

TABLES
FOR THE
MUTUAL CONVERSION
OF
SOLAR AND SIDEREAL
TIME

BY
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(reconstruction by Denis Roegel, October 15, 2010)

Note on the reconstruction

This book is a reconstruction of Sang's book. It was initially produced on September 3–4, 2009, and slightly improved on October 14–15, 2010. All the tables were generated automatically. The layout of the tables is very regular and the generation of the tables was therefore made straightforward.

In his preface, Sang claims that there is not a single error in his tables. We haven't checked the entire tables, but Sang's claim appears quite plausible. However, Sang's preface contains two errors, which we have left uncorrected in the following pages. The first error occurs in the third example. Sang converts 3.27 seconds of solar time into 3.26 seconds of sidereal time. But sidereal time elapses faster than solar time, and the correct value is 3.28 seconds. In the fourth example, Sang converts 2.49 seconds of sidereal time into 2.50 seconds of solar time, but for the same reasons as above, it should be 2.48 seconds. Sang's two errors cancel, so that the result of the fourth example is indeed the value he started with in the third example.

D. Roegel, 15 October 2010.

PREFACE.

THE operations of converting Solar into Sidereal and Sidereal into Solar Time are of very frequent occurrence in Astronomical Calculations, —so much so, that short tables for assisting in the conversion are printed in every issue of the Nautical Almanac; the values of the hours, minutes, and seconds are therein separately given, so that each conversion requires the extraction of three numbers and the addition of these together.

In the following Tables the values are given for each tenth second during the whole day, so that for all the purposes of Nautical Astronomy the equivalent time can be found by a single inspection. Even when precision to the hundredth part of a second is required, the Astronomer has only to perform mentally an addition to the last three figures of the tabulated quantity. To meet the requirements of more refined investigations, Tables of the values for each hundredth part of a second up to ten seconds are prefixed; and still farther to accommodate the Astronomer, the values are given for each Solar and for each Sidereal day during the year.

A Table of the coincidences of the beats of the Solar and Sidereal Clocks is given for the whole day; which Table will be found to have certain conveniences in the daily work of the Observatory, and particularly in the rating of chronometers.

These Tables have been constructed on the assumption that the mean equinoctial year, or interval between two consecutive mean equinoxes in March, is 365.242217 Solar or 366.242217 Sidereal days. On account of the gradual displacement of the relative positions of the equinoctial point and the earth's perihelion, these numbers, as shown

by Bessel, are subject to a small secular change; but that change is too small to affect the accuracy of the tabulated results for very many years.

The calculations were all made in duplicate by independent processes; and the precautions taken for insuring accuracy in the printing were such as to warrant the expectation that not a single error exists in the book.

The Navigator, to whom the work is especially useful, has often to make his calculations by the cabin lamp and amid the anxieties of his voyage; and therefore the Tables have not been compressed into the smallest possible shape, but have been printed in an open and easily intelligible form, and in a large and clear type. Also, as, to prevent mistakes, it is desirable to check the calculation by reconvertng the result into the first given kind of time, the Tables for converting Solar into Sidereal are placed face to face with those for turning Sidereal into Solar time; by this arrangement the reconversion can be made at a glance, and without ever having to turn over more than one leaf.

EXAMPLES.

1. To convert $13^{\text{h}} 27^{\text{m}} 18^{\text{s}}.3768$ of mean solar time into sidereal time:—

| | Sol. | = | Sid. |
|-----------|---------------|---|---------------|
| Page 180, | 13 27 10 | | 13 29 22.5969 |
| Page 16, | 8.37 | | 8.3929 |
| | .0068 | | 68 |
| | 13 27 18.3768 | = | 13 29 30.9966 |

2. To convert $13^{\text{h}} 29^{\text{m}} 30^{\text{s}}.9966$ of sidereal time into mean solar time:—

| | Sid. | | Sol. |
|-----------|---------------|---|---------------|
| Page 181, | 13 29 30 | = | 13 27 17.3828 |
| Page 19, | .996 | = | .9933 |
| | 6 | = | 6 |
| | 13 29 30.9966 | = | 13 27 18.3767 |

3. To convert $21^{\text{h}} 13^{\text{m}} 43^{\text{s}}.27$ of mean solar time into sidereal time:—

| | Sol. | | Sid. |
|-----------|-------------|---|-------------|
| Page 274, | 21 13 40 | = | 21 17 09.23 |
| Mentally, | 3.27 | = | 3.26 |
| | 21 13 43.27 | = | 21 17 12.49 |

N.B. — In this and in all cases in which accuracy to the hundredth part of a second is sufficient, the addition may be performed mentally, and the result written down at once.

4. To convert $21^{\text{h}} 17^{\text{m}} 12^{\text{s}}.49$ of sidereal time into mean solar time:—

| | Sid. | | Sol. |
|-----------|-------------|---|-------------|
| Page 275, | 21 17 10 | = | 21 13 40.77 |
| Mentally, | 2.49 | = | 2.50 |
| | 21 17 12.49 | = | 21 13 43.27 |

5. The apparent sidereal time at Greenwich mean noon of Jan. I, 1868 being $18^{\text{h}} 41^{\text{m}} 43^{\text{s}}$, required the corresponding sidereal time for Jan. I, 1869.

| | Sid. |
|-------------------------------------|-------------|
| Jan. I, 1868, apparent, | 18 41 43.00 |
| — Equation of equinox, . . . | +.38 |
| Mean sidereal time, | 18 41 43.38 |
| 366 solar days (p. 318) = | 0 02 59.26 |
| Jan. I, 1869, mean sid. time, . . . | 18 44 42.64 |
| + Equation of equinox, | -.68 |
| Jan. I, 1869, apparent sid. time, | 18 44 41.96 |

6. In order to test the going of a clock, the disappearance of a star against a building was observed on Feb. 2, 1866, and found to be at $10^{\text{h}} 37^{\text{m}} 43^{\text{s}}$. The disappearance was again observed on April 27 to be at $5^{\text{h}} 08^{\text{m}} 17^{\text{s}}$. Required the clock's rate.

| | | | |
|------------------------------------|----|----|----|
| Feb. 2, observed disappearance, .. | 10 | 37 | 43 |
| 84 sid. days (p. 311), | 18 | 29 | 44 |
| April 27, expected disappearance, | 5 | 07 | 27 |
| Observed, | 5 | 08 | 17 |
| Clock's gain in 84 sidereal days, | | | 50 |

the change in the position of the star being neglected.

7. In comparing a marine chronometer with the Transit Clock of the Observatory, the coincidence of the second's beat (not the halfsecond's) of the chronometer was observed at $3^{\text{h}} 17^{\text{m}} 27^{\text{s}}$. Required the time of the first coincidence after 7^{h} on the chronometer.

| | | | |
|--|---|----|-------|
| Coincidence in Table, p. 322, at | 3 | 14 | 47.75 |
| Observed coincidence, | 3 | 17 | 27. |
| Constant to be added, | | 2 | 39.25 |
| Tabular coincidence after 7^{h} , | 7 | 00 | 01.71 |
| Expected time of coincidence, | 7 | 02 | 41 |

TIME CONVERSION
TABLES

TABLE
 FOR
 CONVERTING
 MEAN SOLAR TIME
 INTO
 SIDEREAL TIME

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 0.00 | 0.0000 | 0.10 | 0.1003 | 0.20 | 0.2005 | 0.30 | 0.3008 |
| .01 | .0100 | .11 | .1103 | .21 | .2106 | .31 | .3108 |
| .02 | .0201 | .12 | .1203 | .22 | .2206 | .32 | .3209 |
| .03 | .0301 | .13 | .1304 | .23 | .2306 | .33 | .3309 |
| .04 | .0401 | .14 | .1404 | .24 | .2407 | .34 | .3409 |
| 0.05 | 0.0501 | 0.15 | 0.1504 | 0.25 | 0.2507 | 0.35 | 0.3510 |
| .06 | .0602 | .16 | .1604 | .26 | .2607 | .36 | .3610 |
| .07 | .0702 | .17 | .1705 | .27 | .2707 | .37 | .3710 |
| .08 | .0802 | .18 | .1805 | .28 | .2808 | .38 | .3810 |
| .09 | .0902 | .19 | .1905 | .29 | .2908 | .39 | .3911 |

TABLE
 FOR
 CONVERTING
 SIDEREAL TIME
 INTO
 MEAN SOLAR TIME

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 0.00 | 0.0000 | 0.10 | 0.0997 | 0.20 | 0.1995 | 0.30 | 0.2992 |
| .01 | .0100 | .11 | .1097 | .21 | .2094 | .31 | .3092 |
| .02 | .0199 | .12 | .1197 | .22 | .2194 | .32 | .3191 |
| .03 | .0299 | .13 | .1296 | .23 | .2294 | .33 | .3291 |
| .04 | .0399 | .14 | .1396 | .24 | .2393 | .34 | .3391 |
| 0.05 | 0.0499 | 0.15 | 0.1496 | 0.25 | 0.2493 | 0.35 | 0.3490 |
| .06 | .0598 | .16 | .1596 | .26 | .2593 | .36 | .3590 |
| .07 | .0698 | .17 | .1695 | .27 | .2693 | .37 | .3690 |
| .08 | .0798 | .18 | .1795 | .28 | .2792 | .38 | .3790 |
| .09 | .0898 | .19 | .1895 | .29 | .2892 | .39 | .3889 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 0.40 | 0.4011 | 0.70 | 0.7019 | 1.00 | 1.0027 | 1.30 | 1.3036 |
| .41 | .4111 | .71 | .7119 | .01 | .0128 | .31 | .3136 |
| .42 | .4211 | .72 | .7220 | .02 | .0228 | .32 | .3236 |
| .43 | .4312 | .73 | .7320 | .03 | .0328 | .33 | .3336 |
| .44 | .4412 | .74 | .7420 | .04 | .0428 | .34 | .3437 |
| 0.45 | 0.4512 | 0.75 | 0.7521 | 1.05 | 1.0529 | 1.35 | 1.3537 |
| .46 | .4613 | .76 | .7621 | .06 | .0629 | .36 | .3637 |
| .47 | .4713 | .77 | .7721 | .07 | .0729 | .37 | .3738 |
| .48 | .4813 | .78 | .7821 | .08 | .0830 | .38 | .3838 |
| .49 | .4913 | .79 | .7922 | .09 | .0930 | .39 | .3938 |
| 0.50 | 0.5014 | 0.80 | 0.8022 | 1.10 | 1.1030 | 1.40 | 1.4038 |
| .51 | .5114 | .81 | .8122 | .11 | .1130 | .41 | .4139 |
| .52 | .5214 | .82 | .8222 | .12 | .1231 | .42 | .4239 |
| .53 | .5315 | .83 | .8323 | .13 | .1331 | .43 | .4339 |
| .54 | .5415 | .84 | .8423 | .14 | .1431 | .44 | .4439 |
| 0.55 | 0.5515 | 0.85 | 0.8523 | 1.15 | 1.1531 | 1.45 | 1.4540 |
| .56 | .5615 | .86 | .8624 | .16 | .1632 | .46 | .4640 |
| .57 | .5716 | .87 | .8724 | .17 | .1732 | .47 | .4740 |
| .58 | .5816 | .88 | .8824 | .18 | .1832 | .48 | .4841 |
| .59 | .5916 | .89 | .8924 | .19 | .1933 | .49 | .4941 |
| 0.60 | 0.6016 | 0.90 | 0.9025 | 1.20 | 1.2033 | 1.50 | 1.5041 |
| .61 | .6117 | .91 | .9125 | .21 | .2133 | .51 | .5141 |
| .62 | .6217 | .92 | .9225 | .22 | .2233 | .52 | .5242 |
| .63 | .6317 | .93 | .9325 | .23 | .2334 | .53 | .5342 |
| .64 | .6418 | .94 | .9426 | .24 | .2434 | .54 | .5442 |
| 0.65 | 0.6518 | 0.95 | 0.9526 | 1.25 | 1.2534 | 1.55 | 1.5542 |
| .66 | .6618 | .96 | .9626 | .26 | .2634 | .56 | .5643 |
| .67 | .6718 | .97 | .9727 | .27 | .2735 | .57 | .5743 |
| .68 | .6819 | .98 | .9827 | .28 | .2835 | .58 | .5843 |
| .69 | .6919 | .99 | .9927 | .29 | .2935 | .59 | .5944 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 0.40 | 0.3989 | 0.70 | 0.6981 | 1.00 | 0.9973 | 1.30 | 1.2965 |
| .41 | 0.4089 | .71 | 0.7081 | .01 | 1.0072 | .31 | 1.3064 |
| .42 | .4189 | .72 | .7180 | .02 | .0172 | .32 | .3164 |
| .43 | .4288 | .73 | .7280 | .03 | .0272 | .33 | .3264 |
| .44 | .4388 | .74 | .7380 | .04 | .0372 | .34 | .3363 |
| 0.45 | .4488 | 0.75 | .7480 | 1.05 | .0471 | 1.35 | .3463 |
| .46 | 0.4587 | .76 | 0.7579 | .06 | 1.0571 | .36 | 1.3563 |
| .47 | .4687 | .77 | .7679 | .07 | .0671 | .37 | .3663 |
| .48 | .4787 | .78 | .7779 | .08 | .0771 | .38 | .3762 |
| .49 | .4887 | .79 | .7878 | .09 | .0870 | .39 | .3862 |
| 0.50 | .4986 | 0.80 | .7978 | 1.10 | .0970 | 1.40 | .3962 |
| .51 | 0.5086 | .81 | 0.8078 | .11 | 1.1070 | .41 | 1.4062 |
| .52 | .5186 | .82 | .8178 | .12 | .1169 | .42 | .4161 |
| .53 | .5286 | .83 | .8277 | .13 | .1269 | .43 | .4261 |
| .54 | .5385 | .84 | .8377 | .14 | .1369 | .44 | .4361 |
| 0.55 | .5485 | 0.85 | .8477 | 1.15 | .1469 | 1.45 | .4460 |
| .56 | 0.5585 | .86 | 0.8577 | .16 | 1.1568 | .46 | 1.4560 |
| .57 | .5684 | .87 | .8676 | .17 | .1668 | .47 | .4660 |
| .58 | .5784 | .88 | .8776 | .18 | .1768 | .48 | .4760 |
| .59 | .5884 | .89 | .8876 | .19 | .1868 | .49 | .4859 |
| 0.60 | .5984 | 0.90 | .8975 | 1.20 | .1967 | 1.50 | .4959 |
| .61 | 0.6083 | .91 | 0.9075 | .21 | 1.2067 | .51 | 1.5059 |
| .62 | .6183 | .92 | .9175 | .22 | .2167 | .52 | .5158 |
| .63 | .6283 | .93 | .9275 | .23 | .2266 | .53 | .5258 |
| .64 | .6383 | .94 | .9374 | .24 | .2366 | .54 | .5358 |
| 0.65 | .6482 | 0.95 | .9474 | 1.25 | .2466 | 1.55 | .5458 |
| .66 | 0.6582 | .96 | 0.9574 | .26 | 1.2566 | .56 | 1.5557 |
| .67 | .6682 | .97 | .9674 | .27 | .2665 | .57 | .5657 |
| .68 | .6781 | .98 | .9773 | .28 | .2765 | .58 | .5757 |
| .69 | .6881 | .99 | .9873 | .29 | .2865 | .59 | .5857 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 1.60 | 1.6044 | 1.90 | 1.9052 | 2.20 | 2.2060 | 2.50 | 2.5068 |
| .61 | .6144 | .91 | .9152 | .21 | .2161 | .51 | .5169 |
| .62 | .6244 | .92 | .9253 | .22 | .2261 | .52 | .5269 |
| .63 | .6345 | .93 | .9353 | .23 | .2361 | .53 | .5369 |
| .64 | .6445 | .94 | .9453 | .24 | .2461 | .54 | .5470 |
| 1.65 | 1.6545 | 1.95 | 1.9553 | 2.25 | 2.2562 | 2.55 | 2.5570 |
| .66 | .6645 | .96 | .9654 | .26 | .2662 | .56 | .5670 |
| .67 | .6746 | .97 | .9754 | .27 | .2762 | .57 | .5770 |
| .68 | .6846 | .98 | .9854 | .28 | .2862 | .58 | .5871 |
| .69 | .6946 | .99 | .9954 | .29 | .2963 | .59 | .5971 |
| 1.70 | 1.7047 | 2.00 | 2.0055 | 2.30 | 2.3063 | 2.60 | 2.6071 |
| .71 | .7147 | .01 | .0155 | .31 | .3163 | .61 | .6171 |
| .72 | .7247 | .02 | .0255 | .32 | .3264 | .62 | .6272 |
| .73 | .7347 | .03 | .0356 | .33 | .3364 | .63 | .6372 |
| .74 | .7448 | .04 | .0456 | .34 | .3464 | .64 | .6472 |
| 1.75 | 1.7548 | 2.05 | 2.0556 | 2.35 | 2.3564 | 2.65 | 2.6573 |
| .76 | .7648 | .06 | .0656 | .36 | .3665 | .66 | .6673 |
| .77 | .7748 | .07 | .0757 | .37 | .3765 | .67 | .6773 |
| .78 | .7849 | .08 | .0857 | .38 | .3865 | .68 | .6873 |
| .79 | .7949 | .09 | .0957 | .39 | .3965 | .69 | .6974 |
| 1.80 | 1.8049 | 2.10 | 2.1057 | 2.40 | 2.4066 | 2.70 | 2.7074 |
| .81 | .8150 | .11 | .1158 | .41 | .4166 | .71 | .7174 |
| .82 | .8250 | .12 | .1258 | .42 | .4266 | .72 | .7274 |
| .83 | .8350 | .13 | .1358 | .43 | .4367 | .73 | .7375 |
| .84 | .8450 | .14 | .1459 | .44 | .4467 | .74 | .7475 |
| 1.85 | 1.8551 | 2.15 | 2.1559 | 2.45 | 2.4567 | 2.75 | 2.7575 |
| .86 | .8651 | .16 | .1659 | .46 | .4667 | .76 | .7676 |
| .87 | .8751 | .17 | .1759 | .47 | .4768 | .77 | .7776 |
| .88 | .8851 | .18 | .1860 | .48 | .4868 | .78 | .7876 |
| .89 | .8952 | .19 | .1960 | .49 | .4968 | .79 | .7976 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 1.60 | 1.5956 | 1.90 | 1.8948 | 2.20 | 2.1940 | 2.50 | 2.4932 |
| .61 | 1.6056 | .91 | 1.9048 | .21 | 2.2040 | .51 | 2.5031 |
| .62 | .6156 | .92 | .9148 | .22 | .2139 | .52 | .5131 |
| .63 | .6255 | .93 | .9247 | .23 | .2239 | .53 | .5231 |
| .64 | .6355 | .94 | .9347 | .24 | .2339 | .54 | .5331 |
| 1.65 | .6455 | 1.95 | .9447 | 2.25 | .2439 | 2.55 | .5430 |
| .66 | 1.6555 | .96 | 1.9546 | .26 | 2.2538 | .56 | 2.5530 |
| .67 | .6654 | .97 | .9646 | .27 | .2638 | .57 | .5630 |
| .68 | .6754 | .98 | .9746 | .28 | .2738 | .58 | .5730 |
| .69 | .6854 | .99 | .9846 | .29 | .2837 | .59 | .5829 |
| 1.70 | .6954 | 2.00 | .9945 | 2.30 | .2937 | 2.60 | .5929 |
| .71 | 1.7053 | .01 | 2.0045 | .31 | 2.3037 | .61 | 2.6029 |
| .72 | .7153 | .02 | .0145 | .32 | .3137 | .62 | .6128 |
| .73 | .7253 | .03 | .0245 | .33 | .3236 | .63 | .6228 |
| .74 | .7352 | .04 | .0344 | .34 | .3336 | .64 | .6328 |
| 1.75 | .7452 | 2.05 | .0444 | 2.35 | .3436 | 2.65 | .6428 |
| .76 | 1.7552 | .06 | 2.0544 | .36 | 2.3536 | .66 | 2.6527 |
| .77 | .7652 | .07 | .0643 | .37 | .3635 | .67 | .6627 |
| .78 | .7751 | .08 | .0743 | .38 | .3735 | .68 | .6727 |
| .79 | .7851 | .09 | .0843 | .39 | .3835 | .69 | .6827 |
| 1.80 | .7951 | 2.10 | .0943 | 2.40 | .3934 | 2.70 | .6926 |
| .81 | 1.8051 | .11 | 2.1042 | .41 | 2.4034 | .71 | 2.7026 |
| .82 | .8150 | .12 | .1142 | .42 | .4134 | .72 | .7126 |
| .83 | .8250 | .13 | .1242 | .43 | .4234 | .73 | .7225 |
| .84 | .8350 | .14 | .1342 | .44 | .4333 | .74 | .7325 |
| 1.85 | .8449 | 2.15 | .1441 | 2.45 | .4433 | 2.75 | .7425 |
| .86 | 1.8549 | .16 | 2.1541 | .46 | 2.4533 | .76 | 2.7525 |
| .87 | .8649 | .17 | .1641 | .47 | .4633 | .77 | .7624 |
| .88 | .8749 | .18 | .1740 | .48 | .4732 | .78 | .7724 |
| .89 | .8848 | .19 | .1840 | .49 | .4832 | .79 | .7824 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 2.80 | 2.8077 | 3.10 | 3.1085 | 3.40 | 3.4093 | 3.70 | 3.7101 |
| .81 | .8177 | .11 | .1185 | .41 | .4193 | .71 | .7202 |
| .82 | .8277 | .12 | .1285 | .42 | .4294 | .72 | .7302 |
| .83 | .8377 | .13 | .1386 | .43 | .4394 | .73 | .7402 |
| .84 | .8478 | .14 | .1486 | .44 | .4494 | .74 | 3.7502 |
| 2.85 | 2.8578 | 3.15 | 3.1586 | 3.45 | 3.4594 | 3.75 | .7603 |
| .86 | .8678 | .16 | .1687 | .46 | .4695 | .76 | .7703 |
| .87 | .8779 | .17 | .1787 | .47 | .4795 | .77 | .7803 |
| .88 | .8879 | .18 | .1887 | .48 | .4895 | .78 | .7903 |
| .89 | .8979 | .19 | .1987 | .49 | .4996 | .79 | 3.8004 |
| 2.90 | 2.9079 | 3.20 | 3.2088 | 3.50 | 3.5096 | 3.80 | .8104 |
| .91 | .9180 | .21 | .2188 | .51 | .5196 | .81 | .8204 |
| .92 | .9280 | .22 | .2288 | .52 | .5296 | .82 | .8305 |
| .93 | .9380 | .23 | .2388 | .53 | .5397 | .83 | .8405 |
| .94 | .9480 | .24 | .2489 | .54 | .5497 | .84 | 3.8505 |
| 2.95 | 2.9581 | 3.25 | 3.2589 | 3.55 | 3.5597 | 3.85 | .8605 |
| .96 | .9681 | .26 | .2689 | .56 | .5697 | .86 | .8706 |
| .97 | .9781 | .27 | .2790 | .57 | .5798 | .87 | .8806 |
| .98 | .9882 | .28 | .2890 | .58 | .5898 | .88 | .8906 |
| .99 | .9982 | .29 | .2990 | .59 | .5998 | .89 | 3.9007 |
| 3.00 | 3.0082 | 3.30 | 3.3090 | 3.60 | 3.6099 | 3.90 | .9107 |
| .01 | .0182 | .31 | .3191 | .61 | .6199 | .91 | .9207 |
| .02 | .0283 | .32 | .3291 | .62 | .6299 | .92 | .9307 |
| .03 | .0383 | .33 | .3391 | .63 | .6399 | .93 | .9408 |
| .04 | .0483 | .34 | .3491 | .64 | 3.6500 | .94 | 3.9508 |
| 3.05 | 3.0584 | 3.35 | 3.3592 | 3.65 | .6600 | 3.95 | .9608 |
| .06 | .0684 | .36 | .3692 | .66 | .6700 | .96 | .9708 |
| .07 | .0784 | .37 | .3792 | .67 | .6800 | .97 | .9809 |
| .08 | .0884 | .38 | .3893 | .68 | .6901 | .98 | .9909 |
| .09 | .0985 | .39 | .3993 | .69 | 3.7001 | .99 | 4.0009 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 2.80 | 2.7924 | 3.10 | 3.0915 | 3.40 | 3.3907 | 3.70 | 3.6899 |
| .81 | 2.8023 | .11 | 3.1015 | .41 | 3.4007 | .71 | .6999 |
| .82 | .8123 | .12 | .1115 | .42 | .4107 | .72 | 3.7098 |
| .83 | .8223 | .13 | .1215 | .43 | .4206 | .73 | .7198 |
| .84 | .8322 | .14 | .1314 | .44 | .4306 | .74 | .7298 |
| 2.85 | .8422 | 3.15 | .1414 | 3.45 | .4406 | 3.75 | .7398 |
| .86 | 2.8522 | .16 | 3.1514 | .46 | 3.4506 | .76 | .7497 |
| .87 | .8622 | .17 | .1613 | .47 | .4605 | .77 | 3.7597 |
| .88 | .8721 | .18 | .1713 | .48 | .4705 | .78 | .7697 |
| .89 | .8821 | .19 | .1813 | .49 | .4805 | .79 | .7797 |
| 2.90 | .8921 | 3.20 | .1913 | 3.50 | .4904 | 3.80 | .7896 |
| .91 | 2.9021 | .21 | 3.2012 | .51 | 3.5004 | .81 | .7996 |
| .92 | .9120 | .22 | .2112 | .52 | .5104 | .82 | 3.8096 |
| .93 | .9220 | .23 | .2212 | .53 | .5204 | .83 | .8195 |
| .94 | .9320 | .24 | .2312 | .54 | .5303 | .84 | .8295 |
| 2.95 | .9419 | 3.25 | .2411 | 3.55 | .5403 | 3.85 | .8395 |
| .96 | 2.9519 | .26 | 3.2511 | .56 | 3.5503 | .86 | .8495 |
| .97 | .9619 | .27 | .2611 | .57 | .5603 | .87 | 3.8594 |
| .98 | .9719 | .28 | .2710 | .58 | .5702 | .88 | .8694 |
| .99 | .9818 | .29 | .2810 | .59 | .5802 | .89 | .8794 |
| 3.00 | .9918 | 3.30 | .2910 | 3.60 | .5902 | 3.90 | .8894 |
| .01 | 3.0018 | .31 | 3.3010 | .61 | 3.6001 | .91 | .8993 |
| .02 | .0118 | .32 | .3109 | .62 | .6101 | .92 | 3.9093 |
| .03 | .0217 | .33 | .3209 | .63 | .6201 | .93 | .9193 |
| .04 | .0317 | .34 | .3309 | .64 | .6301 | .94 | .9292 |
| 3.05 | .0417 | 3.35 | .3409 | 3.65 | .6400 | 3.95 | .9392 |
| .06 | 3.0516 | .36 | 3.3508 | .66 | 3.6500 | .96 | .9492 |
| .07 | .0616 | .37 | .3608 | .67 | .6600 | .97 | 3.9592 |
| .08 | .0716 | .38 | .3708 | .68 | .6700 | .98 | .9691 |
| .09 | .0816 | .39 | .3807 | .69 | .6799 | .99 | .9791 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 4.00 | 4.0110 | 4.30 | 4.3118 | 4.60 | 4.6126 | 4.90 | 4.9134 |
| .01 | .0210 | .31 | .3218 | .61 | .6226 | .91 | .9234 |
| .02 | .0310 | .32 | .3318 | .62 | .6326 | .92 | .9335 |
| .03 | .0410 | .33 | .3419 | .63 | .6427 | .93 | .9435 |
| .04 | 4.0511 | .34 | 4.3519 | .64 | 4.6527 | .94 | 4.9535 |
| 4.05 | .0611 | 4.35 | .3619 | 4.65 | .6627 | 4.95 | .9636 |
| .06 | .0711 | .36 | .3719 | .66 | .6728 | .96 | .9736 |
| .07 | .0811 | .37 | .3820 | .67 | .6828 | .97 | .9836 |
| .08 | .0912 | .38 | .3920 | .68 | .6928 | .98 | .9936 |
| .09 | 4.1012 | .39 | 4.4020 | .69 | 4.7028 | .99 | 5.0037 |
| 4.10 | .1112 | 4.40 | .4120 | 4.70 | .7129 | 5.00 | .0137 |
| .11 | .1213 | .41 | .4221 | .71 | .7229 | .01 | .0237 |
| .12 | .1313 | .42 | .4321 | .72 | .7329 | .02 | .0337 |
| .13 | .1413 | .43 | .4421 | .73 | .7430 | .03 | .0438 |
| .14 | 4.1513 | .44 | 4.4522 | .74 | 4.7530 | .04 | 5.0538 |
| 4.15 | .1614 | 4.45 | .4622 | 4.75 | .7630 | 5.05 | .0638 |
| .16 | .1714 | .46 | .4722 | .76 | .7730 | .06 | .0739 |
| .17 | .1814 | .47 | .4822 | .77 | .7831 | .07 | .0839 |
| .18 | .1914 | .48 | .4923 | .78 | .7931 | .08 | .0939 |
| .19 | 4.2015 | .49 | 4.5023 | .79 | 4.8031 | .09 | 5.1039 |
| 4.20 | .2115 | 4.50 | .5123 | 4.80 | .8131 | 5.10 | .1140 |
| .21 | .2215 | .51 | .5223 | .81 | .8232 | .11 | .1240 |
| .22 | .2316 | .52 | .5324 | .82 | .8332 | .12 | .1340 |
| .23 | .2416 | .53 | .5424 | .83 | .8432 | .13 | .1440 |
| .24 | 4.2516 | .54 | 4.5524 | .84 | 4.8533 | .14 | 5.1541 |
| 4.25 | .2616 | 4.55 | .5625 | 4.85 | .8633 | 5.15 | .1641 |
| .26 | .2717 | .56 | .5725 | .86 | .8733 | .16 | .1741 |
| .27 | .2817 | .57 | .5825 | .87 | .8833 | .17 | .1842 |
| .28 | .2917 | .58 | .5925 | .88 | .8934 | .18 | .1942 |
| .29 | 4.3017 | .59 | 4.6026 | .89 | 4.9034 | .19 | 5.2042 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 4.00 | 3.9891 | 4.30 | 4.2883 | 4.60 | 4.5874 | 4.90 | 4.8866 |
| .01 | .9991 | .31 | .2982 | .61 | .5974 | .91 | .8966 |
| .02 | 4.0090 | .32 | 4.3082 | .62 | 4.6074 | .92 | 4.9066 |
| .03 | .0190 | .33 | .3182 | .63 | .6174 | .93 | .9165 |
| .04 | .0290 | .34 | .3281 | .64 | .6273 | .94 | .9265 |
| 4.05 | .0389 | 4.35 | .3381 | 4.65 | .6373 | 4.95 | .9365 |
| .06 | .0489 | .36 | .3481 | .66 | .6473 | .96 | .9465 |
| .07 | 4.0589 | .37 | 4.3581 | .67 | 4.6572 | .97 | 4.9564 |
| .08 | .0689 | .38 | .3680 | .68 | .6672 | .98 | .9664 |
| .09 | .0788 | .39 | .3780 | .69 | .6772 | .99 | .9764 |
| 4.10 | .0888 | 4.40 | .3880 | 4.70 | .6872 | 5.00 | .9863 |
| .11 | .0988 | .41 | .3980 | .71 | .6971 | .01 | .9963 |
| .12 | 4.1088 | .42 | 4.4079 | .72 | 4.7071 | .02 | 5.0063 |
| .13 | .1187 | .43 | .4179 | .73 | .7171 | .03 | .0163 |
| .14 | .1287 | .44 | .4279 | .74 | .7271 | .04 | .0262 |
| 4.15 | .1387 | 4.45 | .4378 | 4.75 | .7370 | 5.05 | .0362 |
| .16 | .1486 | .46 | .4478 | .76 | .7470 | .06 | .0462 |
| .17 | 4.1586 | .47 | 4.4578 | .77 | 4.7570 | .07 | 5.0562 |
| .18 | .1686 | .48 | .4678 | .78 | .7669 | .08 | .0661 |
| .19 | .1786 | .49 | .4777 | .79 | .7769 | .09 | .0761 |
| 4.20 | .1885 | 4.50 | .4877 | 4.80 | .7869 | 5.10 | .0861 |
| .21 | .1985 | .51 | .4977 | .81 | .7969 | .11 | .0960 |
| .22 | 4.2085 | .52 | 4.5077 | .82 | 4.8068 | .12 | 5.1060 |
| .23 | .2185 | .53 | .5176 | .83 | .8168 | .13 | .1160 |
| .24 | .2284 | .54 | .5276 | .84 | .8268 | .14 | .1260 |
| 4.25 | .2384 | 4.55 | .5376 | 4.85 | .8368 | 5.15 | .1359 |
| .26 | .2484 | .56 | .5475 | .86 | .8467 | .16 | .1459 |
| .27 | 4.2583 | .57 | 4.5575 | .87 | 4.8567 | .17 | 5.1559 |
| .28 | .2683 | .58 | .5675 | .88 | .8667 | .18 | .1659 |
| .29 | .2783 | .59 | .5775 | .89 | .8766 | .19 | .1758 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 5.20 | 5.2142 | 5.50 | 5.5151 | 5.80 | 5.8159 | 6.10 | 6.1167 |
| .21 | .2243 | .51 | .5251 | .81 | .8259 | .11 | .1267 |
| .22 | .2343 | .52 | .5351 | .82 | .8359 | .12 | .1368 |
| .23 | .2443 | .53 | .5451 | .83 | .8460 | .13 | .1468 |
| .24 | 5.2543 | .54 | 5.5552 | .84 | 5.8560 | .14 | 6.1568 |
| 5.25 | .2644 | 5.55 | .5652 | 5.85 | .8660 | 6.15 | .1668 |
| .26 | .2744 | .56 | .5752 | .86 | .8760 | .16 | .1769 |
| .27 | .2844 | .57 | .5853 | .87 | .8861 | .17 | .1869 |
| .28 | .2945 | .58 | .5953 | .88 | .8961 | .18 | .1969 |
| .29 | 5.3045 | .59 | 5.6053 | .89 | 5.9061 | .19 | 6.2069 |
| 5.30 | .3145 | 5.60 | .6153 | 5.90 | .9162 | 6.20 | .2170 |
| .31 | .3245 | .61 | .6254 | .91 | .9262 | .21 | .2270 |
| .32 | .3346 | .62 | .6354 | .92 | .9362 | .22 | .2370 |
| .33 | .3446 | .63 | .6454 | .93 | .9462 | .23 | .2471 |
| .34 | 5.3546 | .64 | 5.6554 | .94 | 5.9563 | .24 | 6.2571 |
| 5.35 | .3646 | 5.65 | .6655 | 5.95 | .9663 | 6.25 | .2671 |
| .36 | .3747 | .66 | .6755 | .96 | .9763 | .26 | .2771 |
| .37 | .3847 | .67 | .6855 | .97 | .9863 | .27 | .2872 |
| .38 | .3947 | .68 | .6956 | .98 | .9964 | .28 | .2972 |
| .39 | 5.4048 | .69 | 5.7056 | .99 | 6.0064 | .29 | 6.3072 |
| 5.40 | .4148 | 5.70 | .7156 | 6.00 | .0164 | 6.30 | .3172 |
| .41 | .4248 | .71 | .7256 | .01 | .0265 | .31 | .3273 |
| .42 | .4348 | .72 | .7357 | .02 | .0365 | .32 | .3373 |
| .43 | .4449 | .73 | .7457 | .03 | .0465 | .33 | .3473 |
| .44 | 5.4549 | .74 | 5.7557 | .04 | 6.0565 | .34 | 6.3574 |
| 5.45 | .4649 | 5.75 | .7657 | 6.05 | .0666 | 6.35 | .3674 |
| .46 | .4749 | .76 | .7758 | .06 | .0766 | .36 | .3774 |
| .47 | .4850 | .77 | .7858 | .07 | .0866 | .37 | .3874 |
| .48 | .4950 | .78 | .7958 | .08 | .0966 | .38 | .3975 |
| .49 | 5.5050 | .79 | 5.8059 | .09 | 6.1067 | .39 | 6.4075 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 5.20 | 5.1858 | 5.50 | 5.4850 | 5.80 | 5.7842 | 6.10 | 6.0833 |
| .21 | .1958 | .51 | .4950 | .81 | .7941 | .11 | .0933 |
| .22 | 5.2057 | .52 | 5.5049 | .82 | 5.8041 | .12 | 6.1033 |
| .23 | .2157 | .53 | .5149 | .83 | .8141 | .13 | .1133 |
| .24 | .2257 | .54 | .5249 | .84 | .8241 | .14 | .1232 |
| 5.25 | .2357 | 5.55 | .5348 | 5.85 | .8340 | 6.15 | .1332 |
| .26 | .2456 | .56 | .5448 | .86 | .8440 | .16 | .1432 |
| .27 | 5.2556 | .57 | 5.5548 | .87 | 5.8540 | .17 | 6.1532 |
| .28 | .2656 | .58 | .5648 | .88 | .8639 | .18 | .1631 |
| .29 | .2756 | .59 | .5747 | .89 | .8739 | .19 | .1731 |
| 5.30 | .2855 | 5.60 | .5847 | 5.90 | .8839 | 6.20 | .1831 |
| .31 | .2955 | .61 | .5947 | .91 | .8939 | .21 | .1930 |
| .32 | 5.3055 | .62 | 5.6047 | .92 | 5.9038 | .22 | 6.2030 |
| .33 | .3154 | .63 | .6146 | .93 | .9138 | .23 | .2130 |
| .34 | .3254 | .64 | .6246 | .94 | .9238 | .24 | .2230 |
| 5.35 | .3354 | 5.65 | .6346 | 5.95 | .9338 | 6.25 | .2329 |
| .36 | .3454 | .66 | .6445 | .96 | .9437 | .26 | .2429 |
| .37 | 5.3553 | .67 | 5.6545 | .97 | 5.9537 | .27 | 6.2529 |
| .38 | .3653 | .68 | .6645 | .98 | .9637 | .28 | .2629 |
| .39 | .3753 | .69 | .6745 | .99 | .9736 | .29 | .2728 |
| 5.40 | .3853 | 5.70 | .6844 | 6.00 | .9836 | 6.30 | .2828 |
| .41 | .3952 | .71 | .6944 | .01 | .9936 | .31 | .2928 |
| .42 | 5.4052 | .72 | 5.7044 | .02 | 6.0036 | .32 | 6.3027 |
| .43 | .4152 | .73 | .7144 | .03 | .0135 | .33 | .3127 |
| .44 | .4251 | .74 | .7243 | .04 | .0235 | .34 | .3227 |
| 5.45 | .4351 | 5.75 | .7343 | 6.05 | .0335 | 6.35 | .3327 |
| .46 | .4451 | .76 | .7443 | .06 | .0435 | .36 | .3426 |
| .47 | 5.4551 | .77 | 5.7542 | .07 | 6.0534 | .37 | 6.3526 |
| .48 | .4650 | .78 | .7642 | .08 | .0634 | .38 | .3626 |
| .49 | .4750 | .79 | .7742 | .09 | .0734 | .39 | .3726 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 6.40 | 6.4175 | 6.70 | 6.7183 | 7.00 | 7.0192 | 7.30 | 7.3200 |
| .41 | .4275 | .71 | .7284 | .01 | .0292 | .31 | .3300 |
| .42 | .4376 | .72 | .7384 | .02 | .0392 | .32 | .3400 |
| .43 | .4476 | .73 | .7484 | .03 | .0492 | .33 | 7.3501 |
| .44 | 6.4576 | .74 | 6.7585 | .04 | 7.0593 | .34 | .3601 |
| 6.45 | .4677 | 6.75 | .7685 | 7.05 | .0693 | 7.35 | .3701 |
| .46 | .4777 | .76 | .7785 | .06 | .0793 | .36 | .3802 |
| .47 | .4877 | .77 | .7885 | .07 | .0894 | .37 | .3902 |
| .48 | .4977 | .78 | .7986 | .08 | .0994 | .38 | 7.4002 |
| .49 | 6.5078 | .79 | 6.8086 | .09 | 7.1094 | .39 | .4102 |
| 6.50 | .5178 | 6.80 | .8186 | 7.10 | .1194 | 7.40 | .4203 |
| .51 | .5278 | .81 | .8286 | .11 | .1295 | .41 | .4303 |
| .52 | .5379 | .82 | .8387 | .12 | .1395 | .42 | .4403 |
| .53 | .5479 | .83 | .8487 | .13 | .1495 | .43 | 7.4503 |
| .54 | 6.5579 | .84 | 6.8587 | .14 | 7.1595 | .44 | .4604 |
| 6.55 | .5679 | 6.85 | .8688 | 7.15 | .1696 | 7.45 | .4704 |
| .56 | .5780 | .86 | .8788 | .16 | .1796 | .46 | .4804 |
| .57 | .5880 | .87 | .8888 | .17 | .1896 | .47 | .4905 |
| .58 | .5980 | .88 | .8988 | .18 | .1997 | .48 | 7.5005 |
| .59 | 6.6080 | .89 | 6.9089 | .19 | 7.2097 | .49 | .5105 |
| 6.60 | .6181 | 6.90 | .9189 | 7.20 | .2197 | 7.50 | .5205 |
| .61 | .6281 | .91 | .9289 | .21 | .2297 | .51 | .5306 |
| .62 | .6381 | .92 | .9389 | .22 | .2398 | .52 | .5406 |
| .63 | .6482 | .93 | .9490 | .23 | .2498 | .53 | 7.5506 |
| .64 | 6.6582 | .94 | 6.9590 | .24 | 7.2598 | .54 | .5606 |
| 6.65 | .6682 | 6.95 | .9690 | 7.25 | .2698 | 7.55 | .5707 |
| .66 | .6782 | .96 | .9791 | .26 | .2799 | .56 | .5807 |
| .67 | .6883 | .97 | .9891 | .27 | .2899 | .57 | .5907 |
| .68 | .6983 | .98 | .9991 | .28 | .2999 | .58 | 7.6008 |
| .69 | 6.7083 | .99 | 7.0091 | .29 | .3100 | .59 | .6108 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 6.40 | 6.3825 | 6.70 | 6.6817 | 7.00 | 6.9809 | 7.30 | 7.2801 |
| .41 | .3925 | .71 | .6917 | .01 | .9909 | .31 | .2900 |
| .42 | 6.4025 | .72 | 6.7017 | .02 | 7.0008 | .32 | 7.3000 |
| .43 | .4124 | .73 | .7116 | .03 | .0108 | .33 | .3100 |
| .44 | .4224 | .74 | .7216 | .04 | .0208 | .34 | .3200 |
| 6.45 | .4324 | 6.75 | .7316 | 7.05 | .0308 | 7.35 | .3299 |
| .46 | .4424 | .76 | .7415 | .06 | .0407 | .36 | .3399 |
| .47 | 6.4523 | .77 | 6.7515 | .07 | 7.0507 | .37 | .3499 |
| .48 | .4623 | .78 | .7615 | .08 | .0607 | .38 | 7.3598 |
| .49 | .4723 | .79 | .7715 | .09 | .0706 | .39 | .3698 |
| 6.50 | .4823 | 6.80 | .7814 | 7.10 | .0806 | 7.40 | .3798 |
| .51 | .4922 | .81 | .7914 | .11 | .0906 | .41 | .3898 |
| .52 | 6.5022 | .82 | 6.8014 | .12 | 7.1006 | .42 | .3997 |
| .53 | .5122 | .83 | .8114 | .13 | .1105 | .43 | 7.4097 |
| .54 | .5221 | .84 | .8213 | .14 | .1205 | .44 | .4197 |
| 6.55 | .5321 | 6.85 | .8313 | 7.15 | .1305 | 7.45 | .4297 |
| .56 | .5421 | .86 | .8413 | .16 | .1405 | .46 | .4396 |
| .57 | 6.5521 | .87 | 6.8512 | .17 | 7.1504 | .47 | .4496 |
| .58 | .5620 | .88 | .8612 | .18 | .1604 | .48 | 7.4596 |
| .59 | .5720 | .89 | .8712 | .19 | .1704 | .49 | .4695 |
| 6.60 | .5820 | 6.90 | .8812 | 7.20 | .1803 | 7.50 | .4795 |
| .61 | .5920 | .91 | .8911 | .21 | .1903 | .51 | .4895 |
| .62 | 6.6019 | .92 | 6.9011 | .22 | 7.2003 | .52 | .4995 |
| .63 | .6119 | .93 | .9111 | .23 | .2103 | .53 | 7.5094 |
| .64 | .6219 | .94 | .9211 | .24 | .2202 | .54 | .5194 |
| 6.65 | .6318 | 6.95 | .9310 | 7.25 | .2302 | 7.55 | .5294 |
| .66 | .6418 | .96 | .9410 | .26 | .2402 | .56 | .5394 |
| .67 | 6.6518 | .97 | 6.9510 | .27 | 7.2501 | .57 | .5493 |
| .68 | .6618 | .98 | .9609 | .28 | .2601 | .58 | 7.5593 |
| .69 | .6717 | .99 | .9709 | .29 | .2701 | .59 | .5693 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 7.60 | 7.6208 | 7.90 | 7.9216 | 8.20 | 8.2225 | 8.50 | 8.5233 |
| .61 | .6308 | .91 | .9317 | .21 | .2325 | .51 | .5333 |
| .62 | .6409 | .92 | .9417 | .22 | .2425 | .52 | .5433 |
| .63 | 7.6509 | .93 | 7.9517 | .23 | 8.2525 | .53 | 8.5534 |
| .64 | .6609 | .94 | .9617 | .24 | .2626 | .54 | .5634 |
| 7.65 | .6709 | 7.95 | .9718 | 8.25 | .2726 | 8.55 | .5734 |
| .66 | .6810 | .96 | .9818 | .26 | .2826 | .56 | .5834 |
| .67 | .6910 | .97 | .9918 | .27 | .2926 | .57 | .5935 |
| .68 | 7.7010 | .98 | 8.0018 | .28 | 8.3027 | .58 | 8.6035 |
| .69 | .7111 | .99 | .0119 | .29 | .3127 | .59 | .6135 |
| 7.70 | .7211 | 8.00 | .0219 | 8.30 | .3227 | 8.60 | .6235 |
| .71 | .7311 | .01 | .0319 | .31 | .3328 | .61 | .6336 |
| .72 | .7411 | .02 | .0420 | .32 | .3428 | .62 | .6436 |
| .73 | 7.7512 | .03 | 8.0520 | .33 | 8.3528 | .63 | 8.6536 |
| .74 | .7612 | .04 | .0620 | .34 | .3628 | .64 | .6637 |
| 7.75 | .7712 | 8.05 | .0720 | 8.35 | .3729 | 8.65 | .6737 |
| .76 | .7812 | .06 | .0821 | .36 | .3829 | .66 | .6837 |
| .77 | .7913 | .07 | .0921 | .37 | .3929 | .67 | .6937 |
| .78 | 7.8013 | .08 | 8.1021 | .38 | 8.4029 | .68 | 8.7038 |
| .79 | .8113 | .09 | .1121 | .39 | .4130 | .69 | .7138 |
| 7.80 | .8214 | 8.10 | .1222 | 8.40 | .4230 | 8.70 | .7238 |
| .81 | .8314 | .11 | .1322 | .41 | .4330 | .71 | .7338 |
| .82 | .8414 | .12 | .1422 | .42 | .4431 | .72 | .7439 |
| .83 | 7.8514 | .13 | 8.1523 | .43 | 8.4531 | .73 | 8.7539 |
| .84 | .8615 | .14 | .1623 | .44 | .4631 | .74 | .7639 |
| 7.85 | .8715 | 8.15 | .1723 | 8.45 | .4731 | 8.75 | .7740 |
| .86 | .8815 | .16 | .1823 | .46 | .4832 | .76 | .7840 |
| .87 | .8915 | .17 | .1924 | .47 | .4932 | .77 | .7940 |
| .88 | 7.9016 | .18 | 8.2024 | .48 | 8.5032 | .78 | 8.8040 |
| .89 | .9116 | .19 | .2124 | .49 | .5132 | .79 | .8141 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 7.60 | 7.5792 | 7.90 | 7.8784 | 8.20 | 8.1776 | 8.50 | 8.4768 |
| .61 | .5892 | .91 | .8884 | .21 | .1876 | .51 | .4868 |
| .62 | .5992 | .92 | .8984 | .22 | .1976 | .52 | .4967 |
| .63 | 7.6092 | .93 | 7.9083 | .23 | 8.2075 | .53 | 8.5067 |
| .64 | .6191 | .94 | .9183 | .24 | .2175 | .54 | .5167 |
| 7.65 | .6291 | 7.95 | .9283 | 8.25 | .2275 | 8.55 | .5267 |
| .66 | .6391 | .96 | .9383 | .26 | .2374 | .56 | .5366 |
| .67 | .6491 | .97 | .9482 | .27 | .2474 | .57 | .5466 |
| .68 | 7.6590 | .98 | 7.9582 | .28 | 8.2574 | .58 | 8.5566 |
| .69 | .6690 | .99 | .9682 | .29 | .2674 | .59 | .5665 |
| 7.70 | .6790 | 8.00 | .9782 | 8.30 | .2773 | 8.60 | .5765 |
| .71 | .6889 | .01 | .9881 | .31 | .2873 | .61 | .5865 |
| .72 | .6989 | .02 | .9981 | .32 | .2973 | .62 | .5965 |
| .73 | 7.7089 | .03 | 8.0081 | .33 | 8.3073 | .63 | 8.6064 |
| .74 | .7189 | .04 | .0180 | .34 | .3172 | .64 | .6164 |
| 7.75 | .7288 | 8.05 | .0280 | 8.35 | .3272 | 8.65 | .6264 |
| .76 | .7388 | .06 | .0380 | .36 | .3372 | .66 | .6364 |
| .77 | .7488 | .07 | .0480 | .37 | .3471 | .67 | .6463 |
| .78 | 7.7588 | .08 | 8.0579 | .38 | 8.3571 | .68 | 8.6563 |
| .79 | .7687 | .09 | .0679 | .39 | .3671 | .69 | .6663 |
| 7.80 | .7787 | 8.10 | .0779 | 8.40 | .3771 | 8.70 | .6762 |
| .81 | .7887 | .11 | .0879 | .41 | .3870 | .71 | .6862 |
| .82 | .7986 | .12 | .0978 | .42 | .3970 | .72 | .6962 |
| .83 | 7.8086 | .13 | 8.1078 | .43 | 8.4070 | .73 | 8.7062 |
| .84 | .8186 | .14 | .1178 | .44 | .4170 | .74 | .7161 |
| 7.85 | .8286 | 8.15 | .1277 | 8.45 | .4269 | 8.75 | .7261 |
| .86 | .8385 | .16 | .1377 | .46 | .4369 | .76 | .7361 |
| .87 | .8485 | .17 | .1477 | .47 | .4469 | .77 | .7461 |
| .88 | 7.8585 | .18 | 8.1577 | .48 | 8.4568 | .78 | 8.7560 |
| .89 | .8685 | .19 | .1676 | .49 | .4668 | .79 | .7660 |

| Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. |
|------|--------|------|--------|------|--------|------|--------|
| 8.80 | 8.8241 | 9.10 | 9.1249 | 9.40 | 9.4257 | 9.70 | 9.7266 |
| .81 | .8341 | .11 | .1349 | .41 | .4358 | .71 | .7366 |
| .82 | .8441 | .12 | .1450 | .42 | .4458 | .72 | .7466 |
| .83 | 8.8542 | .13 | 9.1550 | .43 | 9.4558 | .73 | 9.7566 |
| .84 | .8642 | .14 | .1650 | .44 | .4658 | .74 | .7667 |
| 8.85 | .8742 | 9.15 | .1751 | 9.45 | .4759 | 9.75 | .7767 |
| .86 | .8843 | .16 | .1851 | .46 | .4859 | .76 | .7867 |
| .87 | .8943 | .17 | .1951 | .47 | .4959 | .77 | .7967 |
| .88 | 8.9043 | .18 | 9.2051 | .48 | 9.5060 | .78 | 9.8068 |
| .89 | .9143 | .19 | .2152 | .49 | .5160 | .79 | .8168 |
| 8.90 | .9244 | 9.20 | .2252 | 9.50 | .5260 | 9.80 | .8268 |
| .91 | .9344 | .21 | .2352 | .51 | .5360 | .81 | .8369 |
| .92 | .9444 | .22 | .2452 | .52 | .5461 | .82 | .8469 |
| .93 | 8.9544 | .23 | 9.2553 | .53 | 9.5561 | .83 | 9.8569 |
| .94 | .9645 | .24 | .2653 | .54 | .5661 | .84 | .8669 |
| 8.95 | .9745 | 9.25 | .2753 | 9.55 | .5761 | 9.85 | .8770 |
| .96 | .9845 | .26 | .2854 | .56 | .5862 | .86 | .8870 |
| .97 | .9946 | .27 | .2954 | .57 | .5962 | .87 | .8970 |
| .98 | 9.0046 | .28 | 9.3054 | .58 | 9.6062 | .88 | 9.9071 |
| .99 | .0146 | .29 | .3154 | .59 | .6163 | .89 | .9171 |
| 9.00 | .0246 | 9.30 | .3255 | 9.60 | .6263 | 9.90 | .9271 |
| .01 | .0347 | .31 | .3355 | .61 | .6363 | .91 | .9371 |
| .02 | .0447 | .32 | .3455 | .62 | .6463 | .92 | .9472 |
| .03 | 9.0547 | .33 | 9.3555 | .63 | 9.6564 | .93 | 9.9572 |
| .04 | .0648 | .34 | .3656 | .64 | .6664 | .94 | .9672 |
| 9.05 | .0748 | 9.35 | .3756 | 9.65 | .6764 | 9.95 | .9772 |
| .06 | .0848 | .36 | .3856 | .66 | .6864 | .96 | .9873 |
| .07 | .0948 | .37 | .3957 | .67 | .6965 | .97 | .9973 |
| .08 | 9.1049 | .38 | 9.4057 | .68 | 9.7065 | .98 | ◆.0073 |
| .09 | .1149 | .39 | .4157 | .69 | .7165 | .99 | .0174 |

| Sid. | Sol. | Sid. | Sol. | Sid. | Sol. | Sid. | Sol. |
|------|--------|------|--------|------|--------|------|--------|
| 8.80 | 8.7760 | 9.10 | 9.0752 | 9.40 | 9.3743 | 9.70 | 9.6735 |
| .81 | .7859 | .11 | .0851 | .41 | .3843 | .71 | .6835 |
| .82 | .7959 | .12 | .0951 | .42 | .3943 | .72 | .6935 |
| .83 | 8.8059 | .13 | 9.1051 | .43 | 9.4043 | .73 | 9.7034 |
| .84 | .8159 | .14 | .1150 | .44 | .4142 | .74 | .7134 |
| 8.85 | .8258 | 9.15 | .1250 | 9.45 | .4242 | 9.75 | .7234 |
| .86 | .8358 | .16 | .1350 | .46 | .4342 | .76 | .7334 |
| .87 | .8458 | .17 | .1450 | .47 | .4441 | .77 | .7433 |
| .88 | 8.8558 | .18 | 9.1549 | .48 | 9.4541 | .78 | 9.7533 |
| .89 | .8657 | .19 | .1649 | .49 | .4641 | .79 | .7633 |
| 8.90 | .8757 | 9.20 | .1749 | 9.50 | .4741 | 9.80 | .7732 |
| .91 | .8857 | .21 | .1849 | .51 | .4840 | .81 | .7832 |
| .92 | .8956 | .22 | .1948 | .52 | .4940 | .82 | .7932 |
| .93 | 8.9056 | .23 | 9.2048 | .53 | 9.5040 | .83 | 9.8032 |
| .94 | .9156 | .24 | .2148 | .54 | .5140 | .84 | .8131 |
| 8.95 | .9256 | 9.25 | .2247 | 9.55 | .5239 | 9.85 | .8231 |
| .96 | .9355 | .26 | .2347 | .56 | .5339 | .86 | .8331 |
| .97 | .9455 | .27 | .2447 | .57 | .5439 | .87 | .8431 |
| .98 | 8.9555 | .28 | 9.2547 | .58 | 9.5538 | .88 | 9.8530 |
| .99 | .9655 | .29 | .2646 | .59 | .5638 | .89 | .8630 |
| 9.00 | .9754 | 9.30 | .2746 | 9.60 | .5738 | 9.90 | .8730 |
| .01 | .9854 | .31 | .2846 | .61 | .5838 | .91 | .8829 |
| .02 | .9954 | .32 | .2946 | .62 | .5937 | .92 | .8929 |
| .03 | 9.0053 | .33 | 9.3045 | .63 | 9.6037 | .93 | 9.9029 |
| .04 | .0153 | .34 | .3145 | .64 | .6137 | .94 | .9129 |
| 9.05 | .0253 | 9.35 | .3245 | 9.65 | .6237 | 9.95 | .9228 |
| .06 | .0353 | .36 | .3344 | .66 | .6336 | .96 | .9328 |
| .07 | .0452 | .37 | .3444 | .67 | .6436 | .97 | .9428 |
| .08 | 9.0552 | .38 | 9.3544 | .68 | 9.6536 | .98 | 9.9528 |
| .09 | .0652 | .39 | .3644 | .69 | .6635 | .99 | .9627 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 0 00 00 | 0 00 00.0000 | 0 05 00 | 0 05 00.8214 |
| 10 | 10.0274 | 10 | 10.8488 |
| 20 | 20.0548 | 20 | 20.8761 |
| 30 | 30.0821 | 30 | 30.9035 |
| 40 | 40.1095 | 40 | 40.9309 |
| 50 | 50.1369 | 50 | 50.9583 |
| 0 01 00 | 0 01 00.1643 | 0 06 00 | 0 06 00.9856 |
| 10 | 10.1917 | 10 | 11.0130 |
| 20 | 20.2190 | 20 | 21.0404 |
| 30 | 30.2464 | 30 | 31.0678 |
| 40 | 40.2738 | 40 | 41.0952 |
| 50 | 50.3012 | 50 | 51.1225 |
| 0 02 00 | 0 02 00.3285 | 0 07 00 | 0 07 01.1499 |
| 10 | 10.3559 | 10 | 11.1773 |
| 20 | 20.3833 | 20 | 21.2047 |
| 30 | 30.4107 | 30 | 31.2321 |
| 40 | 40.4381 | 40 | 41.2594 |
| 50 | 50.4654 | 50 | 51.2868 |
| 0 03 00 | 0 03 00.4928 | 0 08 00 | 0 08 01.3142 |
| 10 | 10.5202 | 10 | 11.3416 |
| 20 | 20.5476 | 20 | 21.3690 |
| 30 | 30.5750 | 30 | 31.3963 |
| 40 | 40.6023 | 40 | 41.4237 |
| 50 | 50.6297 | 50 | 51.4511 |
| 0 04 00 | 0 04 00.6571 | 0 09 00 | 0 09 01.4785 |
| 10 | 10.6845 | 10 | 11.5059 |
| 20 | 20.7119 | 20 | 21.5332 |
| 30 | 30.7392 | 30 | 31.5606 |
| 40 | 40.7666 | 40 | 41.5880 |
| 50 | 50.7940 | 50 | 51.6154 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 0 00 00 | 0 00 00.0000 | 0 05 00 | 0 04 59.1809 |
| 10 | 09.9727 | 10 | 0 05 09.1536 |
| 20 | 19.9454 | 20 | 19.1263 |
| 30 | 29.9181 | 30 | 29.0990 |
| 40 | 39.8908 | 40 | 39.0717 |
| 50 | 49.8635 | 50 | 49.0443 |
| 0 01 00 | 59.8362 | 0 06 00 | 59.0170 |
| 10 | 0 01 09.8089 | 10 | 0 06 08.9897 |
| 20 | 19.7816 | 20 | 18.9624 |
| 30 | 29.7543 | 30 | 28.9351 |
| 40 | 39.7270 | 40 | 38.9078 |
| 50 | 49.6997 | 50 | 48.8805 |
| 0 02 00 | 59.6723 | 0 07 00 | 58.8532 |
| 10 | 0 02 09.6450 | 10 | 0 07 08.8259 |
| 20 | 19.6177 | 20 | 18.7986 |
| 30 | 29.5904 | 30 | 28.7713 |
| 40 | 39.5631 | 40 | 38.7440 |
| 50 | 49.5358 | 50 | 48.7167 |
| 0 03 00 | 59.5085 | 0 08 00 | 58.6894 |
| 10 | 0 03 09.4812 | 10 | 0 08 08.6621 |
| 20 | 19.4539 | 20 | 18.6348 |
| 30 | 29.4266 | 30 | 28.6075 |
| 40 | 39.3993 | 40 | 38.5802 |
| 50 | 49.3720 | 50 | 48.5529 |
| 0 04 00 | 59.3447 | 0 09 00 | 58.5256 |
| 10 | 0 04 09.3174 | 10 | 0 09 08.4983 |
| 20 | 19.2901 | 20 | 18.4710 |
| 30 | 29.2628 | 30 | 28.4437 |
| 40 | 39.2355 | 40 | 38.4163 |
| 50 | 49.2082 | 50 | 48.3890 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 0 10 00 | 0 10 01.6427 | 0 15 00 | 0 15 02.4641 |
| 10 | 11.6701 | 10 | 12.4915 |
| 20 | 21.6975 | 20 | 22.5189 |
| 30 | 31.7249 | 30 | 32.5463 |
| 40 | 41.7523 | 40 | 42.5736 |
| 50 | 51.7796 | 50 | 52.6010 |
| 0 11 00 | 0 11 01.8070 | 0 16 00 | 0 16 02.6284 |
| 10 | 11.8344 | 10 | 12.6558 |
| 20 | 21.8618 | 20 | 22.6832 |
| 30 | 31.8892 | 30 | 32.7105 |
| 40 | 41.9165 | 40 | 42.7379 |
| 50 | 51.9439 | 50 | 52.7653 |
| 0 12 00 | 0 12 01.9713 | 0 17 00 | 0 17 02.7927 |
| 10 | 11.9987 | 10 | 12.8200 |
| 20 | 22.0261 | 20 | 22.8474 |
| 30 | 32.0534 | 30 | 32.8748 |
| 40 | 42.0808 | 40 | 42.9022 |
| 50 | 52.1082 | 50 | 52.9296 |
| 0 13 00 | 0 13 02.1356 | 0 18 00 | 0 18 02.9569 |
| 10 | 12.1629 | 10 | 12.9843 |
| 20 | 22.1903 | 20 | 23.0117 |
| 30 | 32.2177 | 30 | 33.0391 |
| 40 | 42.2451 | 40 | 43.0665 |
| 50 | 52.2725 | 50 | 53.0938 |
| 0 14 00 | 0 14 02.2998 | 0 19 00 | 0 19 03.1212 |
| 10 | 12.3272 | 10 | 13.1486 |
| 20 | 22.3546 | 20 | 23.1760 |
| 30 | 32.3820 | 30 | 33.2034 |
| 40 | 42.4094 | 40 | 43.2307 |
| 50 | 52.4367 | 50 | 53.2581 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 0 10 00 | 0 09 58.3617 | 0 15 00 | 0 14 57.5426 |
| 10 | 0 10 08.3344 | 10 | 0 15 07.5153 |
| 20 | 18.3071 | 20 | 17.4880 |
| 30 | 28.2798 | 30 | 27.4607 |
| 40 | 38.2525 | 40 | 37.4334 |
| 50 | 48.2252 | 50 | 47.4061 |
| 0 11 00 | 58.1979 | 0 16 00 | 57.3788 |
| 10 | 0 11 08.1706 | 10 | 0 16 07.3515 |
| 20 | 18.1433 | 20 | 17.3242 |
| 30 | 28.1160 | 30 | 27.2969 |
| 40 | 38.0887 | 40 | 37.2696 |
| 50 | 48.0614 | 50 | 47.2423 |
| 0 12 00 | 58.0341 | 0 17 00 | 57.2150 |
| 10 | 0 12 08.0068 | 10 | 0 17 07.1877 |
| 20 | 17.9795 | 20 | 17.1603 |
| 30 | 27.9522 | 30 | 27.1330 |
| 40 | 37.9249 | 40 | 37.1057 |
| 50 | 47.8976 | 50 | 47.0784 |
| 0 13 00 | 57.8703 | 0 18 00 | 57.0511 |
| 10 | 0 13 07.8430 | 10 | 0 18 07.0238 |
| 20 | 17.8157 | 20 | 16.9965 |
| 30 | 27.7883 | 30 | 26.9692 |
| 40 | 37.7610 | 40 | 36.9419 |
| 50 | 47.7337 | 50 | 46.9146 |
| 0 14 00 | 57.7064 | 0 19 00 | 56.8873 |
| 10 | 0 14 07.6791 | 10 | 0 19 06.8600 |
| 20 | 17.6518 | 20 | 16.8327 |
| 30 | 27.6245 | 30 | 26.8054 |
| 40 | 37.5972 | 40 | 36.7781 |
| 50 | 47.5699 | 50 | 46.7508 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 0 20 00 | 0 20 03.2855 | 0 25 00 | 0 25 04.1069 |
| 10 | 13.3129 | 10 | 14.1342 |
| 20 | 23.3402 | 20 | 24.1616 |
| 30 | 33.3676 | 30 | 34.1890 |
| 40 | 43.3950 | 40 | 44.2164 |
| 50 | 53.4224 | 50 | 54.2438 |
| 0 21 00 | 0 21 03.4498 | 0 26 00 | 0 26 04.2711 |
| 10 | 13.4771 | 10 | 14.2985 |
| 20 | 23.5045 | 20 | 24.3259 |
| 30 | 33.5319 | 30 | 34.3533 |
| 40 | 43.5593 | 40 | 44.3807 |
| 50 | 53.5867 | 50 | 54.4080 |
| 0 22 00 | 0 22 03.6140 | 0 27 00 | 0 27 04.4354 |
| 10 | 13.6414 | 10 | 14.4628 |
| 20 | 23.6688 | 20 | 24.4902 |
| 30 | 33.6962 | 30 | 34.5176 |
| 40 | 43.7236 | 40 | 44.5449 |
| 50 | 53.7509 | 50 | 54.5723 |
| 0 23 00 | 0 23 03.7783 | 0 28 00 | 0 28 04.5997 |
| 10 | 13.8057 | 10 | 14.6271 |
| 20 | 23.8331 | 20 | 24.6544 |
| 30 | 33.8605 | 30 | 34.6818 |
| 40 | 43.8878 | 40 | 44.7092 |
| 50 | 53.9152 | 50 | 54.7366 |
| 0 24 00 | 0 24 03.9426 | 0 29 00 | 0 29 04.7640 |
| 10 | 13.9700 | 10 | 14.7913 |
| 20 | 23.9973 | 20 | 24.8187 |
| 30 | 34.0247 | 30 | 34.8461 |
| 40 | 44.0521 | 40 | 44.8735 |
| 50 | 54.0795 | 50 | 54.9009 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 0 20 00 | 0 19 56.7235 | 0 25 00 | 0 24 55.9043 |
| 10 | 0 20 06.6962 | 10 | 0 25 05.8770 |
| 20 | 16.6689 | 20 | 15.8497 |
| 30 | 26.6416 | 30 | 25.8224 |
| 40 | 36.6143 | 40 | 35.7951 |
| 50 | 46.5870 | 50 | 45.7678 |
| 0 21 00 | 56.5597 | 0 26 00 | 55.7405 |
| 10 | 0 21 06.5323 | 10 | 0 26 05.7132 |
| 20 | 16.5050 | 20 | 15.6859 |
| 30 | 26.4777 | 30 | 25.6586 |
| 40 | 36.4504 | 40 | 35.6313 |
| 50 | 46.4231 | 50 | 45.6040 |
| 0 22 00 | 56.3958 | 0 27 00 | 55.5767 |
| 10 | 0 22 06.3685 | 10 | 0 27 05.5494 |
| 20 | 16.3412 | 20 | 15.5221 |
| 30 | 26.3139 | 30 | 25.4948 |
| 40 | 36.2866 | 40 | 35.4675 |
| 50 | 46.2593 | 50 | 45.4402 |
| 0 23 00 | 56.2320 | 0 28 00 | 55.4129 |
| 10 | 0 23 06.2047 | 10 | 0 28 05.3856 |
| 20 | 16.1774 | 20 | 15.3583 |
| 30 | 26.1501 | 30 | 25.3310 |
| 40 | 36.1228 | 40 | 35.3037 |
| 50 | 46.0955 | 50 | 45.2764 |
| 0 24 00 | 56.0682 | 0 29 00 | 55.2490 |
| 10 | 0 24 06.0409 | 10 | 0 29 05.2217 |
| 20 | 16.0136 | 20 | 15.1944 |
| 30 | 25.9863 | 30 | 25.1671 |
| 40 | 35.9590 | 40 | 35.1398 |
| 50 | 45.9317 | 50 | 45.1125 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 0 30 00 | 0 30 04.9282 | 0 35 00 | 0 35 05.7496 |
| 10 | 14.9556 | 10 | 15.7770 |
| 20 | 24.9830 | 20 | 25.8044 |
| 30 | 35.0104 | 30 | 35.8317 |
| 40 | 45.0378 | 40 | 45.8591 |
| 50 | 55.0651 | 50 | 55.8865 |
| 0 31 00 | 0 31 05.0925 | 0 36 00 | 0 36 05.9139 |
| 10 | 15.1199 | 10 | 15.9413 |
| 20 | 25.1473 | 20 | 25.9686 |
| 30 | 35.1746 | 30 | 35.9960 |
| 40 | 45.2020 | 40 | 46.0234 |
| 50 | 55.2294 | 50 | 56.0508 |
| 0 32 00 | 0 32 05.2568 | 0 37 00 | 0 37 06.0782 |
| 10 | 15.2842 | 10 | 16.1055 |
| 20 | 25.3115 | 20 | 26.1329 |
| 30 | 35.3389 | 30 | 36.1603 |
| 40 | 45.3663 | 40 | 46.1877 |
| 50 | 55.3937 | 50 | 56.2151 |
| 0 33 00 | 0 33 05.4211 | 0 38 00 | 0 38 06.2424 |
| 10 | 15.4484 | 10 | 16.2698 |
| 20 | 25.4758 | 20 | 26.2972 |
| 30 | 35.5032 | 30 | 36.3246 |
| 40 | 45.5306 | 40 | 46.3519 |
| 50 | 55.5580 | 50 | 56.3793 |
| 0 34 00 | 0 34 05.5853 | 0 39 00 | 0 39 06.4067 |
| 10 | 15.6127 | 10 | 16.4341 |
| 20 | 25.6401 | 20 | 26.4615 |
| 30 | 35.6675 | 30 | 36.4888 |
| 40 | 45.6949 | 40 | 46.5162 |
| 50 | 55.7222 | 50 | 56.5436 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 0 30 00 | 0 29 55.0852 | 0 35 00 | 0 34 54.2661 |
| 10 | 0 30 05.0579 | 10 | 0 35 04.2388 |
| 20 | 15.0306 | 20 | 14.2115 |
| 30 | 25.0033 | 30 | 24.1842 |
| 40 | 34.9760 | 40 | 34.1569 |
| 50 | 44.9487 | 50 | 44.1296 |
| 0 31 00 | 54.9214 | 0 36 00 | 54.1023 |
| 10 | 0 31 04.8941 | 10 | 0 36 04.0750 |
| 20 | 14.8668 | 20 | 14.0477 |
| 30 | 24.8395 | 30 | 24.0204 |
| 40 | 34.8122 | 40 | 33.9930 |
| 50 | 44.7849 | 50 | 43.9657 |
| 0 32 00 | 54.7576 | 0 37 00 | 53.9384 |
| 10 | 0 32 04.7303 | 10 | 0 37 03.9111 |
| 20 | 14.7030 | 20 | 13.8838 |
| 30 | 24.6757 | 30 | 23.8565 |
| 40 | 34.6484 | 40 | 33.8292 |
| 50 | 44.6210 | 50 | 43.8019 |
| 0 33 00 | 54.5937 | 0 38 00 | 53.7746 |
| 10 | 0 33 04.5664 | 10 | 0 38 03.7473 |
| 20 | 14.5391 | 20 | 13.7200 |
| 30 | 24.5118 | 30 | 23.6927 |
| 40 | 34.4845 | 40 | 33.6654 |
| 50 | 44.4572 | 50 | 43.6381 |
| 0 34 00 | 54.4299 | 0 39 00 | 53.6108 |
| 10 | 0 34 04.4026 | 10 | 0 39 03.5835 |
| 20 | 14.3753 | 20 | 13.5562 |
| 30 | 24.3480 | 30 | 23.5289 |
| 40 | 34.3207 | 40 | 33.5016 |
| 50 | 44.2934 | 50 | 43.4743 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 0 40 00 | 0 40 06.5710 | 0 45 00 | 0 45 07.3924 |
| 10 | 16.5984 | 10 | 17.4197 |
| 20 | 26.6257 | 20 | 27.4471 |
| 30 | 36.6531 | 30 | 37.4745 |
| 40 | 46.6805 | 40 | 47.5019 |
| 50 | 56.7079 | 50 | 57.5293 |
| 0 41 00 | 0 41 06.7353 | 0 46 00 | 0 46 07.5566 |
| 10 | 16.7626 | 10 | 17.5840 |
| 20 | 26.7900 | 20 | 27.6114 |
| 30 | 36.8174 | 30 | 37.6388 |
| 40 | 46.8448 | 40 | 47.6661 |
| 50 | 56.8722 | 50 | 57.6935 |
| 0 42 00 | 0 42 06.8995 | 0 47 00 | 0 47 07.7209 |
| 10 | 16.9269 | 10 | 17.7483 |
| 20 | 26.9543 | 20 | 27.7757 |
| 30 | 36.9817 | 30 | 37.8030 |
| 40 | 47.0090 | 40 | 47.8304 |
| 50 | 57.0364 | 50 | 57.8578 |
| 0 43 00 | 0 43 07.0638 | 0 48 00 | 0 48 07.8852 |
| 10 | 17.0912 | 10 | 17.9126 |
| 20 | 27.1186 | 20 | 27.9399 |
| 30 | 37.1459 | 30 | 37.9673 |
| 40 | 47.1733 | 40 | 47.9947 |
| 50 | 57.2007 | 50 | 58.0221 |
| 0 44 00 | 0 44 07.2281 | 0 49 00 | 0 49 08.0495 |
| 10 | 17.2555 | 10 | 18.0768 |
| 20 | 27.2828 | 20 | 28.1042 |
| 30 | 37.3102 | 30 | 38.1316 |
| 40 | 47.3376 | 40 | 48.1590 |
| 50 | 57.3650 | 50 | 58.1863 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 0 40 00 | 0 39 53.4470 | 0 45 00 | 0 44 52.6278 |
| 10 | 0 40 03.4197 | 10 | 0 45 02.6005 |
| 20 | 13.3924 | 20 | 12.5732 |
| 30 | 23.3650 | 30 | 22.5459 |
| 40 | 33.3377 | 40 | 32.5186 |
| 50 | 43.3104 | 50 | 42.4913 |
| 0 41 00 | 53.2831 | 0 46 00 | 52.4640 |
| 10 | 0 41 03.2558 | 10 | 0 46 02.4367 |
| 20 | 13.2285 | 20 | 12.4094 |
| 30 | 23.2012 | 30 | 22.3821 |
| 40 | 33.1739 | 40 | 32.3548 |
| 50 | 43.1466 | 50 | 42.3275 |
| 0 42 00 | 53.1193 | 0 47 00 | 52.3002 |
| 10 | 0 42 03.0920 | 10 | 0 47 02.2729 |
| 20 | 13.0647 | 20 | 12.2456 |
| 30 | 23.0374 | 30 | 22.2183 |
| 40 | 33.0101 | 40 | 32.1910 |
| 50 | 42.9828 | 50 | 42.1637 |
| 0 43 00 | 52.9555 | 0 48 00 | 52.1364 |
| 10 | 0 43 02.9282 | 10 | 0 48 02.1090 |
| 20 | 12.9009 | 20 | 12.0817 |
| 30 | 22.8736 | 30 | 22.0544 |
| 40 | 32.8463 | 40 | 32.0271 |
| 50 | 42.8190 | 50 | 41.9998 |
| 0 44 00 | 52.7917 | 0 49 00 | 51.9725 |
| 10 | 0 44 02.7644 | 10 | 0 49 01.9452 |
| 20 | 12.7370 | 20 | 11.9179 |
| 30 | 22.7097 | 30 | 21.8906 |
| 40 | 32.6824 | 40 | 31.8633 |
| 50 | 42.6551 | 50 | 41.8360 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 0 50 00 | 0 50 08.2137 | 0 55 00 | 0 55 09.0351 |
| 10 | 18.2411 | 10 | 19.0625 |
| 20 | 28.2685 | 20 | 29.0899 |
| 30 | 38.2959 | 30 | 39.1172 |
| 40 | 48.3232 | 40 | 49.1446 |
| 50 | 58.3506 | 50 | 59.1720 |
| 0 51 00 | 0 51 08.3780 | 0 56 00 | 0 56 09.1994 |
| 10 | 18.4054 | 10 | 19.2268 |
| 20 | 28.4328 | 20 | 29.2541 |
| 30 | 38.4601 | 30 | 39.2815 |
| 40 | 48.4875 | 40 | 49.3089 |
| 50 | 58.5149 | 50 | 59.3363 |
| 0 52 00 | 0 52 08.5423 | 0 57 00 | 0 57 09.3636 |
| 10 | 18.5697 | 10 | 19.3910 |
| 20 | 28.5970 | 20 | 29.4184 |
| 30 | 38.6244 | 30 | 39.4458 |
| 40 | 48.6518 | 40 | 49.4732 |
| 50 | 58.6792 | 50 | 59.5005 |
| 0 53 00 | 0 53 08.7066 | 0 58 00 | 0 58 09.5279 |
| 10 | 18.7339 | 10 | 19.5553 |
| 20 | 28.7613 | 20 | 29.5827 |
| 30 | 38.7887 | 30 | 39.6101 |
| 40 | 48.8161 | 40 | 49.6374 |
| 50 | 58.8434 | 50 | 59.6648 |
| 0 54 00 | 0 54 08.8708 | 0 59 00 | 0 59 09.6922 |
| 10 | 18.8982 | 10 | 19.7196 |
| 20 | 28.9256 | 20 | 29.7470 |
| 30 | 38.9530 | 30 | 39.7743 |
| 40 | 48.9803 | 40 | 49.8017 |
| 50 | 59.0077 | 50 | 59.8291 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 0 50 00 | 0 49 51.8087 | 0 55 00 | 0 54 50.9896 |
| 10 | 0 50 01.7814 | 10 | 0 55 00.9623 |
| 20 | 11.7541 | 20 | 10.9350 |
| 30 | 21.7268 | 30 | 20.9077 |
| 40 | 31.6995 | 40 | 30.8804 |
| 50 | 41.6722 | 50 | 40.8530 |
| 0 51 00 | 51.6449 | 0 56 00 | 50.8257 |
| 10 | 0 51 01.6176 | 10 | 0 56 00.7984 |
| 20 | 11.5903 | 20 | 10.7711 |
| 30 | 21.5630 | 30 | 20.7438 |
| 40 | 31.5357 | 40 | 30.7165 |
| 50 | 41.5084 | 50 | 40.6892 |
| 0 52 00 | 51.4810 | 0 57 00 | 50.6619 |
| 10 | 0 52 01.4537 | 10 | 0 57 00.6346 |
| 20 | 11.4264 | 20 | 10.6073 |
| 30 | 21.3991 | 30 | 20.5800 |
| 40 | 31.3718 | 40 | 30.5527 |
| 50 | 41.3445 | 50 | 40.5254 |
| 0 53 00 | 51.3172 | 0 58 00 | 50.4981 |
| 10 | 0 53 01.2899 | 10 | 0 58 00.4708 |
| 20 | 11.2626 | 20 | 10.4435 |
| 30 | 21.2353 | 30 | 20.4162 |
| 40 | 31.2080 | 40 | 30.3889 |
| 50 | 41.1807 | 50 | 40.3616 |
| 0 54 00 | 51.1534 | 0 59 00 | 50.3343 |
| 10 | 0 54 01.1261 | 10 | 0 59 00.3070 |
| 20 | 11.0988 | 20 | 10.2797 |
| 30 | 21.0715 | 30 | 20.2524 |
| 40 | 31.0442 | 40 | 30.2250 |
| 50 | 41.0169 | 50 | 40.1977 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 1 00 00 | 1 00 09.8565 | 1 05 00 | 1 05 10.6778 |
| 10 | 19.8839 | 10 | 20.7052 |
| 20 | 29.9112 | 20 | 30.7326 |
| 30 | 39.9386 | 30 | 40.7600 |
| 40 | 49.9660 | 40 | 50.7874 |
| 50 | 59.9934 | 50 | 1 06 00.8147 |
| 1 01 00 | 1 01 10.0207 | 1 06 00 | 10.8421 |
| 10 | 20.0481 | 10 | 20.8695 |
| 20 | 30.0755 | 20 | 30.8969 |
| 30 | 40.1029 | 30 | 40.9243 |
| 40 | 50.1303 | 40 | 50.9516 |
| 50 | 1 02 00.1576 | 50 | 1 07 00.9790 |
| 1 02 00 | 10.1850 | 1 07 00 | 11.0064 |
| 10 | 20.2124 | 10 | 21.0338 |
| 20 | 30.2398 | 20 | 31.0612 |
| 30 | 40.2672 | 30 | 41.0885 |
| 40 | 50.2945 | 40 | 51.1159 |
| 50 | 1 03 00.3219 | 50 | 1 08 01.1433 |
| 1 03 00 | 10.3493 | 1 08 00 | 11.1707 |
| 10 | 20.3767 | 10 | 21.1980 |
| 20 | 30.4041 | 20 | 31.2254 |
| 30 | 40.4314 | 30 | 41.2528 |
| 40 | 50.4588 | 40 | 51.2802 |
| 50 | 1 04 00.4862 | 50 | 1 09 01.3076 |
| 1 04 00 | 10.5136 | 1 09 00 | 11.3349 |
| 10 | 20.5410 | 10 | 21.3623 |
| 20 | 30.5683 | 20 | 31.3897 |
| 30 | 40.5957 | 30 | 41.4171 |
| 40 | 50.6231 | 40 | 51.4445 |
| 50 | 1 05 00.6505 | 50 | 1 10 01.4718 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 1 00 00 | 0 59 50.1704 | 1 05 00 | 1 04 49.3513 |
| 10 | 1 00 00.1431 | 10 | 59.3240 |
| 20 | 10.1158 | 20 | 1 05 09.2967 |
| 30 | 20.0885 | 30 | 19.2694 |
| 40 | 30.0612 | 40 | 29.2421 |
| 50 | 40.0339 | 50 | 39.2148 |
| 1 01 00 | 50.0066 | 1 06 00 | 49.1875 |
| 10 | 59.9793 | 10 | 59.1602 |
| 20 | 1 01 09.9520 | 20 | 1 06 09.1329 |
| 30 | 19.9247 | 30 | 19.1056 |
| 40 | 29.8974 | 40 | 29.0783 |
| 50 | 39.8701 | 50 | 39.0510 |
| 1 02 00 | 49.8428 | 1 07 00 | 49.0237 |
| 10 | 59.8155 | 10 | 58.9964 |
| 20 | 1 02 09.7882 | 20 | 1 07 08.9690 |
| 30 | 19.7609 | 30 | 18.9417 |
| 40 | 29.7336 | 40 | 28.9144 |
| 50 | 39.7063 | 50 | 38.8871 |
| 1 03 00 | 49.6790 | 1 08 00 | 48.8598 |
| 10 | 59.6517 | 10 | 58.8325 |
| 20 | 1 03 09.6244 | 20 | 1 08 08.8052 |
| 30 | 19.5970 | 30 | 18.7779 |
| 40 | 29.5697 | 40 | 28.7506 |
| 50 | 39.5424 | 50 | 38.7233 |
| 1 04 00 | 49.5151 | 1 09 00 | 48.6960 |
| 10 | 59.4878 | 10 | 58.6687 |
| 20 | 1 04 09.4605 | 20 | 1 09 08.6414 |
| 30 | 19.4332 | 30 | 18.6141 |
| 40 | 29.4059 | 40 | 28.5868 |
| 50 | 39.3786 | 50 | 38.5595 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 1 10 00 | 1 10 11.4992 | 1 15 00 | 1 15 12.3206 |
| 10 | 21.5266 | 10 | 22.3480 |
| 20 | 31.5540 | 20 | 32.3753 |
| 30 | 41.5814 | 30 | 42.4027 |
| 40 | 51.6087 | 40 | 52.4301 |
| 50 | 1 11 01.6361 | 50 | 1 16 02.4575 |
| 1 11 00 | 11.6635 | 1 16 00 | 12.4849 |
| 10 | 21.6909 | 10 | 22.5122 |
| 20 | 31.7183 | 20 | 32.5396 |
| 30 | 41.7456 | 30 | 42.5670 |
| 40 | 51.7730 | 40 | 52.5944 |
| 50 | 1 12 01.8004 | 50 | 1 17 02.6218 |
| 1 12 00 | 11.8278 | 1 17 00 | 12.6491 |
| 10 | 21.8551 | 10 | 22.6765 |
| 20 | 31.8825 | 20 | 32.7039 |
| 30 | 41.9099 | 30 | 42.7313 |
| 40 | 51.9373 | 40 | 52.7587 |
| 50 | 1 13 01.9647 | 50 | 1 18 02.7860 |
| 1 13 00 | 11.9920 | 1 18 00 | 12.8134 |
| 10 | 22.0194 | 10 | 22.8408 |
| 20 | 32.0468 | 20 | 32.8682 |
| 30 | 42.0742 | 30 | 42.8956 |
| 40 | 52.1016 | 40 | 52.9229 |
| 50 | 1 14 02.1289 | 50 | 1 19 02.9503 |
| 1 14 00 | 12.1563 | 1 19 00 | 12.9777 |
| 10 | 22.1837 | 10 | 23.0051 |
| 20 | 32.2111 | 20 | 33.0324 |
| 30 | 42.2385 | 30 | 43.0598 |
| 40 | 52.2658 | 40 | 53.0872 |
| 50 | 1 15 02.2932 | 50 | 1 20 03.1146 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 1 10 00 | 1 09 48.5322 | 1 15 00 | 1 14 47.7130 |
| 10 | 58.5049 | 10 | 57.6857 |
| 20 | 1 10 08.4776 | 20 | 1 15 07.6584 |
| 30 | 18.4503 | 30 | 17.6311 |
| 40 | 28.4230 | 40 | 27.6038 |
| 50 | 38.3957 | 50 | 37.5765 |
| 1 11 00 | 48.3684 | 1 16 00 | 47.5492 |
| 10 | 58.3410 | 10 | 57.5219 |
| 20 | 1 11 08.3137 | 20 | 1 16 07.4946 |
| 30 | 18.2864 | 30 | 17.4673 |
| 40 | 28.2591 | 40 | 27.4400 |
| 50 | 38.2318 | 50 | 37.4127 |
| 1 12 00 | 48.2045 | 1 17 00 | 47.3854 |
| 10 | 58.1772 | 10 | 57.3581 |
| 20 | 1 12 08.1499 | 20 | 1 17 07.3308 |
| 30 | 18.1226 | 30 | 17.3035 |
| 40 | 28.0953 | 40 | 27.2762 |
| 50 | 38.0680 | 50 | 37.2489 |
| 1 13 00 | 48.0407 | 1 18 00 | 47.2216 |
| 10 | 58.0134 | 10 | 57.1943 |
| 20 | 1 13 07.9861 | 20 | 1 18 07.1670 |
| 30 | 17.9588 | 30 | 17.1397 |
| 40 | 27.9315 | 40 | 27.1124 |
| 50 | 37.9042 | 50 | 37.0850 |
| 1 14 00 | 47.8769 | 1 19 00 | 47.0577 |
| 10 | 57.8496 | 10 | 57.0304 |
| 20 | 1 14 07.8223 | 20 | 1 19 07.0031 |
| 30 | 17.7950 | 30 | 16.9758 |
| 40 | 27.7677 | 40 | 26.9485 |
| 50 | 37.7404 | 50 | 36.9212 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 1 20 00 | 1 20 13.1420 | 1 25 00 | 1 25 13.9633 |
| 10 | 23.1693 | 10 | 23.9907 |
| 20 | 33.1967 | 20 | 34.0181 |
| 30 | 43.2241 | 30 | 44.0455 |
| 40 | 53.2515 | 40 | 54.0729 |
| 50 | 1 21 03.2789 | 50 | 1 26 04.1002 |
| 1 21 00 | 13.3062 | 1 26 00 | 14.1276 |
| 10 | 23.3336 | 10 | 24.1550 |
| 20 | 33.3610 | 20 | 34.1824 |
| 30 | 43.3884 | 30 | 44.2097 |
| 40 | 53.4158 | 40 | 54.2371 |
| 50 | 1 22 03.4431 | 50 | 1 27 04.2645 |
| 1 22 00 | 13.4705 | 1 27 00 | 14.2919 |
| 10 | 23.4979 | 10 | 24.3193 |
| 20 | 33.5253 | 20 | 34.3466 |
| 30 | 43.5527 | 30 | 44.3740 |
| 40 | 53.5800 | 40 | 54.4014 |
| 50 | 1 23 03.6074 | 50 | 1 28 04.4288 |
| 1 23 00 | 13.6348 | 1 28 00 | 14.4562 |
| 10 | 23.6622 | 10 | 24.4835 |
| 20 | 33.6895 | 20 | 34.5109 |
| 30 | 43.7169 | 30 | 44.5383 |
| 40 | 53.7443 | 40 | 54.5657 |
| 50 | 1 24 03.7717 | 50 | 1 29 04.5931 |
| 1 24 00 | 13.7991 | 1 29 00 | 14.6204 |
| 10 | 23.8264 | 10 | 24.6478 |
| 20 | 33.8538 | 20 | 34.6752 |
| 30 | 43.8812 | 30 | 44.7026 |
| 40 | 53.9086 | 40 | 54.7300 |
| 50 | 1 25 03.9360 | 50 | 1 30 04.7573 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 1 20 00 | 1 19 46.8939 | 1 25 00 | 1 24 46.0748 |
| 10 | 56.8666 | 10 | 56.0475 |
| 20 | 1 20 06.8393 | 20 | 1 25 06.0202 |
| 30 | 16.8120 | 30 | 15.9929 |
| 40 | 26.7847 | 40 | 25.9656 |
| 50 | 36.7574 | 50 | 35.9383 |
| 1 21 00 | 46.7301 | 1 26 00 | 45.9110 |
| 10 | 56.7028 | 10 | 55.8837 |
| 20 | 1 21 06.6755 | 20 | 1 26 05.8564 |
| 30 | 16.6482 | 30 | 15.8291 |
| 40 | 26.6209 | 40 | 25.8017 |
| 50 | 36.5936 | 50 | 35.7744 |
| 1 22 00 | 46.5663 | 1 27 00 | 45.7471 |
| 10 | 56.5390 | 10 | 55.7198 |
| 20 | 1 22 06.5117 | 20 | 1 27 05.6925 |
| 30 | 16.4844 | 30 | 15.6652 |
| 40 | 26.4571 | 40 | 25.6379 |
| 50 | 36.4297 | 50 | 35.6106 |
| 1 23 00 | 46.4024 | 1 28 00 | 45.5833 |
| 10 | 56.3751 | 10 | 55.5560 |
| 20 | 1 23 06.3478 | 20 | 1 28 05.5287 |
| 30 | 16.3205 | 30 | 15.5014 |
| 40 | 26.2932 | 40 | 25.4741 |
| 50 | 36.2659 | 50 | 35.4468 |
| 1 24 00 | 46.2386 | 1 29 00 | 45.4195 |
| 10 | 56.2113 | 10 | 55.3922 |
| 20 | 1 24 06.1840 | 20 | 1 29 05.3649 |
| 30 | 16.1567 | 30 | 15.3376 |
| 40 | 26.1294 | 40 | 25.3103 |
| 50 | 36.1021 | 50 | 35.2830 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 1 30 00 | 1 30 14.7847 | 1 35 00 | 1 35 15.6061 |
| 10 | 24.8121 | 10 | 25.6335 |
| 20 | 34.8395 | 20 | 35.6608 |
| 30 | 44.8668 | 30 | 45.6882 |
| 40 | 54.8942 | 40 | 55.7156 |
| 50 | 1 31 04.9216 | 50 | 1 36 05.7430 |
| 1 31 00 | 14.9490 | 1 36 00 | 15.7704 |
| 10 | 24.9764 | 10 | 25.7977 |
| 20 | 35.0037 | 20 | 35.8251 |
| 30 | 45.0311 | 30 | 45.8525 |
| 40 | 55.0585 | 40 | 55.8799 |
| 50 | 1 32 05.0859 | 50 | 1 37 05.9073 |
| 1 32 00 | 15.1133 | 1 37 00 | 15.9346 |
| 10 | 25.1406 | 10 | 25.9620 |
| 20 | 35.1680 | 20 | 35.9894 |
| 30 | 45.1954 | 30 | 46.0168 |
| 40 | 55.2228 | 40 | 56.0441 |
| 50 | 1 33 05.2502 | 50 | 1 38 06.0715 |
| 1 33 00 | 15.2775 | 1 38 00 | 16.0989 |
| 10 | 25.3049 | 10 | 26.1263 |
| 20 | 35.3323 | 20 | 36.1537 |
| 30 | 45.3597 | 30 | 46.1810 |
| 40 | 55.3870 | 40 | 56.2084 |
| 50 | 1 34 05.4144 | 50 | 1 39 06.2358 |
| 1 34 00 | 15.4418 | 1 39 00 | 16.2632 |
| 10 | 25.4692 | 10 | 26.2906 |
| 20 | 35.4966 | 20 | 36.3179 |
| 30 | 45.5239 | 30 | 46.3453 |
| 40 | 55.5513 | 40 | 56.3727 |
| 50 | 1 35 05.5787 | 50 | 1 40 06.4001 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 1 30 00 | 1 29 45.2557 | 1 35 00 | 1 34 44.4365 |
| 10 | 55.2284 | 10 | 54.4092 |
| 20 | 1 30 05.2011 | 20 | 1 35 04.3819 |
| 30 | 15.1737 | 30 | 14.3546 |
| 40 | 25.1464 | 40 | 24.3273 |
| 50 | 35.1191 | 50 | 34.3000 |
| 1 31 00 | 45.0918 | 1 36 00 | 44.2727 |
| 10 | 55.0645 | 10 | 54.2454 |
| 20 | 1 31 05.0372 | 20 | 1 36 04.2181 |
| 30 | 15.0099 | 30 | 14.1908 |
| 40 | 24.9826 | 40 | 24.1635 |
| 50 | 34.9553 | 50 | 34.1362 |
| 1 32 00 | 44.9280 | 1 37 00 | 44.1089 |
| 10 | 54.9007 | 10 | 54.0816 |
| 20 | 1 32 04.8734 | 20 | 1 37 04.0543 |
| 30 | 14.8461 | 30 | 14.0270 |
| 40 | 24.8188 | 40 | 23.9997 |
| 50 | 34.7915 | 50 | 33.9724 |
| 1 33 00 | 44.7642 | 1 38 00 | 43.9451 |
| 10 | 54.7369 | 10 | 53.9177 |
| 20 | 1 33 04.7096 | 20 | 1 38 03.8904 |
| 30 | 14.6823 | 30 | 13.8631 |
| 40 | 24.6550 | 40 | 23.8358 |
| 50 | 34.6277 | 50 | 33.8085 |
| 1 34 00 | 44.6004 | 1 39 00 | 43.7812 |
| 10 | 54.5731 | 10 | 53.7539 |
| 20 | 1 34 04.5457 | 20 | 1 39 03.7266 |
| 30 | 14.5184 | 30 | 13.6993 |
| 40 | 24.4911 | 40 | 23.6720 |
| 50 | 34.4638 | 50 | 33.6447 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 1 40 00 | 16.4275 | 1 45 00 | 17.2488 |
| 10 | 26.4548 | 10 | 27.2762 |
| 20 | 36.4822 | 20 | 37.3036 |
| 30 | 46.5096 | 30 | 47.3310 |
| 40 | 56.5370 | 40 | 57.3583 |
| 50 | 1 41 06.5644 | 50 | 1 46 07.3857 |
| 1 41 00 | 16.5917 | 1 46 00 | 17.4131 |
| 10 | 26.6191 | 10 | 27.4405 |
| 20 | 36.6465 | 20 | 37.4679 |
| 30 | 46.6739 | 30 | 47.4952 |
| 40 | 56.7012 | 40 | 57.5226 |
| 50 | 1 42 06.7286 | 50 | 1 47 07.5500 |
| 1 42 00 | 16.7560 | 1 47 00 | 17.5774 |
| 10 | 26.7834 | 10 | 27.6048 |
| 20 | 36.8108 | 20 | 37.6321 |
| 30 | 46.8381 | 30 | 47.6595 |
| 40 | 56.8655 | 40 | 57.6869 |
| 50 | 1 43 06.8929 | 50 | 1 48 07.7143 |
| 1 43 00 | 16.9203 | 1 48 00 | 17.7417 |
| 10 | 26.9477 | 10 | 27.7690 |
| 20 | 36.9750 | 20 | 37.7964 |
| 30 | 47.0024 | 30 | 47.8238 |
| 40 | 57.0298 | 40 | 57.8512 |
| 50 | 1 44 07.0572 | 50 | 1 49 07.8785 |
| 1 44 00 | 17.0846 | 1 49 00 | 17.9059 |
| 10 | 27.1119 | 10 | 27.9333 |
| 20 | 37.1393 | 20 | 37.9607 |
| 30 | 47.1667 | 30 | 47.9881 |
| 40 | 57.1941 | 40 | 58.0154 |
| 50 | 1 45 07.2214 | 50 | 1 50 08.0428 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 1 40 00 | 1 39 43.6174 | 1 45 00 | 1 44 42.7983 |
| 10 | 53.5901 | 10 | 52.7710 |
| 20 | 1 40 03.5628 | 20 | 1 45 02.7437 |
| 30 | 13.5355 | 30 | 12.7164 |
| 40 | 23.5082 | 40 | 22.6891 |
| 50 | 33.4809 | 50 | 32.6617 |
| 1 41 00 | 43.4536 | 1 46 00 | 42.6344 |
| 10 | 53.4263 | 10 | 52.6071 |
| 20 | 1 41 03.3990 | 20 | 1 46 02.5798 |
| 30 | 13.3717 | 30 | 12.5525 |
| 40 | 23.3444 | 40 | 22.5252 |
| 50 | 33.3171 | 50 | 32.4979 |
| 1 42 00 | 43.2897 | 1 47 00 | 42.4706 |
| 10 | 53.2624 | 10 | 52.4433 |
| 20 | 1 42 03.2351 | 20 | 1 47 02.4160 |
| 30 | 13.2078 | 30 | 12.3887 |
| 40 | 23.1805 | 40 | 22.3614 |
| 50 | 33.1532 | 50 | 32.3341 |
| 1 43 00 | 43.1259 | 1 48 00 | 42.3068 |
| 10 | 53.0986 | 10 | 52.2795 |
| 20 | 1 43 03.0713 | 20 | 1 48 02.2522 |
| 30 | 13.0440 | 30 | 12.2249 |
| 40 | 23.0167 | 40 | 22.1976 |
| 50 | 32.9894 | 50 | 32.1703 |
| 1 44 00 | 42.9621 | 1 49 00 | 42.1430 |
| 10 | 52.9348 | 10 | 52.1157 |
| 20 | 1 44 02.9075 | 20 | 1 49 02.0884 |
| 30 | 12.8802 | 30 | 12.0611 |
| 40 | 22.8529 | 40 | 22.0337 |
| 50 | 32.8256 | 50 | 32.0064 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 1 50 00 | 1 50 18.0702 | 1 55 00 | 1 55 18.8916 |
| 10 | 28.0976 | 10 | 28.9190 |
| 20 | 38.1250 | 20 | 38.9463 |
| 30 | 48.1523 | 30 | 48.9737 |
| 40 | 58.1797 | 40 | 59.0011 |
| 50 | 1 51 08.2071 | 50 | 1 56 09.0285 |
| 1 51 00 | 18.2345 | 1 56 00 | 19.0558 |
| 10 | 28.2619 | 10 | 29.0832 |
| 20 | 38.2892 | 20 | 39.1106 |
| 30 | 48.3166 | 30 | 49.1380 |
| 40 | 58.3440 | 40 | 59.1654 |
| 50 | 1 52 08.3714 | 50 | 1 57 09.1927 |
| 1 52 00 | 18.3987 | 1 57 00 | 19.2201 |
| 10 | 28.4261 | 10 | 29.2475 |
| 20 | 38.4535 | 20 | 39.2749 |
| 30 | 48.4809 | 30 | 49.3023 |
| 40 | 58.5083 | 40 | 59.3296 |
| 50 | 1 53 08.5356 | 50 | 1 58 09.3570 |
| 1 53 00 | 18.5630 | 1 58 00 | 19.3844 |
| 10 | 28.5904 | 10 | 29.4118 |
| 20 | 38.6178 | 20 | 39.4392 |
| 30 | 48.6452 | 30 | 49.4665 |
| 40 | 58.6725 | 40 | 59.4939 |
| 50 | 1 54 08.6999 | 50 | 1 59 09.5213 |
| 1 54 00 | 18.7273 | 1 59 00 | 19.5487 |
| 10 | 28.7547 | 10 | 29.5761 |
| 20 | 38.7821 | 20 | 39.6034 |
| 30 | 48.8094 | 30 | 49.6308 |
| 40 | 58.8368 | 40 | 59.6582 |
| 50 | 1 55 08.8642 | 50 | 2 00 09.6856 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 1 50 00 | 1 49 41.9791 | 1 55 00 | 1 54 41.1600 |
| 10 | 51.9518 | 10 | 51.1327 |
| 20 | 1 50 01.9245 | 20 | 1 55 01.1054 |
| 30 | 11.8972 | 30 | 11.0781 |
| 40 | 21.8699 | 40 | 21.0508 |
| 50 | 31.8426 | 50 | 31.0235 |
| 1 51 00 | 41.8153 | 1 56 00 | 40.9962 |
| 10 | 51.7880 | 10 | 50.9689 |
| 20 | 1 51 01.7607 | 20 | 1 56 00.9416 |
| 30 | 11.7334 | 30 | 10.9143 |
| 40 | 21.7061 | 40 | 20.8870 |
| 50 | 31.6788 | 50 | 30.8597 |
| 1 52 00 | 41.6515 | 1 57 00 | 40.8324 |
| 10 | 51.6242 | 10 | 50.8051 |
| 20 | 1 52 01.5969 | 20 | 1 57 00.7777 |
| 30 | 11.5696 | 30 | 10.7504 |
| 40 | 21.5423 | 40 | 20.7231 |
| 50 | 31.5150 | 50 | 30.6958 |
| 1 53 00 | 41.4877 | 1 58 00 | 40.6685 |
| 10 | 51.4604 | 10 | 50.6412 |
| 20 | 1 53 01.4331 | 20 | 1 58 00.6139 |
| 30 | 11.4057 | 30 | 10.5866 |
| 40 | 21.3784 | 40 | 20.5593 |
| 50 | 31.3511 | 50 | 30.5320 |
| 1 54 00 | 41.3238 | 1 59 00 | 40.5047 |
| 10 | 51.2965 | 10 | 50.4774 |
| 20 | 1 54 01.2692 | 20 | 1 59 00.4501 |
| 30 | 11.2419 | 30 | 10.4228 |
| 40 | 21.2146 | 40 | 20.3955 |
| 50 | 31.1873 | 50 | 30.3682 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 2 00 00 | 2 00 19.7129 | 2 05 00 | 2 05 20.5343 |
| 10 | 29.7403 | 10 | 30.5617 |
| 20 | 39.7677 | 20 | 40.5891 |
| 30 | 49.7951 | 30 | 50.6165 |
| 40 | 59.8225 | 40 | 2 06 00.6438 |
| 50 | 2 01 09.8498 | 50 | 10.6712 |
| 2 01 00 | 19.8772 | 2 06 00 | 20.6986 |
| 10 | 29.9046 | 10 | 30.7260 |
| 20 | 39.9320 | 20 | 40.7534 |
| 30 | 49.9594 | 30 | 50.7807 |
| 40 | 59.9867 | 40 | 2 07 00.8081 |
| 50 | 2 02 10.0141 | 50 | 10.8355 |
| 2 02 00 | 20.0415 | 2 07 00 | 20.8629 |
| 10 | 30.0689 | 10 | 30.8902 |
| 20 | 40.0963 | 20 | 40.9176 |
| 30 | 50.1236 | 30 | 50.9450 |
| 40 | 2 03 00.1510 | 40 | 2 08 00.9724 |
| 50 | 10.1784 | 50 | 10.9998 |
| 2 03 00 | 20.2058 | 2 08 00 | 21.0271 |
| 10 | 30.2331 | 10 | 31.0545 |
| 20 | 40.2605 | 20 | 41.0819 |
| 30 | 50.2879 | 30 | 51.1093 |
| 40 | 2 04 00.3153 | 40 | 2 09 01.1367 |
| 50 | 10.3427 | 50 | 11.1640 |
| 2 04 00 | 20.3700 | 2 09 00 | 21.1914 |
| 10 | 30.3974 | 10 | 31.2188 |
| 20 | 40.4248 | 20 | 41.2462 |
| 30 | 50.4522 | 30 | 51.2736 |
| 40 | 2 05 00.4796 | 40 | 2 10 01.3009 |
| 50 | 10.5069 | 50 | 11.3283 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 2 00 00 | 1 59 40.3409 | 2 05 00 | 2 04 39.5217 |
| 10 | 50.3136 | 10 | 49.4944 |
| 20 | 2 00 00.2863 | 20 | 59.4671 |
| 30 | 10.2590 | 30 | 2 05 09.4398 |
| 40 | 20.2317 | 40 | 19.4125 |
| 50 | 30.2044 | 50 | 29.3852 |
| 2 01 00 | 40.1771 | 2 06 00 | 39.3579 |
| 10 | 50.1497 | 10 | 49.3306 |
| 20 | 2 01 00.1224 | 20 | 59.3033 |
| 30 | 10.0951 | 30 | 2 06 09.2760 |
| 40 | 20.0678 | 40 | 19.2487 |
| 50 | 30.0405 | 50 | 29.2214 |
| 2 02 00 | 40.0132 | 2 07 00 | 39.1941 |
| 10 | 49.9859 | 10 | 49.1668 |
| 20 | 59.9586 | 20 | 59.1395 |
| 30 | 2 02 09.9313 | 30 | 2 07 09.1122 |
| 40 | 19.9040 | 40 | 19.0849 |
| 50 | 29.8767 | 50 | 29.0576 |
| 2 03 00 | 39.8494 | 2 08 00 | 39.0303 |
| 10 | 49.8221 | 10 | 49.0030 |
| 20 | 59.7948 | 20 | 58.9757 |
| 30 | 2 03 09.7675 | 30 | 2 08 08.9484 |
| 40 | 19.7402 | 40 | 18.9211 |
| 50 | 29.7129 | 50 | 28.8937 |
| 2 04 00 | 39.6856 | 2 09 00 | 38.8664 |
| 10 | 49.6583 | 10 | 48.8391 |
| 20 | 59.6310 | 20 | 58.8118 |
| 30 | 2 04 09.6037 | 30 | 2 09 08.7845 |
| 40 | 19.5764 | 40 | 18.7572 |
| 50 | 29.5491 | 50 | 28.7299 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 2 10 00 | 2 10 21.3557 | 2 15 00 | 2 15 22.1771 |
| 10 | 31.3831 | 10 | 32.2044 |
| 20 | 41.4104 | 20 | 42.2318 |
| 30 | 51.4378 | 30 | 52.2592 |
| 40 | 2 11 01.4652 | 40 | 2 16 02.2866 |
| 50 | 11.4926 | 50 | 12.3140 |
| 2 11 00 | 21.5200 | 2 16 00 | 22.3413 |
| 10 | 31.5473 | 10 | 32.3687 |
| 20 | 41.5747 | 20 | 42.3961 |
| 30 | 51.6021 | 30 | 52.4235 |
| 40 | 2 12 01.6295 | 40 | 2 17 02.4509 |
| 50 | 11.6569 | 50 | 12.4782 |
| 2 12 00 | 21.6842 | 2 17 00 | 22.5056 |
| 10 | 31.7116 | 10 | 32.5330 |
| 20 | 41.7390 | 20 | 42.5604 |
| 30 | 51.7664 | 30 | 52.5878 |
| 40 | 2 13 01.7938 | 40 | 2 18 02.6151 |
| 50 | 11.8211 | 50 | 12.6425 |
| 2 13 00 | 21.8485 | 2 18 00 | 22.6699 |
| 10 | 31.8759 | 10 | 32.6973 |
| 20 | 41.9033 | 20 | 42.7246 |
| 30 | 51.9307 | 30 | 52.7520 |
| 40 | 2 14 01.9580 | 40 | 2 19 02.7794 |
| 50 | 11.9854 | 50 | 12.8068 |
| 2 14 00 | 22.0128 | 2 19 00 | 22.8342 |
| 10 | 32.0402 | 10 | 32.8615 |
| 20 | 42.0675 | 20 | 42.8889 |
| 30 | 52.0949 | 30 | 52.9163 |
| 40 | 2 15 02.1223 | 40 | 2 20 02.9437 |
| 50 | 12.1497 | 50 | 12.9711 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 2 10 00 | 2 09 38.7026 | 2 15 00 | 2 14 37.8835 |
| 10 | 48.6753 | 10 | 47.8562 |
| 20 | 58.6480 | 20 | 57.8289 |
| 30 | 2 10 08.6207 | 30 | 2 15 07.8016 |
| 40 | 18.5934 | 40 | 17.7743 |
| 50 | 28.5661 | 50 | 27.7470 |
| 2 11 00 | 38.5388 | 2 16 00 | 37.7197 |
| 10 | 48.5115 | 10 | 47.6924 |
| 20 | 58.4842 | 20 | 57.6651 |
| 30 | 2 11 08.4569 | 30 | 2 16 07.6378 |
| 40 | 18.4296 | 40 | 17.6104 |
| 50 | 28.4023 | 50 | 27.5831 |
| 2 12 00 | 38.3750 | 2 17 00 | 37.5558 |
| 10 | 48.3477 | 10 | 47.5285 |
| 20 | 58.3204 | 20 | 57.5012 |
| 30 | 2 12 08.2931 | 30 | 2 17 07.4739 |
| 40 | 18.2657 | 40 | 17.4466 |
| 50 | 28.2384 | 50 | 27.4193 |
| 2 13 00 | 38.2111 | 2 18 00 | 37.3920 |
| 10 | 48.1838 | 10 | 47.3647 |
| 20 | 58.1565 | 20 | 57.3374 |
| 30 | 2 13 08.1292 | 30 | 2 18 07.3101 |
| 40 | 18.1019 | 40 | 17.2828 |
| 50 | 28.0746 | 50 | 27.2555 |
| 2 14 00 | 38.0473 | 2 19 00 | 37.2282 |
| 10 | 48.0200 | 10 | 47.2009 |
| 20 | 57.9927 | 20 | 57.1736 |
| 30 | 2 14 07.9654 | 30 | 2 19 07.1463 |
| 40 | 17.9381 | 40 | 17.1190 |
| 50 | 27.9108 | 50 | 27.0917 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 2 20 00 | 2 20 22.9984 | 2 25 00 | 2 25 23.8198 |
| 10 | 33.0258 | 10 | 33.8472 |
| 20 | 43.0532 | 20 | 43.8746 |
| 30 | 53.0806 | 30 | 53.9019 |
| 40 | 2 21 03.1080 | 40 | 2 26 03.9293 |
| 50 | 13.1353 | 50 | 13.9567 |
| 2 21 00 | 23.1627 | 2 26 00 | 23.9841 |
| 10 | 33.1901 | 10 | 34.0115 |
| 20 | 43.2175 | 20 | 44.0388 |
| 30 | 53.2448 | 30 | 54.0662 |
| 40 | 2 22 03.2722 | 40 | 2 27 04.0936 |
| 50 | 13.2996 | 50 | 14.1210 |
| 2 22 00 | 23.3270 | 2 27 00 | 24.1484 |
| 10 | 33.3544 | 10 | 34.1757 |
| 20 | 43.3817 | 20 | 44.2031 |
| 30 | 53.4091 | 30 | 54.2305 |
| 40 | 2 23 03.4365 | 40 | 2 28 04.2579 |
| 50 | 13.4639 | 50 | 14.2853 |
| 2 23 00 | 23.4913 | 2 28 00 | 24.3126 |
| 10 | 33.5186 | 10 | 34.3400 |
| 20 | 43.5460 | 20 | 44.3674 |
| 30 | 53.5734 | 30 | 54.3948 |
| 40 | 2 24 03.6008 | 40 | 2 29 04.4221 |
| 50 | 13.6282 | 50 | 14.4495 |
| 2 24 00 | 23.6555 | 2 29 00 | 24.4769 |
| 10 | 33.6829 | 10 | 34.5043 |
| 20 | 43.7103 | 20 | 44.5317 |
| 30 | 53.7377 | 30 | 54.5590 |
| 40 | 2 25 03.7651 | 40 | 2 30 04.5864 |
| 50 | 13.7924 | 50 | 14.6138 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 2 20 00 | 2 19 37.0644 | 2 25 00 | 2 24 36.2452 |
| 10 | 47.0371 | 10 | 46.2179 |
| 20 | 57.0098 | 20 | 56.1906 |
| 30 | 2 20 06.9824 | 30 | 2 25 06.1633 |
| 40 | 16.9551 | 40 | 16.1360 |
| 50 | 26.9278 | 50 | 26.1087 |
| 2 21 00 | 36.9005 | 2 26 00 | 36.0814 |
| 10 | 46.8732 | 10 | 46.0541 |
| 20 | 56.8459 | 20 | 56.0268 |
| 30 | 2 21 06.8186 | 30 | 2 26 05.9995 |
| 40 | 16.7913 | 40 | 15.9722 |
| 50 | 26.7640 | 50 | 25.9449 |
| 2 22 00 | 36.7367 | 2 27 00 | 35.9176 |
| 10 | 46.7094 | 10 | 45.8903 |
| 20 | 56.6821 | 20 | 55.8630 |
| 30 | 2 22 06.6548 | 30 | 2 27 05.8357 |
| 40 | 16.6275 | 40 | 15.8084 |
| 50 | 26.6002 | 50 | 25.7811 |
| 2 23 00 | 36.5729 | 2 28 00 | 35.7538 |
| 10 | 46.5456 | 10 | 45.7264 |
| 20 | 56.5183 | 20 | 55.6991 |
| 30 | 2 23 06.4910 | 30 | 2 28 05.6718 |
| 40 | 16.4637 | 40 | 15.6445 |
| 50 | 26.4364 | 50 | 25.6172 |
| 2 24 00 | 36.4091 | 2 29 00 | 35.5899 |
| 10 | 46.3818 | 10 | 45.5626 |
| 20 | 56.3544 | 20 | 55.5353 |
| 30 | 2 24 06.3271 | 30 | 2 29 05.5080 |
| 40 | 16.2998 | 40 | 15.4807 |
| 50 | 26.2725 | 50 | 25.4534 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 2 30 00 | 24.6412 | 2 35 00 | 25.4626 |
| 10 | 34.6686 | 10 | 35.4899 |
| 20 | 44.6959 | 20 | 45.5173 |
| 30 | 54.7233 | 30 | 55.5447 |
| 40 | 2 31 04.7507 | 40 | 2 36 05.5721 |
| 50 | 14.7781 | 50 | 15.5995 |
| 2 31 00 | 24.8055 | 2 36 00 | 25.6268 |
| 10 | 34.8328 | 10 | 35.6542 |
| 20 | 44.8602 | 20 | 45.6816 |
| 30 | 54.8876 | 30 | 55.7090 |
| 40 | 2 32 04.9150 | 40 | 2 37 05.7363 |
| 50 | 14.9424 | 50 | 15.7637 |
| 2 32 00 | 24.9697 | 2 37 00 | 25.7911 |
| 10 | 34.9971 | 10 | 35.8185 |
| 20 | 45.0245 | 20 | 45.8459 |
| 30 | 55.0519 | 30 | 55.8732 |
| 40 | 2 33 05.0792 | 40 | 2 38 05.9006 |
| 50 | 15.1066 | 50 | 15.9280 |
| 2 33 00 | 25.1340 | 2 38 00 | 25.9554 |
| 10 | 35.1614 | 10 | 35.9828 |
| 20 | 45.1888 | 20 | 46.0101 |
| 30 | 55.2161 | 30 | 56.0375 |
| 40 | 2 34 05.2435 | 40 | 2 39 06.0649 |
| 50 | 15.2709 | 50 | 16.0923 |
| 2 34 00 | 25.2983 | 2 39 00 | 26.1197 |
| 10 | 35.3257 | 10 | 36.1470 |
| 20 | 45.3530 | 20 | 46.1744 |
| 30 | 55.3804 | 30 | 56.2018 |
| 40 | 2 35 05.4078 | 40 | 2 40 06.2292 |
| 50 | 15.4352 | 50 | 16.2565 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 2 30 00 | 2 29 35.4261 | 2 35 00 | 2 34 34.6070 |
| 10 | 45.3988 | 10 | 44.5797 |
| 20 | 55.3715 | 20 | 54.5524 |
| 30 | 2 30 05.3442 | 30 | 2 35 04.5251 |
| 40 | 15.3169 | 40 | 14.4978 |
| 50 | 25.2896 | 50 | 24.4704 |
| 2 31 00 | 35.2623 | 2 36 00 | 34.4431 |
| 10 | 45.2350 | 10 | 44.4158 |
| 20 | 55.2077 | 20 | 54.3885 |
| 30 | 2 31 05.1804 | 30 | 2 36 04.3612 |
| 40 | 15.1531 | 40 | 14.3339 |
| 50 | 25.1258 | 50 | 24.3066 |
| 2 32 00 | 35.0984 | 2 37 00 | 34.2793 |
| 10 | 45.0711 | 10 | 44.2520 |
| 20 | 55.0438 | 20 | 54.2247 |
| 30 | 2 32 05.0165 | 30 | 2 37 04.1974 |
| 40 | 14.9892 | 40 | 14.1701 |
| 50 | 24.9619 | 50 | 24.1428 |
| 2 33 00 | 34.9346 | 2 38 00 | 34.1155 |
| 10 | 44.9073 | 10 | 44.0882 |
| 20 | 54.8800 | 20 | 54.0609 |
| 30 | 2 33 04.8527 | 30 | 2 38 04.0336 |
| 40 | 14.8254 | 40 | 14.0063 |
| 50 | 24.7981 | 50 | 23.9790 |
| 2 34 00 | 34.7708 | 2 39 00 | 33.9517 |
| 10 | 44.7435 | 10 | 43.9244 |
| 20 | 54.7162 | 20 | 53.8971 |
| 30 | 2 34 04.6889 | 30 | 2 39 03.8698 |
| 40 | 14.6616 | 40 | 13.8424 |
| 50 | 24.6343 | 50 | 23.8151 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 2 40 00 | 26.2839 | 2 45 00 | 27.1053 |
| 10 | 36.3113 | 10 | 37.1327 |
| 20 | 46.3387 | 20 | 47.1601 |
| 30 | 56.3661 | 30 | 57.1874 |
| 40 | 2 41 06.3934 | 40 | 2 46 07.2148 |
| 50 | 16.4208 | 50 | 17.2422 |
| 2 41 00 | 26.4482 | 2 46 00 | 27.2696 |
| 10 | 36.4756 | 10 | 37.2970 |
| 20 | 46.5030 | 20 | 47.3243 |
| 30 | 56.5303 | 30 | 57.3517 |
| 40 | 2 42 06.5577 | 40 | 2 47 07.3791 |
| 50 | 16.5851 | 50 | 17.4065 |
| 2 42 00 | 26.6125 | 2 47 00 | 27.4338 |
| 10 | 36.6399 | 10 | 37.4612 |
| 20 | 46.6672 | 20 | 47.4886 |
| 30 | 56.6946 | 30 | 57.5160 |
| 40 | 2 43 06.7220 | 40 | 2 48 07.5434 |
| 50 | 16.7494 | 50 | 17.5707 |
| 2 43 00 | 26.7768 | 2 48 00 | 27.5981 |
| 10 | 36.8041 | 10 | 37.6255 |
| 20 | 46.8315 | 20 | 47.6529 |
| 30 | 56.8589 | 30 | 57.6803 |
| 40 | 2 44 06.8863 | 40 | 2 49 07.7076 |
| 50 | 16.9136 | 50 | 17.7350 |
| 2 44 00 | 26.9410 | 2 49 00 | 27.7624 |
| 10 | 36.9684 | 10 | 37.7898 |
| 20 | 46.9958 | 20 | 47.8172 |
| 30 | 57.0232 | 30 | 57.8445 |
| 40 | 2 45 07.0505 | 40 | 2 50 07.8719 |
| 50 | 17.0779 | 50 | 17.8993 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 2 40 00 | 2 39 33.7878 | 2 45 00 | 2 44 32.9687 |
| 10 | 43.7605 | 10 | 42.9414 |
| 20 | 53.7332 | 20 | 52.9141 |
| 30 | 2 40 03.7059 | 30 | 2 45 02.8868 |
| 40 | 13.6786 | 40 | 12.8595 |
| 50 | 23.6513 | 50 | 22.8322 |
| 2 41 00 | 33.6240 | 2 46 00 | 32.8049 |
| 10 | 43.5967 | 10 | 42.7776 |
| 20 | 53.5694 | 20 | 52.7503 |
| 30 | 2 41 03.5421 | 30 | 2 46 02.7230 |
| 40 | 13.5148 | 40 | 12.6957 |
| 50 | 23.4875 | 50 | 22.6684 |
| 2 42 00 | 33.4602 | 2 47 00 | 32.6411 |
| 10 | 43.4329 | 10 | 42.6138 |
| 20 | 53.4056 | 20 | 52.5864 |
| 30 | 2 42 03.3783 | 30 | 2 47 02.5591 |
| 40 | 13.3510 | 40 | 12.5318 |
| 50 | 23.3237 | 50 | 22.5045 |
| 2 43 00 | 33.2964 | 2 48 00 | 32.4772 |
| 10 | 43.2691 | 10 | 42.4499 |
| 20 | 53.2418 | 20 | 52.4226 |
| 30 | 2 43 03.2144 | 30 | 2 48 02.3953 |
| 40 | 13.1871 | 40 | 12.3680 |
| 50 | 23.1598 | 50 | 22.3407 |
| 2 44 00 | 33.1325 | 2 49 00 | 32.3134 |
| 10 | 43.1052 | 10 | 42.2861 |
| 20 | 53.0779 | 20 | 52.2588 |
| 30 | 2 44 03.0506 | 30 | 2 49 02.2315 |
| 40 | 13.0233 | 40 | 12.2042 |
| 50 | 22.9960 | 50 | 22.1769 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 2 50 00 | 2 50 27.9267 | 2 55 00 | 2 55 28.7480 |
| 10 | 37.9541 | 10 | 38.7754 |
| 20 | 47.9814 | 20 | 48.8028 |
| 30 | 58.0088 | 30 | 58.8302 |
| 40 | 2 51 08.0362 | 40 | 2 56 08.8576 |
| 50 | 18.0636 | 50 | 18.8849 |
| 2 51 00 | 28.0909 | 2 56 00 | 28.9123 |
| 10 | 38.1183 | 10 | 38.9397 |
| 20 | 48.1457 | 20 | 48.9671 |
| 30 | 58.1731 | 30 | 58.9945 |
| 40 | 2 52 08.2005 | 40 | 2 57 09.0218 |
| 50 | 18.2278 | 50 | 19.0492 |
| 2 52 00 | 28.2552 | 2 57 00 | 29.0766 |
| 10 | 38.2826 | 10 | 39.1040 |
| 20 | 48.3100 | 20 | 49.1314 |
| 30 | 58.3374 | 30 | 59.1587 |
| 40 | 2 53 08.3647 | 40 | 2 58 09.1861 |
| 50 | 18.3921 | 50 | 19.2135 |
| 2 53 00 | 28.4195 | 2 58 00 | 29.2409 |
| 10 | 38.4469 | 10 | 39.2682 |
| 20 | 48.4743 | 20 | 49.2956 |
| 30 | 58.5016 | 30 | 59.3230 |
| 40 | 2 54 08.5290 | 40 | 2 59 09.3504 |
| 50 | 18.5564 | 50 | 19.3778 |
| 2 54 00 | 28.5838 | 2 59 00 | 29.4051 |
| 10 | 38.6112 | 10 | 39.4325 |
| 20 | 48.6385 | 20 | 49.4599 |
| 30 | 58.6659 | 30 | 59.4873 |
| 40 | 2 55 08.6933 | 40 | 3 00 09.5147 |
| 50 | 18.7207 | 50 | 19.5420 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 2 50 00 | 2 49 32.1496 | 2 55 00 | 2 54 31.3304 |
| 10 | 42.1223 | 10 | 41.3031 |
| 20 | 52.0950 | 20 | 51.2758 |
| 30 | 2 50 02.0677 | 30 | 2 55 01.2485 |
| 40 | 12.0404 | 40 | 11.2212 |
| 50 | 22.0131 | 50 | 21.1939 |
| 2 51 00 | 31.9858 | 2 56 00 | 31.1666 |
| 10 | 41.9584 | 10 | 41.1393 |
| 20 | 51.9311 | 20 | 51.1120 |
| 30 | 2 51 01.9038 | 30 | 2 56 01.0847 |
| 40 | 11.8765 | 40 | 11.0574 |
| 50 | 21.8492 | 50 | 21.0301 |
| 2 52 00 | 31.8219 | 2 57 00 | 31.0028 |
| 10 | 41.7946 | 10 | 40.9755 |
| 20 | 51.7673 | 20 | 50.9482 |
| 30 | 2 52 01.7400 | 30 | 2 57 00.9209 |
| 40 | 11.7127 | 40 | 10.8936 |
| 50 | 21.6854 | 50 | 20.8663 |
| 2 53 00 | 31.6581 | 2 58 00 | 30.8390 |
| 10 | 41.6308 | 10 | 40.8117 |
| 20 | 51.6035 | 20 | 50.7844 |
| 30 | 2 53 01.5762 | 30 | 2 58 00.7571 |
| 40 | 11.5489 | 40 | 10.7298 |
| 50 | 21.5216 | 50 | 20.7024 |
| 2 54 00 | 31.4943 | 2 59 00 | 30.6751 |
| 10 | 41.4670 | 10 | 40.6478 |
| 20 | 51.4397 | 20 | 50.6205 |
| 30 | 2 54 01.4124 | 30 | 2 59 00.5932 |
| 40 | 11.3851 | 40 | 10.5659 |
| 50 | 21.3578 | 50 | 20.5386 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 3 00 00 | 3 00 29.5694 | 3 05 00 | 3 05 30.3908 |
| 10 | 39.5968 | 10 | 40.4182 |
| 20 | 49.6242 | 20 | 50.4455 |
| 30 | 59.6516 | 30 | 3 06 00.4729 |
| 40 | 3 01 09.6789 | 40 | 10.5003 |
| 50 | 19.7063 | 50 | 20.5277 |
| 3 01 00 | 29.7337 | 3 06 00 | 30.5551 |
| 10 | 39.7611 | 10 | 40.5824 |
| 20 | 49.7885 | 20 | 50.6098 |
| 30 | 59.8158 | 30 | 3 07 00.6372 |
| 40 | 3 02 09.8432 | 40 | 10.6646 |
| 50 | 19.8706 | 50 | 20.6920 |
| 3 02 00 | 29.8980 | 3 07 00 | 30.7193 |
| 10 | 39.9253 | 10 | 40.7467 |
| 20 | 49.9527 | 20 | 50.7741 |
| 30 | 59.9801 | 30 | 3 08 00.8015 |
| 40 | 3 03 10.0075 | 40 | 10.8289 |
| 50 | 20.0349 | 50 | 20.8562 |
| 3 03 00 | 30.0622 | 3 08 00 | 30.8836 |
| 10 | 40.0896 | 10 | 40.9110 |
| 20 | 50.1170 | 20 | 50.9384 |
| 30 | 3 04 00.1444 | 30 | 3 09 00.9658 |
| 40 | 10.1718 | 40 | 10.9931 |
| 50 | 20.1991 | 50 | 21.0205 |
| 3 04 00 | 30.2265 | 3 09 00 | 31.0479 |
| 10 | 40.2539 | 10 | 41.0753 |
| 20 | 50.2813 | 20 | 51.1026 |
| 30 | 3 05 00.3087 | 30 | 3 10 01.1300 |
| 40 | 10.3360 | 40 | 11.1574 |
| 50 | 20.3634 | 50 | 21.1848 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 3 00 00 | 2 59 30.5113 | 3 05 00 | 3 04 29.6922 |
| 10 | 40.4840 | 10 | 39.6649 |
| 20 | 50.4567 | 20 | 49.6376 |
| 30 | 3 00 00.4294 | 30 | 59.6103 |
| 40 | 10.4021 | 40 | 3 05 09.5830 |
| 50 | 20.3748 | 50 | 19.5557 |
| 3 01 00 | 30.3475 | 3 06 00 | 29.5284 |
| 10 | 40.3202 | 10 | 39.5011 |
| 20 | 50.2929 | 20 | 49.4738 |
| 30 | 3 01 00.2656 | 30 | 59.4464 |
| 40 | 10.2383 | 40 | 3 06 09.4191 |
| 50 | 20.2110 | 50 | 19.3918 |
| 3 02 00 | 30.1837 | 3 07 00 | 29.3645 |
| 10 | 40.1564 | 10 | 39.3372 |
| 20 | 50.1291 | 20 | 49.3099 |
| 30 | 3 02 00.1018 | 30 | 59.2826 |
| 40 | 10.0744 | 40 | 3 07 09.2553 |
| 50 | 20.0471 | 50 | 19.2280 |
| 3 03 00 | 30.0198 | 3 08 00 | 29.2007 |
| 10 | 39.9925 | 10 | 39.1734 |
| 20 | 49.9652 | 20 | 49.1461 |
| 30 | 59.9379 | 30 | 59.1188 |
| 40 | 3 03 09.9106 | 40 | 3 08 09.0915 |
| 50 | 19.8833 | 50 | 19.0642 |
| 3 04 00 | 29.8560 | 3 09 00 | 29.0369 |
| 10 | 39.8287 | 10 | 39.0096 |
| 20 | 49.8014 | 20 | 48.9823 |
| 30 | 59.7741 | 30 | 58.9550 |
| 40 | 3 04 09.7468 | 40 | 3 09 08.9277 |
| 50 | 19.7195 | 50 | 18.9004 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 3 10 00 | 3 10 31.2122 | 3 15 00 | 3 15 32.0335 |
| 10 | 41.2395 | 10 | 42.0609 |
| 20 | 51.2669 | 20 | 52.0883 |
| 30 | 3 11 01.2943 | 30 | 3 16 02.1157 |
| 40 | 11.3217 | 40 | 12.1431 |
| 50 | 21.3491 | 50 | 22.1704 |
| 3 11 00 | 31.3764 | 3 16 00 | 32.1978 |
| 10 | 41.4038 | 10 | 42.2252 |
| 20 | 51.4312 | 20 | 52.2526 |
| 30 | 3 12 01.4586 | 30 | 3 17 02.2799 |
| 40 | 11.4860 | 40 | 12.3073 |
| 50 | 21.5133 | 50 | 22.3347 |
| 3 12 00 | 31.5407 | 3 17 00 | 32.3621 |
| 10 | 41.5681 | 10 | 42.3895 |
| 20 | 51.5955 | 20 | 52.4168 |
| 30 | 3 13 01.6229 | 30 | 3 18 02.4442 |
| 40 | 11.6502 | 40 | 12.4716 |
| 50 | 21.6776 | 50 | 22.4990 |
| 3 13 00 | 31.7050 | 3 18 00 | 32.5264 |
| 10 | 41.7324 | 10 | 42.5537 |
| 20 | 51.7597 | 20 | 52.5811 |
| 30 | 3 14 01.7871 | 30 | 3 19 02.6085 |
| 40 | 11.8145 | 40 | 12.6359 |
| 50 | 21.8419 | 50 | 22.6633 |
| 3 14 00 | 31.8693 | 3 19 00 | 32.6906 |
| 10 | 41.8966 | 10 | 42.7180 |
| 20 | 51.9240 | 20 | 52.7454 |
| 30 | 3 15 01.9514 | 30 | 3 20 02.7728 |
| 40 | 11.9788 | 40 | 12.8002 |
| 50 | 22.0062 | 50 | 22.8275 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 3 10 00 | 3 09 28.8731 | 3 15 00 | 3 14 28.0539 |
| 10 | 38.8458 | 10 | 38.0266 |
| 20 | 48.8185 | 20 | 47.9993 |
| 30 | 58.7911 | 30 | 57.9720 |
| 40 | 3 10 08.7638 | 40 | 3 15 07.9447 |
| 50 | 18.7365 | 50 | 17.9174 |
| 3 11 00 | 28.7092 | 3 16 00 | 27.8901 |
| 10 | 38.6819 | 10 | 37.8628 |
| 20 | 48.6546 | 20 | 47.8355 |
| 30 | 58.6273 | 30 | 57.8082 |
| 40 | 3 11 08.6000 | 40 | 3 16 07.7809 |
| 50 | 18.5727 | 50 | 17.7536 |
| 3 12 00 | 28.5454 | 3 17 00 | 27.7263 |
| 10 | 38.5181 | 10 | 37.6990 |
| 20 | 48.4908 | 20 | 47.6717 |
| 30 | 58.4635 | 30 | 57.6444 |
| 40 | 3 12 08.4362 | 40 | 3 17 07.6171 |
| 50 | 18.4089 | 50 | 17.5898 |
| 3 13 00 | 28.3816 | 3 18 00 | 27.5625 |
| 10 | 38.3543 | 10 | 37.5351 |
| 20 | 48.3270 | 20 | 47.5078 |
| 30 | 58.2997 | 30 | 57.4805 |
| 40 | 3 13 08.2724 | 40 | 3 18 07.4532 |
| 50 | 18.2451 | 50 | 17.4259 |
| 3 14 00 | 28.2178 | 3 19 00 | 27.3986 |
| 10 | 38.1905 | 10 | 37.3713 |
| 20 | 48.1631 | 20 | 47.3440 |
| 30 | 58.1358 | 30 | 57.3167 |
| 40 | 3 14 08.1085 | 40 | 3 19 07.2894 |
| 50 | 18.0812 | 50 | 17.2621 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 3 20 00 | 3 20 32.8549 | 3 25 00 | 3 25 33.6763 |
| 10 | 42.8823 | 10 | 43.7037 |
| 20 | 52.9097 | 20 | 53.7310 |
| 30 | 3 21 02.9370 | 30 | 3 26 03.7584 |
| 40 | 12.9644 | 40 | 13.7858 |
| 50 | 22.9918 | 50 | 23.8132 |
| 3 21 00 | 33.0192 | 3 26 00 | 33.8406 |
| 10 | 43.0466 | 10 | 43.8679 |
| 20 | 53.0739 | 20 | 53.8953 |
| 30 | 3 22 03.1013 | 30 | 3 27 03.9227 |
| 40 | 13.1287 | 40 | 13.9501 |
| 50 | 23.1561 | 50 | 23.9775 |
| 3 22 00 | 33.1835 | 3 27 00 | 34.0048 |
| 10 | 43.2108 | 10 | 44.0322 |
| 20 | 53.2382 | 20 | 54.0596 |
| 30 | 3 23 03.2656 | 30 | 3 28 04.0870 |
| 40 | 13.2930 | 40 | 14.1143 |
| 50 | 23.3204 | 50 | 24.1417 |
| 3 23 00 | 33.3477 | 3 28 00 | 34.1691 |
| 10 | 43.3751 | 10 | 44.1965 |
| 20 | 53.4025 | 20 | 54.2239 |
| 30 | 3 24 03.4299 | 30 | 3 29 04.2512 |
| 40 | 13.4572 | 40 | 14.2786 |
| 50 | 23.4846 | 50 | 24.3060 |
| 3 24 00 | 33.5120 | 3 29 00 | 34.3334 |
| 10 | 43.5394 | 10 | 44.3608 |
| 20 | 53.5668 | 20 | 54.3881 |
| 30 | 3 25 03.5941 | 30 | 3 30 04.4155 |
| 40 | 13.6215 | 40 | 14.4429 |
| 50 | 23.6489 | 50 | 24.4703 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 3 20 00 | 3 19 27.2348 | 3 25 00 | 3 24 26.4157 |
| 10 | 37.2075 | 10 | 36.3884 |
| 20 | 47.1802 | 20 | 46.3611 |
| 30 | 57.1529 | 30 | 56.3338 |
| 40 | 3 20 07.1256 | 40 | 3 25 06.3065 |
| 50 | 17.0983 | 50 | 16.2791 |
| 3 21 00 | 27.0710 | 3 26 00 | 26.2518 |
| 10 | 37.0437 | 10 | 36.2245 |
| 20 | 47.0164 | 20 | 46.1972 |
| 30 | 56.9891 | 30 | 56.1699 |
| 40 | 3 21 06.9618 | 40 | 3 26 06.1426 |
| 50 | 16.9345 | 50 | 16.1153 |
| 3 22 00 | 26.9071 | 3 27 00 | 26.0880 |
| 10 | 36.8798 | 10 | 36.0607 |
| 20 | 46.8525 | 20 | 46.0334 |
| 30 | 56.8252 | 30 | 56.0061 |
| 40 | 3 22 06.7979 | 40 | 3 27 05.9788 |
| 50 | 16.7706 | 50 | 15.9515 |
| 3 23 00 | 26.7433 | 3 28 00 | 25.9242 |
| 10 | 36.7160 | 10 | 35.8969 |
| 20 | 46.6887 | 20 | 45.8696 |
| 30 | 56.6614 | 30 | 55.8423 |
| 40 | 3 23 06.6341 | 40 | 3 28 05.8150 |
| 50 | 16.6068 | 50 | 15.7877 |
| 3 24 00 | 26.5795 | 3 29 00 | 25.7604 |
| 10 | 36.5522 | 10 | 35.7331 |
| 20 | 46.5249 | 20 | 45.7058 |
| 30 | 56.4976 | 30 | 55.6785 |
| 40 | 3 24 06.4703 | 40 | 3 29 05.6511 |
| 50 | 16.4430 | 50 | 15.6238 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 3 30 00 | 3 30 34.4977 | 3 35 00 | 3 35 35.3190 |
| 10 | 44.5250 | 10 | 45.3464 |
| 20 | 54.5524 | 20 | 55.3738 |
| 30 | 3 31 04.5798 | 30 | 3 36 05.4012 |
| 40 | 14.6072 | 40 | 15.4285 |
| 50 | 24.6346 | 50 | 25.4559 |
| 3 31 00 | 34.6619 | 3 36 00 | 35.4833 |
| 10 | 44.6893 | 10 | 45.5107 |
| 20 | 54.7167 | 20 | 55.5381 |
| 30 | 3 32 04.7441 | 30 | 3 37 05.5654 |
| 40 | 14.7714 | 40 | 15.5928 |
| 50 | 24.7988 | 50 | 25.6202 |
| 3 32 00 | 34.8262 | 3 37 00 | 35.6476 |
| 10 | 44.8536 | 10 | 45.6750 |
| 20 | 54.8810 | 20 | 55.7023 |
| 30 | 3 33 04.9083 | 30 | 3 38 05.7297 |
| 40 | 14.9357 | 40 | 15.7571 |
| 50 | 24.9631 | 50 | 25.7845 |
| 3 33 00 | 34.9905 | 3 38 00 | 35.8119 |
| 10 | 45.0179 | 10 | 45.8392 |
| 20 | 55.0452 | 20 | 55.8666 |
| 30 | 3 34 05.0726 | 30 | 3 39 05.8940 |
| 40 | 15.1000 | 40 | 15.9214 |
| 50 | 25.1274 | 50 | 25.9487 |
| 3 34 00 | 35.1548 | 3 39 00 | 35.9761 |
| 10 | 45.1821 | 10 | 46.0035 |
| 20 | 55.2095 | 20 | 56.0309 |
| 30 | 3 35 05.2369 | 30 | 3 40 06.0583 |
| 40 | 15.2643 | 40 | 16.0856 |
| 50 | 25.2916 | 50 | 26.1130 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 3 30 00 | 3 29 25.5965 | 3 35 00 | 3 34 24.7774 |
| 10 | 35.5692 | 10 | 34.7501 |
| 20 | 45.5419 | 20 | 44.7228 |
| 30 | 55.5146 | 30 | 54.6955 |
| 40 | 3 30 05.4873 | 40 | 3 35 04.6682 |
| 50 | 15.4600 | 50 | 14.6409 |
| 3 31 00 | 25.4327 | 3 36 00 | 24.6136 |
| 10 | 35.4054 | 10 | 34.5863 |
| 20 | 45.3781 | 20 | 44.5590 |
| 30 | 55.3508 | 30 | 54.5317 |
| 40 | 3 31 05.3235 | 40 | 3 36 04.5044 |
| 50 | 15.2962 | 50 | 14.4771 |
| 3 32 00 | 25.2689 | 3 37 00 | 24.4498 |
| 10 | 35.2416 | 10 | 34.4225 |
| 20 | 45.2143 | 20 | 44.3951 |
| 30 | 55.1870 | 30 | 54.3678 |
| 40 | 3 32 05.1597 | 40 | 3 37 04.3405 |
| 50 | 15.1324 | 50 | 14.3132 |
| 3 33 00 | 25.1051 | 3 38 00 | 24.2859 |
| 10 | 35.0778 | 10 | 34.2586 |
| 20 | 45.0505 | 20 | 44.2313 |
| 30 | 55.0231 | 30 | 54.2040 |
| 40 | 3 33 04.9958 | 40 | 3 38 04.1767 |
| 50 | 14.9685 | 50 | 14.1494 |
| 3 34 00 | 24.9412 | 3 39 00 | 24.1221 |
| 10 | 34.9139 | 10 | 34.0948 |
| 20 | 44.8866 | 20 | 44.0675 |
| 30 | 54.8593 | 30 | 54.0402 |
| 40 | 3 34 04.8320 | 40 | 3 39 04.0129 |
| 50 | 14.8047 | 50 | 13.9856 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 3 40 00 | 3 40 36.1404 | 3 45 00 | 3 45 36.9618 |
| 10 | 46.1678 | 10 | 46.9892 |
| 20 | 56.1952 | 20 | 57.0165 |
| 30 | 3 41 06.2225 | 30 | 3 46 07.0439 |
| 40 | 16.2499 | 40 | 17.0713 |
| 50 | 26.2773 | 50 | 27.0987 |
| 3 41 00 | 36.3047 | 3 46 00 | 37.1260 |
| 10 | 46.3321 | 10 | 47.1534 |
| 20 | 56.3594 | 20 | 57.1808 |
| 30 | 3 42 06.3868 | 30 | 3 47 07.2082 |
| 40 | 16.4142 | 40 | 17.2356 |
| 50 | 26.4416 | 50 | 27.2629 |
| 3 42 00 | 36.4689 | 3 47 00 | 37.2903 |
| 10 | 46.4963 | 10 | 47.3177 |
| 20 | 56.5237 | 20 | 57.3451 |
| 30 | 3 43 06.5511 | 30 | 3 48 07.3725 |
| 40 | 16.5785 | 40 | 17.3998 |
| 50 | 26.6058 | 50 | 27.4272 |
| 3 43 00 | 36.6332 | 3 48 00 | 37.4546 |
| 10 | 46.6606 | 10 | 47.4820 |
| 20 | 56.6880 | 20 | 57.5094 |
| 30 | 3 44 06.7154 | 30 | 3 49 07.5367 |
| 40 | 16.7427 | 40 | 17.5641 |
| 50 | 26.7701 | 50 | 27.5915 |
| 3 44 00 | 36.7975 | 3 49 00 | 37.6189 |
| 10 | 46.8249 | 10 | 47.6463 |
| 20 | 56.8523 | 20 | 57.6736 |
| 30 | 3 45 06.8796 | 30 | 3 50 07.7010 |
| 40 | 16.9070 | 40 | 17.7284 |
| 50 | 26.9344 | 50 | 27.7558 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 3 40 00 | 3 39 23.9583 | 3 45 00 | 3 44 23.1391 |
| 10 | 33.9310 | 10 | 33.1118 |
| 20 | 43.9037 | 20 | 43.0845 |
| 30 | 53.8764 | 30 | 53.0572 |
| 40 | 3 40 03.8491 | 40 | 3 45 03.0299 |
| 50 | 13.8218 | 50 | 13.0026 |
| 3 41 00 | 23.7945 | 3 46 00 | 22.9753 |
| 10 | 33.7671 | 10 | 32.9480 |
| 20 | 43.7398 | 20 | 42.9207 |
| 30 | 53.7125 | 30 | 52.8934 |
| 40 | 3 41 03.6852 | 40 | 3 46 02.8661 |
| 50 | 13.6579 | 50 | 12.8388 |
| 3 42 00 | 23.6306 | 3 47 00 | 22.8115 |
| 10 | 33.6033 | 10 | 32.7842 |
| 20 | 43.5760 | 20 | 42.7569 |
| 30 | 53.5487 | 30 | 52.7296 |
| 40 | 3 42 03.5214 | 40 | 3 47 02.7023 |
| 50 | 13.4941 | 50 | 12.6750 |
| 3 43 00 | 23.4668 | 3 48 00 | 22.6477 |
| 10 | 33.4395 | 10 | 32.6204 |
| 20 | 43.4122 | 20 | 42.5931 |
| 30 | 53.3849 | 30 | 52.5658 |
| 40 | 3 43 03.3576 | 40 | 3 48 02.5385 |
| 50 | 13.3303 | 50 | 12.5111 |
| 3 44 00 | 23.3030 | 3 49 00 | 22.4838 |
| 10 | 33.2757 | 10 | 32.4565 |
| 20 | 43.2484 | 20 | 42.4292 |
| 30 | 53.2211 | 30 | 52.4019 |
| 40 | 3 44 03.1938 | 40 | 3 49 02.3746 |
| 50 | 13.1665 | 50 | 12.3473 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 3 50 00 | 3 50 37.7831 | 3 55 00 | 3 55 38.6045 |
| 10 | 47.8105 | 10 | 48.6319 |
| 20 | 57.8379 | 20 | 58.6593 |
| 30 | 3 51 07.8653 | 30 | 3 56 08.6867 |
| 40 | 17.8927 | 40 | 18.7140 |
| 50 | 27.9200 | 50 | 28.7414 |
| 3 51 00 | 37.9474 | 3 56 00 | 38.7688 |
| 10 | 47.9748 | 10 | 48.7962 |
| 20 | 58.0022 | 20 | 58.8236 |
| 30 | 3 52 08.0296 | 30 | 3 57 08.8509 |
| 40 | 18.0569 | 40 | 18.8783 |
| 50 | 28.0843 | 50 | 28.9057 |
| 3 52 00 | 38.1117 | 3 57 00 | 38.9331 |
| 10 | 48.1391 | 10 | 48.9604 |
| 20 | 58.1665 | 20 | 58.9878 |
| 30 | 3 53 08.1938 | 30 | 3 58 09.0152 |
| 40 | 18.2212 | 40 | 19.0426 |
| 50 | 28.2486 | 50 | 29.0700 |
| 3 53 00 | 38.2760 | 3 58 00 | 39.0973 |
| 10 | 48.3033 | 10 | 49.1247 |
| 20 | 58.3307 | 20 | 59.1521 |
| 30 | 3 54 08.3581 | 30 | 3 59 09.1795 |
| 40 | 18.3855 | 40 | 19.2069 |
| 50 | 28.4129 | 50 | 29.2342 |
| 3 54 00 | 38.4402 | 3 59 00 | 39.2616 |
| 10 | 48.4676 | 10 | 49.2890 |
| 20 | 58.4950 | 20 | 59.3164 |
| 30 | 3 55 08.5224 | 30 | 4 00 09.3438 |
| 40 | 18.5498 | 40 | 19.3711 |
| 50 | 28.5771 | 50 | 29.3985 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 3 50 00 | 3 49 22.3200 | 3 55 00 | 3 54 21.5009 |
| 10 | 32.2927 | 10 | 31.4736 |
| 20 | 42.2654 | 20 | 41.4463 |
| 30 | 52.2381 | 30 | 51.4190 |
| 40 | 3 50 02.2108 | 40 | 3 55 01.3917 |
| 50 | 12.1835 | 50 | 11.3644 |
| 3 51 00 | 22.1562 | 3 56 00 | 21.3371 |
| 10 | 32.1289 | 10 | 31.3098 |
| 20 | 42.1016 | 20 | 41.2825 |
| 30 | 52.0743 | 30 | 51.2551 |
| 40 | 3 51 02.0470 | 40 | 3 56 01.2278 |
| 50 | 12.0197 | 50 | 11.2005 |
| 3 52 00 | 21.9924 | 3 57 00 | 21.1732 |
| 10 | 31.9651 | 10 | 31.1459 |
| 20 | 41.9378 | 20 | 41.1186 |
| 30 | 51.9105 | 30 | 51.0913 |
| 40 | 3 52 01.8831 | 40 | 3 57 01.0640 |
| 50 | 11.8558 | 50 | 11.0367 |
| 3 53 00 | 21.8285 | 3 58 00 | 21.0094 |
| 10 | 31.8012 | 10 | 30.9821 |
| 20 | 41.7739 | 20 | 40.9548 |
| 30 | 51.7466 | 30 | 50.9275 |
| 40 | 3 53 01.7193 | 40 | 3 58 00.9002 |
| 50 | 11.6920 | 50 | 10.8729 |
| 3 54 00 | 21.6647 | 3 59 00 | 20.8456 |
| 10 | 31.6374 | 10 | 30.8183 |
| 20 | 41.6101 | 20 | 40.7910 |
| 30 | 51.5828 | 30 | 50.7637 |
| 40 | 3 54 01.5555 | 40 | 3 59 00.7364 |
| 50 | 11.5282 | 50 | 10.7091 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 4 00 00 | 4 00 39.4259 | 4 05 00 | 4 05 40.2473 |
| 10 | 49.4533 | 10 | 50.2746 |
| 20 | 59.4806 | 20 | 4 06 00.3020 |
| 30 | 4 01 09.5080 | 30 | 10.3294 |
| 40 | 19.5354 | 40 | 20.3568 |
| 50 | 29.5628 | 50 | 30.3842 |
| 4 01 00 | 39.5902 | 4 06 00 | 40.4115 |
| 10 | 49.6175 | 10 | 50.4389 |
| 20 | 59.6449 | 20 | 4 07 00.4663 |
| 30 | 4 02 09.6723 | 30 | 10.4937 |
| 40 | 19.6997 | 40 | 20.5211 |
| 50 | 29.7271 | 50 | 30.5484 |
| 4 02 00 | 39.7544 | 4 07 00 | 40.5758 |
| 10 | 49.7818 | 10 | 50.6032 |
| 20 | 59.8092 | 20 | 4 08 00.6306 |
| 30 | 4 03 09.8366 | 30 | 10.6580 |
| 40 | 19.8640 | 40 | 20.6853 |
| 50 | 29.8913 | 50 | 30.7127 |
| 4 03 00 | 39.9187 | 4 08 00 | 40.7401 |
| 10 | 49.9461 | 10 | 50.7675 |
| 20 | 59.9735 | 20 | 4 09 00.7948 |
| 30 | 4 04 10.0009 | 30 | 10.8222 |
| 40 | 20.0282 | 40 | 20.8496 |
| 50 | 30.0556 | 50 | 30.8770 |
| 4 04 00 | 40.0830 | 4 09 00 | 40.9044 |
| 10 | 50.1104 | 10 | 50.9317 |
| 20 | 4 05 00.1377 | 20 | 4 10 00.9591 |
| 30 | 10.1651 | 30 | 10.9865 |
| 40 | 20.1925 | 40 | 21.0139 |
| 50 | 30.2199 | 50 | 31.0413 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 4 00 00 | 3 59 20.6818 | 4 05 00 | 4 04 19.8626 |
| 10 | 30.6545 | 10 | 29.8353 |
| 20 | 40.6271 | 20 | 39.8080 |
| 30 | 50.5998 | 30 | 49.7807 |
| 40 | 4 00 00.5725 | 40 | 59.7534 |
| 50 | 10.5452 | 50 | 4 05 09.7261 |
| 4 01 00 | 20.5179 | 4 06 00 | 19.6988 |
| 10 | 30.4906 | 10 | 29.6715 |
| 20 | 40.4633 | 20 | 39.6442 |
| 30 | 50.4360 | 30 | 49.6169 |
| 40 | 4 01 00.4087 | 40 | 59.5896 |
| 50 | 10.3814 | 50 | 4 06 09.5623 |
| 4 02 00 | 20.3541 | 4 07 00 | 19.5350 |
| 10 | 30.3268 | 10 | 29.5077 |
| 20 | 40.2995 | 20 | 39.4804 |
| 30 | 50.2722 | 30 | 49.4531 |
| 40 | 4 02 00.2449 | 40 | 59.4258 |
| 50 | 10.2176 | 50 | 4 07 09.3985 |
| 4 03 00 | 20.1903 | 4 08 00 | 19.3712 |
| 10 | 30.1630 | 10 | 29.3438 |
| 20 | 40.1357 | 20 | 39.3165 |
| 30 | 50.1084 | 30 | 49.2892 |
| 40 | 4 03 00.0811 | 40 | 59.2619 |
| 50 | 10.0538 | 50 | 4 08 09.2346 |
| 4 04 00 | 20.0265 | 4 09 00 | 19.2073 |
| 10 | 29.9991 | 10 | 29.1800 |
| 20 | 39.9718 | 20 | 39.1527 |
| 30 | 49.9445 | 30 | 49.1254 |
| 40 | 59.9172 | 40 | 59.0981 |
| 50 | 4 04 09.8899 | 50 | 4 09 09.0708 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 4 10 00 | 4 10 41.0686 | 4 15 00 | 4 15 41.8900 |
| 10 | 51.0960 | 10 | 51.9174 |
| 20 | 4 11 01.1234 | 20 | 4 16 01.9448 |
| 30 | 11.1508 | 30 | 11.9721 |
| 40 | 21.1782 | 40 | 21.9995 |
| 50 | 31.2055 | 50 | 32.0269 |
| 4 11 00 | 41.2329 | 4 16 00 | 42.0543 |
| 10 | 51.2603 | 10 | 52.0817 |
| 20 | 4 12 01.2877 | 20 | 4 17 02.1090 |
| 30 | 11.3150 | 30 | 12.1364 |
| 40 | 21.3424 | 40 | 22.1638 |
| 50 | 31.3698 | 50 | 32.1912 |
| 4 12 00 | 41.3972 | 4 17 00 | 42.2186 |
| 10 | 51.4246 | 10 | 52.2459 |
| 20 | 4 13 01.4519 | 20 | 4 18 02.2733 |
| 30 | 11.4793 | 30 | 12.3007 |
| 40 | 21.5067 | 40 | 22.3281 |
| 50 | 31.5341 | 50 | 32.3555 |
| 4 13 00 | 41.5615 | 4 18 00 | 42.3828 |
| 10 | 51.5888 | 10 | 52.4102 |
| 20 | 4 14 01.6162 | 20 | 4 19 02.4376 |
| 30 | 11.6436 | 30 | 12.4650 |
| 40 | 21.6710 | 40 | 22.4923 |
| 50 | 31.6984 | 50 | 32.5197 |
| 4 14 00 | 41.7257 | 4 19 00 | 42.5471 |
| 10 | 51.7531 | 10 | 52.5745 |
| 20 | 4 15 01.7805 | 20 | 4 20 02.6019 |
| 30 | 11.8079 | 30 | 12.6292 |
| 40 | 21.8353 | 40 | 22.6566 |
| 50 | 31.8626 | 50 | 32.6840 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 4 10 00 | 4 09 19.0435 | 4 15 00 | 4 14 18.2244 |
| 10 | 29.0162 | 10 | 28.1971 |
| 20 | 38.9889 | 20 | 38.1698 |
| 30 | 48.9616 | 30 | 48.1425 |
| 40 | 58.9343 | 40 | 58.1152 |
| 50 | 4 10 08.9070 | 50 | 4 15 08.0878 |
| 4 11 00 | 18.8797 | 4 16 00 | 18.0605 |
| 10 | 28.8524 | 10 | 28.0332 |
| 20 | 38.8251 | 20 | 38.0059 |
| 30 | 48.7978 | 30 | 47.9786 |
| 40 | 58.7705 | 40 | 57.9513 |
| 50 | 4 11 08.7432 | 50 | 4 16 07.9240 |
| 4 12 00 | 18.7158 | 4 17 00 | 17.8967 |
| 10 | 28.6885 | 10 | 27.8694 |
| 20 | 38.6612 | 20 | 37.8421 |
| 30 | 48.6339 | 30 | 47.8148 |
| 40 | 58.6066 | 40 | 57.7875 |
| 50 | 4 12 08.5793 | 50 | 4 17 07.7602 |
| 4 13 00 | 18.5520 | 4 18 00 | 17.7329 |
| 10 | 28.5247 | 10 | 27.7056 |
| 20 | 38.4974 | 20 | 37.6783 |
| 30 | 48.4701 | 30 | 47.6510 |
| 40 | 58.4428 | 40 | 57.6237 |
| 50 | 4 13 08.4155 | 50 | 4 18 07.5964 |
| 4 14 00 | 18.3882 | 4 19 00 | 17.5691 |
| 10 | 28.3609 | 10 | 27.5418 |
| 20 | 38.3336 | 20 | 37.5145 |
| 30 | 48.3063 | 30 | 47.4872 |
| 40 | 58.2790 | 40 | 57.4598 |
| 50 | 4 14 08.2517 | 50 | 4 19 07.4325 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 4 20 00 | 4 20 42.7114 | 4 25 00 | 4 25 43.5328 |
| 10 | 52.7388 | 10 | 53.5601 |
| 20 | 4 21 02.7661 | 20 | 4 26 03.5875 |
| 30 | 12.7935 | 30 | 13.6149 |
| 40 | 22.8209 | 40 | 23.6423 |
| 50 | 32.8483 | 50 | 33.6697 |
| 4 21 00 | 42.8757 | 4 26 00 | 43.6970 |
| 10 | 52.9030 | 10 | 53.7244 |
| 20 | 4 22 02.9304 | 20 | 4 27 03.7518 |
| 30 | 12.9578 | 30 | 13.7792 |
| 40 | 22.9852 | 40 | 23.8065 |
| 50 | 33.0126 | 50 | 33.8339 |
| 4 22 00 | 43.0399 | 4 27 00 | 43.8613 |
| 10 | 53.0673 | 10 | 53.8887 |
| 20 | 4 23 03.0947 | 20 | 4 28 03.9161 |
| 30 | 13.1221 | 30 | 13.9434 |
| 40 | 23.1494 | 40 | 23.9708 |
| 50 | 33.1768 | 50 | 33.9982 |
| 4 23 00 | 43.2042 | 4 28 00 | 44.0256 |
| 10 | 53.2316 | 10 | 54.0530 |
| 20 | 4 24 03.2590 | 20 | 4 29 04.0803 |
| 30 | 13.2863 | 30 | 14.1077 |
| 40 | 23.3137 | 40 | 24.1351 |
| 50 | 33.3411 | 50 | 34.1625 |
| 4 24 00 | 43.3685 | 4 29 00 | 44.1899 |
| 10 | 53.3959 | 10 | 54.2172 |
| 20 | 4 25 03.4232 | 20 | 4 30 04.2446 |
| 30 | 13.4506 | 30 | 14.2720 |
| 40 | 23.4780 | 40 | 24.2994 |
| 50 | 33.5054 | 50 | 34.3267 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 4 20 00 | 4 19 17.4052 | 4 25 00 | 4 24 16.5861 |
| 10 | 27.3779 | 10 | 26.5588 |
| 20 | 37.3506 | 20 | 36.5315 |
| 30 | 47.3233 | 30 | 46.5042 |
| 40 | 57.2960 | 40 | 56.4769 |
| 50 | 4 20 07.2687 | 50 | 4 25 06.4496 |
| 4 21 00 | 17.2414 | 4 26 00 | 16.4223 |
| 10 | 27.2141 | 10 | 26.3950 |
| 20 | 37.1868 | 20 | 36.3677 |
| 30 | 47.1595 | 30 | 46.3404 |
| 40 | 57.1322 | 40 | 56.3131 |
| 50 | 4 21 07.1049 | 50 | 4 26 06.2858 |
| 4 22 00 | 17.0776 | 4 27 00 | 16.2585 |
| 10 | 27.0503 | 10 | 26.2312 |
| 20 | 37.0230 | 20 | 36.2038 |
| 30 | 46.9957 | 30 | 46.1765 |
| 40 | 56.9684 | 40 | 56.1492 |
| 50 | 4 22 06.9411 | 50 | 4 27 06.1219 |
| 4 23 00 | 16.9138 | 4 28 00 | 16.0946 |
| 10 | 26.8865 | 10 | 26.0673 |
| 20 | 36.8592 | 20 | 36.0400 |
| 30 | 46.8318 | 30 | 46.0127 |
| 40 | 56.8045 | 40 | 55.9854 |
| 50 | 4 23 06.7772 | 50 | 4 28 05.9581 |
| 4 24 00 | 16.7499 | 4 29 00 | 15.9308 |
| 10 | 26.7226 | 10 | 25.9035 |
| 20 | 36.6953 | 20 | 35.8762 |
| 30 | 46.6680 | 30 | 45.8489 |
| 40 | 56.6407 | 40 | 55.8216 |
| 50 | 4 24 06.6134 | 50 | 4 29 05.7943 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 4 30 00 | 4 30 44.3541 | 4 35 00 | 4 35 45.1755 |
| 10 | 54.3815 | 10 | 55.2029 |
| 20 | 4 31 04.4089 | 20 | 4 36 05.2303 |
| 30 | 14.4363 | 30 | 15.2576 |
| 40 | 24.4636 | 40 | 25.2850 |
| 50 | 34.4910 | 50 | 35.3124 |
| 4 31 00 | 44.5184 | 4 36 00 | 45.3398 |
| 10 | 54.5458 | 10 | 55.3672 |
| 20 | 4 32 04.5732 | 20 | 4 37 05.3945 |
| 30 | 14.6005 | 30 | 15.4219 |
| 40 | 24.6279 | 40 | 25.4493 |
| 50 | 34.6553 | 50 | 35.4767 |
| 4 32 00 | 44.6827 | 4 37 00 | 45.5040 |
| 10 | 54.7101 | 10 | 55.5314 |
| 20 | 4 33 04.7374 | 20 | 4 38 05.5588 |
| 30 | 14.7648 | 30 | 15.5862 |
| 40 | 24.7922 | 40 | 25.6136 |
| 50 | 34.8196 | 50 | 35.6409 |
| 4 33 00 | 44.8470 | 4 38 00 | 45.6683 |
| 10 | 54.8743 | 10 | 55.6957 |
| 20 | 4 34 04.9017 | 20 | 4 39 05.7231 |
| 30 | 14.9291 | 30 | 15.7505 |
| 40 | 24.9565 | 40 | 25.7778 |
| 50 | 34.9838 | 50 | 35.8052 |
| 4 34 00 | 45.0112 | 4 39 00 | 45.8326 |
| 10 | 55.0386 | 10 | 55.8600 |
| 20 | 4 35 05.0660 | 20 | 4 40 05.8874 |
| 30 | 15.0934 | 30 | 15.9147 |
| 40 | 25.1207 | 40 | 25.9421 |
| 50 | 35.1481 | 50 | 35.9695 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 4 30 00 | 4 29 15.7670 | 4 35 00 | 4 34 14.9478 |
| 10 | 25.7397 | 10 | 24.9205 |
| 20 | 35.7124 | 20 | 34.8932 |
| 30 | 45.6851 | 30 | 44.8659 |
| 40 | 55.6578 | 40 | 54.8386 |
| 50 | 4 30 05.6305 | 50 | 4 35 04.8113 |
| 4 31 00 | 15.6032 | 4 36 00 | 14.7840 |
| 10 | 25.5758 | 10 | 24.7567 |
| 20 | 35.5485 | 20 | 34.7294 |
| 30 | 45.5212 | 30 | 44.7021 |
| 40 | 55.4939 | 40 | 54.6748 |
| 50 | 4 31 05.4666 | 50 | 4 36 04.6475 |
| 4 32 00 | 15.4393 | 4 37 00 | 14.6202 |
| 10 | 25.4120 | 10 | 24.5929 |
| 20 | 35.3847 | 20 | 34.5656 |
| 30 | 45.3574 | 30 | 44.5383 |
| 40 | 55.3301 | 40 | 54.5110 |
| 50 | 4 32 05.3028 | 50 | 4 37 04.4837 |
| 4 33 00 | 15.2755 | 4 38 00 | 14.4564 |
| 10 | 25.2482 | 10 | 24.4291 |
| 20 | 35.2209 | 20 | 34.4018 |
| 30 | 45.1936 | 30 | 44.3745 |
| 40 | 55.1663 | 40 | 54.3472 |
| 50 | 4 33 05.1390 | 50 | 4 38 04.3198 |
| 4 34 00 | 15.1117 | 4 39 00 | 14.2925 |
| 10 | 25.0844 | 10 | 24.2652 |
| 20 | 35.0571 | 20 | 34.2379 |
| 30 | 45.0298 | 30 | 44.2106 |
| 40 | 55.0025 | 40 | 54.1833 |
| 50 | 4 34 04.9752 | 50 | 4 39 04.1560 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 4 40 00 | 4 40 45.9969 | 4 45 00 | 4 45 46.8182 |
| 10 | 56.0243 | 10 | 56.8456 |
| 20 | 4 41 06.0516 | 20 | 4 46 06.8730 |
| 30 | 16.0790 | 30 | 16.9004 |
| 40 | 26.1064 | 40 | 26.9278 |
| 50 | 36.1338 | 50 | 36.9551 |
| 4 41 00 | 46.1611 | 4 46 00 | 46.9825 |
| 10 | 56.1885 | 10 | 57.0099 |
| 20 | 4 42 06.2159 | 20 | 4 47 07.0373 |
| 30 | 16.2433 | 30 | 17.0647 |
| 40 | 26.2707 | 40 | 27.0920 |
| 50 | 36.2980 | 50 | 37.1194 |
| 4 42 00 | 46.3254 | 4 47 00 | 47.1468 |
| 10 | 56.3528 | 10 | 57.1742 |
| 20 | 4 43 06.3802 | 20 | 4 48 07.2016 |
| 30 | 16.4076 | 30 | 17.2289 |
| 40 | 26.4349 | 40 | 27.2563 |
| 50 | 36.4623 | 50 | 37.2837 |
| 4 43 00 | 46.4897 | 4 48 00 | 47.3111 |
| 10 | 56.5171 | 10 | 57.3384 |
| 20 | 4 44 06.5445 | 20 | 4 49 07.3658 |
| 30 | 16.5718 | 30 | 17.3932 |
| 40 | 26.5992 | 40 | 27.4206 |
| 50 | 36.6266 | 50 | 37.4480 |
| 4 44 00 | 46.6540 | 4 49 00 | 47.4753 |
| 10 | 56.6814 | 10 | 57.5027 |
| 20 | 4 45 06.7087 | 20 | 4 50 07.5301 |
| 30 | 16.7361 | 30 | 17.5575 |
| 40 | 26.7635 | 40 | 27.5849 |
| 50 | 36.7909 | 50 | 37.6122 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 4 40 00 | 4 39 14.1287 | 4 45 00 | 4 44 13.3096 |
| 10 | 24.1014 | 10 | 23.2823 |
| 20 | 34.0741 | 20 | 33.2550 |
| 30 | 44.0468 | 30 | 43.2277 |
| 40 | 54.0195 | 40 | 53.2004 |
| 50 | 4 40 03.9922 | 50 | 4 45 03.1731 |
| 4 41 00 | 13.9649 | 4 46 00 | 13.1458 |
| 10 | 23.9376 | 10 | 23.1185 |
| 20 | 33.9103 | 20 | 33.0912 |
| 30 | 43.8830 | 30 | 43.0638 |
| 40 | 53.8557 | 40 | 53.0365 |
| 50 | 4 41 03.8284 | 50 | 4 46 03.0092 |
| 4 42 00 | 13.8011 | 4 47 00 | 12.9819 |
| 10 | 23.7738 | 10 | 22.9546 |
| 20 | 33.7465 | 20 | 32.9273 |
| 30 | 43.7192 | 30 | 42.9000 |
| 40 | 53.6918 | 40 | 52.8727 |
| 50 | 4 42 03.6645 | 50 | 4 47 02.8454 |
| 4 43 00 | 13.6372 | 4 48 00 | 12.8181 |
| 10 | 23.6099 | 10 | 22.7908 |
| 20 | 33.5826 | 20 | 32.7635 |
| 30 | 43.5553 | 30 | 42.7362 |
| 40 | 53.5280 | 40 | 52.7089 |
| 50 | 4 43 03.5007 | 50 | 4 48 02.6816 |
| 4 44 00 | 13.4734 | 4 49 00 | 12.6543 |
| 10 | 23.4461 | 10 | 22.6270 |
| 20 | 33.4188 | 20 | 32.5997 |
| 30 | 43.3915 | 30 | 42.5724 |
| 40 | 53.3642 | 40 | 52.5451 |
| 50 | 4 44 03.3369 | 50 | 4 49 02.5178 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 4 50 00 | 4 50 47.6396 | 4 55 00 | 4 55 48.4610 |
| 10 | 57.6670 | 10 | 58.4884 |
| 20 | 4 51 07.6944 | 20 | 4 56 08.5157 |
| 30 | 17.7218 | 30 | 18.5431 |
| 40 | 27.7491 | 40 | 28.5705 |
| 50 | 37.7765 | 50 | 38.5979 |
| 4 51 00 | 47.8039 | 4 56 00 | 48.6253 |
| 10 | 57.8313 | 10 | 58.6526 |
| 20 | 4 52 07.8587 | 20 | 4 57 08.6800 |
| 30 | 17.8860 | 30 | 18.7074 |
| 40 | 27.9134 | 40 | 28.7348 |
| 50 | 37.9408 | 50 | 38.7622 |
| 4 52 00 | 47.9682 | 4 57 00 | 48.7895 |
| 10 | 57.9955 | 10 | 58.8169 |
| 20 | 4 53 08.0229 | 20 | 4 58 08.8443 |
| 30 | 18.0503 | 30 | 18.8717 |
| 40 | 28.0777 | 40 | 28.8991 |
| 50 | 38.1051 | 50 | 38.9264 |
| 4 53 00 | 48.1324 | 4 58 00 | 48.9538 |
| 10 | 58.1598 | 10 | 58.9812 |
| 20 | 4 54 08.1872 | 20 | 4 59 09.0086 |
| 30 | 18.2146 | 30 | 19.0360 |
| 40 | 28.2420 | 40 | 29.0633 |
| 50 | 38.2693 | 50 | 39.0907 |
| 4 54 00 | 48.2967 | 4 59 00 | 49.1181 |
| 10 | 58.3241 | 10 | 59.1455 |
| 20 | 4 55 08.3515 | 20 | 5 00 09.1728 |
| 30 | 18.3789 | 30 | 19.2002 |
| 40 | 28.4062 | 40 | 29.2276 |
| 50 | 38.4336 | 50 | 39.2550 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 4 50 00 | 4 49 12.4905 | 4 55 00 | 4 54 11.6713 |
| 10 | 22.4632 | 10 | 21.6440 |
| 20 | 32.4358 | 20 | 31.6167 |
| 30 | 42.4085 | 30 | 41.5894 |
| 40 | 52.3812 | 40 | 51.5621 |
| 50 | 4 50 02.3539 | 50 | 4 55 01.5348 |
| 4 51 00 | 12.3266 | 4 56 00 | 11.5075 |
| 10 | 22.2993 | 10 | 21.4802 |
| 20 | 32.2720 | 20 | 31.4529 |
| 30 | 42.2447 | 30 | 41.4256 |
| 40 | 52.2174 | 40 | 51.3983 |
| 50 | 4 51 02.1901 | 50 | 4 56 01.3710 |
| 4 52 00 | 12.1628 | 4 57 00 | 11.3437 |
| 10 | 22.1355 | 10 | 21.3164 |
| 20 | 32.1082 | 20 | 31.2891 |
| 30 | 42.0809 | 30 | 41.2618 |
| 40 | 52.0536 | 40 | 51.2345 |
| 50 | 4 52 02.0263 | 50 | 4 57 01.2072 |
| 4 53 00 | 11.9990 | 4 58 00 | 11.1798 |
| 10 | 21.9717 | 10 | 21.1525 |
| 20 | 31.9444 | 20 | 31.1252 |
| 30 | 41.9171 | 30 | 41.0979 |
| 40 | 51.8898 | 40 | 51.0706 |
| 50 | 4 53 01.8625 | 50 | 4 58 01.0433 |
| 4 54 00 | 11.8352 | 4 59 00 | 11.0160 |
| 10 | 21.8078 | 10 | 20.9887 |
| 20 | 31.7805 | 20 | 30.9614 |
| 30 | 41.7532 | 30 | 40.9341 |
| 40 | 51.7259 | 40 | 50.9068 |
| 50 | 4 54 01.6986 | 50 | 4 59 00.8795 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 5 00 00 | 5 00 49.2824 | 5 05 00 | 5 05 50.1037 |
| 10 | 59.3097 | 10 | 5 06 00.1311 |
| 20 | 5 01 09.3371 | 20 | 10.1585 |
| 30 | 19.3645 | 30 | 20.1859 |
| 40 | 29.3919 | 40 | 30.2133 |
| 50 | 39.4193 | 50 | 40.2406 |
| 5 01 00 | 49.4466 | 5 06 00 | 50.2680 |
| 10 | 59.4740 | 10 | 5 07 00.2954 |
| 20 | 5 02 09.5014 | 20 | 10.3228 |
| 30 | 19.5288 | 30 | 20.3501 |
| 40 | 29.5562 | 40 | 30.3775 |
| 50 | 39.5835 | 50 | 40.4049 |
| 5 02 00 | 49.6109 | 5 07 00 | 50.4323 |
| 10 | 59.6383 | 10 | 5 08 00.4597 |
| 20 | 5 03 09.6657 | 20 | 10.4870 |
| 30 | 19.6931 | 30 | 20.5144 |
| 40 | 29.7204 | 40 | 30.5418 |
| 50 | 39.7478 | 50 | 40.5692 |
| 5 03 00 | 49.7752 | 5 08 00 | 50.5966 |
| 10 | 59.8026 | 10 | 5 09 00.6239 |
| 20 | 5 04 09.8299 | 20 | 10.6513 |
| 30 | 19.8573 | 30 | 20.6787 |
| 40 | 29.8847 | 40 | 30.7061 |
| 50 | 39.9121 | 50 | 40.7335 |
| 5 04 00 | 49.9395 | 5 09 00 | 50.7608 |
| 10 | 59.9668 | 10 | 5 10 00.7882 |
| 20 | 5 05 09.9942 | 20 | 10.8156 |
| 30 | 20.0216 | 30 | 20.8430 |
| 40 | 30.0490 | 40 | 30.8704 |
| 50 | 40.0764 | 50 | 40.8977 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 5 00 00 | 4 59 10.8522 | 5 05 00 | 5 04 10.0331 |
| 10 | 20.8249 | 10 | 20.0058 |
| 20 | 30.7976 | 20 | 29.9785 |
| 30 | 40.7703 | 30 | 39.9512 |
| 40 | 50.7430 | 40 | 49.9239 |
| 50 | 5 00 00.7157 | 50 | 59.8965 |
| 5 01 00 | 10.6884 | 5 06 00 | 5 05 09.8692 |
| 10 | 20.6611 | 10 | 19.8419 |
| 20 | 30.6338 | 20 | 29.8146 |
| 30 | 40.6065 | 30 | 39.7873 |
| 40 | 50.5792 | 40 | 49.7600 |
| 50 | 5 01 00.5519 | 50 | 59.7327 |
| 5 02 00 | 10.5245 | 5 07 00 | 5 06 09.7054 |
| 10 | 20.4972 | 10 | 19.6781 |
| 20 | 30.4699 | 20 | 29.6508 |
| 30 | 40.4426 | 30 | 39.6235 |
| 40 | 50.4153 | 40 | 49.5962 |
| 50 | 5 02 00.3880 | 50 | 59.5689 |
| 5 03 00 | 10.3607 | 5 08 00 | 5 07 09.5416 |
| 10 | 20.3334 | 10 | 19.5143 |
| 20 | 30.3061 | 20 | 29.4870 |
| 30 | 40.2788 | 30 | 39.4597 |
| 40 | 50.2515 | 40 | 49.4324 |
| 50 | 5 03 00.2242 | 50 | 59.4051 |
| 5 04 00 | 10.1969 | 5 09 00 | 5 08 09.3778 |
| 10 | 20.1696 | 10 | 19.3505 |
| 20 | 30.1423 | 20 | 29.3232 |
| 30 | 40.1150 | 30 | 39.2959 |
| 40 | 50.0877 | 40 | 49.2685 |
| 50 | 5 04 00.0604 | 50 | 59.2412 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 5 10 00 | 5 10 50.9251 | 5 15 00 | 5 15 51.7465 |
| 10 | 5 11 00.9525 | 10 | 5 16 01.7739 |
| 20 | 10.9799 | 20 | 11.8012 |
| 30 | 21.0072 | 30 | 21.8286 |
| 40 | 31.0346 | 40 | 31.8560 |
| 50 | 41.0620 | 50 | 41.8834 |
| 5 11 00 | 51.0894 | 5 16 00 | 51.9108 |
| 10 | 5 12 01.1168 | 10 | 5 17 01.9381 |
| 20 | 11.1441 | 20 | 11.9655 |
| 30 | 21.1715 | 30 | 21.9929 |
| 40 | 31.1989 | 40 | 32.0203 |
| 50 | 41.2263 | 50 | 42.0477 |
| 5 12 00 | 51.2537 | 5 17 00 | 52.0750 |
| 10 | 5 13 01.2810 | 10 | 5 18 02.1024 |
| 20 | 11.3084 | 20 | 12.1298 |
| 30 | 21.3358 | 30 | 22.1572 |
| 40 | 31.3632 | 40 | 32.1845 |
| 50 | 41.3906 | 50 | 42.2119 |
| 5 13 00 | 51.4179 | 5 18 00 | 52.2393 |
| 10 | 5 14 01.4453 | 10 | 5 19 02.2667 |
| 20 | 11.4727 | 20 | 12.2941 |
| 30 | 21.5001 | 30 | 22.3214 |
| 40 | 31.5274 | 40 | 32.3488 |
| 50 | 41.5548 | 50 | 42.3762 |
| 5 14 00 | 51.5822 | 5 19 00 | 52.4036 |
| 10 | 5 15 01.6096 | 10 | 5 20 02.4310 |
| 20 | 11.6370 | 20 | 12.4583 |
| 30 | 21.6643 | 30 | 22.4857 |
| 40 | 31.6917 | 40 | 32.5131 |
| 50 | 41.7191 | 50 | 42.5405 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 5 10 00 | 5 09 09.2139 | 5 15 00 | 5 14 08.3948 |
| 10 | 19.1866 | 10 | 18.3675 |
| 20 | 29.1593 | 20 | 28.3402 |
| 30 | 39.1320 | 30 | 38.3129 |
| 40 | 49.1047 | 40 | 48.2856 |
| 50 | 59.0774 | 50 | 58.2583 |
| 5 11 00 | 5 10 09.0501 | 5 16 00 | 5 15 08.2310 |
| 10 | 19.0228 | 10 | 18.2037 |
| 20 | 28.9955 | 20 | 28.1764 |
| 30 | 38.9682 | 30 | 38.1491 |
| 40 | 48.9409 | 40 | 48.1218 |
| 50 | 58.9136 | 50 | 58.0945 |
| 5 12 00 | 5 11 08.8863 | 5 17 00 | 5 16 08.0672 |
| 10 | 18.8590 | 10 | 18.0399 |
| 20 | 28.8317 | 20 | 28.0125 |
| 30 | 38.8044 | 30 | 37.9852 |
| 40 | 48.7771 | 40 | 47.9579 |
| 50 | 58.7498 | 50 | 57.9306 |
| 5 13 00 | 5 12 08.7225 | 5 18 00 | 5 17 07.9033 |
| 10 | 18.6952 | 10 | 17.8760 |
| 20 | 28.6679 | 20 | 27.8487 |
| 30 | 38.6405 | 30 | 37.8214 |
| 40 | 48.6132 | 40 | 47.7941 |
| 50 | 58.5859 | 50 | 57.7668 |
| 5 14 00 | 5 13 08.5586 | 5 19 00 | 5 18 07.7395 |
| 10 | 18.5313 | 10 | 17.7122 |
| 20 | 28.5040 | 20 | 27.6849 |
| 30 | 38.4767 | 30 | 37.6576 |
| 40 | 48.4494 | 40 | 47.6303 |
| 50 | 58.4221 | 50 | 57.6030 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 5 20 00 | 5 20 52.5679 | 5 25 00 | 5 25 53.3892 |
| 10 | 5 21 02.5952 | 10 | 5 26 03.4166 |
| 20 | 12.6226 | 20 | 13.4440 |
| 30 | 22.6500 | 30 | 23.4714 |
| 40 | 32.6774 | 40 | 33.4987 |
| 50 | 42.7048 | 50 | 43.5261 |
| 5 21 00 | 52.7321 | 5 26 00 | 53.5535 |
| 10 | 5 22 02.7595 | 10 | 5 27 03.5809 |
| 20 | 12.7869 | 20 | 13.6083 |
| 30 | 22.8143 | 30 | 23.6356 |
| 40 | 32.8416 | 40 | 33.6630 |
| 50 | 42.8690 | 50 | 43.6904 |
| 5 22 00 | 52.8964 | 5 27 00 | 53.7178 |
| 10 | 5 23 02.9238 | 10 | 5 28 03.7452 |
| 20 | 12.9512 | 20 | 13.7725 |
| 30 | 22.9785 | 30 | 23.7999 |
| 40 | 33.0059 | 40 | 33.8273 |
| 50 | 43.0333 | 50 | 43.8547 |
| 5 23 00 | 53.0607 | 5 28 00 | 53.8821 |
| 10 | 5 24 03.0881 | 10 | 5 29 03.9094 |
| 20 | 13.1154 | 20 | 13.9368 |
| 30 | 23.1428 | 30 | 23.9642 |
| 40 | 33.1702 | 40 | 33.9916 |
| 50 | 43.1976 | 50 | 44.0189 |
| 5 24 00 | 53.2250 | 5 29 00 | 54.0463 |
| 10 | 5 25 03.2523 | 10 | 5 30 04.0737 |
| 20 | 13.2797 | 20 | 14.1011 |
| 30 | 23.3071 | 30 | 24.1285 |
| 40 | 33.3345 | 40 | 34.1558 |
| 50 | 43.3618 | 50 | 44.1832 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 5 20 00 | 5 19 07.5757 | 5 25 00 | 5 24 06.7565 |
| 10 | 17.5484 | 10 | 16.7292 |
| 20 | 27.5211 | 20 | 26.7019 |
| 30 | 37.4938 | 30 | 36.6746 |
| 40 | 47.4665 | 40 | 46.6473 |
| 50 | 57.4392 | 50 | 56.6200 |
| 5 21 00 | 5 20 07.4119 | 5 26 00 | 5 25 06.5927 |
| 10 | 17.3845 | 10 | 16.5654 |
| 20 | 27.3572 | 20 | 26.5381 |
| 30 | 37.3299 | 30 | 36.5108 |
| 40 | 47.3026 | 40 | 46.4835 |
| 50 | 57.2753 | 50 | 56.4562 |
| 5 22 00 | 5 21 07.2480 | 5 27 00 | 5 26 06.4289 |
| 10 | 17.2207 | 10 | 16.4016 |
| 20 | 27.1934 | 20 | 26.3743 |
| 30 | 37.1661 | 30 | 36.3470 |
| 40 | 47.1388 | 40 | 46.3197 |
| 50 | 57.1115 | 50 | 56.2924 |
| 5 23 00 | 5 22 07.0842 | 5 28 00 | 5 27 06.2651 |
| 10 | 17.0569 | 10 | 16.2378 |
| 20 | 27.0296 | 20 | 26.2105 |
| 30 | 37.0023 | 30 | 36.1832 |
| 40 | 46.9750 | 40 | 46.1559 |
| 50 | 56.9477 | 50 | 56.1285 |
| 5 24 00 | 5 23 06.9204 | 5 29 00 | 5 28 06.1012 |
| 10 | 16.8931 | 10 | 16.0739 |
| 20 | 26.8658 | 20 | 26.0466 |
| 30 | 36.8385 | 30 | 36.0193 |
| 40 | 46.8112 | 40 | 45.9920 |
| 50 | 56.7839 | 50 | 55.9647 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 5 30 00 | 5 30 54.2106 | 5 35 00 | 5 35 55.0320 |
| 10 | 5 31 04.2380 | 10 | 5 36 05.0594 |
| 20 | 14.2654 | 20 | 15.0867 |
| 30 | 24.2927 | 30 | 25.1141 |
| 40 | 34.3201 | 40 | 35.1415 |
| 50 | 44.3475 | 50 | 45.1689 |
| 5 31 00 | 54.3749 | 5 36 00 | 55.1962 |
| 10 | 5 32 04.4023 | 10 | 5 37 05.2236 |
| 20 | 14.4296 | 20 | 15.2510 |
| 30 | 24.4570 | 30 | 25.2784 |
| 40 | 34.4844 | 40 | 35.3058 |
| 50 | 44.5118 | 50 | 45.3331 |
| 5 32 00 | 54.5391 | 5 37 00 | 55.3605 |
| 10 | 5 33 04.5665 | 10 | 5 38 05.3879 |
| 20 | 14.5939 | 20 | 15.4153 |
| 30 | 24.6213 | 30 | 25.4427 |
| 40 | 34.6487 | 40 | 35.4700 |
| 50 | 44.6760 | 50 | 45.4974 |
| 5 33 00 | 54.7034 | 5 38 00 | 55.5248 |
| 10 | 5 34 04.7308 | 10 | 5 39 05.5522 |
| 20 | 14.7582 | 20 | 15.5796 |
| 30 | 24.7856 | 30 | 25.6069 |
| 40 | 34.8129 | 40 | 35.6343 |
| 50 | 44.8403 | 50 | 45.6617 |
| 5 34 00 | 54.8677 | 5 39 00 | 55.6891 |
| 10 | 5 35 04.8951 | 10 | 5 40 05.7165 |
| 20 | 14.9225 | 20 | 15.7438 |
| 30 | 24.9498 | 30 | 25.7712 |
| 40 | 34.9772 | 40 | 35.7986 |
| 50 | 45.0046 | 50 | 45.8260 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 5 30 00 | 5 29 05.9374 | 5 35 00 | 5 34 05.1183 |
| 10 | 15.9101 | 10 | 15.0910 |
| 20 | 25.8828 | 20 | 25.0637 |
| 30 | 35.8555 | 30 | 35.0364 |
| 40 | 45.8282 | 40 | 45.0091 |
| 50 | 55.8009 | 50 | 54.9818 |
| 5 31 00 | 5 30 05.7736 | 5 36 00 | 5 35 04.9545 |
| 10 | 15.7463 | 10 | 14.9272 |
| 20 | 25.7190 | 20 | 24.8999 |
| 30 | 35.6917 | 30 | 34.8725 |
| 40 | 45.6644 | 40 | 44.8452 |
| 50 | 55.6371 | 50 | 54.8179 |
| 5 32 00 | 5 31 05.6098 | 5 37 00 | 5 36 04.7906 |
| 10 | 15.5825 | 10 | 14.7633 |
| 20 | 25.5552 | 20 | 24.7360 |
| 30 | 35.5279 | 30 | 34.7087 |
| 40 | 45.5005 | 40 | 44.6814 |
| 50 | 55.4732 | 50 | 54.6541 |
| 5 33 00 | 5 32 05.4459 | 5 38 00 | 5 37 04.6268 |
| 10 | 15.4186 | 10 | 14.5995 |
| 20 | 25.3913 | 20 | 24.5722 |
| 30 | 35.3640 | 30 | 34.5449 |
| 40 | 45.3367 | 40 | 44.5176 |
| 50 | 55.3094 | 50 | 54.4903 |
| 5 34 00 | 5 33 05.2821 | 5 39 00 | 5 38 04.4630 |
| 10 | 15.2548 | 10 | 14.4357 |
| 20 | 25.2275 | 20 | 24.4084 |
| 30 | 35.2002 | 30 | 34.3811 |
| 40 | 45.1729 | 40 | 44.3538 |
| 50 | 55.1456 | 50 | 54.3265 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 5 40 00 | 5 40 55.8533 | 5 45 00 | 5 45 56.6747 |
| 10 | 5 41 05.8807 | 10 | 5 46 06.7021 |
| 20 | 15.9081 | 20 | 16.7295 |
| 30 | 25.9355 | 30 | 26.7569 |
| 40 | 35.9629 | 40 | 36.7842 |
| 50 | 45.9902 | 50 | 46.8116 |
| 5 41 00 | 56.0176 | 5 46 00 | 56.8390 |
| 10 | 5 42 06.0450 | 10 | 5 47 06.8664 |
| 20 | 16.0724 | 20 | 16.8938 |
| 30 | 26.0998 | 30 | 26.9211 |
| 40 | 36.1271 | 40 | 36.9485 |
| 50 | 46.1545 | 50 | 46.9759 |
| 5 42 00 | 56.1819 | 5 47 00 | 57.0033 |
| 10 | 5 43 06.2093 | 10 | 5 48 07.0306 |
| 20 | 16.2367 | 20 | 17.0580 |
| 30 | 26.2640 | 30 | 27.0854 |
| 40 | 36.2914 | 40 | 37.1128 |
| 50 | 46.3188 | 50 | 47.1402 |
| 5 43 00 | 56.3462 | 5 48 00 | 57.1675 |
| 10 | 5 44 06.3735 | 10 | 5 49 07.1949 |
| 20 | 16.4009 | 20 | 17.2223 |
| 30 | 26.4283 | 30 | 27.2497 |
| 40 | 36.4557 | 40 | 37.2771 |
| 50 | 46.4831 | 50 | 47.3044 |
| 5 44 00 | 56.5104 | 5 49 00 | 57.3318 |
| 10 | 5 45 06.5378 | 10 | 5 50 07.3592 |
| 20 | 16.5652 | 20 | 17.3866 |
| 30 | 26.5926 | 30 | 27.4140 |
| 40 | 36.6200 | 40 | 37.4413 |
| 50 | 46.6473 | 50 | 47.4687 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 5 40 00 | 5 39 04.2992 | 5 45 00 | 5 44 03.4800 |
| 10 | 14.2719 | 10 | 13.4527 |
| 20 | 24.2445 | 20 | 23.4254 |
| 30 | 34.2172 | 30 | 33.3981 |
| 40 | 44.1899 | 40 | 43.3708 |
| 50 | 54.1626 | 50 | 53.3435 |
| 5 41 00 | 5 40 04.1353 | 5 46 00 | 5 45 03.3162 |
| 10 | 14.1080 | 10 | 13.2889 |
| 20 | 24.0807 | 20 | 23.2616 |
| 30 | 34.0534 | 30 | 33.2343 |
| 40 | 44.0261 | 40 | 43.2070 |
| 50 | 53.9988 | 50 | 53.1797 |
| 5 42 00 | 5 41 03.9715 | 5 47 00 | 5 46 03.1524 |
| 10 | 13.9442 | 10 | 13.1251 |
| 20 | 23.9169 | 20 | 23.0978 |
| 30 | 33.8896 | 30 | 33.0705 |
| 40 | 43.8623 | 40 | 43.0432 |
| 50 | 53.8350 | 50 | 53.0159 |
| 5 43 00 | 5 42 03.8077 | 5 48 00 | 5 47 02.9885 |
| 10 | 13.7804 | 10 | 12.9612 |
| 20 | 23.7531 | 20 | 22.9339 |
| 30 | 33.7258 | 30 | 32.9066 |
| 40 | 43.6985 | 40 | 42.8793 |
| 50 | 53.6712 | 50 | 52.8520 |
| 5 44 00 | 5 43 03.6439 | 5 49 00 | 5 48 02.8247 |
| 10 | 13.6165 | 10 | 12.7974 |
| 20 | 23.5892 | 20 | 22.7701 |
| 30 | 33.5619 | 30 | 32.7428 |
| 40 | 43.5346 | 40 | 42.7155 |
| 50 | 53.5073 | 50 | 52.6882 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 5 50 00 | 5 50 57.4961 | 5 55 00 | 5 55 58.3175 |
| 10 | 5 51 07.5235 | 10 | 5 56 08.3448 |
| 20 | 17.5508 | 20 | 18.3722 |
| 30 | 27.5782 | 30 | 28.3996 |
| 40 | 37.6056 | 40 | 38.4270 |
| 50 | 47.6330 | 50 | 48.4544 |
| 5 51 00 | 57.6604 | 5 56 00 | 58.4817 |
| 10 | 5 52 07.6877 | 10 | 5 57 08.5091 |
| 20 | 17.7151 | 20 | 18.5365 |
| 30 | 27.7425 | 30 | 28.5639 |
| 40 | 37.7699 | 40 | 38.5913 |
| 50 | 47.7973 | 50 | 48.6186 |
| 5 52 00 | 57.8246 | 5 57 00 | 58.6460 |
| 10 | 5 53 07.8520 | 10 | 5 58 08.6734 |
| 20 | 17.8794 | 20 | 18.7008 |
| 30 | 27.9068 | 30 | 28.7282 |
| 40 | 37.9342 | 40 | 38.7555 |
| 50 | 47.9615 | 50 | 48.7829 |
| 5 53 00 | 57.9889 | 5 58 00 | 58.8103 |
| 10 | 5 54 08.0163 | 10 | 5 59 08.8377 |
| 20 | 18.0437 | 20 | 18.8650 |
| 30 | 28.0711 | 30 | 28.8924 |
| 40 | 38.0984 | 40 | 38.9198 |
| 50 | 48.1258 | 50 | 48.9472 |
| 5 54 00 | 58.1532 | 5 59 00 | 58.9746 |
| 10 | 5 55 08.1806 | 10 | 6 00 09.0019 |
| 20 | 18.2079 | 20 | 19.0293 |
| 30 | 28.2353 | 30 | 29.0567 |
| 40 | 38.2627 | 40 | 39.0841 |
| 50 | 48.2901 | 50 | 49.1115 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 5 50 00 | 5 49 02.6609 | 5 55 00 | 5 54 01.8418 |
| 10 | 12.6336 | 10 | 11.8145 |
| 20 | 22.6063 | 20 | 21.7872 |
| 30 | 32.5790 | 30 | 31.7599 |
| 40 | 42.5517 | 40 | 41.7326 |
| 50 | 52.5244 | 50 | 51.7052 |
| 5 51 00 | 5 50 02.4971 | 5 56 00 | 5 55 01.6779 |
| 10 | 12.4698 | 10 | 11.6506 |
| 20 | 22.4425 | 20 | 21.6233 |
| 30 | 32.4152 | 30 | 31.5960 |
| 40 | 42.3879 | 40 | 41.5687 |
| 50 | 52.3605 | 50 | 51.5414 |
| 5 52 00 | 5 51 02.3332 | 5 57 00 | 5 56 01.5141 |
| 10 | 12.3059 | 10 | 11.4868 |
| 20 | 22.2786 | 20 | 21.4595 |
| 30 | 32.2513 | 30 | 31.4322 |
| 40 | 42.2240 | 40 | 41.4049 |
| 50 | 52.1967 | 50 | 51.3776 |
| 5 53 00 | 5 52 02.1694 | 5 58 00 | 5 57 01.3503 |
| 10 | 12.1421 | 10 | 11.3230 |
| 20 | 22.1148 | 20 | 21.2957 |
| 30 | 32.0875 | 30 | 31.2684 |
| 40 | 42.0602 | 40 | 41.2411 |
| 50 | 52.0329 | 50 | 51.2138 |
| 5 54 00 | 5 53 02.0056 | 5 59 00 | 5 58 01.1865 |
| 10 | 11.9783 | 10 | 11.1592 |
| 20 | 21.9510 | 20 | 21.1319 |
| 30 | 31.9237 | 30 | 31.1046 |
| 40 | 41.8964 | 40 | 41.0772 |
| 50 | 51.8691 | 50 | 51.0499 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 6 00 00 | 6 00 59.1388 | 6 05 00 | 6 05 59.9602 |
| 10 | 6 01 09.1662 | 10 | 6 06 09.9876 |
| 20 | 19.1936 | 20 | 20.0150 |
| 30 | 29.2210 | 30 | 30.0423 |
| 40 | 39.2484 | 40 | 40.0697 |
| 50 | 49.2757 | 50 | 50.0971 |
| 6 01 00 | 59.3031 | 6 06 00 | 6 07 00.1245 |
| 10 | 6 02 09.3305 | 10 | 10.1519 |
| 20 | 19.3579 | 20 | 20.1792 |
| 30 | 29.3852 | 30 | 30.2066 |
| 40 | 39.4126 | 40 | 40.2340 |
| 50 | 49.4400 | 50 | 50.2614 |
| 6 02 00 | 59.4674 | 6 07 00 | 6 08 00.2888 |
| 10 | 6 03 09.4948 | 10 | 10.3161 |
| 20 | 19.5221 | 20 | 20.3435 |
| 30 | 29.5495 | 30 | 30.3709 |
| 40 | 39.5769 | 40 | 40.3983 |
| 50 | 49.6043 | 50 | 50.4257 |
| 6 03 00 | 59.6317 | 6 08 00 | 6 09 00.4530 |
| 10 | 6 04 09.6590 | 10 | 10.4804 |
| 20 | 19.6864 | 20 | 20.5078 |
| 30 | 29.7138 | 30 | 30.5352 |
| 40 | 39.7412 | 40 | 40.5625 |
| 50 | 49.7686 | 50 | 50.5899 |
| 6 04 00 | 59.7959 | 6 09 00 | 6 10 00.6173 |
| 10 | 6 05 09.8233 | 10 | 10.6447 |
| 20 | 19.8507 | 20 | 20.6721 |
| 30 | 29.8781 | 30 | 30.6994 |
| 40 | 39.9055 | 40 | 40.7268 |
| 50 | 49.9328 | 50 | 50.7542 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 6 00 00 | 5 59 01.0226 | 6 05 00 | 6 04 00.2035 |
| 10 | 10.9953 | 10 | 10.1762 |
| 20 | 20.9680 | 20 | 20.1489 |
| 30 | 30.9407 | 30 | 30.1216 |
| 40 | 40.9134 | 40 | 40.0943 |
| 50 | 50.8861 | 50 | 50.0670 |
| 6 01 00 | 6 00 00.8588 | 6 06 00 | 6 05 00.0397 |
| 10 | 10.8315 | 10 | 10.0124 |
| 20 | 20.8042 | 20 | 19.9851 |
| 30 | 30.7769 | 30 | 29.9578 |
| 40 | 40.7496 | 40 | 39.9305 |
| 50 | 50.7223 | 50 | 49.9032 |
| 6 02 00 | 6 01 00.6950 | 6 07 00 | 59.8759 |
| 10 | 10.6677 | 10 | 6 06 09.8486 |
| 20 | 20.6404 | 20 | 19.8212 |
| 30 | 30.6131 | 30 | 29.7939 |
| 40 | 40.5858 | 40 | 39.7666 |
| 50 | 50.5585 | 50 | 49.7393 |
| 6 03 00 | 6 02 00.5312 | 6 08 00 | 59.7120 |
| 10 | 10.5039 | 10 | 6 07 09.6847 |
| 20 | 20.4766 | 20 | 19.6574 |
| 30 | 30.4492 | 30 | 29.6301 |
| 40 | 40.4219 | 40 | 39.6028 |
| 50 | 50.3946 | 50 | 49.5755 |
| 6 04 00 | 6 03 00.3673 | 6 09 00 | 59.5482 |
| 10 | 10.3400 | 10 | 6 08 09.5209 |
| 20 | 20.3127 | 20 | 19.4936 |
| 30 | 30.2854 | 30 | 29.4663 |
| 40 | 40.2581 | 40 | 39.4390 |
| 50 | 50.2308 | 50 | 49.4117 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 6 10 00 | 6 11 00.7816 | 6 15 00 | 6 16 01.6030 |
| 10 | 10.8090 | 10 | 11.6303 |
| 20 | 20.8363 | 20 | 21.6577 |
| 30 | 30.8637 | 30 | 31.6851 |
| 40 | 40.8911 | 40 | 41.7125 |
| 50 | 50.9185 | 50 | 51.7399 |
| 6 11 00 | 6 12 00.9459 | 6 16 00 | 6 17 01.7672 |
| 10 | 10.9732 | 10 | 11.7946 |
| 20 | 21.0006 | 20 | 21.8220 |
| 30 | 31.0280 | 30 | 31.8494 |
| 40 | 41.0554 | 40 | 41.8767 |
| 50 | 51.0828 | 50 | 51.9041 |
| 6 12 00 | 6 13 01.1101 | 6 17 00 | 6 18 01.9315 |
| 10 | 11.1375 | 10 | 11.9589 |
| 20 | 21.1649 | 20 | 21.9863 |
| 30 | 31.1923 | 30 | 32.0136 |
| 40 | 41.2196 | 40 | 42.0410 |
| 50 | 51.2470 | 50 | 52.0684 |
| 6 13 00 | 6 14 01.2744 | 6 18 00 | 6 19 02.0958 |
| 10 | 11.3018 | 10 | 12.1232 |
| 20 | 21.3292 | 20 | 22.1505 |
| 30 | 31.3565 | 30 | 32.1779 |
| 40 | 41.3839 | 40 | 42.2053 |
| 50 | 51.4113 | 50 | 52.2327 |
| 6 14 00 | 6 15 01.4387 | 6 19 00 | 6 20 02.2601 |
| 10 | 11.4661 | 10 | 12.2874 |
| 20 | 21.4934 | 20 | 22.3148 |
| 30 | 31.5208 | 30 | 32.3422 |
| 40 | 41.5482 | 40 | 42.3696 |
| 50 | 51.5756 | 50 | 52.3969 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 6 10 00 | 6 08 59.3844 | 6 15 00 | 6 13 58.5652 |
| 10 | 6 09 09.3571 | 10 | 6 14 08.5379 |
| 20 | 19.3298 | 20 | 18.5106 |
| 30 | 29.3025 | 30 | 28.4833 |
| 40 | 39.2752 | 40 | 38.4560 |
| 50 | 49.2479 | 50 | 48.4287 |
| 6 11 00 | 59.2206 | 6 16 00 | 58.4014 |
| 10 | 6 10 09.1932 | 10 | 6 15 08.3741 |
| 20 | 19.1659 | 20 | 18.3468 |
| 30 | 29.1386 | 30 | 28.3195 |
| 40 | 39.1113 | 40 | 38.2922 |
| 50 | 49.0840 | 50 | 48.2649 |
| 6 12 00 | 59.0567 | 6 17 00 | 58.2376 |
| 10 | 6 11 09.0294 | 10 | 6 16 08.2103 |
| 20 | 19.0021 | 20 | 18.1830 |
| 30 | 28.9748 | 30 | 28.1557 |
| 40 | 38.9475 | 40 | 38.1284 |
| 50 | 48.9202 | 50 | 48.1011 |
| 6 13 00 | 58.8929 | 6 18 00 | 58.0738 |
| 10 | 6 12 08.8656 | 10 | 6 17 08.0465 |
| 20 | 18.8383 | 20 | 18.0192 |
| 30 | 28.8110 | 30 | 27.9919 |
| 40 | 38.7837 | 40 | 37.9646 |
| 50 | 48.7564 | 50 | 47.9372 |
| 6 14 00 | 58.7291 | 6 19 00 | 57.9099 |
| 10 | 6 13 08.7018 | 10 | 6 18 07.8826 |
| 20 | 18.6745 | 20 | 17.8553 |
| 30 | 28.6472 | 30 | 27.8280 |
| 40 | 38.6199 | 40 | 37.8007 |
| 50 | 48.5926 | 50 | 47.7734 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 6 20 00 | 6 21 02.4243 | 6 25 00 | 6 26 03.2457 |
| 10 | 12.4517 | 10 | 13.2731 |
| 20 | 22.4791 | 20 | 23.3005 |
| 30 | 32.5065 | 30 | 33.3278 |
| 40 | 42.5338 | 40 | 43.3552 |
| 50 | 52.5612 | 50 | 53.3826 |
| 6 21 00 | 6 22 02.5886 | 6 26 00 | 6 27 03.4100 |
| 10 | 12.6160 | 10 | 13.4374 |
| 20 | 22.6434 | 20 | 23.4647 |
| 30 | 32.6707 | 30 | 33.4921 |
| 40 | 42.6981 | 40 | 43.5195 |
| 50 | 52.7255 | 50 | 53.5469 |
| 6 22 00 | 6 23 02.7529 | 6 27 00 | 6 28 03.5742 |
| 10 | 12.7803 | 10 | 13.6016 |
| 20 | 22.8076 | 20 | 23.6290 |
| 30 | 32.8350 | 30 | 33.6564 |
| 40 | 42.8624 | 40 | 43.6838 |
| 50 | 52.8898 | 50 | 53.7111 |
| 6 23 00 | 6 24 02.9172 | 6 28 00 | 6 29 03.7385 |
| 10 | 12.9445 | 10 | 13.7659 |
| 20 | 22.9719 | 20 | 23.7933 |
| 30 | 32.9993 | 30 | 33.8207 |
| 40 | 43.0267 | 40 | 43.8480 |
| 50 | 53.0540 | 50 | 53.8754 |
| 6 24 00 | 6 25 03.0814 | 6 29 00 | 6 30 03.9028 |
| 10 | 13.1088 | 10 | 13.9302 |
| 20 | 23.1362 | 20 | 23.9576 |
| 30 | 33.1636 | 30 | 33.9849 |
| 40 | 43.1909 | 40 | 44.0123 |
| 50 | 53.2183 | 50 | 54.0397 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 6 20 00 | 6 18 57.7461 | 6 25 00 | 6 23 56.9270 |
| 10 | 6 19 07.7188 | 10 | 6 24 06.8997 |
| 20 | 17.6915 | 20 | 16.8724 |
| 30 | 27.6642 | 30 | 26.8451 |
| 40 | 37.6369 | 40 | 36.8178 |
| 50 | 47.6096 | 50 | 46.7905 |
| 6 21 00 | 57.5823 | 6 26 00 | 56.7632 |
| 10 | 6 20 07.5550 | 10 | 6 25 06.7359 |
| 20 | 17.5277 | 20 | 16.7086 |
| 30 | 27.5004 | 30 | 26.6812 |
| 40 | 37.4731 | 40 | 36.6539 |
| 50 | 47.4458 | 50 | 46.6266 |
| 6 22 00 | 57.4185 | 6 27 00 | 56.5993 |
| 10 | 6 21 07.3912 | 10 | 6 26 06.5720 |
| 20 | 17.3639 | 20 | 16.5447 |
| 30 | 27.3366 | 30 | 26.5174 |
| 40 | 37.3092 | 40 | 36.4901 |
| 50 | 47.2819 | 50 | 46.4628 |
| 6 23 00 | 57.2546 | 6 28 00 | 56.4355 |
| 10 | 6 22 07.2273 | 10 | 6 27 06.4082 |
| 20 | 17.2000 | 20 | 16.3809 |
| 30 | 27.1727 | 30 | 26.3536 |
| 40 | 37.1454 | 40 | 36.3263 |
| 50 | 47.1181 | 50 | 46.2990 |
| 6 24 00 | 57.0908 | 6 29 00 | 56.2717 |
| 10 | 6 23 07.0635 | 10 | 6 28 06.2444 |
| 20 | 17.0362 | 20 | 16.2171 |
| 30 | 27.0089 | 30 | 26.1898 |
| 40 | 36.9816 | 40 | 36.1625 |
| 50 | 46.9543 | 50 | 46.1352 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 6 30 00 | 6 31 04.0671 | 6 35 00 | 6 36 04.8884 |
| 10 | 14.0945 | 10 | 14.9158 |
| 20 | 24.1218 | 20 | 24.9432 |
| 30 | 34.1492 | 30 | 34.9706 |
| 40 | 44.1766 | 40 | 44.9980 |
| 50 | 54.2040 | 50 | 55.0253 |
| 6 31 00 | 6 32 04.2313 | 6 36 00 | 6 37 05.0527 |
| 10 | 14.2587 | 10 | 15.0801 |
| 20 | 24.2861 | 20 | 25.1075 |
| 30 | 34.3135 | 30 | 35.1349 |
| 40 | 44.3409 | 40 | 45.1622 |
| 50 | 54.3682 | 50 | 55.1896 |
| 6 32 00 | 6 33 04.3956 | 6 37 00 | 6 38 05.2170 |
| 10 | 14.4230 | 10 | 15.2444 |
| 20 | 24.4504 | 20 | 25.2718 |
| 30 | 34.4778 | 30 | 35.2991 |
| 40 | 44.5051 | 40 | 45.3265 |
| 50 | 54.5325 | 50 | 55.3539 |
| 6 33 00 | 6 34 04.5599 | 6 38 00 | 6 39 05.3813 |
| 10 | 14.5873 | 10 | 15.4086 |
| 20 | 24.6147 | 20 | 25.4360 |
| 30 | 34.6420 | 30 | 35.4634 |
| 40 | 44.6694 | 40 | 45.4908 |
| 50 | 54.6968 | 50 | 55.5182 |
| 6 34 00 | 6 35 04.7242 | 6 39 00 | 6 40 05.5455 |
| 10 | 14.7516 | 10 | 15.5729 |
| 20 | 24.7789 | 20 | 25.6003 |
| 30 | 34.8063 | 30 | 35.6277 |
| 40 | 44.8337 | 40 | 45.6551 |
| 50 | 54.8611 | 50 | 55.6824 |

| Sidereal. | Solar. | Sidereal. | Solar. |
|-----------|--------------|-----------|--------------|
| 6 30 00 | 6 28 56.1079 | 6 35 00 | 6 33 55.2887 |
| 10 | 6 29 06.0806 | 10 | 6 34 05.2614 |
| 20 | 16.0532 | 20 | 15.2341 |
| 30 | 26.0259 | 30 | 25.2068 |
| 40 | 35.9986 | 40 | 35.1795 |
| 50 | 45.9713 | 50 | 45.1522 |
| 6 31 00 | 55.9440 | 6 36 00 | 55.1249 |
| 10 | 6 30 05.9167 | 10 | 6 35 05.0976 |
| 20 | 15.8894 | 20 | 15.0703 |
| 30 | 25.8621 | 30 | 25.0430 |
| 40 | 35.8348 | 40 | 35.0157 |
| 50 | 45.8075 | 50 | 44.9884 |
| 6 32 00 | 55.7802 | 6 37 00 | 54.9611 |
| 10 | 6 31 05.7529 | 10 | 6 36 04.9338 |
| 20 | 15.7256 | 20 | 14.9065 |
| 30 | 25.6983 | 30 | 24.8792 |
| 40 | 35.6710 | 40 | 34.8519 |
| 50 | 45.6437 | 50 | 44.8246 |
| 6 33 00 | 55.6164 | 6 38 00 | 54.7972 |
| 10 | 6 32 05.5891 | 10 | 6 37 04.7699 |
| 20 | 15.5618 | 20 | 14.7426 |
| 30 | 25.5345 | 30 | 24.7153 |
| 40 | 35.5072 | 40 | 34.6880 |
| 50 | 45.4799 | 50 | 44.6607 |
| 6 34 00 | 55.4526 | 6 39 00 | 54.6334 |
| 10 | 6 33 05.4252 | 10 | 6 38 04.6061 |
| 20 | 15.3979 | 20 | 14.5788 |
| 30 | 25.3706 | 30 | 24.5515 |
| 40 | 35.3433 | 40 | 34.5242 |
| 50 | 45.3160 | 50 | 44.4969 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 6 40 00 | 6 41 05.7098 | 6 45 00 | 6 46 06.5312 |
| 10 | 15.7372 | 10 | 16.5586 |
| 20 | 25.7646 | 20 | 26.5860 |
| 30 | 35.7920 | 30 | 36.6133 |
| 40 | 45.8193 | 40 | 46.6407 |
| 50 | 55.8467 | 50 | 56.6681 |
| 6 41 00 | 6 42 05.8741 | 6 46 00 | 6 47 06.6955 |
| 10 | 15.9015 | 10 | 16.7228 |
| 20 | 25.9289 | 20 | 26.7502 |
| 30 | 35.9562 | 30 | 36.7776 |
| 40 | 45.9836 | 40 | 46.8050 |
| 50 | 56.0110 | 50 | 56.8324 |
| 6 42 00 | 6 43 06.0384 | 6 47 00 | 6 48 06.8597 |
| 10 | 16.0657 | 10 | 16.8871 |
| 20 | 26.0931 | 20 | 26.9145 |
| 30 | 36.1205 | 30 | 36.9419 |
| 40 | 46.1479 | 40 | 46.9693 |
| 50 | 56.1753 | 50 | 56.9966 |
| 6 43 00 | 6 44 06.2026 | 6 48 00 | 6 49 07.0240 |
| 10 | 16.2300 | 10 | 17.0514 |
| 20 | 26.2574 | 20 | 27.0788 |
| 30 | 36.2848 | 30 | 37.1062 |
| 40 | 46.3122 | 40 | 47.1335 |
| 50 | 56.3395 | 50 | 57.1609 |
| 6 44 00 | 6 45 06.3669 | 6 49 00 | 6 50 07.1883 |
| 10 | 16.3943 | 10 | 17.2157 |
| 20 | 26.4217 | 20 | 27.2430 |
| 30 | 36.4491 | 30 | 37.2704 |
| 40 | 46.4764 | 40 | 47.2978 |
| 50 | 56.5038 | 50 | 57.3252 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 6 40 00 | 6 38 54.4696 | 6 45 00 | 6 43 53.6505 |
| 10 | 6 39 04.4423 | 10 | 6 44 03.6232 |
| 20 | 14.4150 | 20 | 13.5959 |
| 30 | 24.3877 | 30 | 23.5686 |
| 40 | 34.3604 | 40 | 33.5412 |
| 50 | 44.3331 | 50 | 43.5139 |
| 6 41 00 | 54.3058 | 6 46 00 | 53.4866 |
| 10 | 6 40 04.2785 | 10 | 6 45 03.4593 |
| 20 | 14.2512 | 20 | 13.4320 |
| 30 | 24.2239 | 30 | 23.4047 |
| 40 | 34.1966 | 40 | 33.3774 |
| 50 | 44.1692 | 50 | 43.3501 |
| 6 42 00 | 54.1419 | 6 47 00 | 53.3228 |
| 10 | 6 41 04.1146 | 10 | 6 46 03.2955 |
| 20 | 14.0873 | 20 | 13.2682 |
| 30 | 24.0600 | 30 | 23.2409 |
| 40 | 34.0327 | 40 | 33.2136 |
| 50 | 44.0054 | 50 | 43.1863 |
| 6 43 00 | 53.9781 | 6 48 00 | 53.1590 |
| 10 | 6 42 03.9508 | 10 | 6 47 03.1317 |
| 20 | 13.9235 | 20 | 13.1044 |
| 30 | 23.8962 | 30 | 23.0771 |
| 40 | 33.8689 | 40 | 33.0498 |
| 50 | 43.8416 | 50 | 43.0225 |
| 6 44 00 | 53.8143 | 6 49 00 | 52.9952 |
| 10 | 6 43 03.7870 | 10 | 6 48 02.9679 |
| 20 | 13.7597 | 20 | 12.9406 |
| 30 | 23.7324 | 30 | 22.9133 |
| 40 | 33.7051 | 40 | 32.8859 |
| 50 | 43.6778 | 50 | 42.8586 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 6 50 00 | 6 51 07.3526 | 6 55 00 | 6 56 08.1739 |
| 10 | 17.3799 | 10 | 18.2013 |
| 20 | 27.4073 | 20 | 28.2287 |
| 30 | 37.4347 | 30 | 38.2561 |
| 40 | 47.4621 | 40 | 48.2835 |
| 50 | 57.4895 | 50 | 58.3108 |
| 6 51 00 | 6 52 07.5168 | 6 56 00 | 6 57 08.3382 |
| 10 | 17.5442 | 10 | 18.3656 |
| 20 | 27.5716 | 20 | 28.3930 |
| 30 | 37.5990 | 30 | 38.4203 |
| 40 | 47.6264 | 40 | 48.4477 |
| 50 | 57.6537 | 50 | 58.4751 |
| 6 52 00 | 6 53 07.6811 | 6 57 00 | 6 58 08.5025 |
| 10 | 17.7085 | 10 | 18.5299 |
| 20 | 27.7359 | 20 | 28.5572 |
| 30 | 37.7633 | 30 | 38.5846 |
| 40 | 47.7906 | 40 | 48.6120 |
| 50 | 57.8180 | 50 | 58.6394 |
| 6 53 00 | 6 54 07.8454 | 6 58 00 | 6 59 08.6668 |
| 10 | 17.8728 | 10 | 18.6941 |
| 20 | 27.9001 | 20 | 28.7215 |
| 30 | 37.9275 | 30 | 38.7489 |
| 40 | 47.9549 | 40 | 48.7763 |
| 50 | 57.9823 | 50 | 58.8037 |
| 6 54 00 | 6 55 08.0097 | 6 59 00 | 7 00 08.8310 |
| 10 | 18.0370 | 10 | 18.8584 |
| 20 | 28.0644 | 20 | 28.8858 |
| 30 | 38.0918 | 30 | 38.9132 |
| 40 | 48.1192 | 40 | 48.9406 |
| 50 | 58.1466 | 50 | 58.9679 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 6 50 00 | 6 48 52.8313 | 6 55 00 | 6 53 52.0122 |
| 10 | 6 49 02.8040 | 10 | 6 54 01.9849 |
| 20 | 12.7767 | 20 | 11.9576 |
| 30 | 22.7494 | 30 | 21.9303 |
| 40 | 32.7221 | 40 | 31.9030 |
| 50 | 42.6948 | 50 | 41.8757 |
| 6 51 00 | 52.6675 | 6 56 00 | 51.8484 |
| 10 | 6 50 02.6402 | 10 | 6 55 01.8211 |
| 20 | 12.6129 | 20 | 11.7938 |
| 30 | 22.5856 | 30 | 21.7665 |
| 40 | 32.5583 | 40 | 31.7392 |
| 50 | 42.5310 | 50 | 41.7119 |
| 6 52 00 | 52.5037 | 6 57 00 | 51.6846 |
| 10 | 6 51 02.4764 | 10 | 6 56 01.6573 |
| 20 | 12.4491 | 20 | 11.6299 |
| 30 | 22.4218 | 30 | 21.6026 |
| 40 | 32.3945 | 40 | 31.5753 |
| 50 | 42.3672 | 50 | 41.5480 |
| 6 53 00 | 52.3399 | 6 58 00 | 51.5207 |
| 10 | 6 52 02.3126 | 10 | 6 57 01.4934 |
| 20 | 12.2853 | 20 | 11.4661 |
| 30 | 22.2579 | 30 | 21.4388 |
| 40 | 32.2306 | 40 | 31.4115 |
| 50 | 42.2033 | 50 | 41.3842 |
| 6 54 00 | 52.1760 | 6 59 00 | 51.3569 |
| 10 | 6 53 02.1487 | 10 | 6 58 01.3296 |
| 20 | 12.1214 | 20 | 11.3023 |
| 30 | 22.0941 | 30 | 21.2750 |
| 40 | 32.0668 | 40 | 31.2477 |
| 50 | 42.0395 | 50 | 41.2204 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 7 00 00 | 7 01 08.9953 | 7 05 00 | 7 06 09.8167 |
| 10 | 19.0227 | 10 | 19.8441 |
| 20 | 29.0501 | 20 | 29.8714 |
| 30 | 39.0774 | 30 | 39.8988 |
| 40 | 49.1048 | 40 | 49.9262 |
| 50 | 59.1322 | 50 | 59.9536 |
| 7 01 00 | 7 02 09.1596 | 7 06 00 | 7 07 09.9810 |
| 10 | 19.1870 | 10 | 20.0083 |
| 20 | 29.2143 | 20 | 30.0357 |
| 30 | 39.2417 | 30 | 40.0631 |
| 40 | 49.2691 | 40 | 50.0905 |
| 50 | 59.2965 | 50 | 7 08 00.1179 |
| 7 02 00 | 7 03 09.3239 | 7 07 00 | 10.1452 |
| 10 | 19.3512 | 10 | 20.1726 |
| 20 | 29.3786 | 20 | 30.2000 |
| 30 | 39.4060 | 30 | 40.2274 |
| 40 | 49.4334 | 40 | 50.2547 |
| 50 | 59.4608 | 50 | 7 09 00.2821 |
| 7 03 00 | 7 04 09.4881 | 7 08 00 | 10.3095 |
| 10 | 19.5155 | 10 | 20.3369 |
| 20 | 29.5429 | 20 | 30.3643 |
| 30 | 39.5703 | 30 | 40.3916 |
| 40 | 49.5977 | 40 | 50.4190 |
| 50 | 59.6250 | 50 | 7 10 00.4464 |
| 7 04 00 | 7 05 09.6524 | 7 09 00 | 10.4738 |
| 10 | 19.6798 | 10 | 20.5012 |
| 20 | 29.7072 | 20 | 30.5285 |
| 30 | 39.7345 | 30 | 40.5559 |
| 40 | 49.7619 | 40 | 50.5833 |
| 50 | 59.7893 | 50 | 7 11 00.6107 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 7 00 00 | 6 58 51.1931 | 7 05 00 | 7 03 50.3739 |
| 10 | 6 59 01.1658 | 10 | 7 04 00.3466 |
| 20 | 11.1385 | 20 | 10.3193 |
| 30 | 21.1112 | 30 | 20.2920 |
| 40 | 31.0839 | 40 | 30.2647 |
| 50 | 41.0566 | 50 | 40.2374 |
| 7 01 00 | 51.0293 | 7 06 00 | 50.2101 |
| 10 | 7 00 01.0019 | 10 | 7 05 00.1828 |
| 20 | 10.9746 | 20 | 10.1555 |
| 30 | 20.9473 | 30 | 20.1282 |
| 40 | 30.9200 | 40 | 30.1009 |
| 50 | 40.8927 | 50 | 40.0736 |
| 7 02 00 | 50.8654 | 7 07 00 | 50.0463 |
| 10 | 7 01 00.8381 | 10 | 7 06 00.0190 |
| 20 | 10.8108 | 20 | 09.9917 |
| 30 | 20.7835 | 30 | 19.9644 |
| 40 | 30.7562 | 40 | 29.9371 |
| 50 | 40.7289 | 50 | 39.9098 |
| 7 03 00 | 50.7016 | 7 08 00 | 49.8825 |
| 10 | 7 02 00.6743 | 10 | 59.8552 |
| 20 | 10.6470 | 20 | 7 07 09.8279 |
| 30 | 20.6197 | 30 | 19.8006 |
| 40 | 30.5924 | 40 | 29.7733 |
| 50 | 40.5651 | 50 | 39.7459 |
| 7 04 00 | 50.5378 | 7 09 00 | 49.7186 |
| 10 | 7 03 00.5105 | 10 | 59.6913 |
| 20 | 10.4832 | 20 | 7 08 09.6640 |
| 30 | 20.4559 | 30 | 19.6367 |
| 40 | 30.4286 | 40 | 29.6094 |
| 50 | 40.4013 | 50 | 39.5821 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 7 10 00 | 7 11 10.6381 | 7 15 00 | 7 16 11.4594 |
| 10 | 20.6654 | 10 | 21.4868 |
| 20 | 30.6928 | 20 | 31.5142 |
| 30 | 40.7202 | 30 | 41.5416 |
| 40 | 50.7476 | 40 | 51.5689 |
| 50 | 7 12 00.7750 | 50 | 7 17 01.5963 |
| 7 11 00 | 10.8023 | 7 16 00 | 11.6237 |
| 10 | 20.8297 | 10 | 21.6511 |
| 20 | 30.8571 | 20 | 31.6785 |
| 30 | 40.8845 | 30 | 41.7058 |
| 40 | 50.9118 | 40 | 51.7332 |
| 50 | 7 13 00.9392 | 50 | 7 18 01.7606 |
| 7 12 00 | 10.9666 | 7 17 00 | 11.7880 |
| 10 | 20.9940 | 10 | 21.8154 |
| 20 | 31.0214 | 20 | 31.8427 |
| 30 | 41.0487 | 30 | 41.8701 |
| 40 | 51.0761 | 40 | 51.8975 |
| 50 | 7 14 01.1035 | 50 | 7 19 01.9249 |
| 7 13 00 | 11.1309 | 7 18 00 | 11.9523 |
| 10 | 21.1583 | 10 | 21.9796 |
| 20 | 31.1856 | 20 | 32.0070 |
| 30 | 41.2130 | 30 | 42.0344 |
| 40 | 51.2404 | 40 | 52.0618 |
| 50 | 7 15 01.2678 | 50 | 7 20 02.0891 |
| 7 14 00 | 11.2952 | 7 19 00 | 12.1165 |
| 10 | 21.3225 | 10 | 22.1439 |
| 20 | 31.3499 | 20 | 32.1713 |
| 30 | 41.3773 | 30 | 42.1987 |
| 40 | 51.4047 | 40 | 52.2260 |
| 50 | 7 16 01.4320 | 50 | 7 21 02.2534 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 7 10 00 | 7 08 49.5548 | 7 15 00 | 7 13 48.7357 |
| 10 | 59.5275 | 10 | 58.7084 |
| 20 | 7 09 09.5002 | 20 | 7 14 08.6811 |
| 30 | 19.4729 | 30 | 18.6538 |
| 40 | 29.4456 | 40 | 28.6265 |
| 50 | 39.4183 | 50 | 38.5992 |
| 7 11 00 | 49.3910 | 7 16 00 | 48.5719 |
| 10 | 59.3637 | 10 | 58.5446 |
| 20 | 7 10 09.3364 | 20 | 7 15 08.5173 |
| 30 | 19.3091 | 30 | 18.4899 |
| 40 | 29.2818 | 40 | 28.4626 |
| 50 | 39.2545 | 50 | 38.4353 |
| 7 12 00 | 49.2272 | 7 17 00 | 48.4080 |
| 10 | 59.1999 | 10 | 58.3807 |
| 20 | 7 11 09.1726 | 20 | 7 16 08.3534 |
| 30 | 19.1453 | 30 | 18.3261 |
| 40 | 29.1179 | 40 | 28.2988 |
| 50 | 39.0906 | 50 | 38.2715 |
| 7 13 00 | 49.0633 | 7 18 00 | 48.2442 |
| 10 | 59.0360 | 10 | 58.2169 |
| 20 | 7 12 09.0087 | 20 | 7 17 08.1896 |
| 30 | 18.9814 | 30 | 18.1623 |
| 40 | 28.9541 | 40 | 28.1350 |
| 50 | 38.9268 | 50 | 38.1077 |
| 7 14 00 | 48.8995 | 7 19 00 | 48.0804 |
| 10 | 58.8722 | 10 | 58.0531 |
| 20 | 7 13 08.8449 | 20 | 7 18 08.0258 |
| 30 | 18.8176 | 30 | 17.9985 |
| 40 | 28.7903 | 40 | 27.9712 |
| 50 | 38.7630 | 50 | 37.9439 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 7 20 00 | 7 21 12.2808 | 7 25 00 | 7 26 13.1022 |
| 10 | 22.3082 | 10 | 23.1296 |
| 20 | 32.3356 | 20 | 33.1569 |
| 30 | 42.3629 | 30 | 43.1843 |
| 40 | 52.3903 | 40 | 53.2117 |
| 50 | 7 22 02.4177 | 50 | 7 27 03.2391 |
| 7 21 00 | 12.4451 | 7 26 00 | 13.2664 |
| 10 | 22.4725 | 10 | 23.2938 |
| 20 | 32.4998 | 20 | 33.3212 |
| 30 | 42.5272 | 30 | 43.3486 |
| 40 | 52.5546 | 40 | 53.3760 |
| 50 | 7 23 02.5820 | 50 | 7 28 03.4033 |
| 7 22 00 | 12.6094 | 7 27 00 | 13.4307 |
| 10 | 22.6367 | 10 | 23.4581 |
| 20 | 32.6641 | 20 | 33.4855 |
| 30 | 42.6915 | 30 | 43.5129 |
| 40 | 52.7189 | 40 | 53.5402 |
| 50 | 7 24 02.7462 | 50 | 7 29 03.5676 |
| 7 23 00 | 12.7736 | 7 28 00 | 13.5950 |
| 10 | 22.8010 | 10 | 23.6224 |
| 20 | 32.8284 | 20 | 33.6498 |
| 30 | 42.8558 | 30 | 43.6771 |
| 40 | 52.8831 | 40 | 53.7045 |
| 50 | 7 25 02.9105 | 50 | 7 30 03.7319 |
| 7 24 00 | 12.9379 | 7 29 00 | 13.7593 |
| 10 | 22.9653 | 10 | 23.7867 |
| 20 | 32.9927 | 20 | 33.8140 |
| 30 | 43.0200 | 30 | 43.8414 |
| 40 | 53.0474 | 40 | 53.8688 |
| 50 | 7 26 03.0748 | 50 | 7 31 03.8962 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 7 20 00 | 7 18 47.9166 | 7 25 00 | 7 23 47.0974 |
| 10 | 57.8893 | 10 | 57.0701 |
| 20 | 7 19 07.8619 | 20 | 7 24 07.0428 |
| 30 | 17.8346 | 30 | 17.0155 |
| 40 | 27.8073 | 40 | 26.9882 |
| 50 | 37.7800 | 50 | 36.9609 |
| 7 21 00 | 47.7527 | 7 26 00 | 46.9336 |
| 10 | 57.7254 | 10 | 56.9063 |
| 20 | 7 20 07.6981 | 20 | 7 25 06.8790 |
| 30 | 17.6708 | 30 | 16.8517 |
| 40 | 27.6435 | 40 | 26.8244 |
| 50 | 37.6162 | 50 | 36.7971 |
| 7 22 00 | 47.5889 | 7 27 00 | 46.7698 |
| 10 | 57.5616 | 10 | 56.7425 |
| 20 | 7 21 07.5343 | 20 | 7 26 06.7152 |
| 30 | 17.5070 | 30 | 16.6879 |
| 40 | 27.4797 | 40 | 26.6606 |
| 50 | 37.4524 | 50 | 36.6333 |
| 7 23 00 | 47.4251 | 7 28 00 | 46.6059 |
| 10 | 57.3978 | 10 | 56.5786 |
| 20 | 7 22 07.3705 | 20 | 7 27 06.5513 |
| 30 | 17.3432 | 30 | 16.5240 |
| 40 | 27.3159 | 40 | 26.4967 |
| 50 | 37.2886 | 50 | 36.4694 |
| 7 24 00 | 47.2613 | 7 29 00 | 46.4421 |
| 10 | 57.2339 | 10 | 56.4148 |
| 20 | 7 23 07.2066 | 20 | 7 28 06.3875 |
| 30 | 17.1793 | 30 | 16.3602 |
| 40 | 27.1520 | 40 | 26.3329 |
| 50 | 37.1247 | 50 | 36.3056 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 7 30 00 | 7 31 13.9235 | 7 35 00 | 7 36 14.7449 |
| 10 | 23.9509 | 10 | 24.7723 |
| 20 | 33.9783 | 20 | 34.7997 |
| 30 | 44.0057 | 30 | 44.8271 |
| 40 | 54.0331 | 40 | 54.8544 |
| 50 | 7 32 04.0604 | 50 | 7 37 04.8818 |
| 7 31 00 | 14.0878 | 7 36 00 | 14.9092 |
| 10 | 24.1152 | 10 | 24.9366 |
| 20 | 34.1426 | 20 | 34.9640 |
| 30 | 44.1700 | 30 | 44.9913 |
| 40 | 54.1973 | 40 | 55.0187 |
| 50 | 7 33 04.2247 | 50 | 7 38 05.0461 |
| 7 32 00 | 14.2521 | 7 37 00 | 15.0735 |
| 10 | 24.2795 | 10 | 25.1008 |
| 20 | 34.3069 | 20 | 35.1282 |
| 30 | 44.3342 | 30 | 45.1556 |
| 40 | 54.3616 | 40 | 55.1830 |
| 50 | 7 34 04.3890 | 50 | 7 39 05.2104 |
| 7 33 00 | 14.4164 | 7 38 00 | 15.2377 |
| 10 | 24.4437 | 10 | 25.2651 |
| 20 | 34.4711 | 20 | 35.2925 |
| 30 | 44.4985 | 30 | 45.3199 |
| 40 | 54.5259 | 40 | 55.3473 |
| 50 | 7 35 04.5533 | 50 | 7 40 05.3746 |
| 7 34 00 | 14.5806 | 7 39 00 | 15.4020 |
| 10 | 24.6080 | 10 | 25.4294 |
| 20 | 34.6354 | 20 | 35.4568 |
| 30 | 44.6628 | 30 | 45.4842 |
| 40 | 54.6902 | 40 | 55.5115 |
| 50 | 7 36 04.7175 | 50 | 7 41 05.5389 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 7 30 00 | 7 28 46.2783 | 7 35 00 | 7 33 45.4592 |
| 10 | 56.2510 | 10 | 55.4319 |
| 20 | 7 29 06.2237 | 20 | 7 34 05.4046 |
| 30 | 16.1964 | 30 | 15.3773 |
| 40 | 26.1691 | 40 | 25.3499 |
| 50 | 36.1418 | 50 | 35.3226 |
| 7 31 00 | 46.1145 | 7 36 00 | 45.2953 |
| 10 | 56.0872 | 10 | 55.2680 |
| 20 | 7 30 06.0599 | 20 | 7 35 05.2407 |
| 30 | 16.0326 | 30 | 15.2134 |
| 40 | 26.0053 | 40 | 25.1861 |
| 50 | 35.9779 | 50 | 35.1588 |
| 7 32 00 | 45.9506 | 7 37 00 | 45.1315 |
| 10 | 55.9233 | 10 | 55.1042 |
| 20 | 7 31 05.8960 | 20 | 7 36 05.0769 |
| 30 | 15.8687 | 30 | 15.0496 |
| 40 | 25.8414 | 40 | 25.0223 |
| 50 | 35.8141 | 50 | 34.9950 |
| 7 33 00 | 45.7868 | 7 38 00 | 44.9677 |
| 10 | 55.7595 | 10 | 54.9404 |
| 20 | 7 32 05.7322 | 20 | 7 37 04.9131 |
| 30 | 15.7049 | 30 | 14.8858 |
| 40 | 25.6776 | 40 | 24.8585 |
| 50 | 35.6503 | 50 | 34.8312 |
| 7 34 00 | 45.6230 | 7 39 00 | 44.8039 |
| 10 | 55.5957 | 10 | 54.7766 |
| 20 | 7 33 05.5684 | 20 | 7 38 04.7493 |
| 30 | 15.5411 | 30 | 14.7219 |
| 40 | 25.5138 | 40 | 24.6946 |
| 50 | 35.4865 | 50 | 34.6673 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 7 40 00 | 7 41 15.5663 | 7 45 00 | 7 46 16.3877 |
| 10 | 25.5937 | 10 | 26.4150 |
| 20 | 35.6211 | 20 | 36.4424 |
| 30 | 45.6484 | 30 | 46.4698 |
| 40 | 55.6758 | 40 | 56.4972 |
| 50 | 7 42 05.7032 | 50 | 7 47 06.5246 |
| 7 41 00 | 15.7306 | 7 46 00 | 16.5519 |
| 10 | 25.7579 | 10 | 26.5793 |
| 20 | 35.7853 | 20 | 36.6067 |
| 30 | 45.8127 | 30 | 46.6341 |
| 40 | 55.8401 | 40 | 56.6615 |
| 50 | 7 43 05.8675 | 50 | 7 48 06.6888 |
| 7 42 00 | 15.8948 | 7 47 00 | 16.7162 |
| 10 | 25.9222 | 10 | 26.7436 |
| 20 | 35.9496 | 20 | 36.7710 |
| 30 | 45.9770 | 30 | 46.7984 |
| 40 | 56.0044 | 40 | 56.8257 |
| 50 | 7 44 06.0317 | 50 | 7 49 06.8531 |
| 7 43 00 | 16.0591 | 7 48 00 | 16.8805 |
| 10 | 26.0865 | 10 | 26.9079 |
| 20 | 36.1139 | 20 | 36.9352 |
| 30 | 46.1413 | 30 | 46.9626 |
| 40 | 56.1686 | 40 | 56.9900 |
| 50 | 7 45 06.1960 | 50 | 7 50 07.0174 |
| 7 44 00 | 16.2234 | 7 49 00 | 17.0448 |
| 10 | 26.2508 | 10 | 27.0721 |
| 20 | 36.2781 | 20 | 37.0995 |
| 30 | 46.3055 | 30 | 47.1269 |
| 40 | 56.3329 | 40 | 57.1543 |
| 50 | 7 46 06.3603 | 50 | 7 51 07.1817 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 7 40 00 | 7 38 44.6400 | 7 45 00 | 7 43 43.8209 |
| 10 | 54.6127 | 10 | 53.7936 |
| 20 | 7 39 04.5854 | 20 | 7 44 03.7663 |
| 30 | 14.5581 | 30 | 13.7390 |
| 40 | 24.5308 | 40 | 23.7117 |
| 50 | 34.5035 | 50 | 33.6844 |
| 7 41 00 | 44.4762 | 7 46 00 | 43.6571 |
| 10 | 54.4489 | 10 | 53.6298 |
| 20 | 7 40 04.4216 | 20 | 7 45 03.6025 |
| 30 | 14.3943 | 30 | 13.5752 |
| 40 | 24.3670 | 40 | 23.5479 |
| 50 | 34.3397 | 50 | 33.5206 |
| 7 42 00 | 44.3124 | 7 47 00 | 43.4933 |
| 10 | 54.2851 | 10 | 53.4660 |
| 20 | 7 41 04.2578 | 20 | 7 46 03.4386 |
| 30 | 14.2305 | 30 | 13.4113 |
| 40 | 24.2032 | 40 | 23.3840 |
| 50 | 34.1759 | 50 | 33.3567 |
| 7 43 00 | 44.1486 | 7 48 00 | 43.3294 |
| 10 | 54.1213 | 10 | 53.3021 |
| 20 | 7 42 04.0940 | 20 | 7 47 03.2748 |
| 30 | 14.0666 | 30 | 13.2475 |
| 40 | 24.0393 | 40 | 23.2202 |
| 50 | 34.0120 | 50 | 33.1929 |
| 7 44 00 | 43.9847 | 7 49 00 | 43.1656 |
| 10 | 53.9574 | 10 | 53.1383 |
| 20 | 7 43 03.9301 | 20 | 7 48 03.1110 |
| 30 | 13.9028 | 30 | 13.0837 |
| 40 | 23.8755 | 40 | 23.0564 |
| 50 | 33.8482 | 50 | 33.0291 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 7 50 00 | 7 51 17.2090 | 7 55 00 | 7 56 18.0304 |
| 10 | 27.2364 | 10 | 28.0578 |
| 20 | 37.2638 | 20 | 38.0852 |
| 30 | 47.2912 | 30 | 48.1125 |
| 40 | 57.3186 | 40 | 58.1399 |
| 50 | 7 52 07.3459 | 50 | 7 57 08.1673 |
| 7 51 00 | 17.3733 | 7 56 00 | 18.1947 |
| 10 | 27.4007 | 10 | 28.2221 |
| 20 | 37.4281 | 20 | 38.2494 |
| 30 | 47.4554 | 30 | 48.2768 |
| 40 | 57.4828 | 40 | 58.3042 |
| 50 | 7 53 07.5102 | 50 | 7 58 08.3316 |
| 7 52 00 | 17.5376 | 7 57 00 | 18.3590 |
| 10 | 27.5650 | 10 | 28.3863 |
| 20 | 37.5923 | 20 | 38.4137 |
| 30 | 47.6197 | 30 | 48.4411 |
| 40 | 57.6471 | 40 | 58.4685 |
| 50 | 7 54 07.6745 | 50 | 7 59 08.4959 |
| 7 53 00 | 17.7019 | 7 58 00 | 18.5232 |
| 10 | 27.7292 | 10 | 28.5506 |
| 20 | 37.7566 | 20 | 38.5780 |
| 30 | 47.7840 | 30 | 48.6054 |
| 40 | 57.8114 | 40 | 58.6328 |
| 50 | 7 55 07.8388 | 50 | 8 00 08.6601 |
| 7 54 00 | 17.8661 | 7 59 00 | 18.6875 |
| 10 | 27.8935 | 10 | 28.7149 |
| 20 | 37.9209 | 20 | 38.7423 |
| 30 | 47.9483 | 30 | 48.7696 |
| 40 | 57.9757 | 40 | 58.7970 |
| 50 | 7 56 08.0030 | 50 | 8 01 08.8244 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 7 50 00 | 7 48 43.0018 | 7 55 00 | 7 53 42.1826 |
| 10 | 52.9745 | 10 | 52.1553 |
| 20 | 7 49 02.9472 | 20 | 7 54 02.1280 |
| 30 | 12.9199 | 30 | 12.1007 |
| 40 | 22.8926 | 40 | 22.0734 |
| 50 | 32.8653 | 50 | 32.0461 |
| 7 51 00 | 42.8380 | 7 56 00 | 42.0188 |
| 10 | 52.8106 | 10 | 51.9915 |
| 20 | 7 50 02.7833 | 20 | 7 55 01.9642 |
| 30 | 12.7560 | 30 | 11.9369 |
| 40 | 22.7287 | 40 | 21.9096 |
| 50 | 32.7014 | 50 | 31.8823 |
| 7 52 00 | 42.6741 | 7 57 00 | 41.8550 |
| 10 | 52.6468 | 10 | 51.8277 |
| 20 | 7 51 02.6195 | 20 | 7 56 01.8004 |
| 30 | 12.5922 | 30 | 11.7731 |
| 40 | 22.5649 | 40 | 21.7458 |
| 50 | 32.5376 | 50 | 31.7185 |
| 7 53 00 | 42.5103 | 7 58 00 | 41.6912 |
| 10 | 52.4830 | 10 | 51.6639 |
| 20 | 7 52 02.4557 | 20 | 7 57 01.6366 |
| 30 | 12.4284 | 30 | 11.6093 |
| 40 | 22.4011 | 40 | 21.5820 |
| 50 | 32.3738 | 50 | 31.5546 |
| 7 54 00 | 42.3465 | 7 59 00 | 41.5273 |
| 10 | 52.3192 | 10 | 51.5000 |
| 20 | 7 53 02.2919 | 20 | 7 58 01.4727 |
| 30 | 12.2646 | 30 | 11.4454 |
| 40 | 22.2373 | 40 | 21.4181 |
| 50 | 32.2100 | 50 | 31.3908 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 8 00 00 | 8 01 18.8518 | 8 05 00 | 8 06 19.6732 |
| 10 | 28.8792 | 10 | 29.7005 |
| 20 | 38.9065 | 20 | 39.7279 |
| 30 | 48.9339 | 30 | 49.7553 |
| 40 | 58.9613 | 40 | 59.7827 |
| 50 | 8 02 08.9887 | 50 | 8 07 09.8101 |
| 8 01 00 | 19.0161 | 8 06 00 | 19.8374 |
| 10 | 29.0434 | 10 | 29.8648 |
| 20 | 39.0708 | 20 | 39.8922 |
| 30 | 49.0982 | 30 | 49.9196 |
| 40 | 59.1256 | 40 | 59.9469 |
| 50 | 8 03 09.1530 | 50 | 8 08 09.9743 |
| 8 02 00 | 19.1803 | 8 07 00 | 20.0017 |
| 10 | 29.2077 | 10 | 30.0291 |
| 20 | 39.2351 | 20 | 40.0565 |
| 30 | 49.2625 | 30 | 50.0838 |
| 40 | 59.2898 | 40 | 8 09 00.1112 |
| 50 | 8 04 09.3172 | 50 | 10.1386 |
| 8 03 00 | 19.3446 | 8 08 00 | 20.1660 |
| 10 | 29.3720 | 10 | 30.1934 |
| 20 | 39.3994 | 20 | 40.2207 |
| 30 | 49.4267 | 30 | 50.2481 |
| 40 | 59.4541 | 40 | 8 10 00.2755 |
| 50 | 8 05 09.4815 | 50 | 10.3029 |
| 8 04 00 | 19.5089 | 8 09 00 | 20.3303 |
| 10 | 29.5363 | 10 | 30.3576 |
| 20 | 39.5636 | 20 | 40.3850 |
| 30 | 49.5910 | 30 | 50.4124 |
| 40 | 59.6184 | 40 | 8 11 00.4398 |
| 50 | 8 06 09.6458 | 50 | 10.4671 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 8 00 00 | 7 58 41.3635 | 8 05 00 | 8 03 40.5444 |
| 10 | 51.3362 | 10 | 50.5171 |
| 20 | 7 59 01.3089 | 20 | 8 04 00.4898 |
| 30 | 11.2816 | 30 | 10.4625 |
| 40 | 21.2543 | 40 | 20.4352 |
| 50 | 31.2270 | 50 | 30.4079 |
| 8 01 00 | 41.1997 | 8 06 00 | 40.3806 |
| 10 | 51.1724 | 10 | 50.3533 |
| 20 | 8 00 01.1451 | 20 | 8 05 00.3260 |
| 30 | 11.1178 | 30 | 10.2986 |
| 40 | 21.0905 | 40 | 20.2713 |
| 50 | 31.0632 | 50 | 30.2440 |
| 8 02 00 | 41.0359 | 8 07 00 | 40.2167 |
| 10 | 51.0086 | 10 | 50.1894 |
| 20 | 8 01 00.9813 | 20 | 8 06 00.1621 |
| 30 | 10.9540 | 30 | 10.1348 |
| 40 | 20.9266 | 40 | 20.1075 |
| 50 | 30.8993 | 50 | 30.0802 |
| 8 03 00 | 40.8720 | 8 08 00 | 40.0529 |
| 10 | 50.8447 | 10 | 50.0256 |
| 20 | 8 02 00.8174 | 20 | 59.9983 |
| 30 | 10.7901 | 30 | 8 07 09.9710 |
| 40 | 20.7628 | 40 | 19.9437 |
| 50 | 30.7355 | 50 | 29.9164 |
| 8 04 00 | 40.7082 | 8 09 00 | 39.8891 |
| 10 | 50.6809 | 10 | 49.8618 |
| 20 | 8 03 00.6536 | 20 | 59.8345 |
| 30 | 10.6263 | 30 | 8 08 09.8072 |
| 40 | 20.5990 | 40 | 19.7799 |
| 50 | 30.5717 | 50 | 29.7526 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 8 10 00 | 8 11 20.4945 | 8 15 00 | 8 16 21.3159 |
| 10 | 30.5219 | 10 | 31.3433 |
| 20 | 40.5493 | 20 | 41.3707 |
| 30 | 50.5767 | 30 | 51.3980 |
| 40 | 8 12 00.6040 | 40 | 8 17 01.4254 |
| 50 | 10.6314 | 50 | 11.4528 |
| 8 11 00 | 20.6588 | 8 16 00 | 21.4802 |
| 10 | 30.6862 | 10 | 31.5076 |
| 20 | 40.7136 | 20 | 41.5349 |
| 30 | 50.7409 | 30 | 51.5623 |
| 40 | 8 13 00.7683 | 40 | 8 18 01.5897 |
| 50 | 10.7957 | 50 | 11.6171 |
| 8 12 00 | 20.8231 | 8 17 00 | 21.6445 |
| 10 | 30.8505 | 10 | 31.6718 |
| 20 | 40.8778 | 20 | 41.6992 |
| 30 | 50.9052 | 30 | 51.7266 |
| 40 | 8 14 00.9326 | 40 | 8 19 01.7540 |
| 50 | 10.9600 | 50 | 11.7813 |
| 8 13 00 | 20.9874 | 8 18 00 | 21.8087 |
| 10 | 31.0147 | 10 | 31.8361 |
| 20 | 41.0421 | 20 | 41.8635 |
| 30 | 51.0695 | 30 | 51.8909 |
| 40 | 8 15 01.0969 | 40 | 8 20 01.9182 |
| 50 | 11.1242 | 50 | 11.9456 |
| 8 14 00 | 21.1516 | 8 19 00 | 21.9730 |
| 10 | 31.1790 | 10 | 32.0004 |
| 20 | 41.2064 | 20 | 42.0278 |
| 30 | 51.2338 | 30 | 52.0551 |
| 40 | 8 16 01.2611 | 40 | 8 21 02.0825 |
| 50 | 11.2885 | 50 | 12.1099 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 8 10 00 | 8 08 39.7253 | 8 15 00 | 8 13 38.9061 |
| 10 | 49.6980 | 10 | 48.8788 |
| 20 | 59.6706 | 20 | 58.8515 |
| 30 | 8 09 09.6433 | 30 | 8 14 08.8242 |
| 40 | 19.6160 | 40 | 18.7969 |
| 50 | 29.5887 | 50 | 28.7696 |
| 8 11 00 | 39.5614 | 8 16 00 | 38.7423 |
| 10 | 49.5341 | 10 | 48.7150 |
| 20 | 59.5068 | 20 | 58.6877 |
| 30 | 8 10 09.4795 | 30 | 8 15 08.6604 |
| 40 | 19.4522 | 40 | 18.6331 |
| 50 | 29.4249 | 50 | 28.6058 |
| 8 12 00 | 39.3976 | 8 17 00 | 38.5785 |
| 10 | 49.3703 | 10 | 48.5512 |
| 20 | 59.3430 | 20 | 58.5239 |
| 30 | 8 11 09.3157 | 30 | 8 16 08.4966 |
| 40 | 19.2884 | 40 | 18.4693 |
| 50 | 29.2611 | 50 | 28.4420 |
| 8 13 00 | 39.2338 | 8 18 00 | 38.4146 |
| 10 | 49.2065 | 10 | 48.3873 |
| 20 | 59.1792 | 20 | 58.3600 |
| 30 | 8 12 09.1519 | 30 | 8 17 08.3327 |
| 40 | 19.1246 | 40 | 18.3054 |
| 50 | 29.0973 | 50 | 28.2781 |
| 8 14 00 | 39.0700 | 8 19 00 | 38.2508 |
| 10 | 49.0426 | 10 | 48.2235 |
| 20 | 59.0153 | 20 | 58.1962 |
| 30 | 8 13 08.9880 | 30 | 8 18 08.1689 |
| 40 | 18.9607 | 40 | 18.1416 |
| 50 | 28.9334 | 50 | 28.1143 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 8 20 00 | 8 21 22.1373 | 8 25 00 | 8 26 22.9586 |
| 10 | 32.1647 | 10 | 32.9860 |
| 20 | 42.1920 | 20 | 43.0134 |
| 30 | 52.2194 | 30 | 53.0408 |
| 40 | 8 22 02.2468 | 40 | 8 27 03.0682 |
| 50 | 12.2742 | 50 | 13.0955 |
| 8 21 00 | 22.3015 | 8 26 00 | 23.1229 |
| 10 | 32.3289 | 10 | 33.1503 |
| 20 | 42.3563 | 20 | 43.1777 |
| 30 | 52.3837 | 30 | 53.2051 |
| 40 | 8 23 02.4111 | 40 | 8 28 03.2324 |
| 50 | 12.4384 | 50 | 13.2598 |
| 8 22 00 | 22.4658 | 8 27 00 | 23.2872 |
| 10 | 32.4932 | 10 | 33.3146 |
| 20 | 42.5206 | 20 | 43.3420 |
| 30 | 52.5480 | 30 | 53.3693 |
| 40 | 8 24 02.5753 | 40 | 8 29 03.3967 |
| 50 | 12.6027 | 50 | 13.4241 |
| 8 23 00 | 22.6301 | 8 28 00 | 23.4515 |
| 10 | 32.6575 | 10 | 33.4788 |
| 20 | 42.6849 | 20 | 43.5062 |
| 30 | 52.7122 | 30 | 53.5336 |
| 40 | 8 25 02.7396 | 40 | 8 30 03.5610 |
| 50 | 12.7670 | 50 | 13.5884 |
| 8 24 00 | 22.7944 | 8 29 00 | 23.6157 |
| 10 | 32.8218 | 10 | 33.6431 |
| 20 | 42.8491 | 20 | 43.6705 |
| 30 | 52.8765 | 30 | 53.6979 |
| 40 | 8 26 02.9039 | 40 | 8 31 03.7253 |
| 50 | 12.9313 | 50 | 13.7526 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 8 20 00 | 8 18 38.0870 | 8 25 00 | 8 23 37.2679 |
| 10 | 48.0597 | 10 | 47.2406 |
| 20 | 58.0324 | 20 | 57.2133 |
| 30 | 8 19 08.0051 | 30 | 8 24 07.1860 |
| 40 | 17.9778 | 40 | 17.1586 |
| 50 | 27.9505 | 50 | 27.1313 |
| 8 21 00 | 37.9232 | 8 26 00 | 37.1040 |
| 10 | 47.8959 | 10 | 47.0767 |
| 20 | 57.8686 | 20 | 57.0494 |
| 30 | 8 20 07.8413 | 30 | 8 25 07.0221 |
| 40 | 17.8140 | 40 | 16.9948 |
| 50 | 27.7866 | 50 | 26.9675 |
| 8 22 00 | 37.7593 | 8 27 00 | 36.9402 |
| 10 | 47.7320 | 10 | 46.9129 |
| 20 | 57.7047 | 20 | 56.8856 |
| 30 | 8 21 07.6774 | 30 | 8 26 06.8583 |
| 40 | 17.6501 | 40 | 16.8310 |
| 50 | 27.6228 | 50 | 26.8037 |
| 8 23 00 | 37.5955 | 8 28 00 | 36.7764 |
| 10 | 47.5682 | 10 | 46.7491 |
| 20 | 57.5409 | 20 | 56.7218 |
| 30 | 8 22 07.5136 | 30 | 8 27 06.6945 |
| 40 | 17.4863 | 40 | 16.6672 |
| 50 | 27.4590 | 50 | 26.6399 |
| 8 24 00 | 37.4317 | 8 29 00 | 36.6126 |
| 10 | 47.4044 | 10 | 46.5853 |
| 20 | 57.3771 | 20 | 56.5580 |
| 30 | 8 23 07.3498 | 30 | 8 28 06.5306 |
| 40 | 17.3225 | 40 | 16.5033 |
| 50 | 27.2952 | 50 | 26.4760 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 8 30 00 | 8 31 23.7800 | 8 35 00 | 8 36 24.6014 |
| 10 | 33.8074 | 10 | 34.6288 |
| 20 | 43.8348 | 20 | 44.6562 |
| 30 | 53.8622 | 30 | 54.6835 |
| 40 | 8 32 03.8895 | 40 | 8 37 04.7109 |
| 50 | 13.9169 | 50 | 14.7383 |
| 8 31 00 | 23.9443 | 8 36 00 | 24.7657 |
| 10 | 33.9717 | 10 | 34.7930 |
| 20 | 43.9991 | 20 | 44.8204 |
| 30 | 54.0264 | 30 | 54.8478 |
| 40 | 8 33 04.0538 | 40 | 8 38 04.8752 |
| 50 | 14.0812 | 50 | 14.9026 |
| 8 32 00 | 24.1086 | 8 37 00 | 24.9299 |
| 10 | 34.1359 | 10 | 34.9573 |
| 20 | 44.1633 | 20 | 44.9847 |
| 30 | 54.1907 | 30 | 55.0121 |
| 40 | 8 34 04.2181 | 40 | 8 39 05.0395 |
| 50 | 14.2455 | 50 | 15.0668 |
| 8 33 00 | 24.2728 | 8 38 00 | 25.0942 |
| 10 | 34.3002 | 10 | 35.1216 |
| 20 | 44.3276 | 20 | 45.1490 |
| 30 | 54.3550 | 30 | 55.1764 |
| 40 | 8 35 04.3824 | 40 | 8 40 05.2037 |
| 50 | 14.4097 | 50 | 15.2311 |
| 8 34 00 | 24.4371 | 8 39 00 | 25.2585 |
| 10 | 34.4645 | 10 | 35.2859 |
| 20 | 44.4919 | 20 | 45.3132 |
| 30 | 54.5193 | 30 | 55.3406 |
| 40 | 8 36 04.5466 | 40 | 8 41 05.3680 |
| 50 | 14.5740 | 50 | 15.3954 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 8 30 00 | 8 28 36.4487 | 8 35 00 | 8 33 35.6296 |
| 10 | 46.4214 | 10 | 45.6023 |
| 20 | 56.3941 | 20 | 55.5750 |
| 30 | 8 29 06.3668 | 30 | 8 34 05.5477 |
| 40 | 16.3395 | 40 | 15.5204 |
| 50 | 26.3122 | 50 | 25.4931 |
| 8 31 00 | 36.2849 | 8 36 00 | 35.4658 |
| 10 | 46.2576 | 10 | 45.4385 |
| 20 | 56.2303 | 20 | 55.4112 |
| 30 | 8 30 06.2030 | 30 | 8 35 05.3839 |
| 40 | 16.1757 | 40 | 15.3566 |
| 50 | 26.1484 | 50 | 25.3293 |
| 8 32 00 | 36.1211 | 8 37 00 | 35.3020 |
| 10 | 46.0938 | 10 | 45.2747 |
| 20 | 56.0665 | 20 | 55.2473 |
| 30 | 8 31 06.0392 | 30 | 8 36 05.2200 |
| 40 | 16.0119 | 40 | 15.1927 |
| 50 | 25.9846 | 50 | 25.1654 |
| 8 33 00 | 35.9573 | 8 38 00 | 35.1381 |
| 10 | 45.9300 | 10 | 45.1108 |
| 20 | 55.9026 | 20 | 55.0835 |
| 30 | 8 32 05.8753 | 30 | 8 37 05.0562 |
| 40 | 15.8480 | 40 | 15.0289 |
| 50 | 25.8207 | 50 | 25.0016 |
| 8 34 00 | 35.7934 | 8 39 00 | 34.9743 |
| 10 | 45.7661 | 10 | 44.9470 |
| 20 | 55.7388 | 20 | 54.9197 |
| 30 | 8 33 05.7115 | 30 | 8 38 04.8924 |
| 40 | 15.6842 | 40 | 14.8651 |
| 50 | 25.6569 | 50 | 24.8378 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 8 40 00 | 8 41 25.4228 | 8 45 00 | 8 46 26.2441 |
| 10 | 35.4501 | 10 | 36.2715 |
| 20 | 45.4775 | 20 | 46.2989 |
| 30 | 55.5049 | 30 | 56.3263 |
| 40 | 8 42 05.5323 | 40 | 8 47 06.3537 |
| 50 | 15.5597 | 50 | 16.3810 |
| 8 41 00 | 25.5870 | 8 46 00 | 26.4084 |
| 10 | 35.6144 | 10 | 36.4358 |
| 20 | 45.6418 | 20 | 46.4632 |
| 30 | 55.6692 | 30 | 56.4905 |
| 40 | 8 43 05.6966 | 40 | 8 48 06.5179 |
| 50 | 15.7239 | 50 | 16.5453 |
| 8 42 00 | 25.7513 | 8 47 00 | 26.5727 |
| 10 | 35.7787 | 10 | 36.6001 |
| 20 | 45.8061 | 20 | 46.6274 |
| 30 | 55.8335 | 30 | 56.6548 |
| 40 | 8 44 05.8608 | 40 | 8 49 06.6822 |
| 50 | 15.8882 | 50 | 16.7096 |
| 8 43 00 | 25.9156 | 8 48 00 | 26.7370 |
| 10 | 35.9430 | 10 | 36.7643 |
| 20 | 45.9703 | 20 | 46.7917 |
| 30 | 55.9977 | 30 | 56.8191 |
| 40 | 8 45 06.0251 | 40 | 8 50 06.8465 |
| 50 | 16.0525 | 50 | 16.8739 |
| 8 44 00 | 26.0799 | 8 49 00 | 26.9012 |
| 10 | 36.1072 | 10 | 36.9286 |
| 20 | 46.1346 | 20 | 46.9560 |
| 30 | 56.1620 | 30 | 56.9834 |
| 40 | 8 46 06.1894 | 40 | 8 51 07.0108 |
| 50 | 16.2168 | 50 | 17.0381 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 8 40 00 | 8 38 34.8105 | 8 45 00 | 8 43 33.9913 |
| 10 | 44.7832 | 10 | 43.9640 |
| 20 | 54.7559 | 20 | 53.9367 |
| 30 | 8 39 04.7286 | 30 | 8 44 03.9094 |
| 40 | 14.7013 | 40 | 13.8821 |
| 50 | 24.6740 | 50 | 23.8548 |
| 8 41 00 | 34.6467 | 8 46 00 | 33.8275 |
| 10 | 44.6193 | 10 | 43.8002 |
| 20 | 54.5920 | 20 | 53.7729 |
| 30 | 8 40 04.5647 | 30 | 8 45 03.7456 |
| 40 | 14.5374 | 40 | 13.7183 |
| 50 | 24.5101 | 50 | 23.6910 |
| 8 42 00 | 34.4828 | 8 47 00 | 33.6637 |
| 10 | 44.4555 | 10 | 43.6364 |
| 20 | 54.4282 | 20 | 53.6091 |
| 30 | 8 41 04.4009 | 30 | 8 46 03.5818 |
| 40 | 14.3736 | 40 | 13.5545 |
| 50 | 24.3463 | 50 | 23.5272 |
| 8 43 00 | 34.3190 | 8 48 00 | 33.4999 |
| 10 | 44.2917 | 10 | 43.4726 |
| 20 | 54.2644 | 20 | 53.4453 |
| 30 | 8 42 04.2371 | 30 | 8 47 03.4180 |
| 40 | 14.2098 | 40 | 13.3907 |
| 50 | 24.1825 | 50 | 23.3633 |
| 8 44 00 | 34.1552 | 8 49 00 | 33.3360 |
| 10 | 44.1279 | 10 | 43.3087 |
| 20 | 54.1006 | 20 | 53.2814 |
| 30 | 8 43 04.0733 | 30 | 8 48 03.2541 |
| 40 | 14.0460 | 40 | 13.2268 |
| 50 | 24.0187 | 50 | 23.1995 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 8 50 00 | 8 51 27.0655 | 8 55 00 | 8 56 27.8869 |
| 10 | 37.0929 | 10 | 37.9143 |
| 20 | 47.1203 | 20 | 47.9416 |
| 30 | 57.1476 | 30 | 57.9690 |
| 40 | 8 52 07.1750 | 40 | 8 57 07.9964 |
| 50 | 17.2024 | 50 | 18.0238 |
| 8 51 00 | 27.2298 | 8 56 00 | 28.0512 |
| 10 | 37.2572 | 10 | 38.0785 |
| 20 | 47.2845 | 20 | 48.1059 |
| 30 | 57.3119 | 30 | 58.1333 |
| 40 | 8 53 07.3393 | 40 | 8 58 08.1607 |
| 50 | 17.3667 | 50 | 18.1881 |
| 8 52 00 | 27.3941 | 8 57 00 | 28.2154 |
| 10 | 37.4214 | 10 | 38.2428 |
| 20 | 47.4488 | 20 | 48.2702 |
| 30 | 57.4762 | 30 | 58.2976 |
| 40 | 8 54 07.5036 | 40 | 8 59 08.3249 |
| 50 | 17.5310 | 50 | 18.3523 |
| 8 53 00 | 27.5583 | 8 58 00 | 28.3797 |
| 10 | 37.5857 | 10 | 38.4071 |
| 20 | 47.6131 | 20 | 48.4345 |
| 30 | 57.6405 | 30 | 58.4618 |
| 40 | 8 55 07.6679 | 40 | 9 00 08.4892 |
| 50 | 17.6952 | 50 | 18.5166 |
| 8 54 00 | 27.7226 | 8 59 00 | 28.5440 |
| 10 | 37.7500 | 10 | 38.5714 |
| 20 | 47.7774 | 20 | 48.5987 |
| 30 | 57.8047 | 30 | 58.6261 |
| 40 | 8 56 07.8321 | 40 | 9 01 08.6535 |
| 50 | 17.8595 | 50 | 18.6809 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 8 50 00 | 8 48 33.1722 | 8 55 00 | 8 53 32.3531 |
| 10 | 43.1449 | 10 | 42.3258 |
| 20 | 53.1176 | 20 | 52.2985 |
| 30 | 8 49 03.0903 | 30 | 8 54 02.2712 |
| 40 | 13.0630 | 40 | 12.2439 |
| 50 | 23.0357 | 50 | 22.2166 |
| 8 51 00 | 33.0084 | 8 56 00 | 32.1893 |
| 10 | 42.9811 | 10 | 42.1620 |
| 20 | 52.9538 | 20 | 52.1347 |
| 30 | 8 50 02.9265 | 30 | 8 55 02.1073 |
| 40 | 12.8992 | 40 | 12.0800 |
| 50 | 22.8719 | 50 | 22.0527 |
| 8 52 00 | 32.8446 | 8 57 00 | 32.0254 |
| 10 | 42.8173 | 10 | 41.9981 |
| 20 | 52.7900 | 20 | 51.9708 |
| 30 | 8 51 02.7627 | 30 | 8 56 01.9435 |
| 40 | 12.7353 | 40 | 11.9162 |
| 50 | 22.7080 | 50 | 21.8889 |
| 8 53 00 | 32.6807 | 8 58 00 | 31.8616 |
| 10 | 42.6534 | 10 | 41.8343 |
| 20 | 52.6261 | 20 | 51.8070 |
| 30 | 8 52 02.5988 | 30 | 8 57 01.7797 |
| 40 | 12.5715 | 40 | 11.7524 |
| 50 | 22.5442 | 50 | 21.7251 |
| 8 54 00 | 32.5169 | 8 59 00 | 31.6978 |
| 10 | 42.4896 | 10 | 41.6705 |
| 20 | 52.4623 | 20 | 51.6432 |
| 30 | 8 53 02.4350 | 30 | 8 58 01.6159 |
| 40 | 12.4077 | 40 | 11.5886 |
| 50 | 22.3804 | 50 | 21.5613 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 9 00 00 | 9 01 28.7083 | 9 05 00 | 9 06 29.5296 |
| 10 | 38.7356 | 10 | 39.5570 |
| 20 | 48.7630 | 20 | 49.5844 |
| 30 | 58.7904 | 30 | 59.6118 |
| 40 | 9 02 08.8178 | 40 | 9 07 09.6391 |
| 50 | 18.8452 | 50 | 19.6665 |
| 9 01 00 | 28.8725 | 9 06 00 | 29.6939 |
| 10 | 38.8999 | 10 | 39.7213 |
| 20 | 48.9273 | 20 | 49.7487 |
| 30 | 58.9547 | 30 | 59.7760 |
| 40 | 9 03 08.9820 | 40 | 9 08 09.8034 |
| 50 | 19.0094 | 50 | 19.8308 |
| 9 02 00 | 29.0368 | 9 07 00 | 29.8582 |
| 10 | 39.0642 | 10 | 39.8856 |
| 20 | 49.0916 | 20 | 49.9129 |
| 30 | 59.1189 | 30 | 59.9403 |
| 40 | 9 04 09.1463 | 40 | 9 09 09.9677 |
| 50 | 19.1737 | 50 | 19.9951 |
| 9 03 00 | 29.2011 | 9 08 00 | 30.0225 |
| 10 | 39.2285 | 10 | 40.0498 |
| 20 | 49.2558 | 20 | 50.0772 |
| 30 | 59.2832 | 30 | 9 10 00.1046 |
| 40 | 9 05 09.3106 | 40 | 10.1320 |
| 50 | 19.3380 | 50 | 20.1593 |
| 9 04 00 | 29.3654 | 9 09 00 | 30.1867 |
| 10 | 39.3927 | 10 | 40.2141 |
| 20 | 49.4201 | 20 | 50.2415 |
| 30 | 59.4475 | 30 | 9 11 00.2689 |
| 40 | 9 06 09.4749 | 40 | 10.2962 |
| 50 | 19.5022 | 50 | 20.3236 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 9 00 00 | 8 58 31.5340 | 9 05 00 | 9 03 30.7148 |
| 10 | 41.5067 | 10 | 40.6875 |
| 20 | 51.4793 | 20 | 50.6602 |
| 30 | 8 59 01.4520 | 30 | 9 04 00.6329 |
| 40 | 11.4247 | 40 | 10.6056 |
| 50 | 21.3974 | 50 | 20.5783 |
| 9 01 00 | 31.3701 | 9 06 00 | 30.5510 |
| 10 | 41.3428 | 10 | 40.5237 |
| 20 | 51.3155 | 20 | 50.4964 |
| 30 | 9 00 01.2882 | 30 | 9 05 00.4691 |
| 40 | 11.2609 | 40 | 10.4418 |
| 50 | 21.2336 | 50 | 20.4145 |
| 9 02 00 | 31.2063 | 9 07 00 | 30.3872 |
| 10 | 41.1790 | 10 | 40.3599 |
| 20 | 51.1517 | 20 | 50.3326 |
| 30 | 9 01 01.1244 | 30 | 9 06 00.3053 |
| 40 | 11.0971 | 40 | 10.2780 |
| 50 | 21.0698 | 50 | 20.2507 |
| 9 03 00 | 31.0425 | 9 08 00 | 30.2233 |
| 10 | 41.0152 | 10 | 40.1960 |
| 20 | 50.9879 | 20 | 50.1687 |
| 30 | 9 02 00.9606 | 30 | 9 07 00.1414 |
| 40 | 10.9333 | 40 | 10.1141 |
| 50 | 20.9060 | 50 | 20.0868 |
| 9 04 00 | 30.8787 | 9 09 00 | 30.0595 |
| 10 | 40.8513 | 10 | 40.0322 |
| 20 | 50.8240 | 20 | 50.0049 |
| 30 | 9 03 00.7967 | 30 | 59.9776 |
| 40 | 10.7694 | 40 | 9 08 09.9503 |
| 50 | 20.7421 | 50 | 19.9230 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 9 10 00 | 9 11 30.3510 | 9 15 00 | 9 16 31.1724 |
| 10 | 40.3784 | 10 | 41.1998 |
| 20 | 50.4058 | 20 | 51.2271 |
| 30 | 9 12 00.4331 | 30 | 9 17 01.2545 |
| 40 | 10.4605 | 40 | 11.2819 |
| 50 | 20.4879 | 50 | 21.3093 |
| 9 11 00 | 30.5153 | 9 16 00 | 31.3366 |
| 10 | 40.5427 | 10 | 41.3640 |
| 20 | 50.5700 | 20 | 51.3914 |
| 30 | 9 13 00.5974 | 30 | 9 18 01.4188 |
| 40 | 10.6248 | 40 | 11.4462 |
| 50 | 20.6522 | 50 | 21.4735 |
| 9 12 00 | 30.6796 | 9 17 00 | 31.5009 |
| 10 | 40.7069 | 10 | 41.5283 |
| 20 | 50.7343 | 20 | 51.5557 |
| 30 | 9 14 00.7617 | 30 | 9 19 01.5831 |
| 40 | 10.7891 | 40 | 11.6104 |
| 50 | 20.8164 | 50 | 21.6378 |
| 9 13 00 | 30.8438 | 9 18 00 | 31.6652 |
| 10 | 40.8712 | 10 | 41.6926 |
| 20 | 50.8986 | 20 | 51.7200 |
| 30 | 9 15 00.9260 | 30 | 9 20 01.7473 |
| 40 | 10.9533 | 40 | 11.7747 |
| 50 | 20.9807 | 50 | 21.8021 |
| 9 14 00 | 31.0081 | 9 19 00 | 31.8295 |
| 10 | 41.0355 | 10 | 41.8569 |
| 20 | 51.0629 | 20 | 51.8842 |
| 30 | 9 16 01.0902 | 30 | 9 21 01.9116 |
| 40 | 11.1176 | 40 | 11.9390 |
| 50 | 21.1450 | 50 | 21.9664 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 9 10 00 | 9 08 29.8957 | 9 15 00 | 9 13 29.0766 |
| 10 | 39.8684 | 10 | 39.0493 |
| 20 | 49.8411 | 20 | 49.0220 |
| 30 | 59.8138 | 30 | 58.9947 |
| 40 | 9 09 09.7865 | 40 | 9 14 08.9673 |
| 50 | 19.7592 | 50 | 18.9400 |
| 9 11 00 | 29.7319 | 9 16 00 | 28.9127 |
| 10 | 39.7046 | 10 | 38.8854 |
| 20 | 49.6773 | 20 | 48.8581 |
| 30 | 59.6500 | 30 | 58.8308 |
| 40 | 9 10 09.6227 | 40 | 9 15 08.8035 |
| 50 | 19.5953 | 50 | 18.7762 |
| 9 12 00 | 29.5680 | 9 17 00 | 28.7489 |
| 10 | 39.5407 | 10 | 38.7216 |
| 20 | 49.5134 | 20 | 48.6943 |
| 30 | 59.4861 | 30 | 58.6670 |
| 40 | 9 11 09.4588 | 40 | 9 16 08.6397 |
| 50 | 19.4315 | 50 | 18.6124 |
| 9 13 00 | 29.4042 | 9 18 00 | 28.5851 |
| 10 | 39.3769 | 10 | 38.5578 |
| 20 | 49.3496 | 20 | 48.5305 |
| 30 | 59.3223 | 30 | 58.5032 |
| 40 | 9 12 09.2950 | 40 | 9 17 08.4759 |
| 50 | 19.2677 | 50 | 18.4486 |
| 9 14 00 | 29.2404 | 9 19 00 | 28.4213 |
| 10 | 39.2131 | 10 | 38.3940 |
| 20 | 49.1858 | 20 | 48.3667 |
| 30 | 59.1585 | 30 | 58.3393 |
| 40 | 9 13 09.1312 | 40 | 9 18 08.3120 |
| 50 | 19.1039 | 50 | 18.2847 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|---------|--------------|---------|--------------|
| 9 20 00 | 9 21 31.9937 | 9 25 00 | 9 26 32.8151 |
| 10 | 42.0211 | 10 | 42.8425 |
| 20 | 52.0485 | 20 | 52.8699 |
| 30 | 9 22 02.0759 | 30 | 9 27 02.8973 |
| 40 | 12.1033 | 40 | 12.9246 |
| 50 | 22.1306 | 50 | 22.9520 |
| 9 21 00 | 32.1580 | 9 26 00 | 32.9794 |
| 10 | 42.1854 | 10 | 43.0068 |
| 20 | 52.2128 | 20 | 53.0342 |
| 30 | 9 23 02.2402 | 30 | 9 28 03.0615 |
| 40 | 12.2675 | 40 | 13.0889 |
| 50 | 22.2949 | 50 | 23.1163 |
| 9 22 00 | 32.3223 | 9 27 00 | 33.1437 |
| 10 | 42.3497 | 10 | 43.1710 |
| 20 | 52.3771 | 20 | 53.1984 |
| 30 | 9 24 02.4044 | 30 | 9 29 03.2258 |
| 40 | 12.4318 | 40 | 13.2532 |
| 50 | 22.4592 | 50 | 23.2806 |
| 9 23 00 | 32.4866 | 9 28 00 | 33.3079 |
| 10 | 42.5139 | 10 | 43.3353 |
| 20 | 52.5413 | 20 | 53.3627 |
| 30 | 9 25 02.5687 | 30 | 9 30 03.3901 |
| 40 | 12.5961 | 40 | 13.4175 |
| 50 | 22.6235 | 50 | 23.4448 |
| 9 24 00 | 32.6508 | 9 29 00 | 33.4722 |
| 10 | 42.6782 | 10 | 43.4996 |
| 20 | 52.7056 | 20 | 53.5270 |
| 30 | 9 26 02.7330 | 30 | 9 31 03.5544 |
| 40 | 12.7604 | 40 | 13.5817 |
| 50 | 22.7877 | 50 | 23.6091 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 9 20 00 | 9 18 28.2574 | 9 25 00 | 9 23 27.4383 |
| 10 | 38.2301 | 10 | 37.4110 |
| 20 | 48.2028 | 20 | 47.3837 |
| 30 | 58.1755 | 30 | 57.3564 |
| 40 | 9 19 08.1482 | 40 | 9 24 07.3291 |
| 50 | 18.1209 | 50 | 17.3018 |
| 9 21 00 | 28.0936 | 9 26 00 | 27.2745 |
| 10 | 38.0663 | 10 | 37.2472 |
| 20 | 48.0390 | 20 | 47.2199 |
| 30 | 58.0117 | 30 | 57.1926 |
| 40 | 9 20 07.9844 | 40 | 9 25 07.1653 |
| 50 | 17.9571 | 50 | 17.1380 |
| 9 22 00 | 27.9298 | 9 27 00 | 27.1107 |
| 10 | 37.9025 | 10 | 37.0833 |
| 20 | 47.8752 | 20 | 47.0560 |
| 30 | 57.8479 | 30 | 57.0287 |
| 40 | 9 21 07.8206 | 40 | 9 26 07.0014 |
| 50 | 17.7933 | 50 | 16.9741 |
| 9 23 00 | 27.7660 | 9 28 00 | 26.9468 |
| 10 | 37.7387 | 10 | 36.9195 |
| 20 | 47.7113 | 20 | 46.8922 |
| 30 | 57.6840 | 30 | 56.8649 |
| 40 | 9 22 07.6567 | 40 | 9 27 06.8376 |
| 50 | 17.6294 | 50 | 16.8103 |
| 9 24 00 | 27.6021 | 9 29 00 | 26.7830 |
| 10 | 37.5748 | 10 | 36.7557 |
| 20 | 47.5475 | 20 | 46.7284 |
| 30 | 57.5202 | 30 | 56.7011 |
| 40 | 9 23 07.4929 | 40 | 9 28 06.6738 |
| 50 | 17.4656 | 50 | 16.6465 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 9 30 00 | 9 31 33.6365 | 9 35 00 | 9 36 34.4579 |
| 10 | 43.6639 | 10 | 44.4852 |
| 20 | 53.6913 | 20 | 54.5126 |
| 30 | 9 32 03.7186 | 30 | 9 37 04.5400 |
| 40 | 13.7460 | 40 | 14.5674 |
| 50 | 23.7734 | 50 | 24.5948 |
| 9 31 00 | 33.8008 | 9 36 00 | 34.6221 |
| 10 | 43.8281 | 10 | 44.6495 |
| 20 | 53.8555 | 20 | 54.6769 |
| 30 | 9 33 03.8829 | 30 | 9 38 04.7043 |
| 40 | 13.9103 | 40 | 14.7317 |
| 50 | 23.9377 | 50 | 24.7590 |
| 9 32 00 | 33.9650 | 9 37 00 | 34.7864 |
| 10 | 43.9924 | 10 | 44.8138 |
| 20 | 54.0198 | 20 | 54.8412 |
| 30 | 9 34 04.0472 | 30 | 9 39 04.8686 |
| 40 | 14.0746 | 40 | 14.8959 |
| 50 | 24.1019 | 50 | 24.9233 |
| 9 33 00 | 34.1293 | 9 38 00 | 34.9507 |
| 10 | 44.1567 | 10 | 44.9781 |
| 20 | 54.1841 | 20 | 55.0054 |
| 30 | 9 35 04.2115 | 30 | 9 40 05.0328 |
| 40 | 14.2388 | 40 | 15.0602 |
| 50 | 24.2662 | 50 | 25.0876 |
| 9 34 00 | 34.2936 | 9 39 00 | 35.1150 |
| 10 | 44.3210 | 10 | 45.1423 |
| 20 | 54.3483 | 20 | 55.1697 |
| 30 | 9 36 04.3757 | 30 | 9 41 05.1971 |
| 40 | 14.4031 | 40 | 15.2245 |
| 50 | 24.4305 | 50 | 25.2519 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 9 30 00 | 9 28 26.6192 | 9 35 00 | 9 33 25.8000 |
| 10 | 36.5919 | 10 | 35.7727 |
| 20 | 46.5646 | 20 | 45.7454 |
| 30 | 56.5373 | 30 | 55.7181 |
| 40 | 9 29 06.5100 | 40 | 9 34 05.6908 |
| 50 | 16.4827 | 50 | 15.6635 |
| 9 31 00 | 26.4554 | 9 36 00 | 25.6362 |
| 10 | 36.4280 | 10 | 35.6089 |
| 20 | 46.4007 | 20 | 45.5816 |
| 30 | 56.3734 | 30 | 55.5543 |
| 40 | 9 30 06.3461 | 40 | 9 35 05.5270 |
| 50 | 16.3188 | 50 | 15.4997 |
| 9 32 00 | 26.2915 | 9 37 00 | 25.4724 |
| 10 | 36.2642 | 10 | 35.4451 |
| 20 | 46.2369 | 20 | 45.4178 |
| 30 | 56.2096 | 30 | 55.3905 |
| 40 | 9 31 06.1823 | 40 | 9 36 05.3632 |
| 50 | 16.1550 | 50 | 15.3359 |
| 9 33 00 | 26.1277 | 9 38 00 | 25.3086 |
| 10 | 36.1004 | 10 | 35.2813 |
| 20 | 46.0731 | 20 | 45.2540 |
| 30 | 56.0458 | 30 | 55.2267 |
| 40 | 9 32 06.0185 | 40 | 9 37 05.1994 |
| 50 | 15.9912 | 50 | 15.1720 |
| 9 34 00 | 25.9639 | 9 39 00 | 25.1447 |
| 10 | 35.9366 | 10 | 35.1174 |
| 20 | 45.9093 | 20 | 45.0901 |
| 30 | 55.8820 | 30 | 55.0628 |
| 40 | 9 33 05.8547 | 40 | 9 38 05.0355 |
| 50 | 15.8274 | 50 | 15.0082 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 9 40 00 | 9 41 35.2792 | 9 45 00 | 9 46 36.1006 |
| 10 | 45.3066 | 10 | 46.1280 |
| 20 | 55.3340 | 20 | 56.1554 |
| 30 | 9 42 05.3614 | 30 | 9 47 06.1827 |
| 40 | 15.3888 | 40 | 16.2101 |
| 50 | 25.4161 | 50 | 26.2375 |
| 9 41 00 | 35.4435 | 9 46 00 | 36.2649 |
| 10 | 45.4709 | 10 | 46.2923 |
| 20 | 55.4983 | 20 | 56.3196 |
| 30 | 9 43 05.5256 | 30 | 9 48 06.3470 |
| 40 | 15.5530 | 40 | 16.3744 |
| 50 | 25.5804 | 50 | 26.4018 |
| 9 42 00 | 35.6078 | 9 47 00 | 36.4292 |
| 10 | 45.6352 | 10 | 46.4565 |
| 20 | 55.6625 | 20 | 56.4839 |
| 30 | 9 44 05.6899 | 30 | 9 49 06.5113 |
| 40 | 15.7173 | 40 | 16.5387 |
| 50 | 25.7447 | 50 | 26.5661 |
| 9 43 00 | 35.7721 | 9 48 00 | 36.5934 |
| 10 | 45.7994 | 10 | 46.6208 |
| 20 | 55.8268 | 20 | 56.6482 |
| 30 | 9 45 05.8542 | 30 | 9 50 06.6756 |
| 40 | 15.8816 | 40 | 16.7030 |
| 50 | 25.9090 | 50 | 26.7303 |
| 9 44 00 | 35.9363 | 9 49 00 | 36.7577 |
| 10 | 45.9637 | 10 | 46.7851 |
| 20 | 55.9911 | 20 | 56.8125 |
| 30 | 9 46 06.0185 | 30 | 9 51 06.8398 |
| 40 | 16.0459 | 40 | 16.8672 |
| 50 | 26.0732 | 50 | 26.8946 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 9 40 00 | 9 38 24.9809 | 9 45 00 | 9 43 24.1618 |
| 10 | 34.9536 | 10 | 34.1345 |
| 20 | 44.9263 | 20 | 44.1072 |
| 30 | 54.8990 | 30 | 54.0799 |
| 40 | 9 39 04.8717 | 40 | 9 44 04.0526 |
| 50 | 14.8444 | 50 | 14.0253 |
| 9 41 00 | 24.8171 | 9 46 00 | 23.9980 |
| 10 | 34.7898 | 10 | 33.9707 |
| 20 | 44.7625 | 20 | 43.9434 |
| 30 | 54.7352 | 30 | 53.9160 |
| 40 | 9 40 04.7079 | 40 | 9 45 03.8887 |
| 50 | 14.6806 | 50 | 13.8614 |
| 9 42 00 | 24.6533 | 9 47 00 | 23.8341 |
| 10 | 34.6260 | 10 | 33.8068 |
| 20 | 44.5987 | 20 | 43.7795 |
| 30 | 54.5714 | 30 | 53.7522 |
| 40 | 9 41 04.5440 | 40 | 9 46 03.7249 |
| 50 | 14.5167 | 50 | 13.6976 |
| 9 43 00 | 24.4894 | 9 48 00 | 23.6703 |
| 10 | 34.4621 | 10 | 33.6430 |
| 20 | 44.4348 | 20 | 43.6157 |
| 30 | 54.4075 | 30 | 53.5884 |
| 40 | 9 42 04.3802 | 40 | 9 47 03.5611 |
| 50 | 14.3529 | 50 | 13.5338 |
| 9 44 00 | 24.3256 | 9 49 00 | 23.5065 |
| 10 | 34.2983 | 10 | 33.4792 |
| 20 | 44.2710 | 20 | 43.4519 |
| 30 | 54.2437 | 30 | 53.4246 |
| 40 | 9 43 04.2164 | 40 | 9 48 03.3973 |
| 50 | 14.1891 | 50 | 13.3700 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 9 50 00 | 9 51 36.9220 | 9 55 00 | 9 56 37.7434 |
| 10 | 46.9494 | 10 | 47.7707 |
| 20 | 56.9767 | 20 | 57.7981 |
| 30 | 9 52 07.0041 | 30 | 9 57 07.8255 |
| 40 | 17.0315 | 40 | 17.8529 |
| 50 | 27.0589 | 50 | 27.8803 |
| 9 51 00 | 37.0863 | 9 56 00 | 37.9076 |
| 10 | 47.1136 | 10 | 47.9350 |
| 20 | 57.1410 | 20 | 57.9624 |
| 30 | 9 53 07.1684 | 30 | 9 58 07.9898 |
| 40 | 17.1958 | 40 | 18.0171 |
| 50 | 27.2232 | 50 | 28.0445 |
| 9 52 00 | 37.2505 | 9 57 00 | 38.0719 |
| 10 | 47.2779 | 10 | 48.0993 |
| 20 | 57.3053 | 20 | 58.1267 |
| 30 | 9 54 07.3327 | 30 | 9 59 08.1540 |
| 40 | 17.3600 | 40 | 18.1814 |
| 50 | 27.3874 | 50 | 28.2088 |
| 9 53 00 | 37.4148 | 9 58 00 | 38.2362 |
| 10 | 47.4422 | 10 | 48.2636 |
| 20 | 57.4696 | 20 | 58.2909 |
| 30 | 9 55 07.4969 | 30 | 10 00 08.3183 |
| 40 | 17.5243 | 40 | 18.3457 |
| 50 | 27.5517 | 50 | 28.3731 |
| 9 54 00 | 37.5791 | 9 59 00 | 38.4005 |
| 10 | 47.6065 | 10 | 48.4278 |
| 20 | 57.6338 | 20 | 58.4552 |
| 30 | 9 56 07.6612 | 30 | 10 01 08.4826 |
| 40 | 17.6886 | 40 | 18.5100 |
| 50 | 27.7160 | 50 | 28.5373 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 9 50 00 | 9 48 23.3427 | 9 55 00 | 9 53 22.5235 |
| 10 | 33.3154 | 10 | 32.4962 |
| 20 | 43.2880 | 20 | 42.4689 |
| 30 | 53.2607 | 30 | 52.4416 |
| 40 | 9 49 03.2334 | 40 | 9 54 02.4143 |
| 50 | 13.2061 | 50 | 12.3870 |
| 9 51 00 | 23.1788 | 9 56 00 | 22.3597 |
| 10 | 33.1515 | 10 | 32.3324 |
| 20 | 43.1242 | 20 | 42.3051 |
| 30 | 53.0969 | 30 | 52.2778 |
| 40 | 9 50 03.0696 | 40 | 9 55 02.2505 |
| 50 | 13.0423 | 50 | 12.2232 |
| 9 52 00 | 23.0150 | 9 57 00 | 22.1959 |
| 10 | 32.9877 | 10 | 32.1686 |
| 20 | 42.9604 | 20 | 42.1413 |
| 30 | 52.9331 | 30 | 52.1140 |
| 40 | 9 51 02.9058 | 40 | 9 56 02.0867 |
| 50 | 12.8785 | 50 | 12.0594 |
| 9 53 00 | 22.8512 | 9 58 00 | 22.0320 |
| 10 | 32.8239 | 10 | 32.0047 |
| 20 | 42.7966 | 20 | 41.9774 |
| 30 | 52.7693 | 30 | 51.9501 |
| 40 | 9 52 02.7420 | 40 | 9 57 01.9228 |
| 50 | 12.7147 | 50 | 11.8955 |
| 9 54 00 | 22.6874 | 9 59 00 | 21.8682 |
| 10 | 32.6600 | 10 | 31.8409 |
| 20 | 42.6327 | 20 | 41.8136 |
| 30 | 52.6054 | 30 | 51.7863 |
| 40 | 9 53 02.5781 | 40 | 9 58 01.7590 |
| 50 | 12.5508 | 50 | 11.7317 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 10 00 00 | 10 01 38.5647 | 10 05 00 | 10 06 39.3861 |
| 10 | 48.5921 | 10 | 49.4135 |
| 20 | 58.6195 | 20 | 59.4409 |
| 30 | 10 02 08.6469 | 30 | 10 07 09.4682 |
| 40 | 18.6742 | 40 | 19.4956 |
| 50 | 28.7016 | 50 | 29.5230 |
| 10 01 00 | 38.7290 | 10 06 00 | 39.5504 |
| 10 | 48.7564 | 10 | 49.5778 |
| 20 | 58.7838 | 20 | 59.6051 |
| 30 | 10 03 08.8111 | 30 | 10 08 09.6325 |
| 40 | 18.8385 | 40 | 19.6599 |
| 50 | 28.8659 | 50 | 29.6873 |
| 10 02 00 | 38.8933 | 10 07 00 | 39.7147 |
| 10 | 48.9207 | 10 | 49.7420 |
| 20 | 58.9480 | 20 | 59.7694 |
| 30 | 10 04 08.9754 | 30 | 10 09 09.7968 |
| 40 | 19.0028 | 40 | 19.8242 |
| 50 | 29.0302 | 50 | 29.8515 |
| 10 03 00 | 39.0576 | 10 08 00 | 39.8789 |
| 10 | 49.0849 | 10 | 49.9063 |
| 20 | 59.1123 | 20 | 59.9337 |
| 30 | 10 05 09.1397 | 30 | 10 10 09.9611 |
| 40 | 19.1671 | 40 | 19.9884 |
| 50 | 29.1944 | 50 | 30.0158 |
| 10 04 00 | 39.2218 | 10 09 00 | 40.0432 |
| 10 | 49.2492 | 10 | 50.0706 |
| 20 | 59.2766 | 20 | 10 11 00.0980 |
| 30 | 10 06 09.3040 | 30 | 10.1253 |
| 40 | 19.3313 | 40 | 20.1527 |
| 50 | 29.3587 | 50 | 30.1801 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 10 00 00 | 9 58 21.7044 | 10 05 00 | 10 03 20.8853 |
| 10 | 31.6771 | 10 | 30.8580 |
| 20 | 41.6498 | 20 | 40.8307 |
| 30 | 51.6225 | 30 | 50.8034 |
| 40 | 9 59 01.5952 | 40 | 10 04 00.7760 |
| 50 | 11.5679 | 50 | 10.7487 |
| 10 01 00 | 21.5406 | 10 06 00 | 20.7214 |
| 10 | 31.5133 | 10 | 30.6941 |
| 20 | 41.4860 | 20 | 40.6668 |
| 30 | 51.4587 | 30 | 50.6395 |
| 40 | 10 00 01.4314 | 40 | 10 05 00.6122 |
| 50 | 11.4040 | 50 | 10.5849 |
| 10 02 00 | 21.3767 | 10 07 00 | 20.5576 |
| 10 | 31.3494 | 10 | 30.5303 |
| 20 | 41.3221 | 20 | 40.5030 |
| 30 | 51.2948 | 30 | 50.4757 |
| 40 | 10 01 01.2675 | 40 | 10 06 00.4484 |
| 50 | 11.2402 | 50 | 10.4211 |
| 10 03 00 | 21.2129 | 10 08 00 | 20.3938 |
| 10 | 31.1856 | 10 | 30.3665 |
| 20 | 41.1583 | 20 | 40.3392 |
| 30 | 51.1310 | 30 | 50.3119 |
| 40 | 10 02 01.1037 | 40 | 10 07 00.2846 |
| 50 | 11.0764 | 50 | 10.2573 |
| 10 04 00 | 21.0491 | 10 09 00 | 20.2300 |
| 10 | 31.0218 | 10 | 30.2027 |
| 20 | 40.9945 | 20 | 40.1754 |
| 30 | 50.9672 | 30 | 50.1480 |
| 40 | 10 03 00.9399 | 40 | 10 08 00.1207 |
| 50 | 10.9126 | 50 | 10.0934 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 10 10 00 | 10 11 40.2075 | 10 15 00 | 10 16 41.0288 |
| 10 | 50.2349 | 10 | 51.0562 |
| 20 | 10 12 00.2622 | 20 | 10 17 01.0836 |
| 30 | 10.2896 | 30 | 11.1110 |
| 40 | 20.3170 | 40 | 21.1384 |
| 50 | 30.3444 | 50 | 31.1657 |
| 10 11 00 | 40.3717 | 10 16 00 | 41.1931 |
| 10 | 50.3991 | 10 | 51.2205 |
| 20 | 10 13 00.4265 | 20 | 10 18 01.2479 |
| 30 | 10.4539 | 30 | 11.2753 |
| 40 | 20.4813 | 40 | 21.3026 |
| 50 | 30.5086 | 50 | 31.3300 |
| 10 12 00 | 40.5360 | 10 17 00 | 41.3574 |
| 10 | 50.5634 | 10 | 51.3848 |
| 20 | 10 14 00.5908 | 20 | 10 19 01.4122 |
| 30 | 10.6182 | 30 | 11.4395 |
| 40 | 20.6455 | 40 | 21.4669 |
| 50 | 30.6729 | 50 | 31.4943 |
| 10 13 00 | 40.7003 | 10 18 00 | 41.5217 |
| 10 | 50.7277 | 10 | 51.5490 |
| 20 | 10 15 00.7551 | 20 | 10 20 01.5764 |
| 30 | 10.7824 | 30 | 11.6038 |
| 40 | 20.8098 | 40 | 21.6312 |
| 50 | 30.8372 | 50 | 31.6586 |
| 10 14 00 | 40.8646 | 10 19 00 | 41.6859 |
| 10 | 50.8920 | 10 | 51.7133 |
| 20 | 10 16 00.9193 | 20 | 10 21 01.7407 |
| 30 | 10.9467 | 30 | 11.7681 |
| 40 | 20.9741 | 40 | 21.7955 |
| 50 | 31.0015 | 50 | 31.8228 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 10 10 00 | 10 08 20.0661 | 10 15 00 | 10 13 19.2470 |
| 10 | 30.0388 | 10 | 29.2197 |
| 20 | 40.0115 | 20 | 39.1924 |
| 30 | 49.9842 | 30 | 49.1651 |
| 40 | 59.9569 | 40 | 59.1378 |
| 50 | 10 09 09.9296 | 50 | 10 14 09.1105 |
| 10 11 00 | 19.9023 | 10 16 00 | 19.0832 |
| 10 | 29.8750 | 10 | 29.0559 |
| 20 | 39.8477 | 20 | 39.0286 |
| 30 | 49.8204 | 30 | 49.0013 |
| 40 | 59.7931 | 40 | 58.9740 |
| 50 | 10 10 09.7658 | 50 | 10 15 08.9467 |
| 10 12 00 | 19.7385 | 10 17 00 | 18.9194 |
| 10 | 29.7112 | 10 | 28.8920 |
| 20 | 39.6839 | 20 | 38.8647 |
| 30 | 49.6566 | 30 | 48.8374 |
| 40 | 59.6293 | 40 | 58.8101 |
| 50 | 10 11 09.6020 | 50 | 10 16 08.7828 |
| 10 13 00 | 19.5747 | 10 18 00 | 18.7555 |
| 10 | 29.5474 | 10 | 28.7282 |
| 20 | 39.5200 | 20 | 38.7009 |
| 30 | 49.4927 | 30 | 48.6736 |
| 40 | 59.4654 | 40 | 58.6463 |
| 50 | 10 12 09.4381 | 50 | 10 17 08.6190 |
| 10 14 00 | 19.4108 | 10 19 00 | 18.5917 |
| 10 | 29.3835 | 10 | 28.5644 |
| 20 | 39.3562 | 20 | 38.5371 |
| 30 | 49.3289 | 30 | 48.5098 |
| 40 | 59.3016 | 40 | 58.4825 |
| 50 | 10 13 09.2743 | 50 | 10 18 08.4552 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 10 20 00 | 10 21 41.8502 | 10 25 00 | 10 26 42.6716 |
| 10 | 51.8776 | 10 | 52.6990 |
| 20 | 10 22 01.9050 | 20 | 10 27 02.7264 |
| 30 | 11.9324 | 30 | 12.7537 |
| 40 | 21.9597 | 40 | 22.7811 |
| 50 | 31.9871 | 50 | 32.8085 |
| 10 21 00 | 42.0145 | 10 26 00 | 42.8359 |
| 10 | 52.0419 | 10 | 52.8632 |
| 20 | 10 23 02.0693 | 20 | 10 28 02.8906 |
| 30 | 12.0966 | 30 | 12.9180 |
| 40 | 22.1240 | 40 | 22.9454 |
| 50 | 32.1514 | 50 | 32.9728 |
| 10 22 00 | 42.1788 | 10 27 00 | 43.0001 |
| 10 | 52.2061 | 10 | 53.0275 |
| 20 | 10 24 02.2335 | 20 | 10 29 03.0549 |
| 30 | 12.2609 | 30 | 13.0823 |
| 40 | 22.2883 | 40 | 23.1097 |
| 50 | 32.3157 | 50 | 33.1370 |
| 10 23 00 | 42.3430 | 10 28 00 | 43.1644 |
| 10 | 52.3704 | 10 | 53.1918 |
| 20 | 10 25 02.3978 | 20 | 10 30 03.2192 |
| 30 | 12.4252 | 30 | 13.2466 |
| 40 | 22.4526 | 40 | 23.2739 |
| 50 | 32.4799 | 50 | 33.3013 |
| 10 24 00 | 42.5073 | 10 29 00 | 43.3287 |
| 10 | 52.5347 | 10 | 53.3561 |
| 20 | 10 26 02.5621 | 20 | 10 31 03.3834 |
| 30 | 12.5895 | 30 | 13.4108 |
| 40 | 22.6168 | 40 | 23.4382 |
| 50 | 32.6442 | 50 | 33.4656 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 10 20 00 | 10 18 18.4279 | 10 25 00 | 10 23 17.6087 |
| 10 | 28.4006 | 10 | 27.5814 |
| 20 | 38.3733 | 20 | 37.5541 |
| 30 | 48.3460 | 30 | 47.5268 |
| 40 | 58.3187 | 40 | 57.4995 |
| 50 | 10 19 08.2914 | 50 | 10 24 07.4722 |
| 10 21 00 | 18.2640 | 10 26 00 | 17.4449 |
| 10 | 28.2367 | 10 | 27.4176 |
| 20 | 38.2094 | 20 | 37.3903 |
| 30 | 48.1821 | 30 | 47.3630 |
| 40 | 58.1548 | 40 | 57.3357 |
| 50 | 10 20 08.1275 | 50 | 10 25 07.3084 |
| 10 22 00 | 18.1002 | 10 27 00 | 17.2811 |
| 10 | 28.0729 | 10 | 27.2538 |
| 20 | 38.0456 | 20 | 37.2265 |
| 30 | 48.0183 | 30 | 47.1992 |
| 40 | 57.9910 | 40 | 57.1719 |
| 50 | 10 21 07.9637 | 50 | 10 26 07.1446 |
| 10 23 00 | 17.9364 | 10 28 00 | 17.1173 |
| 10 | 27.9091 | 10 | 27.0900 |
| 20 | 37.8818 | 20 | 37.0627 |
| 30 | 47.8545 | 30 | 47.0354 |
| 40 | 57.8272 | 40 | 57.0081 |
| 50 | 10 22 07.7999 | 50 | 10 27 06.9807 |
| 10 24 00 | 17.7726 | 10 29 00 | 16.9534 |
| 10 | 27.7453 | 10 | 26.9261 |
| 20 | 37.7180 | 20 | 36.8988 |
| 30 | 47.6907 | 30 | 46.8715 |
| 40 | 57.6634 | 40 | 56.8442 |
| 50 | 10 23 07.6360 | 50 | 10 28 06.8169 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 10 30 00 | 10 31 43.4930 | 10 35 00 | 10 36 44.3143 |
| 10 | 53.5203 | 10 | 54.3417 |
| 20 | 10 32 03.5477 | 20 | 10 37 04.3691 |
| 30 | 13.5751 | 30 | 14.3965 |
| 40 | 23.6025 | 40 | 24.4239 |
| 50 | 33.6299 | 50 | 34.4512 |
| 10 31 00 | 43.6572 | 10 36 00 | 44.4786 |
| 10 | 53.6846 | 10 | 54.5060 |
| 20 | 10 33 03.7120 | 20 | 10 38 04.5334 |
| 30 | 13.7394 | 30 | 14.5607 |
| 40 | 23.7668 | 40 | 24.5881 |
| 50 | 33.7941 | 50 | 34.6155 |
| 10 32 00 | 43.8215 | 10 37 00 | 44.6429 |
| 10 | 53.8489 | 10 | 54.6703 |
| 20 | 10 34 03.8763 | 20 | 10 39 04.6976 |
| 30 | 13.9037 | 30 | 14.7250 |
| 40 | 23.9310 | 40 | 24.7524 |
| 50 | 33.9584 | 50 | 34.7798 |
| 10 33 00 | 43.9858 | 10 38 00 | 44.8072 |
| 10 | 54.0132 | 10 | 54.8345 |
| 20 | 10 35 04.0405 | 20 | 10 40 04.8619 |
| 30 | 14.0679 | 30 | 14.8893 |
| 40 | 24.0953 | 40 | 24.9167 |
| 50 | 34.1227 | 50 | 34.9441 |
| 10 34 00 | 44.1501 | 10 39 00 | 44.9714 |
| 10 | 54.1774 | 10 | 54.9988 |
| 20 | 10 36 04.2048 | 20 | 10 41 05.0262 |
| 30 | 14.2322 | 30 | 15.0536 |
| 40 | 24.2596 | 40 | 25.0810 |
| 50 | 34.2870 | 50 | 35.1083 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 10 30 00 | 10 28 16.7896 | 10 35 00 | 10 33 15.9705 |
| 10 | 26.7623 | 10 | 25.9432 |
| 20 | 36.7350 | 20 | 35.9159 |
| 30 | 46.7077 | 30 | 45.8886 |
| 40 | 56.6804 | 40 | 55.8613 |
| 50 | 10 29 06.6531 | 50 | 10 34 05.8340 |
| 10 31 00 | 16.6258 | 10 36 00 | 15.8067 |
| 10 | 26.5985 | 10 | 25.7794 |
| 20 | 36.5712 | 20 | 35.7521 |
| 30 | 46.5439 | 30 | 45.7247 |
| 40 | 56.5166 | 40 | 55.6974 |
| 50 | 10 30 06.4893 | 50 | 10 35 05.6701 |
| 10 32 00 | 16.4620 | 10 37 00 | 15.6428 |
| 10 | 26.4347 | 10 | 25.6155 |
| 20 | 36.4074 | 20 | 35.5882 |
| 30 | 46.3801 | 30 | 45.5609 |
| 40 | 56.3527 | 40 | 55.5336 |
| 50 | 10 31 06.3254 | 50 | 10 36 05.5063 |
| 10 33 00 | 16.2981 | 10 38 00 | 15.4790 |
| 10 | 26.2708 | 10 | 25.4517 |
| 20 | 36.2435 | 20 | 35.4244 |
| 30 | 46.2162 | 30 | 45.3971 |
| 40 | 56.1889 | 40 | 55.3698 |
| 50 | 10 32 06.1616 | 50 | 10 37 05.3425 |
| 10 34 00 | 16.1343 | 10 39 00 | 15.3152 |
| 10 | 26.1070 | 10 | 25.2879 |
| 20 | 36.0797 | 20 | 35.2606 |
| 30 | 46.0524 | 30 | 45.2333 |
| 40 | 56.0251 | 40 | 55.2060 |
| 50 | 10 33 05.9978 | 50 | 10 38 05.1787 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 10 40 00 | 10 41 45.1357 | 10 45 00 | 10 46 45.9571 |
| 10 | 55.1631 | 10 | 55.9845 |
| 20 | 10 42 05.1905 | 20 | 10 47 06.0118 |
| 30 | 15.2178 | 30 | 16.0392 |
| 40 | 25.2452 | 40 | 26.0666 |
| 50 | 35.2726 | 50 | 36.0940 |
| 10 41 00 | 45.3000 | 10 46 00 | 46.1214 |
| 10 | 55.3274 | 10 | 56.1487 |
| 20 | 10 43 05.3547 | 20 | 10 48 06.1761 |
| 30 | 15.3821 | 30 | 16.2035 |
| 40 | 25.4095 | 40 | 26.2309 |
| 50 | 35.4369 | 50 | 36.2583 |
| 10 42 00 | 45.4643 | 10 47 00 | 46.2856 |
| 10 | 55.4916 | 10 | 56.3130 |
| 20 | 10 44 05.5190 | 20 | 10 49 06.3404 |
| 30 | 15.5464 | 30 | 16.3678 |
| 40 | 25.5738 | 40 | 26.3951 |
| 50 | 35.6012 | 50 | 36.4225 |
| 10 43 00 | 45.6285 | 10 48 00 | 46.4499 |
| 10 | 55.6559 | 10 | 56.4773 |
| 20 | 10 45 05.6833 | 20 | 10 50 06.5047 |
| 30 | 15.7107 | 30 | 16.5320 |
| 40 | 25.7381 | 40 | 26.5594 |
| 50 | 35.7654 | 50 | 36.5868 |
| 10 44 00 | 45.7928 | 10 49 00 | 46.6142 |
| 10 | 55.8202 | 10 | 56.6416 |
| 20 | 10 46 05.8476 | 20 | 10 51 06.6689 |
| 30 | 15.8749 | 30 | 16.6963 |
| 40 | 25.9023 | 40 | 26.7237 |
| 50 | 35.9297 | 50 | 36.7511 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 10 40 00 | 10 38 15.1514 | 10 45 00 | 10 43 14.3322 |
| 10 | 25.1241 | 10 | 24.3049 |
| 20 | 35.0967 | 20 | 34.2776 |
| 30 | 45.0694 | 30 | 44.2503 |
| 40 | 55.0421 | 40 | 54.2230 |
| 50 | 10 39 05.0148 | 50 | 10 44 04.1957 |
| 10 41 00 | 14.9875 | 10 46 00 | 14.1684 |
| 10 | 24.9602 | 10 | 24.1411 |
| 20 | 34.9329 | 20 | 34.1138 |
| 30 | 44.9056 | 30 | 44.0865 |
| 40 | 54.8783 | 40 | 54.0592 |
| 50 | 10 40 04.8510 | 50 | 10 45 04.0319 |
| 10 42 00 | 14.8237 | 10 47 00 | 14.0046 |
| 10 | 24.7964 | 10 | 23.9773 |
| 20 | 34.7691 | 20 | 33.9500 |
| 30 | 44.7418 | 30 | 43.9227 |
| 40 | 54.7145 | 40 | 53.8954 |
| 50 | 10 41 04.6872 | 50 | 10 46 03.8681 |
| 10 43 00 | 14.6599 | 10 48 00 | 13.8407 |
| 10 | 24.6326 | 10 | 23.8134 |
| 20 | 34.6053 | 20 | 33.7861 |
| 30 | 44.5780 | 30 | 43.7588 |
| 40 | 54.5507 | 40 | 53.7315 |
| 50 | 10 42 04.5234 | 50 | 10 47 03.7042 |
| 10 44 00 | 14.4961 | 10 49 00 | 13.6769 |
| 10 | 24.4687 | 10 | 23.6496 |
| 20 | 34.4414 | 20 | 33.6223 |
| 30 | 44.4141 | 30 | 43.5950 |
| 40 | 54.3868 | 40 | 53.5677 |
| 50 | 10 43 04.3595 | 50 | 10 48 03.5404 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 10 50 00 | 10 51 46.7785 | 10 55 00 | 10 56 47.5998 |
| 10 | 56.8058 | 10 | 57.6272 |
| 20 | 10 52 06.8332 | 20 | 10 57 07.6546 |
| 30 | 16.8606 | 30 | 17.6820 |
| 40 | 26.8880 | 40 | 27.7093 |
| 50 | 36.9154 | 50 | 37.7367 |
| 10 51 00 | 46.9427 | 10 56 00 | 47.7641 |
| 10 | 56.9701 | 10 | 57.7915 |
| 20 | 10 53 06.9975 | 20 | 10 58 07.8189 |
| 30 | 17.0249 | 30 | 17.8462 |
| 40 | 27.0522 | 40 | 27.8736 |
| 50 | 37.0796 | 50 | 37.9010 |
| 10 52 00 | 47.1070 | 10 57 00 | 47.9284 |
| 10 | 57.1344 | 10 | 57.9558 |
| 20 | 10 54 07.1618 | 20 | 10 59 07.9831 |
| 30 | 17.1891 | 30 | 18.0105 |
| 40 | 27.2165 | 40 | 28.0379 |
| 50 | 37.2439 | 50 | 38.0653 |
| 10 53 00 | 47.2713 | 10 58 00 | 48.0927 |
| 10 | 57.2987 | 10 | 58.1200 |
| 20 | 10 55 07.3260 | 20 | 11 00 08.1474 |
| 30 | 17.3534 | 30 | 18.1748 |
| 40 | 27.3808 | 40 | 28.2022 |
| 50 | 37.4082 | 50 | 38.2295 |
| 10 54 00 | 47.4356 | 10 59 00 | 48.2569 |
| 10 | 57.4629 | 10 | 58.2843 |
| 20 | 10 56 07.4903 | 20 | 11 01 08.3117 |
| 30 | 17.5177 | 30 | 18.3391 |
| 40 | 27.5451 | 40 | 28.3664 |
| 50 | 37.5724 | 50 | 38.3938 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 10 50 00 | 10 48 13.5131 | 10 55 00 | 10 53 12.6940 |
| 10 | 23.4858 | 10 | 22.6667 |
| 20 | 33.4585 | 20 | 32.6394 |
| 30 | 43.4312 | 30 | 42.6121 |
| 40 | 53.4039 | 40 | 52.5847 |
| 50 | 10 49 03.3766 | 50 | 10 54 02.5574 |
| 10 51 00 | 13.3493 | 10 56 00 | 12.5301 |
| 10 | 23.3220 | 10 | 22.5028 |
| 20 | 33.2947 | 20 | 32.4755 |
| 30 | 43.2674 | 30 | 42.4482 |
| 40 | 53.2401 | 40 | 52.4209 |
| 50 | 10 50 03.2127 | 50 | 10 55 02.3936 |
| 10 52 00 | 13.1854 | 10 57 00 | 12.3663 |
| 10 | 23.1581 | 10 | 22.3390 |
| 20 | 33.1308 | 20 | 32.3117 |
| 30 | 43.1035 | 30 | 42.2844 |
| 40 | 53.0762 | 40 | 52.2571 |
| 50 | 10 51 03.0489 | 50 | 10 56 02.2298 |
| 10 53 00 | 13.0216 | 10 58 00 | 12.2025 |
| 10 | 22.9943 | 10 | 22.1752 |
| 20 | 32.9670 | 20 | 32.1479 |
| 30 | 42.9397 | 30 | 42.1206 |
| 40 | 52.9124 | 40 | 52.0933 |
| 50 | 10 52 02.8851 | 50 | 10 57 02.0660 |
| 10 54 00 | 12.8578 | 10 59 00 | 12.0387 |
| 10 | 22.8305 | 10 | 22.0114 |
| 20 | 32.8032 | 20 | 31.9841 |
| 30 | 42.7759 | 30 | 41.9567 |
| 40 | 52.7486 | 40 | 51.9294 |
| 50 | 10 53 02.7213 | 50 | 10 58 01.9021 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 11 00 00 | 11 01 48.4212 | 11 05 00 | 11 06 49.2426 |
| 10 | 58.4486 | 10 | 59.2700 |
| 20 | 11 02 08.4760 | 20 | 11 07 09.2973 |
| 30 | 18.5033 | 30 | 19.3247 |
| 40 | 28.5307 | 40 | 29.3521 |
| 50 | 38.5581 | 50 | 39.3795 |
| 11 01 00 | 48.5855 | 11 06 00 | 49.4068 |
| 10 | 58.6129 | 10 | 59.4342 |
| 20 | 11 03 08.6402 | 20 | 11 08 09.4616 |
| 30 | 18.6676 | 30 | 19.4890 |
| 40 | 28.6950 | 40 | 29.5164 |
| 50 | 38.7224 | 50 | 39.5437 |
| 11 02 00 | 48.7498 | 11 07 00 | 49.5711 |
| 10 | 58.7771 | 10 | 59.5985 |
| 20 | 11 04 08.8045 | 20 | 11 09 09.6259 |
| 30 | 18.8319 | 30 | 19.6533 |
| 40 | 28.8593 | 40 | 29.6806 |
| 50 | 38.8866 | 50 | 39.7080 |
| 11 03 00 | 48.9140 | 11 08 00 | 49.7354 |
| 10 | 58.9414 | 10 | 59.7628 |
| 20 | 11 05 08.9688 | 20 | 11 10 09.7902 |
| 30 | 18.9962 | 30 | 19.8175 |
| 40 | 29.0235 | 40 | 29.8449 |
| 50 | 39.0509 | 50 | 39.8723 |
| 11 04 00 | 49.0783 | 11 09 00 | 49.8997 |
| 10 | 59.1057 | 10 | 59.9271 |
| 20 | 11 06 09.1331 | 20 | 11 11 09.9544 |
| 30 | 19.1604 | 30 | 19.9818 |
| 40 | 29.1878 | 40 | 30.0092 |
| 50 | 39.2152 | 50 | 40.0366 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 11 00 00 | 10 58 11.8748 | 11 05 00 | 11 03 11.0557 |
| 10 | 21.8475 | 10 | 21.0284 |
| 20 | 31.8202 | 20 | 31.0011 |
| 30 | 41.7929 | 30 | 40.9738 |
| 40 | 51.7656 | 40 | 50.9465 |
| 50 | 10 59 01.7383 | 50 | 11 04 00.9192 |
| 11 01 00 | 11.7110 | 11 06 00 | 10.8919 |
| 10 | 21.6837 | 10 | 20.8646 |
| 20 | 31.6564 | 20 | 30.8373 |
| 30 | 41.6291 | 30 | 40.8100 |
| 40 | 51.6018 | 40 | 50.7827 |
| 50 | 11 00 01.5745 | 50 | 11 05 00.7554 |
| 11 02 00 | 11.5472 | 11 07 00 | 10.7281 |
| 10 | 21.5199 | 10 | 20.7007 |
| 20 | 31.4926 | 20 | 30.6734 |
| 30 | 41.4653 | 30 | 40.6461 |
| 40 | 51.4380 | 40 | 50.6188 |
| 50 | 11 01 01.4107 | 50 | 11 06 00.5915 |
| 11 03 00 | 11.3834 | 11 08 00 | 10.5642 |
| 10 | 21.3561 | 10 | 20.5369 |
| 20 | 31.3287 | 20 | 30.5096 |
| 30 | 41.3014 | 30 | 40.4823 |
| 40 | 51.2741 | 40 | 50.4550 |
| 50 | 11 02 01.2468 | 50 | 11 07 00.4277 |
| 11 04 00 | 11.2195 | 11 09 00 | 10.4004 |
| 10 | 21.1922 | 10 | 20.3731 |
| 20 | 31.1649 | 20 | 30.3458 |
| 30 | 41.1376 | 30 | 40.3185 |
| 40 | 51.1103 | 40 | 50.2912 |
| 50 | 11 03 01.0830 | 50 | 11 08 00.2639 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 11 10 00 | 11 11 50.0639 | 11 15 00 | 11 16 50.8853 |
| 10 | 11 12 00.0913 | 10 | 11 17 00.9127 |
| 20 | 10.1187 | 20 | 10.9401 |
| 30 | 20.1461 | 30 | 20.9675 |
| 40 | 30.1735 | 40 | 30.9948 |
| 50 | 40.2008 | 50 | 41.0222 |
| 11 11 00 | 50.2282 | 11 16 00 | 51.0496 |
| 10 | 11 13 00.2556 | 10 | 11 18 01.0770 |
| 20 | 10.2830 | 20 | 11.1044 |
| 30 | 20.3104 | 30 | 21.1317 |
| 40 | 30.3377 | 40 | 31.1591 |
| 50 | 40.3651 | 50 | 41.1865 |
| 11 12 00 | 50.3925 | 11 17 00 | 51.2139 |
| 10 | 11 14 00.4199 | 10 | 11 19 01.2412 |
| 20 | 10.4473 | 20 | 11.2686 |
| 30 | 20.4746 | 30 | 21.2960 |
| 40 | 30.5020 | 40 | 31.3234 |
| 50 | 40.5294 | 50 | 41.3508 |
| 11 13 00 | 50.5568 | 11 18 00 | 51.3781 |
| 10 | 11 15 00.5841 | 10 | 11 20 01.4055 |
| 20 | 10.6115 | 20 | 11.4329 |
| 30 | 20.6389 | 30 | 21.4603 |
| 40 | 30.6663 | 40 | 31.4877 |
| 50 | 40.6937 | 50 | 41.5150 |
| 11 14 00 | 50.7210 | 11 19 00 | 51.5424 |
| 10 | 11 16 00.7484 | 10 | 11 21 01.5698 |
| 20 | 10.7758 | 20 | 11.5972 |
| 30 | 20.8032 | 30 | 21.6246 |
| 40 | 30.8306 | 40 | 31.6519 |
| 50 | 40.8579 | 50 | 41.6793 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 11 10 00 | 11 08 10.2366 | 11 15 00 | 11 13 09.4174 |
| 10 | 20.2093 | 10 | 19.3901 |
| 20 | 30.1820 | 20 | 29.3628 |
| 30 | 40.1547 | 30 | 39.3355 |
| 40 | 50.1274 | 40 | 49.3082 |
| 50 | 11 09 00.1001 | 50 | 59.2809 |
| 11 11 00 | 10.0727 | 11 16 00 | 11 14 09.2536 |
| 10 | 20.0454 | 10 | 19.2263 |
| 20 | 30.0181 | 20 | 29.1990 |
| 30 | 39.9908 | 30 | 39.1717 |
| 40 | 49.9635 | 40 | 49.1444 |
| 50 | 59.9362 | 50 | 59.1171 |
| 11 12 00 | 11 10 09.9089 | 11 17 00 | 11 15 09.0898 |
| 10 | 19.8816 | 10 | 19.0625 |
| 20 | 29.8543 | 20 | 29.0352 |
| 30 | 39.8270 | 30 | 39.0079 |
| 40 | 49.7997 | 40 | 48.9806 |
| 50 | 59.7724 | 50 | 58.9533 |
| 11 13 00 | 11 11 09.7451 | 11 18 00 | 11 16 08.9260 |
| 10 | 19.7178 | 10 | 18.8987 |
| 20 | 29.6905 | 20 | 28.8714 |
| 30 | 39.6632 | 30 | 38.8441 |
| 40 | 49.6359 | 40 | 48.8167 |
| 50 | 59.6086 | 50 | 58.7894 |
| 11 14 00 | 11 12 09.5813 | 11 19 00 | 11 17 08.7621 |
| 10 | 19.5540 | 10 | 18.7348 |
| 20 | 29.5267 | 20 | 28.7075 |
| 30 | 39.4994 | 30 | 38.6802 |
| 40 | 49.4721 | 40 | 48.6529 |
| 50 | 59.4447 | 50 | 58.6256 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 11 20 00 | 11 21 51.7067 | 11 25 00 | 11 26 52.5281 |
| 10 | 11 22 01.7341 | 10 | 11 27 02.5554 |
| 20 | 11.7615 | 20 | 12.5828 |
| 30 | 21.7888 | 30 | 22.6102 |
| 40 | 31.8162 | 40 | 32.6376 |
| 50 | 41.8436 | 50 | 42.6650 |
| 11 21 00 | 51.8710 | 11 26 00 | 52.6923 |
| 10 | 11 23 01.8983 | 10 | 11 28 02.7197 |
| 20 | 11.9257 | 20 | 12.7471 |
| 30 | 21.9531 | 30 | 22.7745 |
| 40 | 31.9805 | 40 | 32.8019 |
| 50 | 42.0079 | 50 | 42.8292 |
| 11 22 00 | 52.0352 | 11 27 00 | 52.8566 |
| 10 | 11 24 02.0626 | 10 | 11 29 02.8840 |
| 20 | 12.0900 | 20 | 12.9114 |
| 30 | 22.1174 | 30 | 22.9388 |
| 40 | 32.1448 | 40 | 32.9661 |
| 50 | 42.1721 | 50 | 42.9935 |
| 11 23 00 | 52.1995 | 11 28 00 | 53.0209 |
| 10 | 11 25 02.2269 | 10 | 11 30 03.0483 |
| 20 | 12.2543 | 20 | 13.0756 |
| 30 | 22.2817 | 30 | 23.1030 |
| 40 | 32.3090 | 40 | 33.1304 |
| 50 | 42.3364 | 50 | 43.1578 |
| 11 24 00 | 52.3638 | 11 29 00 | 53.1852 |
| 10 | 11 26 02.3912 | 10 | 11 31 03.2125 |
| 20 | 12.4185 | 20 | 13.2399 |
| 30 | 22.4459 | 30 | 23.2673 |
| 40 | 32.4733 | 40 | 33.2947 |
| 50 | 42.5007 | 50 | 43.3221 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 11 20 00 | 11 18 08.5983 | 11 25 00 | 11 23 07.7792 |
| 10 | 18.5710 | 10 | 17.7519 |
| 20 | 28.5437 | 20 | 27.7246 |
| 30 | 38.5164 | 30 | 37.6973 |
| 40 | 48.4891 | 40 | 47.6700 |
| 50 | 58.4618 | 50 | 57.6427 |
| 11 21 00 | 11 19 08.4345 | 11 26 00 | 11 24 07.6154 |
| 10 | 18.4072 | 10 | 17.5881 |
| 20 | 28.3799 | 20 | 27.5608 |
| 30 | 38.3526 | 30 | 37.5334 |
| 40 | 48.3253 | 40 | 47.5061 |
| 50 | 58.2980 | 50 | 57.4788 |
| 11 22 00 | 11 20 08.2707 | 11 27 00 | 11 25 07.4515 |
| 10 | 18.2434 | 10 | 17.4242 |
| 20 | 28.2161 | 20 | 27.3969 |
| 30 | 38.1888 | 30 | 37.3696 |
| 40 | 48.1614 | 40 | 47.3423 |
| 50 | 58.1341 | 50 | 57.3150 |
| 11 23 00 | 11 21 08.1068 | 11 28 00 | 11 26 07.2877 |
| 10 | 18.0795 | 10 | 17.2604 |
| 20 | 28.0522 | 20 | 27.2331 |
| 30 | 38.0249 | 30 | 37.2058 |
| 40 | 47.9976 | 40 | 47.1785 |
| 50 | 57.9703 | 50 | 57.1512 |
| 11 24 00 | 11 22 07.9430 | 11 29 00 | 11 27 07.1239 |
| 10 | 17.9157 | 10 | 17.0966 |
| 20 | 27.8884 | 20 | 27.0693 |
| 30 | 37.8611 | 30 | 37.0420 |
| 40 | 47.8338 | 40 | 47.0147 |
| 50 | 57.8065 | 50 | 56.9874 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 11 30 00 | 11 31 53.3494 | 11 35 00 | 11 36 54.1708 |
| 10 | 11 32 03.3768 | 10 | 11 37 04.1982 |
| 20 | 13.4042 | 20 | 14.2256 |
| 30 | 23.4316 | 30 | 24.2529 |
| 40 | 33.4590 | 40 | 34.2803 |
| 50 | 43.4863 | 50 | 44.3077 |
| 11 31 00 | 53.5137 | 11 36 00 | 54.3351 |
| 10 | 11 33 03.5411 | 10 | 11 38 04.3625 |
| 20 | 13.5685 | 20 | 14.3898 |
| 30 | 23.5958 | 30 | 24.4172 |
| 40 | 33.6232 | 40 | 34.4446 |
| 50 | 43.6506 | 50 | 44.4720 |
| 11 32 00 | 53.6780 | 11 37 00 | 54.4994 |
| 10 | 11 34 03.7054 | 10 | 11 39 04.5267 |
| 20 | 13.7327 | 20 | 14.5541 |
| 30 | 23.7601 | 30 | 24.5815 |
| 40 | 33.7875 | 40 | 34.6089 |
| 50 | 43.8149 | 50 | 44.6363 |
| 11 33 00 | 53.8423 | 11 38 00 | 54.6636 |
| 10 | 11 35 03.8696 | 10 | 11 40 04.6910 |
| 20 | 13.8970 | 20 | 14.7184 |
| 30 | 23.9244 | 30 | 24.7458 |
| 40 | 33.9518 | 40 | 34.7732 |
| 50 | 43.9792 | 50 | 44.8005 |
| 11 34 00 | 54.0065 | 11 39 00 | 54.8279 |
| 10 | 11 36 04.0339 | 10 | 11 41 04.8553 |
| 20 | 14.0613 | 20 | 14.8827 |
| 30 | 24.0887 | 30 | 24.9100 |
| 40 | 34.1161 | 40 | 34.9374 |
| 50 | 44.1434 | 50 | 44.9648 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 11 30 00 | 11 28 06.9601 | 11 35 00 | 11 33 06.1409 |
| 10 | 16.9328 | 10 | 16.1136 |
| 20 | 26.9054 | 20 | 26.0863 |
| 30 | 36.8781 | 30 | 36.0590 |
| 40 | 46.8508 | 40 | 46.0317 |
| 50 | 56.8235 | 50 | 56.0044 |
| 11 31 00 | 11 29 06.7962 | 11 36 00 | 11 34 05.9771 |
| 10 | 16.7689 | 10 | 15.9498 |
| 20 | 26.7416 | 20 | 25.9225 |
| 30 | 36.7143 | 30 | 35.8952 |
| 40 | 46.6870 | 40 | 45.8679 |
| 50 | 56.6597 | 50 | 55.8406 |
| 11 32 00 | 11 30 06.6324 | 11 37 00 | 11 35 05.8133 |
| 10 | 16.6051 | 10 | 15.7860 |
| 20 | 26.5778 | 20 | 25.7587 |
| 30 | 36.5505 | 30 | 35.7314 |
| 40 | 46.5232 | 40 | 45.7041 |
| 50 | 56.4959 | 50 | 55.6768 |
| 11 33 00 | 11 31 06.4686 | 11 38 00 | 11 36 05.6494 |
| 10 | 16.4413 | 10 | 15.6221 |
| 20 | 26.4140 | 20 | 25.5948 |
| 30 | 36.3867 | 30 | 35.5675 |
| 40 | 46.3594 | 40 | 45.5402 |
| 50 | 56.3321 | 50 | 55.5129 |
| 11 34 00 | 11 32 06.3048 | 11 39 00 | 11 37 05.4856 |
| 10 | 16.2774 | 10 | 15.4583 |
| 20 | 26.2501 | 20 | 25.4310 |
| 30 | 36.2228 | 30 | 35.4037 |
| 40 | 46.1955 | 40 | 45.3764 |
| 50 | 56.1682 | 50 | 55.3491 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 11 40 00 | 11 41 54.9922 | 11 45 00 | 11 46 55.8136 |
| 10 | 11 42 05.0196 | 10 | 11 47 05.8409 |
| 20 | 15.0469 | 20 | 15.8683 |
| 30 | 25.0743 | 30 | 25.8957 |
| 40 | 35.1017 | 40 | 35.9231 |
| 50 | 45.1291 | 50 | 45.9505 |
| 11 41 00 | 55.1565 | 11 46 00 | 55.9778 |
| 10 | 11 43 05.1838 | 10 | 11 48 06.0052 |
| 20 | 15.2112 | 20 | 16.0326 |
| 30 | 25.2386 | 30 | 26.0600 |
| 40 | 35.2660 | 40 | 36.0873 |
| 50 | 45.2934 | 50 | 46.1147 |
| 11 42 00 | 55.3207 | 11 47 00 | 56.1421 |
| 10 | 11 44 05.3481 | 10 | 11 49 06.1695 |
| 20 | 15.3755 | 20 | 16.1969 |
| 30 | 25.4029 | 30 | 26.2242 |
| 40 | 35.4302 | 40 | 36.2516 |
| 50 | 45.4576 | 50 | 46.2790 |
| 11 43 00 | 55.4850 | 11 48 00 | 56.3064 |
| 10 | 11 45 05.5124 | 10 | 11 50 06.3338 |
| 20 | 15.5398 | 20 | 16.3611 |
| 30 | 25.5671 | 30 | 26.3885 |
| 40 | 35.5945 | 40 | 36.4159 |
| 50 | 45.6219 | 50 | 46.4433 |
| 11 44 00 | 55.6493 | 11 49 00 | 56.4707 |
| 10 | 11 46 05.6767 | 10 | 11 51 06.4980 |
| 20 | 15.7040 | 20 | 16.5254 |
| 30 | 25.7314 | 30 | 26.5528 |
| 40 | 35.7588 | 40 | 36.5802 |
| 50 | 45.7862 | 50 | 46.6075 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 11 40 00 | 11 38 05.3218 | 11 45 00 | 11 43 04.5027 |
| 10 | 15.2945 | 10 | 14.4754 |
| 20 | 25.2672 | 20 | 24.4481 |
| 30 | 35.2399 | 30 | 34.4208 |
| 40 | 45.2126 | 40 | 44.3934 |
| 50 | 55.1853 | 50 | 54.3661 |
| 11 41 00 | 11 39 05.1580 | 11 46 00 | 11 44 04.3388 |
| 10 | 15.1307 | 10 | 14.3115 |
| 20 | 25.1034 | 20 | 24.2842 |
| 30 | 35.0761 | 30 | 34.2569 |
| 40 | 45.0488 | 40 | 44.2296 |
| 50 | 55.0214 | 50 | 54.2023 |
| 11 42 00 | 11 40 04.9941 | 11 47 00 | 11 45 04.1750 |
| 10 | 14.9668 | 10 | 14.1477 |
| 20 | 24.9395 | 20 | 24.1204 |
| 30 | 34.9122 | 30 | 34.0931 |
| 40 | 44.8849 | 40 | 44.0658 |
| 50 | 54.8576 | 50 | 54.0385 |
| 11 43 00 | 11 41 04.8303 | 11 48 00 | 11 46 04.0112 |
| 10 | 14.8030 | 10 | 13.9839 |
| 20 | 24.7757 | 20 | 23.9566 |
| 30 | 34.7484 | 30 | 33.9293 |
| 40 | 44.7211 | 40 | 43.9020 |
| 50 | 54.6938 | 50 | 53.8747 |
| 11 44 00 | 11 42 04.6665 | 11 49 00 | 11 47 03.8474 |
| 10 | 14.6392 | 10 | 13.8201 |
| 20 | 24.6119 | 20 | 23.7928 |
| 30 | 34.5846 | 30 | 33.7654 |
| 40 | 44.5573 | 40 | 43.7381 |
| 50 | 54.5300 | 50 | 53.7108 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 11 50 00 | 11 51 56.6349 | 11 55 00 | 11 56 57.4563 |
| 10 | 11 52 06.6623 | 10 | 11 57 07.4837 |
| 20 | 16.6897 | 20 | 17.5111 |
| 30 | 26.7171 | 30 | 27.5384 |
| 40 | 36.7444 | 40 | 37.5658 |
| 50 | 46.7718 | 50 | 47.5932 |
| 11 51 00 | 56.7992 | 11 56 00 | 57.6206 |
| 10 | 11 53 06.8266 | 10 | 11 58 07.6480 |
| 20 | 16.8540 | 20 | 17.6753 |
| 30 | 26.8813 | 30 | 27.7027 |
| 40 | 36.9087 | 40 | 37.7301 |
| 50 | 46.9361 | 50 | 47.7575 |
| 11 52 00 | 56.9635 | 11 57 00 | 57.7849 |
| 10 | 11 54 06.9909 | 10 | 11 59 07.8122 |
| 20 | 17.0182 | 20 | 17.8396 |
| 30 | 27.0456 | 30 | 27.8670 |
| 40 | 37.0730 | 40 | 37.8944 |
| 50 | 47.1004 | 50 | 47.9217 |
| 11 53 00 | 57.1278 | 11 58 00 | 57.9491 |
| 10 | 11 55 07.1551 | 10 | 12 00 07.9765 |
| 20 | 17.1825 | 20 | 18.0039 |
| 30 | 27.2099 | 30 | 28.0313 |
| 40 | 37.2373 | 40 | 38.0586 |
| 50 | 47.2646 | 50 | 48.0860 |
| 11 54 00 | 57.2920 | 11 59 00 | 58.1134 |
| 10 | 11 56 07.3194 | 10 | 12 01 08.1408 |
| 20 | 17.3468 | 20 | 18.1682 |
| 30 | 27.3742 | 30 | 28.1955 |
| 40 | 37.4015 | 40 | 38.2229 |
| 50 | 47.4289 | 50 | 48.2503 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 11 50 00 | 11 48 03.6835 | 11 55 00 | 11 53 02.8644 |
| 10 | 13.6562 | 10 | 12.8371 |
| 20 | 23.6289 | 20 | 22.8098 |
| 30 | 33.6016 | 30 | 32.7825 |
| 40 | 43.5743 | 40 | 42.7552 |
| 50 | 53.5470 | 50 | 52.7279 |
| 11 51 00 | 11 49 03.5197 | 11 56 00 | 11 54 02.7006 |
| 10 | 13.4924 | 10 | 12.6733 |
| 20 | 23.4651 | 20 | 22.6460 |
| 30 | 33.4378 | 30 | 32.6187 |
| 40 | 43.4105 | 40 | 42.5914 |
| 50 | 53.3832 | 50 | 52.5641 |
| 11 52 00 | 11 50 03.3559 | 11 57 00 | 11 55 02.5368 |
| 10 | 13.3286 | 10 | 12.5094 |
| 20 | 23.3013 | 20 | 22.4821 |
| 30 | 33.2740 | 30 | 32.4548 |
| 40 | 43.2467 | 40 | 42.4275 |
| 50 | 53.2194 | 50 | 52.4002 |
| 11 53 00 | 11 51 03.1921 | 11 58 00 | 11 56 02.3729 |
| 10 | 13.1648 | 10 | 12.3456 |
| 20 | 23.1374 | 20 | 22.3183 |
| 30 | 33.1101 | 30 | 32.2910 |
| 40 | 43.0828 | 40 | 42.2637 |
| 50 | 53.0555 | 50 | 52.2364 |
| 11 54 00 | 11 52 03.0282 | 11 59 00 | 11 57 02.2091 |
| 10 | 13.0009 | 10 | 12.1818 |
| 20 | 22.9736 | 20 | 22.1545 |
| 30 | 32.9463 | 30 | 32.1272 |
| 40 | 42.9190 | 40 | 42.0999 |
| 50 | 52.8917 | 50 | 52.0726 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 12 00 00 | 12 01 58.2777 | 12 05 00 | 12 06 59.0990 |
| 10 | 12 02 08.3051 | 10 | 12 07 09.1264 |
| 20 | 18.3324 | 20 | 19.1538 |
| 30 | 28.3598 | 30 | 29.1812 |
| 40 | 38.3872 | 40 | 39.2086 |
| 50 | 48.4146 | 50 | 49.2359 |
| 12 01 00 | 58.4419 | 12 06 00 | 59.2633 |
| 10 | 12 03 08.4693 | 10 | 12 08 09.2907 |
| 20 | 18.4967 | 20 | 19.3181 |
| 30 | 28.5241 | 30 | 29.3455 |
| 40 | 38.5515 | 40 | 39.3728 |
| 50 | 48.5788 | 50 | 49.4002 |
| 12 02 00 | 58.6062 | 12 07 00 | 59.4276 |
| 10 | 12 04 08.6336 | 10 | 12 09 09.4550 |
| 20 | 18.6610 | 20 | 19.4824 |
| 30 | 28.6884 | 30 | 29.5097 |
| 40 | 38.7157 | 40 | 39.5371 |
| 50 | 48.7431 | 50 | 49.5645 |
| 12 03 00 | 58.7705 | 12 08 00 | 59.5919 |
| 10 | 12 05 08.7979 | 10 | 12 10 09.6192 |
| 20 | 18.8253 | 20 | 19.6466 |
| 30 | 28.8526 | 30 | 29.6740 |
| 40 | 38.8800 | 40 | 39.7014 |
| 50 | 48.9074 | 50 | 49.7288 |
| 12 04 00 | 58.9348 | 12 09 00 | 59.7561 |
| 10 | 12 06 08.9622 | 10 | 12 11 09.7835 |
| 20 | 18.9895 | 20 | 19.8109 |
| 30 | 29.0169 | 30 | 29.8383 |
| 40 | 39.0443 | 40 | 39.8657 |
| 50 | 49.0717 | 50 | 49.8930 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 12 00 00 | 11 58 02.0453 | 12 05 00 | 12 03 01.2261 |
| 10 | 12.0180 | 10 | 11.1988 |
| 20 | 21.9907 | 20 | 21.1715 |
| 30 | 31.9634 | 30 | 31.1442 |
| 40 | 41.9361 | 40 | 41.1169 |
| 50 | 51.9088 | 50 | 51.0896 |
| 12 01 00 | 11 59 01.8814 | 12 06 00 | 12 04 01.0623 |
| 10 | 11.8541 | 10 | 11.0350 |
| 20 | 21.8268 | 20 | 21.0077 |
| 30 | 31.7995 | 30 | 30.9804 |
| 40 | 41.7722 | 40 | 40.9531 |
| 50 | 51.7449 | 50 | 50.9258 |
| 12 02 00 | 12 00 01.7176 | 12 07 00 | 12 05 00.8985 |
| 10 | 11.6903 | 10 | 10.8712 |
| 20 | 21.6630 | 20 | 20.8439 |
| 30 | 31.6357 | 30 | 30.8166 |
| 40 | 41.6084 | 40 | 40.7893 |
| 50 | 51.5811 | 50 | 50.7620 |
| 12 03 00 | 12 01 01.5538 | 12 08 00 | 12 06 00.7347 |
| 10 | 11.5265 | 10 | 10.7074 |
| 20 | 21.4992 | 20 | 20.6801 |
| 30 | 31.4719 | 30 | 30.6528 |
| 40 | 41.4446 | 40 | 40.6254 |
| 50 | 51.4173 | 50 | 50.5981 |
| 12 04 00 | 12 02 01.3900 | 12 09 00 | 12 07 00.5708 |
| 10 | 11.3627 | 10 | 10.5435 |
| 20 | 21.3354 | 20 | 20.5162 |
| 30 | 31.3081 | 30 | 30.4889 |
| 40 | 41.2808 | 40 | 40.4616 |
| 50 | 51.2534 | 50 | 50.4343 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 12 10 00 | 12 11 59.9204 | 12 15 00 | 12 17 00.7418 |
| 10 | 12 12 09.9478 | 10 | 10.7692 |
| 20 | 19.9752 | 20 | 20.7966 |
| 30 | 30.0026 | 30 | 30.8239 |
| 40 | 40.0299 | 40 | 40.8513 |
| 50 | 50.0573 | 50 | 50.8787 |
| 12 11 00 | 12 13 00.0847 | 12 16 00 | 12 18 00.9061 |
| 10 | 10.1121 | 10 | 10.9334 |
| 20 | 20.1395 | 20 | 20.9608 |
| 30 | 30.1668 | 30 | 30.9882 |
| 40 | 40.1942 | 40 | 41.0156 |
| 50 | 50.2216 | 50 | 51.0430 |
| 12 12 00 | 12 14 00.2490 | 12 17 00 | 12 19 01.0703 |
| 10 | 10.2763 | 10 | 11.0977 |
| 20 | 20.3037 | 20 | 21.1251 |
| 30 | 30.3311 | 30 | 31.1525 |
| 40 | 40.3585 | 40 | 41.1799 |
| 50 | 50.3859 | 50 | 51.2072 |
| 12 13 00 | 12 15 00.4132 | 12 18 00 | 12 20 01.2346 |
| 10 | 10.4406 | 10 | 11.2620 |
| 20 | 20.4680 | 20 | 21.2894 |
| 30 | 30.4954 | 30 | 31.3168 |
| 40 | 40.5228 | 40 | 41.3441 |
| 50 | 50.5501 | 50 | 51.3715 |
| 12 14 00 | 12 16 00.5775 | 12 19 00 | 12 21 01.3989 |
| 10 | 10.6049 | 10 | 11.4263 |
| 20 | 20.6323 | 20 | 21.4536 |
| 30 | 30.6597 | 30 | 31.4810 |
| 40 | 40.6870 | 40 | 41.5084 |
| 50 | 50.7144 | 50 | 51.5358 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 12 10 00 | 12 08 00.4070 | 12 15 00 | 12 12 59.5879 |
| 10 | 10.3797 | 10 | 12 13 09.5606 |
| 20 | 20.3524 | 20 | 19.5333 |
| 30 | 30.3251 | 30 | 29.5060 |
| 40 | 40.2978 | 40 | 39.4787 |
| 50 | 50.2705 | 50 | 49.4514 |
| 12 11 00 | 12 09 00.2432 | 12 16 00 | 59.4241 |
| 10 | 10.2159 | 10 | 12 14 09.3968 |
| 20 | 20.1886 | 20 | 19.3695 |
| 30 | 30.1613 | 30 | 29.3421 |
| 40 | 40.1340 | 40 | 39.3148 |
| 50 | 50.1067 | 50 | 49.2875 |
| 12 12 00 | 12 10 00.0794 | 12 17 00 | 59.2602 |
| 10 | 10.0521 | 10 | 12 15 09.2329 |
| 20 | 20.0248 | 20 | 19.2056 |
| 30 | 29.9974 | 30 | 29.1783 |
| 40 | 39.9701 | 40 | 39.1510 |
| 50 | 49.9428 | 50 | 49.1237 |
| 12 13 00 | 59.9155 | 12 18 00 | 59.0964 |
| 10 | 12 11 09.8882 | 10 | 12 16 09.0691 |
| 20 | 19.8609 | 20 | 19.0418 |
| 30 | 29.8336 | 30 | 29.0145 |
| 40 | 39.8063 | 40 | 38.9872 |
| 50 | 49.7790 | 50 | 48.9599 |
| 12 14 00 | 59.7517 | 12 19 00 | 58.9326 |
| 10 | 12 12 09.7244 | 10 | 12 17 08.9053 |
| 20 | 19.6971 | 20 | 18.8780 |
| 30 | 29.6698 | 30 | 28.8507 |
| 40 | 39.6425 | 40 | 38.8234 |
| 50 | 49.6152 | 50 | 48.7961 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 12 20 00 | 12 22 01.5632 | 12 25 00 | 12 27 02.3845 |
| 10 | 11.5905 | 10 | 12.4119 |
| 20 | 21.6179 | 20 | 22.4393 |
| 30 | 31.6453 | 30 | 32.4667 |
| 40 | 41.6727 | 40 | 42.4941 |
| 50 | 51.7001 | 50 | 52.5214 |
| 12 21 00 | 12 23 01.7274 | 12 26 00 | 12 28 02.5488 |
| 10 | 11.7548 | 10 | 12.5762 |
| 20 | 21.7822 | 20 | 22.6036 |
| 30 | 31.8096 | 30 | 32.6309 |
| 40 | 41.8370 | 40 | 42.6583 |
| 50 | 51.8643 | 50 | 52.6857 |
| 12 22 00 | 12 24 01.8917 | 12 27 00 | 12 29 02.7131 |
| 10 | 11.9191 | 10 | 12.7405 |
| 20 | 21.9465 | 20 | 22.7678 |
| 30 | 31.9739 | 30 | 32.7952 |
| 40 | 42.0012 | 40 | 42.8226 |
| 50 | 52.0286 | 50 | 52.8500 |
| 12 23 00 | 12 25 02.0560 | 12 28 00 | 12 30 02.8774 |
| 10 | 12.0834 | 10 | 12.9047 |
| 20 | 22.1107 | 20 | 22.9321 |
| 30 | 32.1381 | 30 | 32.9595 |
| 40 | 42.1655 | 40 | 42.9869 |
| 50 | 52.1929 | 50 | 53.0143 |
| 12 24 00 | 12 26 02.2203 | 12 29 00 | 12 31 03.0416 |
| 10 | 12.2476 | 10 | 13.0690 |
| 20 | 22.2750 | 20 | 23.0964 |
| 30 | 32.3024 | 30 | 33.1238 |
| 40 | 42.3298 | 40 | 43.1512 |
| 50 | 52.3572 | 50 | 53.1785 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 12 20 00 | 12 17 58.7688 | 12 25 00 | 12 22 57.9496 |
| 10 | 12 18 08.7415 | 10 | 12 23 07.9223 |
| 20 | 18.7141 | 20 | 17.8950 |
| 30 | 28.6868 | 30 | 27.8677 |
| 40 | 38.6595 | 40 | 37.8404 |
| 50 | 48.6322 | 50 | 47.8131 |
| 12 21 00 | 58.6049 | 12 26 00 | 57.7858 |
| 10 | 12 19 08.5776 | 10 | 12 24 07.7585 |
| 20 | 18.5503 | 20 | 17.7312 |
| 30 | 28.5230 | 30 | 27.7039 |
| 40 | 38.4957 | 40 | 37.6766 |
| 50 | 48.4684 | 50 | 47.6493 |
| 12 22 00 | 58.4411 | 12 27 00 | 57.6220 |
| 10 | 12 20 08.4138 | 10 | 12 25 07.5947 |
| 20 | 18.3865 | 20 | 17.5674 |
| 30 | 28.3592 | 30 | 27.5401 |
| 40 | 38.3319 | 40 | 37.5128 |
| 50 | 48.3046 | 50 | 47.4855 |
| 12 23 00 | 58.2773 | 12 28 00 | 57.4581 |
| 10 | 12 21 08.2500 | 10 | 12 26 07.4308 |
| 20 | 18.2227 | 20 | 17.4035 |
| 30 | 28.1954 | 30 | 27.3762 |
| 40 | 38.1681 | 40 | 37.3489 |
| 50 | 48.1408 | 50 | 47.3216 |
| 12 24 00 | 58.1135 | 12 29 00 | 57.2943 |
| 10 | 12 22 08.0861 | 10 | 12 27 07.2670 |
| 20 | 18.0588 | 20 | 17.2397 |
| 30 | 28.0315 | 30 | 27.2124 |
| 40 | 38.0042 | 40 | 37.1851 |
| 50 | 47.9769 | 50 | 47.1578 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 12 30 00 | 12 32 03.2059 | 12 35 00 | 12 37 04.0273 |
| 10 | 13.2333 | 10 | 14.0547 |
| 20 | 23.2607 | 20 | 24.0820 |
| 30 | 33.2880 | 30 | 34.1094 |
| 40 | 43.3154 | 40 | 44.1368 |
| 50 | 53.3428 | 50 | 54.1642 |
| 12 31 00 | 12 33 03.3702 | 12 36 00 | 12 38 04.1916 |
| 10 | 13.3976 | 10 | 14.2189 |
| 20 | 23.4249 | 20 | 24.2463 |
| 30 | 33.4523 | 30 | 34.2737 |
| 40 | 43.4797 | 40 | 44.3011 |
| 50 | 53.5071 | 50 | 54.3285 |
| 12 32 00 | 12 34 03.5345 | 12 37 00 | 12 39 04.3558 |
| 10 | 13.5618 | 10 | 14.3832 |
| 20 | 23.5892 | 20 | 24.4106 |
| 30 | 33.6166 | 30 | 34.4380 |
| 40 | 43.6440 | 40 | 44.4653 |
| 50 | 53.6714 | 50 | 54.4927 |
| 12 33 00 | 12 35 03.6987 | 12 38 00 | 12 40 04.5201 |
| 10 | 13.7261 | 10 | 14.5475 |
| 20 | 23.7535 | 20 | 24.5749 |
| 30 | 33.7809 | 30 | 34.6022 |
| 40 | 43.8083 | 40 | 44.6296 |
| 50 | 53.8356 | 50 | 54.6570 |
| 12 34 00 | 12 36 03.8630 | 12 39 00 | 12 41 04.6844 |
| 10 | 13.8904 | 10 | 14.7118 |
| 20 | 23.9178 | 20 | 24.7391 |
| 30 | 33.9451 | 30 | 34.7665 |
| 40 | 43.9725 | 40 | 44.7939 |
| 50 | 53.9999 | 50 | 54.8213 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 12 30 00 | 12 27 57.1305 | 12 35 00 | 12 32 56.3114 |
| 10 | 12 28 07.1032 | 10 | 12 33 06.2841 |
| 20 | 17.0759 | 20 | 16.2568 |
| 30 | 27.0486 | 30 | 26.2295 |
| 40 | 37.0213 | 40 | 36.2021 |
| 50 | 46.9940 | 50 | 46.1748 |
| 12 31 00 | 56.9667 | 12 36 00 | 56.1475 |
| 10 | 12 29 06.9394 | 10 | 12 34 06.1202 |
| 20 | 16.9121 | 20 | 16.0929 |
| 30 | 26.8848 | 30 | 26.0656 |
| 40 | 36.8575 | 40 | 36.0383 |
| 50 | 46.8301 | 50 | 46.0110 |
| 12 32 00 | 56.8028 | 12 37 00 | 55.9837 |
| 10 | 12 30 06.7755 | 10 | 12 35 05.9564 |
| 20 | 16.7482 | 20 | 15.9291 |
| 30 | 26.7209 | 30 | 25.9018 |
| 40 | 36.6936 | 40 | 35.8745 |
| 50 | 46.6663 | 50 | 45.8472 |
| 12 33 00 | 56.6390 | 12 38 00 | 55.8199 |
| 10 | 12 31 06.6117 | 10 | 12 36 05.7926 |
| 20 | 16.5844 | 20 | 15.7653 |
| 30 | 26.5571 | 30 | 25.7380 |
| 40 | 36.5298 | 40 | 35.7107 |
| 50 | 46.5025 | 50 | 45.6834 |
| 12 34 00 | 56.4752 | 12 39 00 | 55.6561 |
| 10 | 12 32 06.4479 | 10 | 12 37 05.6288 |
| 20 | 16.4206 | 20 | 15.6015 |
| 30 | 26.3933 | 30 | 25.5741 |
| 40 | 36.3660 | 40 | 35.5468 |
| 50 | 46.3387 | 50 | 45.5195 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 12 40 00 | 12 42 04.8487 | 12 45 00 | 12 47 05.6700 |
| 10 | 14.8760 | 10 | 15.6974 |
| 20 | 24.9034 | 20 | 25.7248 |
| 30 | 34.9308 | 30 | 35.7522 |
| 40 | 44.9582 | 40 | 45.7795 |
| 50 | 54.9856 | 50 | 55.8069 |
| 12 41 00 | 12 43 05.0129 | 12 46 00 | 12 48 05.8343 |
| 10 | 15.0403 | 10 | 15.8617 |
| 20 | 25.0677 | 20 | 25.8891 |
| 30 | 35.0951 | 30 | 35.9164 |
| 40 | 45.1224 | 40 | 45.9438 |
| 50 | 55.1498 | 50 | 55.9712 |
| 12 42 00 | 12 44 05.1772 | 12 47 00 | 12 49 05.9986 |
| 10 | 15.2046 | 10 | 16.0260 |
| 20 | 25.2320 | 20 | 26.0533 |
| 30 | 35.2593 | 30 | 36.0807 |
| 40 | 45.2867 | 40 | 46.1081 |
| 50 | 55.3141 | 50 | 56.1355 |
| 12 43 00 | 12 45 05.3415 | 12 48 00 | 12 50 06.1629 |
| 10 | 15.3689 | 10 | 16.1902 |
| 20 | 25.3962 | 20 | 26.2176 |
| 30 | 35.4236 | 30 | 36.2450 |
| 40 | 45.4510 | 40 | 46.2724 |
| 50 | 55.4784 | 50 | 56.2997 |
| 12 44 00 | 12 46 05.5058 | 12 49 00 | 12 51 06.3271 |
| 10 | 15.5331 | 10 | 16.3545 |
| 20 | 25.5605 | 20 | 26.3819 |
| 30 | 35.5879 | 30 | 36.4093 |
| 40 | 45.6153 | 40 | 46.4366 |
| 50 | 55.6426 | 50 | 56.4640 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 12 40 00 | 12 37 55.4922 | 12 45 00 | 12 42 54.6731 |
| 10 | 12 38 05.4649 | 10 | 12 43 04.6458 |
| 20 | 15.4376 | 20 | 14.6185 |
| 30 | 25.4103 | 30 | 24.5912 |
| 40 | 35.3830 | 40 | 34.5639 |
| 50 | 45.3557 | 50 | 44.5366 |
| 12 41 00 | 55.3284 | 12 46 00 | 54.5093 |
| 10 | 12 39 05.3011 | 10 | 12 44 04.4820 |
| 20 | 15.2738 | 20 | 14.4547 |
| 30 | 25.2465 | 30 | 24.4274 |
| 40 | 35.2192 | 40 | 34.4001 |
| 50 | 45.1919 | 50 | 44.3728 |
| 12 42 00 | 55.1646 | 12 47 00 | 54.3455 |
| 10 | 12 40 05.1373 | 10 | 12 45 04.3181 |
| 20 | 15.1100 | 20 | 14.2908 |
| 30 | 25.0827 | 30 | 24.2635 |
| 40 | 35.0554 | 40 | 34.2362 |
| 50 | 45.0281 | 50 | 44.2089 |
| 12 43 00 | 55.0008 | 12 48 00 | 54.1816 |
| 10 | 12 41 04.9735 | 10 | 12 46 04.1543 |
| 20 | 14.9461 | 20 | 14.1270 |
| 30 | 24.9188 | 30 | 24.0997 |
| 40 | 34.8915 | 40 | 34.0724 |
| 50 | 44.8642 | 50 | 44.0451 |
| 12 44 00 | 54.8369 | 12 49 00 | 54.0178 |
| 10 | 12 42 04.8096 | 10 | 12 47 03.9905 |
| 20 | 14.7823 | 20 | 13.9632 |
| 30 | 24.7550 | 30 | 23.9359 |
| 40 | 34.7277 | 40 | 33.9086 |
| 50 | 44.7004 | 50 | 43.8813 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 12 50 00 | 12 52 06.4914 | 12 55 00 | 12 57 07.3128 |
| 10 | 16.5188 | 10 | 17.3402 |
| 20 | 26.5462 | 20 | 27.3675 |
| 30 | 36.5735 | 30 | 37.3949 |
| 40 | 46.6009 | 40 | 47.4223 |
| 50 | 56.6283 | 50 | 57.4497 |
| 12 51 00 | 12 53 06.6557 | 12 56 00 | 12 58 07.4770 |
| 10 | 16.6831 | 10 | 17.5044 |
| 20 | 26.7104 | 20 | 27.5318 |
| 30 | 36.7378 | 30 | 37.5592 |
| 40 | 46.7652 | 40 | 47.5866 |
| 50 | 56.7926 | 50 | 57.6139 |
| 12 52 00 | 12 54 06.8200 | 12 57 00 | 12 59 07.6413 |
| 10 | 16.8473 | 10 | 17.6687 |
| 20 | 26.8747 | 20 | 27.6961 |
| 30 | 36.9021 | 30 | 37.7235 |
| 40 | 46.9295 | 40 | 47.7508 |
| 50 | 56.9568 | 50 | 57.7782 |
| 12 53 00 | 12 55 06.9842 | 12 58 00 | 13 00 07.8056 |
| 10 | 17.0116 | 10 | 17.8330 |
| 20 | 27.0390 | 20 | 27.8604 |
| 30 | 37.0664 | 30 | 37.8877 |
| 40 | 47.0937 | 40 | 47.9151 |
| 50 | 57.1211 | 50 | 57.9425 |
| 12 54 00 | 12 56 07.1485 | 12 59 00 | 13 01 07.9699 |
| 10 | 17.1759 | 10 | 17.9973 |
| 20 | 27.2033 | 20 | 28.0246 |
| 30 | 37.2306 | 30 | 38.0520 |
| 40 | 47.2580 | 40 | 48.0794 |
| 50 | 57.2854 | 50 | 58.1068 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 12 50 00 | 12 47 53.8540 | 12 55 00 | 12 52 53.0348 |
| 10 | 12 48 03.8267 | 10 | 12 53 03.0075 |
| 20 | 13.7994 | 20 | 12.9802 |
| 30 | 23.7721 | 30 | 22.9529 |
| 40 | 33.7448 | 40 | 32.9256 |
| 50 | 43.7175 | 50 | 42.8983 |
| 12 51 00 | 53.6901 | 12 56 00 | 52.8710 |
| 10 | 12 49 03.6628 | 10 | 12 54 02.8437 |
| 20 | 13.6355 | 20 | 12.8164 |
| 30 | 23.6082 | 30 | 22.7891 |
| 40 | 33.5809 | 40 | 32.7618 |
| 50 | 43.5536 | 50 | 42.7345 |
| 12 52 00 | 53.5263 | 12 57 00 | 52.7072 |
| 10 | 12 50 03.4990 | 10 | 12 55 02.6799 |
| 20 | 13.4717 | 20 | 12.6526 |
| 30 | 23.4444 | 30 | 22.6253 |
| 40 | 33.4171 | 40 | 32.5980 |
| 50 | 43.3898 | 50 | 42.5707 |
| 12 53 00 | 53.3625 | 12 58 00 | 52.5434 |
| 10 | 12 51 03.3352 | 10 | 12 56 02.5161 |
| 20 | 13.3079 | 20 | 12.4888 |
| 30 | 23.2806 | 30 | 22.4615 |
| 40 | 33.2533 | 40 | 32.4341 |
| 50 | 43.2260 | 50 | 42.4068 |
| 12 54 00 | 53.1987 | 12 59 00 | 52.3795 |
| 10 | 12 52 03.1714 | 10 | 12 57 02.3522 |
| 20 | 13.1441 | 20 | 12.3249 |
| 30 | 23.1168 | 30 | 22.2976 |
| 40 | 33.0895 | 40 | 32.2703 |
| 50 | 43.0621 | 50 | 42.2430 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 13 00 00 | 13 02 08.1341 | 13 05 00 | 13 07 08.9555 |
| 10 | 18.1615 | 10 | 18.9829 |
| 20 | 28.1889 | 20 | 29.0103 |
| 30 | 38.2163 | 30 | 39.0377 |
| 40 | 48.2437 | 40 | 49.0650 |
| 50 | 58.2710 | 50 | 59.0924 |
| 13 01 00 | 13 03 08.2984 | 13 06 00 | 13 08 09.1198 |
| 10 | 18.3258 | 10 | 19.1472 |
| 20 | 28.3532 | 20 | 29.1746 |
| 30 | 38.3806 | 30 | 39.2019 |
| 40 | 48.4079 | 40 | 49.2293 |
| 50 | 58.4353 | 50 | 59.2567 |
| 13 02 00 | 13 04 08.4627 | 13 07 00 | 13 09 09.2841 |
| 10 | 18.4901 | 10 | 19.3114 |
| 20 | 28.5175 | 20 | 29.3388 |
| 30 | 38.5448 | 30 | 39.3662 |
| 40 | 48.5722 | 40 | 49.3936 |
| 50 | 58.5996 | 50 | 59.4210 |
| 13 03 00 | 13 05 08.6270 | 13 08 00 | 13 10 09.4483 |
| 10 | 18.6543 | 10 | 19.4757 |
| 20 | 28.6817 | 20 | 29.5031 |
| 30 | 38.7091 | 30 | 39.5305 |
| 40 | 48.7365 | 40 | 49.5579 |
| 50 | 58.7639 | 50 | 59.5852 |
| 13 04 00 | 13 06 08.7912 | 13 09 00 | 13 11 09.6126 |
| 10 | 18.8186 | 10 | 19.6400 |
| 20 | 28.8460 | 20 | 29.6674 |
| 30 | 38.8734 | 30 | 39.6948 |
| 40 | 48.9008 | 40 | 49.7221 |
| 50 | 58.9281 | 50 | 59.7495 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 13 00 00 | 12 57 52.2157 | 13 05 00 | 13 02 51.3966 |
| 10 | 12 58 02.1884 | 10 | 13 03 01.3693 |
| 20 | 12.1611 | 20 | 11.3420 |
| 30 | 22.1338 | 30 | 21.3147 |
| 40 | 32.1065 | 40 | 31.2874 |
| 50 | 42.0792 | 50 | 41.2601 |
| 13 01 00 | 52.0519 | 13 06 00 | 51.2328 |
| 10 | 12 59 02.0246 | 10 | 13 04 01.2055 |
| 20 | 11.9973 | 20 | 11.1781 |
| 30 | 21.9700 | 30 | 21.1508 |
| 40 | 31.9427 | 40 | 31.1235 |
| 50 | 41.9154 | 50 | 41.0962 |
| 13 02 00 | 51.8881 | 13 07 00 | 51.0689 |
| 10 | 13 00 01.8608 | 10 | 13 05 01.0416 |
| 20 | 11.8335 | 20 | 11.0143 |
| 30 | 21.8061 | 30 | 20.9870 |
| 40 | 31.7788 | 40 | 30.9597 |
| 50 | 41.7515 | 50 | 40.9324 |
| 13 03 00 | 51.7242 | 13 08 00 | 50.9051 |
| 10 | 13 01 01.6969 | 10 | 13 06 00.8778 |
| 20 | 11.6696 | 20 | 10.8505 |
| 30 | 21.6423 | 30 | 20.8232 |
| 40 | 31.6150 | 40 | 30.7959 |
| 50 | 41.5877 | 50 | 40.7686 |
| 13 04 00 | 51.5604 | 13 09 00 | 50.7413 |
| 10 | 13 02 01.5331 | 10 | 13 07 00.7140 |
| 20 | 11.5058 | 20 | 10.6867 |
| 30 | 21.4785 | 30 | 20.6594 |
| 40 | 31.4512 | 40 | 30.6321 |
| 50 | 41.4239 | 50 | 40.6048 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 13 10 00 | 13 12 09.7769 | 13 15 00 | 13 17 10.5983 |
| 10 | 19.8043 | 10 | 20.6256 |
| 20 | 29.8317 | 20 | 30.6530 |
| 30 | 39.8590 | 30 | 40.6804 |
| 40 | 49.8864 | 40 | 50.7078 |
| 50 | 59.9138 | 50 | 13 18 00.7352 |
| 13 11 00 | 13 13 09.9412 | 13 16 00 | 10.7625 |
| 10 | 19.9685 | 10 | 20.7899 |
| 20 | 29.9959 | 20 | 30.8173 |
| 30 | 40.0233 | 30 | 40.8447 |
| 40 | 50.0507 | 40 | 50.8721 |
| 50 | 13 14 00.0781 | 50 | 13 19 00.8994 |
| 13 12 00 | 10.1054 | 13 17 00 | 10.9268 |
| 10 | 20.1328 | 10 | 20.9542 |
| 20 | 30.1602 | 20 | 30.9816 |
| 30 | 40.1876 | 30 | 41.0090 |
| 40 | 50.2150 | 40 | 51.0363 |
| 50 | 13 15 00.2423 | 50 | 13 20 01.0637 |
| 13 13 00 | 10.2697 | 13 18 00 | 11.0911 |
| 10 | 20.2971 | 10 | 21.1185 |
| 20 | 30.3245 | 20 | 31.1458 |
| 30 | 40.3519 | 30 | 41.1732 |
| 40 | 50.3792 | 40 | 51.2006 |
| 50 | 13 16 00.4066 | 50 | 13 21 01.2280 |
| 13 14 00 | 10.4340 | 13 19 00 | 11.2554 |
| 10 | 20.4614 | 10 | 21.2827 |
| 20 | 30.4887 | 20 | 31.3101 |
| 30 | 40.5161 | 30 | 41.3375 |
| 40 | 50.5435 | 40 | 51.3649 |
| 50 | 13 17 00.5709 | 50 | 13 22 01.3923 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 13 10 00 | 13 07 50.5775 | 13 15 00 | 13 12 49.7583 |
| 10 | 13 08 00.5502 | 10 | 59.7310 |
| 20 | 10.5228 | 20 | 13 13 09.7037 |
| 30 | 20.4955 | 30 | 19.6764 |
| 40 | 30.4682 | 40 | 29.6491 |
| 50 | 40.4409 | 50 | 39.6218 |
| 13 11 00 | 50.4136 | 13 16 00 | 49.5945 |
| 10 | 13 09 00.3863 | 10 | 59.5672 |
| 20 | 10.3590 | 20 | 13 14 09.5399 |
| 30 | 20.3317 | 30 | 19.5126 |
| 40 | 30.3044 | 40 | 29.4853 |
| 50 | 40.2771 | 50 | 39.4580 |
| 13 12 00 | 50.2498 | 13 17 00 | 49.4307 |
| 10 | 13 10 00.2225 | 10 | 59.4034 |
| 20 | 10.1952 | 20 | 13 15 09.3761 |
| 30 | 20.1679 | 30 | 19.3488 |
| 40 | 30.1406 | 40 | 29.3215 |
| 50 | 40.1133 | 50 | 39.2942 |
| 13 13 00 | 50.0860 | 13 18 00 | 49.2668 |
| 10 | 13 11 00.0587 | 10 | 59.2395 |
| 20 | 10.0314 | 20 | 13 16 09.2122 |
| 30 | 20.0041 | 30 | 19.1849 |
| 40 | 29.9768 | 40 | 29.1576 |
| 50 | 39.9495 | 50 | 39.1303 |
| 13 14 00 | 49.9222 | 13 19 00 | 49.1030 |
| 10 | 59.8948 | 10 | 59.0757 |
| 20 | 13 12 09.8675 | 20 | 13 17 09.0484 |
| 30 | 19.8402 | 30 | 19.0211 |
| 40 | 29.8129 | 40 | 28.9938 |
| 50 | 39.7856 | 50 | 38.9665 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 13 20 00 | 13 22 11.4196 | 13 25 00 | 13 27 12.2410 |
| 10 | 21.4470 | 10 | 22.2684 |
| 20 | 31.4744 | 20 | 32.2958 |
| 30 | 41.5018 | 30 | 42.3231 |
| 40 | 51.5292 | 40 | 52.3505 |
| 50 | 13 23 01.5565 | 50 | 13 28 02.3779 |
| 13 21 00 | 11.5839 | 13 26 00 | 12.4053 |
| 10 | 21.6113 | 10 | 22.4327 |
| 20 | 31.6387 | 20 | 32.4600 |
| 30 | 41.6660 | 30 | 42.4874 |
| 40 | 51.6934 | 40 | 52.5148 |
| 50 | 13 24 01.7208 | 50 | 13 29 02.5422 |
| 13 22 00 | 11.7482 | 13 27 00 | 12.5696 |
| 10 | 21.7756 | 10 | 22.5969 |
| 20 | 31.8029 | 20 | 32.6243 |
| 30 | 41.8303 | 30 | 42.6517 |
| 40 | 51.8577 | 40 | 52.6791 |
| 50 | 13 25 01.8851 | 50 | 13 30 02.7065 |
| 13 23 00 | 11.9125 | 13 28 00 | 12.7338 |
| 10 | 21.9398 | 10 | 22.7612 |
| 20 | 31.9672 | 20 | 32.7886 |
| 30 | 41.9946 | 30 | 42.8160 |
| 40 | 52.0220 | 40 | 52.8434 |
| 50 | 13 26 02.0494 | 50 | 13 31 02.8707 |
| 13 24 00 | 12.0767 | 13 29 00 | 12.8981 |
| 10 | 22.1041 | 10 | 22.9255 |
| 20 | 32.1315 | 20 | 32.9529 |
| 30 | 42.1589 | 30 | 42.9802 |
| 40 | 52.1863 | 40 | 53.0076 |
| 50 | 13 27 02.2136 | 50 | 13 32 03.0350 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 13 20 00 | 13 17 48.9392 | 13 25 00 | 13 22 48.1201 |
| 10 | 58.9119 | 10 | 58.0928 |
| 20 | 13 18 08.8846 | 20 | 13 23 08.0655 |
| 30 | 18.8573 | 30 | 18.0382 |
| 40 | 28.8300 | 40 | 28.0108 |
| 50 | 38.8027 | 50 | 37.9835 |
| 13 21 00 | 48.7754 | 13 26 00 | 47.9562 |
| 10 | 58.7481 | 10 | 57.9289 |
| 20 | 13 19 08.7208 | 20 | 13 24 07.9016 |
| 30 | 18.6935 | 30 | 17.8743 |
| 40 | 28.6662 | 40 | 27.8470 |
| 50 | 38.6388 | 50 | 37.8197 |
| 13 22 00 | 48.6115 | 13 27 00 | 47.7924 |
| 10 | 58.5842 | 10 | 57.7651 |
| 20 | 13 20 08.5569 | 20 | 13 25 07.7378 |
| 30 | 18.5296 | 30 | 17.7105 |
| 40 | 28.5023 | 40 | 27.6832 |
| 50 | 38.4750 | 50 | 37.6559 |
| 13 23 00 | 48.4477 | 13 28 00 | 47.6286 |
| 10 | 58.4204 | 10 | 57.6013 |
| 20 | 13 21 08.3931 | 20 | 13 26 07.5740 |
| 30 | 18.3658 | 30 | 17.5467 |
| 40 | 28.3385 | 40 | 27.5194 |
| 50 | 38.3112 | 50 | 37.4921 |
| 13 24 00 | 48.2839 | 13 29 00 | 47.4648 |
| 10 | 58.2566 | 10 | 57.4375 |
| 20 | 13 22 08.2293 | 20 | 13 27 07.4102 |
| 30 | 18.2020 | 30 | 17.3828 |
| 40 | 28.1747 | 40 | 27.3555 |
| 50 | 38.1474 | 50 | 37.3282 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 13 30 00 | 13 32 13.0624 | 13 35 00 | 13 37 13.8838 |
| 10 | 23.0898 | 10 | 23.9111 |
| 20 | 33.1171 | 20 | 33.9385 |
| 30 | 43.1445 | 30 | 43.9659 |
| 40 | 53.1719 | 40 | 53.9933 |
| 50 | 13 33 03.1993 | 50 | 13 38 04.0207 |
| 13 31 00 | 13.2267 | 13 36 00 | 14.0480 |
| 10 | 23.2540 | 10 | 24.0754 |
| 20 | 33.2814 | 20 | 34.1028 |
| 30 | 43.3088 | 30 | 44.1302 |
| 40 | 53.3362 | 40 | 54.1575 |
| 50 | 13 34 03.3636 | 50 | 13 39 04.1849 |
| 13 32 00 | 13.3909 | 13 37 00 | 14.2123 |
| 10 | 23.4183 | 10 | 24.2397 |
| 20 | 33.4457 | 20 | 34.2671 |
| 30 | 43.4731 | 30 | 44.2944 |
| 40 | 53.5004 | 40 | 54.3218 |
| 50 | 13 35 03.5278 | 50 | 13 40 04.3492 |
| 13 33 00 | 13.5552 | 13 38 00 | 14.3766 |
| 10 | 23.5826 | 10 | 24.4040 |
| 20 | 33.6100 | 20 | 34.4313 |
| 30 | 43.6373 | 30 | 44.4587 |
| 40 | 53.6647 | 40 | 54.4861 |
| 50 | 13 36 03.6921 | 50 | 13 41 04.5135 |
| 13 34 00 | 13.7195 | 13 39 00 | 14.5409 |
| 10 | 23.7469 | 10 | 24.5682 |
| 20 | 33.7742 | 20 | 34.5956 |
| 30 | 43.8016 | 30 | 44.6230 |
| 40 | 53.8290 | 40 | 54.6504 |
| 50 | 13 37 03.8564 | 50 | 13 42 04.6778 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 13 30 00 | 13 27 47.3009 | 13 35 00 | 13 32 46.4818 |
| 10 | 57.2736 | 10 | 56.4545 |
| 20 | 13 28 07.2463 | 20 | 13 33 06.4272 |
| 30 | 17.2190 | 30 | 16.3999 |
| 40 | 27.1917 | 40 | 26.3726 |
| 50 | 37.1644 | 50 | 36.3453 |
| 13 31 00 | 47.1371 | 13 36 00 | 46.3180 |
| 10 | 57.1098 | 10 | 56.2907 |
| 20 | 13 29 07.0825 | 20 | 13 34 06.2634 |
| 30 | 17.0552 | 30 | 16.2361 |
| 40 | 27.0279 | 40 | 26.2088 |
| 50 | 37.0006 | 50 | 36.1815 |
| 13 32 00 | 46.9733 | 13 37 00 | 46.1542 |
| 10 | 56.9460 | 10 | 56.1268 |
| 20 | 13 30 06.9187 | 20 | 13 35 06.0995 |
| 30 | 16.8914 | 30 | 16.0722 |
| 40 | 26.8641 | 40 | 26.0449 |
| 50 | 36.8368 | 50 | 36.0176 |
| 13 33 00 | 46.8095 | 13 38 00 | 45.9903 |
| 10 | 56.7822 | 10 | 55.9630 |
| 20 | 13 31 06.7548 | 20 | 13 36 05.9357 |
| 30 | 16.7275 | 30 | 15.9084 |
| 40 | 26.7002 | 40 | 25.8811 |
| 50 | 36.6729 | 50 | 35.8538 |
| 13 34 00 | 46.6456 | 13 39 00 | 45.8265 |
| 10 | 56.6183 | 10 | 55.7992 |
| 20 | 13 32 06.5910 | 20 | 13 37 05.7719 |
| 30 | 16.5637 | 30 | 15.7446 |
| 40 | 26.5364 | 40 | 25.7173 |
| 50 | 36.5091 | 50 | 35.6900 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 13 40 00 | 13 42 14.7051 | 13 45 00 | 13 47 15.5265 |
| 10 | 24.7325 | 10 | 25.5539 |
| 20 | 34.7599 | 20 | 35.5813 |
| 30 | 44.7873 | 30 | 45.6086 |
| 40 | 54.8146 | 40 | 55.6360 |
| 50 | 13 43 04.8420 | 50 | 13 48 05.6634 |
| 13 41 00 | 14.8694 | 13 46 00 | 15.6908 |
| 10 | 24.8968 | 10 | 25.7182 |
| 20 | 34.9242 | 20 | 35.7455 |
| 30 | 44.9515 | 30 | 45.7729 |
| 40 | 54.9789 | 40 | 55.8003 |
| 50 | 13 44 05.0063 | 50 | 13 49 05.8277 |
| 13 42 00 | 15.0337 | 13 47 00 | 15.8551 |
| 10 | 25.0611 | 10 | 25.8824 |
| 20 | 35.0884 | 20 | 35.9098 |
| 30 | 45.1158 | 30 | 45.9372 |
| 40 | 55.1432 | 40 | 55.9646 |
| 50 | 13 45 05.1706 | 50 | 13 50 05.9919 |
| 13 43 00 | 15.1980 | 13 48 00 | 16.0193 |
| 10 | 25.2253 | 10 | 26.0467 |
| 20 | 35.2527 | 20 | 36.0741 |
| 30 | 45.2801 | 30 | 46.1015 |
| 40 | 55.3075 | 40 | 56.1288 |
| 50 | 13 46 05.3348 | 50 | 13 51 06.1562 |
| 13 44 00 | 15.3622 | 13 49 00 | 16.1836 |
| 10 | 25.3896 | 10 | 26.2110 |
| 20 | 35.4170 | 20 | 36.2384 |
| 30 | 45.4444 | 30 | 46.2657 |
| 40 | 55.4717 | 40 | 56.2931 |
| 50 | 13 47 05.4991 | 50 | 13 52 06.3205 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 13 40 00 | 13 37 45.6627 | 13 45 00 | 13 42 44.8435 |
| 10 | 55.6354 | 10 | 54.8162 |
| 20 | 13 38 05.6081 | 20 | 13 43 04.7889 |
| 30 | 15.5808 | 30 | 14.7616 |
| 40 | 25.5535 | 40 | 24.7343 |
| 50 | 35.5262 | 50 | 34.7070 |
| 13 41 00 | 45.4988 | 13 46 00 | 44.6797 |
| 10 | 55.4715 | 10 | 54.6524 |
| 20 | 13 39 05.4442 | 20 | 13 44 04.6251 |
| 30 | 15.4169 | 30 | 14.5978 |
| 40 | 25.3896 | 40 | 24.5705 |
| 50 | 35.3623 | 50 | 34.5432 |
| 13 42 00 | 45.3350 | 13 47 00 | 44.5159 |
| 10 | 55.3077 | 10 | 54.4886 |
| 20 | 13 40 05.2804 | 20 | 13 45 04.4613 |
| 30 | 15.2531 | 30 | 14.4340 |
| 40 | 25.2258 | 40 | 24.4067 |
| 50 | 35.1985 | 50 | 34.3794 |
| 13 43 00 | 45.1712 | 13 48 00 | 44.3521 |
| 10 | 55.1439 | 10 | 54.3248 |
| 20 | 13 41 05.1166 | 20 | 13 46 04.2975 |
| 30 | 15.0893 | 30 | 14.2702 |
| 40 | 25.0620 | 40 | 24.2428 |
| 50 | 35.0347 | 50 | 34.2155 |
| 13 44 00 | 45.0074 | 13 49 00 | 44.1882 |
| 10 | 54.9801 | 10 | 54.1609 |
| 20 | 13 42 04.9528 | 20 | 13 47 04.1336 |
| 30 | 14.9255 | 30 | 14.1063 |
| 40 | 24.8982 | 40 | 24.0790 |
| 50 | 34.8708 | 50 | 34.0517 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 13 50 00 | 13 52 16.3479 | 13 55 00 | 13 57 17.1692 |
| 10 | 26.3753 | 10 | 27.1966 |
| 20 | 36.4026 | 20 | 37.2240 |
| 30 | 46.4300 | 30 | 47.2514 |
| 40 | 56.4574 | 40 | 57.2788 |
| 50 | 13 53 06.4848 | 50 | 13 58 07.3061 |
| 13 51 00 | 16.5121 | 13 56 00 | 17.3335 |
| 10 | 26.5395 | 10 | 27.3609 |
| 20 | 36.5669 | 20 | 37.3883 |
| 30 | 46.5943 | 30 | 47.4157 |
| 40 | 56.6217 | 40 | 57.4430 |
| 50 | 13 54 06.6490 | 50 | 13 59 07.4704 |
| 13 52 00 | 16.6764 | 13 57 00 | 17.4978 |
| 10 | 26.7038 | 10 | 27.5252 |
| 20 | 36.7312 | 20 | 37.5526 |
| 30 | 46.7586 | 30 | 47.5799 |
| 40 | 56.7859 | 40 | 57.6073 |
| 50 | 13 55 06.8133 | 50 | 14 00 07.6347 |
| 13 53 00 | 16.8407 | 13 58 00 | 17.6621 |
| 10 | 26.8681 | 10 | 27.6895 |
| 20 | 36.8955 | 20 | 37.7168 |
| 30 | 46.9228 | 30 | 47.7442 |
| 40 | 56.9502 | 40 | 57.7716 |
| 50 | 13 56 06.9776 | 50 | 14 01 07.7990 |
| 13 54 00 | 17.0050 | 13 59 00 | 17.8263 |
| 10 | 27.0324 | 10 | 27.8537 |
| 20 | 37.0597 | 20 | 37.8811 |
| 30 | 47.0871 | 30 | 47.9085 |
| 40 | 57.1145 | 40 | 57.9359 |
| 50 | 13 57 07.1419 | 50 | 14 02 07.9632 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 13 50 00 | 13 47 44.0244 | 13 55 00 | 13 52 43.2053 |
| 10 | 53.9971 | 10 | 53.1780 |
| 20 | 13 48 03.9698 | 20 | 13 53 03.1507 |
| 30 | 13.9425 | 30 | 13.1234 |
| 40 | 23.9152 | 40 | 23.0961 |
| 50 | 33.8879 | 50 | 33.0688 |
| 13 51 00 | 43.8606 | 13 56 00 | 43.0415 |
| 10 | 53.8333 | 10 | 53.0142 |
| 20 | 13 49 03.8060 | 20 | 13 54 02.9868 |
| 30 | 13.7787 | 30 | 12.9595 |
| 40 | 23.7514 | 40 | 22.9322 |
| 50 | 33.7241 | 50 | 32.9049 |
| 13 52 00 | 43.6968 | 13 57 00 | 42.8776 |
| 10 | 53.6695 | 10 | 52.8503 |
| 20 | 13 50 03.6422 | 20 | 13 55 02.8230 |
| 30 | 13.6148 | 30 | 12.7957 |
| 40 | 23.5875 | 40 | 22.7684 |
| 50 | 33.5602 | 50 | 32.7411 |
| 13 53 00 | 43.5329 | 13 58 00 | 42.7138 |
| 10 | 53.5056 | 10 | 52.6865 |
| 20 | 13 51 03.4783 | 20 | 13 56 02.6592 |
| 30 | 13.4510 | 30 | 12.6319 |
| 40 | 23.4237 | 40 | 22.6046 |
| 50 | 33.3964 | 50 | 32.5773 |
| 13 54 00 | 43.3691 | 13 59 00 | 42.5500 |
| 10 | 53.3418 | 10 | 52.5227 |
| 20 | 13 52 03.3145 | 20 | 13 57 02.4954 |
| 30 | 13.2872 | 30 | 12.4681 |
| 40 | 23.2599 | 40 | 22.4408 |
| 50 | 33.2326 | 50 | 32.4135 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 14 00 00 | 14 02 17.9906 | 14 05 00 | 14 07 18.8120 |
| 10 | 28.0180 | 10 | 28.8394 |
| 20 | 38.0454 | 20 | 38.8668 |
| 30 | 48.0728 | 30 | 48.8941 |
| 40 | 58.1001 | 40 | 58.9215 |
| 50 | 14 03 08.1275 | 50 | 14 08 08.9489 |
| 14 01 00 | 18.1549 | 14 06 00 | 18.9763 |
| 10 | 28.1823 | 10 | 29.0036 |
| 20 | 38.2097 | 20 | 39.0310 |
| 30 | 48.2370 | 30 | 49.0584 |
| 40 | 58.2644 | 40 | 59.0858 |
| 50 | 14 04 08.2918 | 50 | 14 09 09.1132 |
| 14 02 00 | 18.3192 | 14 07 00 | 19.1405 |
| 10 | 28.3465 | 10 | 29.1679 |
| 20 | 38.3739 | 20 | 39.1953 |
| 30 | 48.4013 | 30 | 49.2227 |
| 40 | 58.4287 | 40 | 59.2501 |
| 50 | 14 05 08.4561 | 50 | 14 10 09.2774 |
| 14 03 00 | 18.4834 | 14 08 00 | 19.3048 |
| 10 | 28.5108 | 10 | 29.3322 |
| 20 | 38.5382 | 20 | 39.3596 |
| 30 | 48.5656 | 30 | 49.3870 |
| 40 | 58.5930 | 40 | 59.4143 |
| 50 | 14 06 08.6203 | 50 | 14 11 09.4417 |
| 14 04 00 | 18.6477 | 14 09 00 | 19.4691 |
| 10 | 28.6751 | 10 | 29.4965 |
| 20 | 38.7025 | 20 | 39.5238 |
| 30 | 48.7299 | 30 | 49.5512 |
| 40 | 58.7572 | 40 | 59.5786 |
| 50 | 14 07 08.7846 | 50 | 14 12 09.6060 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 14 00 00 | 13 57 42.3862 | 14 05 00 | 14 02 41.5670 |
| 10 | 52.3588 | 10 | 51.5397 |
| 20 | 13 58 02.3315 | 20 | 14 03 01.5124 |
| 30 | 12.3042 | 30 | 11.4851 |
| 40 | 22.2769 | 40 | 21.4578 |
| 50 | 32.2496 | 50 | 31.4305 |
| 14 01 00 | 42.2223 | 14 06 00 | 41.4032 |
| 10 | 52.1950 | 10 | 51.3759 |
| 20 | 13 59 02.1677 | 20 | 14 04 01.3486 |
| 30 | 12.1404 | 30 | 11.3213 |
| 40 | 22.1131 | 40 | 21.2940 |
| 50 | 32.0858 | 50 | 31.2667 |
| 14 02 00 | 42.0585 | 14 07 00 | 41.2394 |
| 10 | 52.0312 | 10 | 51.2121 |
| 20 | 14 00 02.0039 | 20 | 14 05 01.1848 |
| 30 | 11.9766 | 30 | 11.1575 |
| 40 | 21.9493 | 40 | 21.1302 |
| 50 | 31.9220 | 50 | 31.1029 |
| 14 03 00 | 41.8947 | 14 08 00 | 41.0755 |
| 10 | 51.8674 | 10 | 51.0482 |
| 20 | 14 01 01.8401 | 20 | 14 06 01.0209 |
| 30 | 11.8128 | 30 | 10.9936 |
| 40 | 21.7855 | 40 | 20.9663 |
| 50 | 31.7582 | 50 | 30.9390 |
| 14 04 00 | 41.7309 | 14 09 00 | 40.9117 |
| 10 | 51.7035 | 10 | 50.8844 |
| 20 | 14 02 01.6762 | 20 | 14 07 00.8571 |
| 30 | 11.6489 | 30 | 10.8298 |
| 40 | 21.6216 | 40 | 20.8025 |
| 50 | 31.5943 | 50 | 30.7752 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 14 10 00 | 14 12 19.6334 | 14 15 00 | 14 17 20.4547 |
| 10 | 29.6607 | 10 | 30.4821 |
| 20 | 39.6881 | 20 | 40.5095 |
| 30 | 49.7155 | 30 | 50.5369 |
| 40 | 59.7429 | 40 | 14 18 00.5643 |
| 50 | 14 13 09.7703 | 50 | 10.5916 |
| 14 11 00 | 19.7976 | 14 16 00 | 20.6190 |
| 10 | 29.8250 | 10 | 30.6464 |
| 20 | 39.8524 | 20 | 40.6738 |
| 30 | 49.8798 | 30 | 50.7012 |
| 40 | 59.9072 | 40 | 14 19 00.7285 |
| 50 | 14 14 09.9345 | 50 | 10.7559 |
| 14 12 00 | 19.9619 | 14 17 00 | 20.7833 |
| 10 | 29.9893 | 10 | 30.8107 |
| 20 | 40.0167 | 20 | 40.8380 |
| 30 | 50.0441 | 30 | 50.8654 |
| 40 | 14 15 00.0714 | 40 | 14 20 00.8928 |
| 50 | 10.0988 | 50 | 10.9202 |
| 14 13 00 | 20.1262 | 14 18 00 | 20.9476 |
| 10 | 30.1536 | 10 | 30.9749 |
| 20 | 40.1809 | 20 | 41.0023 |
| 30 | 50.2083 | 30 | 51.0297 |
| 40 | 14 16 00.2357 | 40 | 14 21 01.0571 |
| 50 | 10.2631 | 50 | 11.0845 |
| 14 14 00 | 20.2905 | 14 19 00 | 21.1118 |
| 10 | 30.3178 | 10 | 31.1392 |
| 20 | 40.3452 | 20 | 41.1666 |
| 30 | 50.3726 | 30 | 51.1940 |
| 40 | 14 17 00.4000 | 40 | 14 22 01.2214 |
| 50 | 10.4274 | 50 | 11.2487 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 14 10 00 | 14 07 40.7479 | 14 15 00 | 14 12 39.9288 |
| 10 | 50.7206 | 10 | 49.9015 |
| 20 | 14 08 00.6933 | 20 | 59.8742 |
| 30 | 10.6660 | 30 | 14 13 09.8469 |
| 40 | 20.6387 | 40 | 19.8195 |
| 50 | 30.6114 | 50 | 29.7922 |
| 14 11 00 | 40.5841 | 14 16 00 | 39.7649 |
| 10 | 50.5568 | 10 | 49.7376 |
| 20 | 14 09 00.5295 | 20 | 59.7103 |
| 30 | 10.5022 | 30 | 14 14 09.6830 |
| 40 | 20.4749 | 40 | 19.6557 |
| 50 | 30.4475 | 50 | 29.6284 |
| 14 12 00 | 40.4202 | 14 17 00 | 39.6011 |
| 10 | 50.3929 | 10 | 49.5738 |
| 20 | 14 10 00.3656 | 20 | 59.5465 |
| 30 | 10.3383 | 30 | 14 15 09.5192 |
| 40 | 20.3110 | 40 | 19.4919 |
| 50 | 30.2837 | 50 | 29.4646 |
| 14 13 00 | 40.2564 | 14 18 00 | 39.4373 |
| 10 | 50.2291 | 10 | 49.4100 |
| 20 | 14 11 00.2018 | 20 | 59.3827 |
| 30 | 10.1745 | 30 | 14 16 09.3554 |
| 40 | 20.1472 | 40 | 19.3281 |
| 50 | 30.1199 | 50 | 29.3008 |
| 14 14 00 | 40.0926 | 14 19 00 | 39.2735 |
| 10 | 50.0653 | 10 | 49.2462 |
| 20 | 14 12 00.0380 | 20 | 59.2189 |
| 30 | 10.0107 | 30 | 14 17 09.1915 |
| 40 | 19.9834 | 40 | 19.1642 |
| 50 | 29.9561 | 50 | 29.1369 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 14 20 00 | 14 22 21.2761 | 14 25 00 | 14 27 22.0975 |
| 10 | 31.3035 | 10 | 32.1249 |
| 20 | 41.3309 | 20 | 42.1522 |
| 30 | 51.3582 | 30 | 52.1796 |
| 40 | 14 23 01.3856 | 40 | 14 28 02.2070 |
| 50 | 11.4130 | 50 | 12.2344 |
| 14 21 00 | 21.4404 | 14 26 00 | 22.2618 |
| 10 | 31.4678 | 10 | 32.2891 |
| 20 | 41.4951 | 20 | 42.3165 |
| 30 | 51.5225 | 30 | 52.3439 |
| 40 | 14 24 01.5499 | 40 | 14 29 02.3713 |
| 50 | 11.5773 | 50 | 12.3987 |
| 14 22 00 | 21.6047 | 14 27 00 | 22.4260 |
| 10 | 31.6320 | 10 | 32.4534 |
| 20 | 41.6594 | 20 | 42.4808 |
| 30 | 51.6868 | 30 | 52.5082 |
| 40 | 14 25 01.7142 | 40 | 14 30 02.5355 |
| 50 | 11.7416 | 50 | 12.5629 |
| 14 23 00 | 21.7689 | 14 28 00 | 22.5903 |
| 10 | 31.7963 | 10 | 32.6177 |
| 20 | 41.8237 | 20 | 42.6451 |
| 30 | 51.8511 | 30 | 52.6724 |
| 40 | 14 26 01.8785 | 40 | 14 31 02.6998 |
| 50 | 11.9058 | 50 | 12.7272 |
| 14 24 00 | 21.9332 | 14 29 00 | 22.7546 |
| 10 | 31.9606 | 10 | 32.7820 |
| 20 | 41.9880 | 20 | 42.8093 |
| 30 | 52.0153 | 30 | 52.8367 |
| 40 | 14 27 02.0427 | 40 | 14 32 02.8641 |
| 50 | 12.0701 | 50 | 12.8915 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 14 20 00 | 14 17 39.1096 | 14 25 00 | 14 22 38.2905 |
| 10 | 49.0823 | 10 | 48.2632 |
| 20 | 59.0550 | 20 | 58.2359 |
| 30 | 14 18 09.0277 | 30 | 14 23 08.2086 |
| 40 | 19.0004 | 40 | 18.1813 |
| 50 | 28.9731 | 50 | 28.1540 |
| 14 21 00 | 38.9458 | 14 26 00 | 38.1267 |
| 10 | 48.9185 | 10 | 48.0994 |
| 20 | 58.8912 | 20 | 58.0721 |
| 30 | 14 19 08.8639 | 30 | 14 24 08.0448 |
| 40 | 18.8366 | 40 | 18.0175 |
| 50 | 28.8093 | 50 | 27.9902 |
| 14 22 00 | 38.7820 | 14 27 00 | 37.9629 |
| 10 | 48.7547 | 10 | 47.9355 |
| 20 | 58.7274 | 20 | 57.9082 |
| 30 | 14 20 08.7001 | 30 | 14 25 07.8809 |
| 40 | 18.6728 | 40 | 17.8536 |
| 50 | 28.6455 | 50 | 27.8263 |
| 14 23 00 | 38.6182 | 14 28 00 | 37.7990 |
| 10 | 48.5909 | 10 | 47.7717 |
| 20 | 58.5635 | 20 | 57.7444 |
| 30 | 14 21 08.5362 | 30 | 14 26 07.7171 |
| 40 | 18.5089 | 40 | 17.6898 |
| 50 | 28.4816 | 50 | 27.6625 |
| 14 24 00 | 38.4543 | 14 29 00 | 37.6352 |
| 10 | 48.4270 | 10 | 47.6079 |
| 20 | 58.3997 | 20 | 57.5806 |
| 30 | 14 22 08.3724 | 30 | 14 27 07.5533 |
| 40 | 18.3451 | 40 | 17.5260 |
| 50 | 28.3178 | 50 | 27.4987 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 14 30 00 | 14 32 22.9189 | 14 35 00 | 14 37 23.7402 |
| 10 | 32.9462 | 10 | 33.7676 |
| 20 | 42.9736 | 20 | 43.7950 |
| 30 | 53.0010 | 30 | 53.8224 |
| 40 | 14 33 03.0284 | 40 | 14 38 03.8497 |
| 50 | 13.0558 | 50 | 13.8771 |
| 14 31 00 | 23.0831 | 14 36 00 | 23.9045 |
| 10 | 33.1105 | 10 | 33.9319 |
| 20 | 43.1379 | 20 | 43.9593 |
| 30 | 53.1653 | 30 | 53.9866 |
| 40 | 14 34 03.1926 | 40 | 14 39 04.0140 |
| 50 | 13.2200 | 50 | 14.0414 |
| 14 32 00 | 23.2474 | 14 37 00 | 24.0688 |
| 10 | 33.2748 | 10 | 34.0962 |
| 20 | 43.3022 | 20 | 44.1235 |
| 30 | 53.3295 | 30 | 54.1509 |
| 40 | 14 35 03.3569 | 40 | 14 40 04.1783 |
| 50 | 13.3843 | 50 | 14.2057 |
| 14 33 00 | 23.4117 | 14 38 00 | 24.2331 |
| 10 | 33.4391 | 10 | 34.2604 |
| 20 | 43.4664 | 20 | 44.2878 |
| 30 | 53.4938 | 30 | 54.3152 |
| 40 | 14 36 03.5212 | 40 | 14 41 04.3426 |
| 50 | 13.5486 | 50 | 14.3699 |
| 14 34 00 | 23.5760 | 14 39 00 | 24.3973 |
| 10 | 33.6033 | 10 | 34.4247 |
| 20 | 43.6307 | 20 | 44.4521 |
| 30 | 53.6581 | 30 | 54.4795 |
| 40 | 14 37 03.6855 | 40 | 14 42 04.5068 |
| 50 | 13.7129 | 50 | 14.5342 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 14 30 00 | 14 27 37.4714 | 14 35 00 | 14 32 36.6522 |
| 10 | 47.4441 | 10 | 46.6249 |
| 20 | 57.4168 | 20 | 56.5976 |
| 30 | 14 28 07.3895 | 30 | 14 33 06.5703 |
| 40 | 17.3622 | 40 | 16.5430 |
| 50 | 27.3349 | 50 | 26.5157 |
| 14 31 00 | 37.3075 | 14 36 00 | 36.4884 |
| 10 | 47.2802 | 10 | 46.4611 |
| 20 | 57.2529 | 20 | 56.4338 |
| 30 | 14 29 07.2256 | 30 | 14 34 06.4065 |
| 40 | 17.1983 | 40 | 16.3792 |
| 50 | 27.1710 | 50 | 26.3519 |
| 14 32 00 | 37.1437 | 14 37 00 | 36.3246 |
| 10 | 47.1164 | 10 | 46.2973 |
| 20 | 57.0891 | 20 | 56.2700 |
| 30 | 14 30 07.0618 | 30 | 14 35 06.2427 |
| 40 | 17.0345 | 40 | 16.2154 |
| 50 | 27.0072 | 50 | 26.1881 |
| 14 33 00 | 36.9799 | 14 38 00 | 36.1608 |
| 10 | 46.9526 | 10 | 46.1335 |
| 20 | 56.9253 | 20 | 56.1062 |
| 30 | 14 31 06.8980 | 30 | 14 36 06.0789 |
| 40 | 16.8707 | 40 | 16.0515 |
| 50 | 26.8434 | 50 | 26.0242 |
| 14 34 00 | 36.8161 | 14 39 00 | 35.9969 |
| 10 | 46.7888 | 10 | 45.9696 |
| 20 | 56.7615 | 20 | 55.9423 |
| 30 | 14 32 06.7342 | 30 | 14 37 05.9150 |
| 40 | 16.7069 | 40 | 15.8877 |
| 50 | 26.6795 | 50 | 25.8604 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 14 40 00 | 14 42 24.5616 | 14 45 00 | 14 47 25.3830 |
| 10 | 34.5890 | 10 | 35.4104 |
| 20 | 44.6164 | 20 | 45.4377 |
| 30 | 54.6437 | 30 | 55.4651 |
| 40 | 14 43 04.6711 | 40 | 14 48 05.4925 |
| 50 | 14.6985 | 50 | 15.5199 |
| 14 41 00 | 24.7259 | 14 46 00 | 25.5472 |
| 10 | 34.7533 | 10 | 35.5746 |
| 20 | 44.7806 | 20 | 45.6020 |
| 30 | 54.8080 | 30 | 55.6294 |
| 40 | 14 44 04.8354 | 40 | 14 49 05.6568 |
| 50 | 14.8628 | 50 | 15.6841 |
| 14 42 00 | 24.8902 | 14 47 00 | 25.7115 |
| 10 | 34.9175 | 10 | 35.7389 |
| 20 | 44.9449 | 20 | 45.7663 |
| 30 | 54.9723 | 30 | 55.7937 |
| 40 | 14 45 04.9997 | 40 | 14 50 05.8210 |
| 50 | 15.0270 | 50 | 15.8484 |
| 14 43 00 | 25.0544 | 14 48 00 | 25.8758 |
| 10 | 35.0818 | 10 | 35.9032 |
| 20 | 45.1092 | 20 | 45.9306 |
| 30 | 55.1366 | 30 | 55.9579 |
| 40 | 14 46 05.1639 | 40 | 14 51 05.9853 |
| 50 | 15.1913 | 50 | 16.0127 |
| 14 44 00 | 25.2187 | 14 49 00 | 26.0401 |
| 10 | 35.2461 | 10 | 36.0675 |
| 20 | 45.2735 | 20 | 46.0948 |
| 30 | 55.3008 | 30 | 56.1222 |
| 40 | 14 47 05.3282 | 40 | 14 52 06.1496 |
| 50 | 15.3556 | 50 | 16.1770 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 14 40 00 | 14 37 35.8331 | 14 45 00 | 14 42 35.0140 |
| 10 | 45.8058 | 10 | 44.9867 |
| 20 | 55.7785 | 20 | 54.9594 |
| 30 | 14 38 05.7512 | 30 | 14 43 04.9321 |
| 40 | 15.7239 | 40 | 14.9048 |
| 50 | 25.6966 | 50 | 24.8775 |
| 14 41 00 | 35.6693 | 14 46 00 | 34.8502 |
| 10 | 45.6420 | 10 | 44.8229 |
| 20 | 55.6147 | 20 | 54.7955 |
| 30 | 14 39 05.5874 | 30 | 14 44 04.7682 |
| 40 | 15.5601 | 40 | 14.7409 |
| 50 | 25.5328 | 50 | 24.7136 |
| 14 42 00 | 35.5055 | 14 47 00 | 34.6863 |
| 10 | 45.4782 | 10 | 44.6590 |
| 20 | 55.4509 | 20 | 54.6317 |
| 30 | 14 40 05.4235 | 30 | 14 45 04.6044 |
| 40 | 15.3962 | 40 | 14.5771 |
| 50 | 25.3689 | 50 | 24.5498 |
| 14 43 00 | 35.3416 | 14 48 00 | 34.5225 |
| 10 | 45.3143 | 10 | 44.4952 |
| 20 | 55.2870 | 20 | 54.4679 |
| 30 | 14 41 05.2597 | 30 | 14 46 04.4406 |
| 40 | 15.2324 | 40 | 14.4133 |
| 50 | 25.2051 | 50 | 24.3860 |
| 14 44 00 | 35.1778 | 14 49 00 | 34.3587 |
| 10 | 45.1505 | 10 | 44.3314 |
| 20 | 55.1232 | 20 | 54.3041 |
| 30 | 14 42 05.0959 | 30 | 14 47 04.2768 |
| 40 | 15.0686 | 40 | 14.2495 |
| 50 | 25.0413 | 50 | 24.2222 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 14 50 00 | 14 52 26.2043 | 14 55 00 | 14 57 27.0257 |
| 10 | 36.2317 | 10 | 37.0531 |
| 20 | 46.2591 | 20 | 47.0805 |
| 30 | 56.2865 | 30 | 57.1079 |
| 40 | 14 53 06.3139 | 40 | 14 58 07.1352 |
| 50 | 16.3412 | 50 | 17.1626 |
| 14 51 00 | 26.3686 | 14 56 00 | 27.1900 |
| 10 | 36.3960 | 10 | 37.2174 |
| 20 | 46.4234 | 20 | 47.2448 |
| 30 | 56.4508 | 30 | 57.2721 |
| 40 | 14 54 06.4781 | 40 | 14 59 07.2995 |
| 50 | 16.5055 | 50 | 17.3269 |
| 14 52 00 | 26.5329 | 14 57 00 | 27.3543 |
| 10 | 36.5603 | 10 | 37.3816 |
| 20 | 46.5877 | 20 | 47.4090 |
| 30 | 56.6150 | 30 | 57.4364 |
| 40 | 14 55 06.6424 | 40 | 15 00 07.4638 |
| 50 | 16.6698 | 50 | 17.4912 |
| 14 53 00 | 26.6972 | 14 58 00 | 27.5185 |
| 10 | 36.7246 | 10 | 37.5459 |
| 20 | 46.7519 | 20 | 47.5733 |
| 30 | 56.7793 | 30 | 57.6007 |
| 40 | 14 56 06.8067 | 40 | 15 01 07.6281 |
| 50 | 16.8341 | 50 | 17.6554 |
| 14 54 00 | 26.8614 | 14 59 00 | 27.6828 |
| 10 | 36.8888 | 10 | 37.7102 |
| 20 | 46.9162 | 20 | 47.7376 |
| 30 | 56.9436 | 30 | 57.7650 |
| 40 | 14 57 06.9710 | 40 | 15 02 07.7923 |
| 50 | 16.9983 | 50 | 17.8197 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 14 50 00 | 14 47 34.1949 | 14 55 00 | 14 52 33.3757 |
| 10 | 44.1675 | 10 | 43.3484 |
| 20 | 54.1402 | 20 | 53.3211 |
| 30 | 14 48 04.1129 | 30 | 14 53 03.2938 |
| 40 | 14.0856 | 40 | 13.2665 |
| 50 | 24.0583 | 50 | 23.2392 |
| 14 51 00 | 34.0310 | 14 56 00 | 33.2119 |
| 10 | 44.0037 | 10 | 43.1846 |
| 20 | 53.9764 | 20 | 53.1573 |
| 30 | 14 49 03.9491 | 30 | 14 54 03.1300 |
| 40 | 13.9218 | 40 | 13.1027 |
| 50 | 23.8945 | 50 | 23.0754 |
| 14 52 00 | 33.8672 | 14 57 00 | 33.0481 |
| 10 | 43.8399 | 10 | 43.0208 |
| 20 | 53.8126 | 20 | 52.9935 |
| 30 | 14 50 03.7853 | 30 | 14 55 02.9662 |
| 40 | 13.7580 | 40 | 12.9389 |
| 50 | 23.7307 | 50 | 22.9116 |
| 14 53 00 | 33.7034 | 14 58 00 | 32.8842 |
| 10 | 43.6761 | 10 | 42.8569 |
| 20 | 53.6488 | 20 | 52.8296 |
| 30 | 14 51 03.6215 | 30 | 14 56 02.8023 |
| 40 | 13.5942 | 40 | 12.7750 |
| 50 | 23.5669 | 50 | 22.7477 |
| 14 54 00 | 33.5395 | 14 59 00 | 32.7204 |
| 10 | 43.5122 | 10 | 42.6931 |
| 20 | 53.4849 | 20 | 52.6658 |
| 30 | 14 52 03.4576 | 30 | 14 57 02.6385 |
| 40 | 13.4303 | 40 | 12.6112 |
| 50 | 23.4030 | 50 | 22.5839 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 15 00 00 | 15 02 27.8471 | 15 05 00 | 15 07 28.6685 |
| 10 | 37.8745 | 10 | 38.6958 |
| 20 | 47.9019 | 20 | 48.7232 |
| 30 | 57.9292 | 30 | 58.7506 |
| 40 | 15 03 07.9566 | 40 | 15 08 08.7780 |
| 50 | 17.9840 | 50 | 18.8054 |
| 15 01 00 | 28.0114 | 15 06 00 | 28.8327 |
| 10 | 38.0387 | 10 | 38.8601 |
| 20 | 48.0661 | 20 | 48.8875 |
| 30 | 58.0935 | 30 | 58.9149 |
| 40 | 15 04 08.1209 | 40 | 15 09 08.9423 |
| 50 | 18.1483 | 50 | 18.9696 |
| 15 02 00 | 28.1756 | 15 07 00 | 28.9970 |
| 10 | 38.2030 | 10 | 39.0244 |
| 20 | 48.2304 | 20 | 49.0518 |
| 30 | 58.2578 | 30 | 59.0792 |
| 40 | 15 05 08.2852 | 40 | 15 10 09.1065 |
| 50 | 18.3125 | 50 | 19.1339 |
| 15 03 00 | 28.3399 | 15 08 00 | 29.1613 |
| 10 | 38.3673 | 10 | 39.1887 |
| 20 | 48.3947 | 20 | 49.2160 |
| 30 | 58.4221 | 30 | 59.2434 |
| 40 | 15 06 08.4494 | 40 | 15 11 09.2708 |
| 50 | 18.4768 | 50 | 19.2982 |
| 15 04 00 | 28.5042 | 15 09 00 | 29.3256 |
| 10 | 38.5316 | 10 | 39.3529 |
| 20 | 48.5589 | 20 | 49.3803 |
| 30 | 58.5863 | 30 | 59.4077 |
| 40 | 15 07 08.6137 | 40 | 15 12 09.4351 |
| 50 | 18.6411 | 50 | 19.4625 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 15 00 00 | 14 57 32.5566 | 15 05 00 | 15 02 31.7375 |
| 10 | 42.5293 | 10 | 41.7102 |
| 20 | 52.5020 | 20 | 51.6829 |
| 30 | 14 58 02.4747 | 30 | 15 03 01.6556 |
| 40 | 12.4474 | 40 | 11.6282 |
| 50 | 22.4201 | 50 | 21.6009 |
| 15 01 00 | 32.3928 | 15 06 00 | 31.5736 |
| 10 | 42.3655 | 10 | 41.5463 |
| 20 | 52.3382 | 20 | 51.5190 |
| 30 | 14 59 02.3109 | 30 | 15 04 01.4917 |
| 40 | 12.2836 | 40 | 11.4644 |
| 50 | 22.2562 | 50 | 21.4371 |
| 15 02 00 | 32.2289 | 15 07 00 | 31.4098 |
| 10 | 42.2016 | 10 | 41.3825 |
| 20 | 52.1743 | 20 | 51.3552 |
| 30 | 15 00 02.1470 | 30 | 15 05 01.3279 |
| 40 | 12.1197 | 40 | 11.3006 |
| 50 | 22.0924 | 50 | 21.2733 |
| 15 03 00 | 32.0651 | 15 08 00 | 31.2460 |
| 10 | 42.0378 | 10 | 41.2187 |
| 20 | 52.0105 | 20 | 51.1914 |
| 30 | 15 01 01.9832 | 30 | 15 06 01.1641 |
| 40 | 11.9559 | 40 | 11.1368 |
| 50 | 21.9286 | 50 | 21.1095 |
| 15 04 00 | 31.9013 | 15 09 00 | 31.0822 |
| 10 | 41.8740 | 10 | 41.0549 |
| 20 | 51.8467 | 20 | 51.0276 |
| 30 | 15 02 01.8194 | 30 | 15 07 01.0002 |
| 40 | 11.7921 | 40 | 10.9729 |
| 50 | 21.7648 | 50 | 20.9456 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 15 10 00 | 15 12 29.4898 | 15 15 00 | 15 17 30.3112 |
| 10 | 39.5172 | 10 | 40.3386 |
| 20 | 49.5446 | 20 | 50.3660 |
| 30 | 59.5720 | 30 | 15 18 00.3933 |
| 40 | 15 13 09.5994 | 40 | 10.4207 |
| 50 | 19.6267 | 50 | 20.4481 |
| 15 11 00 | 29.6541 | 15 16 00 | 30.4755 |
| 10 | 39.6815 | 10 | 40.5029 |
| 20 | 49.7089 | 20 | 50.5302 |
| 30 | 59.7363 | 30 | 15 19 00.5576 |
| 40 | 15 14 09.7636 | 40 | 10.5850 |
| 50 | 19.7910 | 50 | 20.6124 |
| 15 12 00 | 29.8184 | 15 17 00 | 30.6398 |
| 10 | 39.8458 | 10 | 40.6671 |
| 20 | 49.8731 | 20 | 50.6945 |
| 30 | 59.9005 | 30 | 15 20 00.7219 |
| 40 | 15 15 09.9279 | 40 | 10.7493 |
| 50 | 19.9553 | 50 | 20.7767 |
| 15 13 00 | 29.9827 | 15 18 00 | 30.8040 |
| 10 | 40.0100 | 10 | 40.8314 |
| 20 | 50.0374 | 20 | 50.8588 |
| 30 | 15 16 00.0648 | 30 | 15 21 00.8862 |
| 40 | 10.0922 | 40 | 10.9136 |
| 50 | 20.1196 | 50 | 20.9409 |
| 15 14 00 | 30.1469 | 15 19 00 | 30.9683 |
| 10 | 40.1743 | 10 | 40.9957 |
| 20 | 50.2017 | 20 | 51.0231 |
| 30 | 15 17 00.2291 | 30 | 15 22 01.0504 |
| 40 | 10.2565 | 40 | 11.0778 |
| 50 | 20.2838 | 50 | 21.1052 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 15 10 00 | 15 07 30.9183 | 15 15 00 | 15 12 30.0992 |
| 10 | 40.8910 | 10 | 40.0719 |
| 20 | 50.8637 | 20 | 50.0446 |
| 30 | 15 08 00.8364 | 30 | 15 13 00.0173 |
| 40 | 10.8091 | 40 | 09.9900 |
| 50 | 20.7818 | 50 | 19.9627 |
| 15 11 00 | 30.7545 | 15 16 00 | 29.9354 |
| 10 | 40.7272 | 10 | 39.9081 |
| 20 | 50.6999 | 20 | 49.8808 |
| 30 | 15 09 00.6726 | 30 | 59.8535 |
| 40 | 10.6453 | 40 | 15 14 09.8262 |
| 50 | 20.6180 | 50 | 19.7989 |
| 15 12 00 | 30.5907 | 15 17 00 | 29.7716 |
| 10 | 40.5634 | 10 | 39.7442 |
| 20 | 50.5361 | 20 | 49.7169 |
| 30 | 15 10 00.5088 | 30 | 59.6896 |
| 40 | 10.4815 | 40 | 15 15 09.6623 |
| 50 | 20.4542 | 50 | 19.6350 |
| 15 13 00 | 30.4269 | 15 18 00 | 29.6077 |
| 10 | 40.3996 | 10 | 39.5804 |
| 20 | 50.3722 | 20 | 49.5531 |
| 30 | 15 11 00.3449 | 30 | 59.5258 |
| 40 | 10.3176 | 40 | 15 16 09.4985 |
| 50 | 20.2903 | 50 | 19.4712 |
| 15 14 00 | 30.2630 | 15 19 00 | 29.4439 |
| 10 | 40.2357 | 10 | 39.4166 |
| 20 | 50.2084 | 20 | 49.3893 |
| 30 | 15 12 00.1811 | 30 | 59.3620 |
| 40 | 10.1538 | 40 | 15 17 09.3347 |
| 50 | 20.1265 | 50 | 19.3074 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 15 20 00 | 15 22 31.1326 | 15 25 00 | 15 27 31.9540 |
| 10 | 41.1600 | 10 | 41.9813 |
| 20 | 51.1873 | 20 | 52.0087 |
| 30 | 15 23 01.2147 | 30 | 15 28 02.0361 |
| 40 | 11.2421 | 40 | 12.0635 |
| 50 | 21.2695 | 50 | 22.0909 |
| 15 21 00 | 31.2969 | 15 26 00 | 32.1182 |
| 10 | 41.3242 | 10 | 42.1456 |
| 20 | 51.3516 | 20 | 52.1730 |
| 30 | 15 24 01.3790 | 30 | 15 29 02.2004 |
| 40 | 11.4064 | 40 | 12.2277 |
| 50 | 21.4338 | 50 | 22.2551 |
| 15 22 00 | 31.4611 | 15 27 00 | 32.2825 |
| 10 | 41.4885 | 10 | 42.3099 |
| 20 | 51.5159 | 20 | 52.3373 |
| 30 | 15 25 01.5433 | 30 | 15 30 02.3646 |
| 40 | 11.5706 | 40 | 12.3920 |
| 50 | 21.5980 | 50 | 22.4194 |
| 15 23 00 | 31.6254 | 15 28 00 | 32.4468 |
| 10 | 41.6528 | 10 | 42.4742 |
| 20 | 51.6802 | 20 | 52.5015 |
| 30 | 15 26 01.7075 | 30 | 15 31 02.5289 |
| 40 | 11.7349 | 40 | 12.5563 |
| 50 | 21.7623 | 50 | 22.5837 |
| 15 24 00 | 31.7897 | 15 29 00 | 32.6111 |
| 10 | 41.8171 | 10 | 42.6384 |
| 20 | 51.8444 | 20 | 52.6658 |
| 30 | 15 27 01.8718 | 30 | 15 32 02.6932 |
| 40 | 11.8992 | 40 | 12.7206 |
| 50 | 21.9266 | 50 | 22.7480 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 15 20 00 | 15 17 29.2801 | 15 25 00 | 15 22 28.4609 |
| 10 | 39.2528 | 10 | 38.4336 |
| 20 | 49.2255 | 20 | 48.4063 |
| 30 | 59.1982 | 30 | 58.3790 |
| 40 | 15 18 09.1709 | 40 | 15 23 08.3517 |
| 50 | 19.1436 | 50 | 18.3244 |
| 15 21 00 | 29.1162 | 15 26 00 | 28.2971 |
| 10 | 39.0889 | 10 | 38.2698 |
| 20 | 49.0616 | 20 | 48.2425 |
| 30 | 59.0343 | 30 | 58.2152 |
| 40 | 15 19 09.0070 | 40 | 15 24 08.1879 |
| 50 | 18.9797 | 50 | 18.1606 |
| 15 22 00 | 28.9524 | 15 27 00 | 28.1333 |
| 10 | 38.9251 | 10 | 38.1060 |
| 20 | 48.8978 | 20 | 48.0787 |
| 30 | 58.8705 | 30 | 58.0514 |
| 40 | 15 20 08.8432 | 40 | 15 25 08.0241 |
| 50 | 18.8159 | 50 | 17.9968 |
| 15 23 00 | 28.7886 | 15 28 00 | 27.9695 |
| 10 | 38.7613 | 10 | 37.9422 |
| 20 | 48.7340 | 20 | 47.9149 |
| 30 | 58.7067 | 30 | 57.8876 |
| 40 | 15 21 08.6794 | 40 | 15 26 07.8602 |
| 50 | 18.6521 | 50 | 17.8329 |
| 15 24 00 | 28.6248 | 15 29 00 | 27.8056 |
| 10 | 38.5975 | 10 | 37.7783 |
| 20 | 48.5702 | 20 | 47.7510 |
| 30 | 58.5429 | 30 | 57.7237 |
| 40 | 15 22 08.5156 | 40 | 15 27 07.6964 |
| 50 | 18.4882 | 50 | 17.6691 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 15 30 00 | 15 32 32.7753 | 15 35 00 | 15 37 33.5967 |
| 10 | 42.8027 | 10 | 43.6241 |
| 20 | 52.8301 | 20 | 53.6515 |
| 30 | 15 33 02.8575 | 30 | 15 38 03.6788 |
| 40 | 12.8848 | 40 | 13.7062 |
| 50 | 22.9122 | 50 | 23.7336 |
| 15 31 00 | 32.9396 | 15 36 00 | 33.7610 |
| 10 | 42.9670 | 10 | 43.7884 |
| 20 | 52.9944 | 20 | 53.8157 |
| 30 | 15 34 03.0217 | 30 | 15 39 03.8431 |
| 40 | 13.0491 | 40 | 13.8705 |
| 50 | 23.0765 | 50 | 23.8979 |
| 15 32 00 | 33.1039 | 15 37 00 | 33.9253 |
| 10 | 43.1313 | 10 | 43.9526 |
| 20 | 53.1586 | 20 | 53.9800 |
| 30 | 15 35 03.1860 | 30 | 15 40 04.0074 |
| 40 | 13.2134 | 40 | 14.0348 |
| 50 | 23.2408 | 50 | 24.0621 |
| 15 33 00 | 33.2682 | 15 38 00 | 34.0895 |
| 10 | 43.2955 | 10 | 44.1169 |
| 20 | 53.3229 | 20 | 54.1443 |
| 30 | 15 36 03.3503 | 30 | 15 41 04.1717 |
| 40 | 13.3777 | 40 | 14.1990 |
| 50 | 23.4050 | 50 | 24.2264 |
| 15 34 00 | 33.4324 | 15 39 00 | 34.2538 |
| 10 | 43.4598 | 10 | 44.2812 |
| 20 | 53.4872 | 20 | 54.3086 |
| 30 | 15 37 03.5146 | 30 | 15 42 04.3359 |
| 40 | 13.5419 | 40 | 14.3633 |
| 50 | 23.5693 | 50 | 24.3907 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 15 30 00 | 15 27 27.6418 | 15 35 00 | 15 32 26.8227 |
| 10 | 37.6145 | 10 | 36.7954 |
| 20 | 47.5872 | 20 | 46.7681 |
| 30 | 57.5599 | 30 | 56.7408 |
| 40 | 15 28 07.5326 | 40 | 15 33 06.7135 |
| 50 | 17.5053 | 50 | 16.6862 |
| 15 31 00 | 27.4780 | 15 36 00 | 26.6589 |
| 10 | 37.4507 | 10 | 36.6316 |
| 20 | 47.4234 | 20 | 46.6042 |
| 30 | 57.3961 | 30 | 56.5769 |
| 40 | 15 29 07.3688 | 40 | 15 34 06.5496 |
| 50 | 17.3415 | 50 | 16.5223 |
| 15 32 00 | 27.3142 | 15 37 00 | 26.4950 |
| 10 | 37.2869 | 10 | 36.4677 |
| 20 | 47.2596 | 20 | 46.4404 |
| 30 | 57.2322 | 30 | 56.4131 |
| 40 | 15 30 07.2049 | 40 | 15 35 06.3858 |
| 50 | 17.1776 | 50 | 16.3585 |
| 15 33 00 | 27.1503 | 15 38 00 | 26.3312 |
| 10 | 37.1230 | 10 | 36.3039 |
| 20 | 47.0957 | 20 | 46.2766 |
| 30 | 57.0684 | 30 | 56.2493 |
| 40 | 15 31 07.0411 | 40 | 15 36 06.2220 |
| 50 | 17.0138 | 50 | 16.1947 |
| 15 34 00 | 26.9865 | 15 39 00 | 26.1674 |
| 10 | 36.9592 | 10 | 36.1401 |
| 20 | 46.9319 | 20 | 46.1128 |
| 30 | 56.9046 | 30 | 56.0855 |
| 40 | 15 32 06.8773 | 40 | 15 37 06.0582 |
| 50 | 16.8500 | 50 | 16.0309 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 15 40 00 | 15 42 34.4181 | 15 45 00 | 15 47 35.2394 |
| 10 | 44.4455 | 10 | 45.2668 |
| 20 | 54.4728 | 20 | 55.2942 |
| 30 | 15 43 04.5002 | 30 | 15 48 05.3216 |
| 40 | 14.5276 | 40 | 15.3490 |
| 50 | 24.5550 | 50 | 25.3763 |
| 15 41 00 | 34.5823 | 15 46 00 | 35.4037 |
| 10 | 44.6097 | 10 | 45.4311 |
| 20 | 54.6371 | 20 | 55.4585 |
| 30 | 15 44 04.6645 | 30 | 15 49 05.4859 |
| 40 | 14.6919 | 40 | 15.5132 |
| 50 | 24.7192 | 50 | 25.5406 |
| 15 42 00 | 34.7466 | 15 47 00 | 35.5680 |
| 10 | 44.7740 | 10 | 45.5954 |
| 20 | 54.8014 | 20 | 55.6228 |
| 30 | 15 45 04.8288 | 30 | 15 50 05.6501 |
| 40 | 14.8561 | 40 | 15.6775 |
| 50 | 24.8835 | 50 | 25.7049 |
| 15 43 00 | 34.9109 | 15 48 00 | 35.7323 |
| 10 | 44.9383 | 10 | 45.7597 |
| 20 | 54.9657 | 20 | 55.7870 |
| 30 | 15 46 04.9930 | 30 | 15 51 05.8144 |
| 40 | 15.0204 | 40 | 15.8418 |
| 50 | 25.0478 | 50 | 25.8692 |
| 15 44 00 | 35.0752 | 15 49 00 | 35.8965 |
| 10 | 45.1026 | 10 | 45.9239 |
| 20 | 55.1299 | 20 | 55.9513 |
| 30 | 15 47 05.1573 | 30 | 15 52 05.9787 |
| 40 | 15.1847 | 40 | 16.0061 |
| 50 | 25.2121 | 50 | 26.0334 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 15 40 00 | 15 37 26.0036 | 15 45 00 | 15 42 25.1844 |
| 10 | 35.9762 | 10 | 35.1571 |
| 20 | 45.9489 | 20 | 45.1298 |
| 30 | 55.9216 | 30 | 55.1025 |
| 40 | 15 38 05.8943 | 40 | 15 43 05.0752 |
| 50 | 15.8670 | 50 | 15.0479 |
| 15 41 00 | 25.8397 | 15 46 00 | 25.0206 |
| 10 | 35.8124 | 10 | 34.9933 |
| 20 | 45.7851 | 20 | 44.9660 |
| 30 | 55.7578 | 30 | 54.9387 |
| 40 | 15 39 05.7305 | 40 | 15 44 04.9114 |
| 50 | 15.7032 | 50 | 14.8841 |
| 15 42 00 | 25.6759 | 15 47 00 | 24.8568 |
| 10 | 35.6486 | 10 | 34.8295 |
| 20 | 45.6213 | 20 | 44.8022 |
| 30 | 55.5940 | 30 | 54.7749 |
| 40 | 15 40 05.5667 | 40 | 15 45 04.7476 |
| 50 | 15.5394 | 50 | 14.7202 |
| 15 43 00 | 25.5121 | 15 48 00 | 24.6929 |
| 10 | 35.4848 | 10 | 34.6656 |
| 20 | 45.4575 | 20 | 44.6383 |
| 30 | 55.4302 | 30 | 54.6110 |
| 40 | 15 41 05.4029 | 40 | 15 46 04.5837 |
| 50 | 15.3756 | 50 | 14.5564 |
| 15 44 00 | 25.3482 | 15 49 00 | 24.5291 |
| 10 | 35.3209 | 10 | 34.5018 |
| 20 | 45.2936 | 20 | 44.4745 |
| 30 | 55.2663 | 30 | 54.4472 |
| 40 | 15 42 05.2390 | 40 | 15 47 04.4199 |
| 50 | 15.2117 | 50 | 14.3926 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 15 50 00 | 15 52 36.0608 | 15 55 00 | 15 57 36.8822 |
| 10 | 46.0882 | 10 | 46.9096 |
| 20 | 56.1156 | 20 | 56.9370 |
| 30 | 15 53 06.1430 | 30 | 15 58 06.9643 |
| 40 | 16.1703 | 40 | 16.9917 |
| 50 | 26.1977 | 50 | 27.0191 |
| 15 51 00 | 36.2251 | 15 56 00 | 37.0465 |
| 10 | 46.2525 | 10 | 47.0738 |
| 20 | 56.2799 | 20 | 57.1012 |
| 30 | 15 54 06.3072 | 30 | 15 59 07.1286 |
| 40 | 16.3346 | 40 | 17.1560 |
| 50 | 26.3620 | 50 | 27.1834 |
| 15 52 00 | 36.3894 | 15 57 00 | 37.2107 |
| 10 | 46.4167 | 10 | 47.2381 |
| 20 | 56.4441 | 20 | 57.2655 |
| 30 | 15 55 06.4715 | 30 | 16 00 07.2929 |
| 40 | 16.4989 | 40 | 17.3203 |
| 50 | 26.5263 | 50 | 27.3476 |
| 15 53 00 | 36.5536 | 15 58 00 | 37.3750 |
| 10 | 46.5810 | 10 | 47.4024 |
| 20 | 56.6084 | 20 | 57.4298 |
| 30 | 15 56 06.6358 | 30 | 16 01 07.4572 |
| 40 | 16.6632 | 40 | 17.4845 |
| 50 | 26.6905 | 50 | 27.5119 |
| 15 54 00 | 36.7179 | 15 59 00 | 37.5393 |
| 10 | 46.7453 | 10 | 47.5667 |
| 20 | 56.7727 | 20 | 57.5940 |
| 30 | 15 57 06.8001 | 30 | 16 02 07.6214 |
| 40 | 16.8274 | 40 | 17.6488 |
| 50 | 26.8548 | 50 | 27.6762 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 15 50 00 | 15 47 24.3653 | 15 55 00 | 15 52 23.5462 |
| 10 | 34.3380 | 10 | 33.5189 |
| 20 | 44.3107 | 20 | 43.4916 |
| 30 | 54.2834 | 30 | 53.4643 |
| 40 | 15 48 04.2561 | 40 | 15 53 03.4369 |
| 50 | 14.2288 | 50 | 13.4096 |
| 15 51 00 | 24.2015 | 15 56 00 | 23.3823 |
| 10 | 34.1742 | 10 | 33.3550 |
| 20 | 44.1469 | 20 | 43.3277 |
| 30 | 54.1196 | 30 | 53.3004 |
| 40 | 15 49 04.0923 | 40 | 15 54 03.2731 |
| 50 | 14.0649 | 50 | 13.2458 |
| 15 52 00 | 24.0376 | 15 57 00 | 23.2185 |
| 10 | 34.0103 | 10 | 33.1912 |
| 20 | 43.9830 | 20 | 43.1639 |
| 30 | 53.9557 | 30 | 53.1366 |
| 40 | 15 50 03.9284 | 40 | 15 55 03.1093 |
| 50 | 13.9011 | 50 | 13.0820 |
| 15 53 00 | 23.8738 | 15 58 00 | 23.0547 |
| 10 | 33.8465 | 10 | 33.0274 |
| 20 | 43.8192 | 20 | 43.0001 |
| 30 | 53.7919 | 30 | 52.9728 |
| 40 | 15 51 03.7646 | 40 | 15 56 02.9455 |
| 50 | 13.7373 | 50 | 12.9182 |
| 15 54 00 | 23.7100 | 15 59 00 | 22.8909 |
| 10 | 33.6827 | 10 | 32.8636 |
| 20 | 43.6554 | 20 | 42.8363 |
| 30 | 53.6281 | 30 | 52.8089 |
| 40 | 15 52 03.6008 | 40 | 15 57 02.7816 |
| 50 | 13.5735 | 50 | 12.7543 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 16 00 00 | 16 02 37.7036 | 16 05 00 | 16 07 38.5249 |
| 10 | 47.7309 | 10 | 48.5523 |
| 20 | 57.7583 | 20 | 58.5797 |
| 30 | 16 03 07.7857 | 30 | 16 08 08.6071 |
| 40 | 17.8131 | 40 | 18.6345 |
| 50 | 27.8405 | 50 | 28.6618 |
| 16 01 00 | 37.8678 | 16 06 00 | 38.6892 |
| 10 | 47.8952 | 10 | 48.7166 |
| 20 | 57.9226 | 20 | 58.7440 |
| 30 | 16 04 07.9500 | 30 | 16 09 08.7714 |
| 40 | 17.9774 | 40 | 18.7987 |
| 50 | 28.0047 | 50 | 28.8261 |
| 16 02 00 | 38.0321 | 16 07 00 | 38.8535 |
| 10 | 48.0595 | 10 | 48.8809 |
| 20 | 58.0869 | 20 | 58.9082 |
| 30 | 16 05 08.1143 | 30 | 16 10 08.9356 |
| 40 | 18.1416 | 40 | 18.9630 |
| 50 | 28.1690 | 50 | 28.9904 |
| 16 03 00 | 38.1964 | 16 08 00 | 39.0178 |
| 10 | 48.2238 | 10 | 49.0451 |
| 20 | 58.2511 | 20 | 59.0725 |
| 30 | 16 06 08.2785 | 30 | 16 11 09.0999 |
| 40 | 18.3059 | 40 | 19.1273 |
| 50 | 28.3333 | 50 | 29.1547 |
| 16 04 00 | 38.3607 | 16 09 00 | 39.1820 |
| 10 | 48.3880 | 10 | 49.2094 |
| 20 | 58.4154 | 20 | 59.2368 |
| 30 | 16 07 08.4428 | 30 | 16 12 09.2642 |
| 40 | 18.4702 | 40 | 19.2916 |
| 50 | 28.4976 | 50 | 29.3189 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 16 00 00 | 15 57 22.7270 | 16 05 00 | 16 02 21.9079 |
| 10 | 32.6997 | 10 | 31.8806 |
| 20 | 42.6724 | 20 | 41.8533 |
| 30 | 52.6451 | 30 | 51.8260 |
| 40 | 15 58 02.6178 | 40 | 16 03 01.7987 |
| 50 | 12.5905 | 50 | 11.7714 |
| 16 01 00 | 22.5632 | 16 06 00 | 21.7441 |
| 10 | 32.5359 | 10 | 31.7168 |
| 20 | 42.5086 | 20 | 41.6895 |
| 30 | 52.4813 | 30 | 51.6622 |
| 40 | 15 59 02.4540 | 40 | 16 04 01.6349 |
| 50 | 12.4267 | 50 | 11.6076 |
| 16 02 00 | 22.3994 | 16 07 00 | 21.5803 |
| 10 | 32.3721 | 10 | 31.5529 |
| 20 | 42.3448 | 20 | 41.5256 |
| 30 | 52.3175 | 30 | 51.4983 |
| 40 | 16 00 02.2902 | 40 | 16 05 01.4710 |
| 50 | 12.2629 | 50 | 11.4437 |
| 16 03 00 | 22.2356 | 16 08 00 | 21.4164 |
| 10 | 32.2083 | 10 | 31.3891 |
| 20 | 42.1809 | 20 | 41.3618 |
| 30 | 52.1536 | 30 | 51.3345 |
| 40 | 16 01 02.1263 | 40 | 16 06 01.3072 |
| 50 | 12.0990 | 50 | 11.2799 |
| 16 04 00 | 22.0717 | 16 09 00 | 21.2526 |
| 10 | 32.0444 | 10 | 31.2253 |
| 20 | 42.0171 | 20 | 41.1980 |
| 30 | 51.9898 | 30 | 51.1707 |
| 40 | 16 02 01.9625 | 40 | 16 07 01.1434 |
| 50 | 11.9352 | 50 | 11.1161 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 16 10 00 | 16 12 39.3463 | 16 15 00 | 16 17 40.1677 |
| 10 | 49.3737 | 10 | 50.1951 |
| 20 | 59.4011 | 20 | 16 18 00.2224 |
| 30 | 16 13 09.4284 | 30 | 10.2498 |
| 40 | 19.4558 | 40 | 20.2772 |
| 50 | 29.4832 | 50 | 30.3046 |
| 16 11 00 | 39.5106 | 16 16 00 | 40.3320 |
| 10 | 49.5380 | 10 | 50.3593 |
| 20 | 59.5653 | 20 | 16 19 00.3867 |
| 30 | 16 14 09.5927 | 30 | 10.4141 |
| 40 | 19.6201 | 40 | 20.4415 |
| 50 | 29.6475 | 50 | 30.4689 |
| 16 12 00 | 39.6749 | 16 17 00 | 40.4962 |
| 10 | 49.7022 | 10 | 50.5236 |
| 20 | 59.7296 | 20 | 16 20 00.5510 |
| 30 | 16 15 09.7570 | 30 | 10.5784 |
| 40 | 19.7844 | 40 | 20.6057 |
| 50 | 29.8118 | 50 | 30.6331 |
| 16 13 00 | 39.8391 | 16 18 00 | 40.6605 |
| 10 | 49.8665 | 10 | 50.6879 |
| 20 | 59.8939 | 20 | 16 21 00.7153 |
| 30 | 16 16 09.9213 | 30 | 10.7426 |
| 40 | 19.9487 | 40 | 20.7700 |
| 50 | 29.9760 | 50 | 30.7974 |
| 16 14 00 | 40.0034 | 16 19 00 | 40.8248 |
| 10 | 50.0308 | 10 | 50.8522 |
| 20 | 16 17 00.0582 | 20 | 16 22 00.8795 |
| 30 | 10.0855 | 30 | 10.9069 |
| 40 | 20.1129 | 40 | 20.9343 |
| 50 | 30.1403 | 50 | 30.9617 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 16 10 00 | 16 07 21.0888 | 16 15 00 | 16 12 20.2696 |
| 10 | 31.0615 | 10 | 30.2423 |
| 20 | 41.0342 | 20 | 40.2150 |
| 30 | 51.0069 | 30 | 50.1877 |
| 40 | 16 08 00.9796 | 40 | 16 13 00.1604 |
| 50 | 10.9523 | 50 | 10.1331 |
| 16 11 00 | 20.9249 | 16 16 00 | 20.1058 |
| 10 | 30.8976 | 10 | 30.0785 |
| 20 | 40.8703 | 20 | 40.0512 |
| 30 | 50.8430 | 30 | 50.0239 |
| 40 | 16 09 00.8157 | 40 | 59.9966 |
| 50 | 10.7884 | 50 | 16 14 09.9693 |
| 16 12 00 | 20.7611 | 16 17 00 | 19.9420 |
| 10 | 30.7338 | 10 | 29.9147 |
| 20 | 40.7065 | 20 | 39.8874 |
| 30 | 50.6792 | 30 | 49.8601 |
| 40 | 16 10 00.6519 | 40 | 59.8328 |
| 50 | 10.6246 | 50 | 16 15 09.8055 |
| 16 13 00 | 20.5973 | 16 18 00 | 19.7782 |
| 10 | 30.5700 | 10 | 29.7509 |
| 20 | 40.5427 | 20 | 39.7236 |
| 30 | 50.5154 | 30 | 49.6963 |
| 40 | 16 11 00.4881 | 40 | 59.6689 |
| 50 | 10.4608 | 50 | 16 16 09.6416 |
| 16 14 00 | 20.4335 | 16 19 00 | 19.6143 |
| 10 | 30.4062 | 10 | 29.5870 |
| 20 | 40.3789 | 20 | 39.5597 |
| 30 | 50.3516 | 30 | 49.5324 |
| 40 | 16 12 00.3243 | 40 | 59.5051 |
| 50 | 10.2969 | 50 | 16 17 09.4778 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 16 20 00 | 16 22 40.9891 | 16 25 00 | 16 27 41.8104 |
| 10 | 51.0164 | 10 | 51.8378 |
| 20 | 16 23 01.0438 | 20 | 16 28 01.8652 |
| 30 | 11.0712 | 30 | 11.8926 |
| 40 | 21.0986 | 40 | 21.9199 |
| 50 | 31.1260 | 50 | 31.9473 |
| 16 21 00 | 41.1533 | 16 26 00 | 41.9747 |
| 10 | 51.1807 | 10 | 52.0021 |
| 20 | 16 24 01.2081 | 20 | 16 29 02.0295 |
| 30 | 11.2355 | 30 | 12.0568 |
| 40 | 21.2628 | 40 | 22.0842 |
| 50 | 31.2902 | 50 | 32.1116 |
| 16 22 00 | 41.3176 | 16 27 00 | 42.1390 |
| 10 | 51.3450 | 10 | 52.1664 |
| 20 | 16 25 01.3724 | 20 | 16 30 02.1937 |
| 30 | 11.3997 | 30 | 12.2211 |
| 40 | 21.4271 | 40 | 22.2485 |
| 50 | 31.4545 | 50 | 32.2759 |
| 16 23 00 | 41.4819 | 16 28 00 | 42.3033 |
| 10 | 51.5093 | 10 | 52.3306 |
| 20 | 16 26 01.5366 | 20 | 16 31 02.3580 |
| 30 | 11.5640 | 30 | 12.3854 |
| 40 | 21.5914 | 40 | 22.4128 |
| 50 | 31.6188 | 50 | 32.4401 |
| 16 24 00 | 41.6462 | 16 29 00 | 42.4675 |
| 10 | 51.6735 | 10 | 52.4949 |
| 20 | 16 27 01.7009 | 20 | 16 32 02.5223 |
| 30 | 11.7283 | 30 | 12.5497 |
| 40 | 21.7557 | 40 | 22.5770 |
| 50 | 31.7831 | 50 | 32.6044 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 16 20 00 | 16 17 19.4505 | 16 25 00 | 16 22 18.6314 |
| 10 | 29.4232 | 10 | 28.6041 |
| 20 | 39.3959 | 20 | 38.5768 |
| 30 | 49.3686 | 30 | 48.5495 |
| 40 | 59.3413 | 40 | 58.5222 |
| 50 | 16 18 09.3140 | 50 | 16 23 08.4949 |
| 16 21 00 | 19.2867 | 16 26 00 | 18.4676 |
| 10 | 29.2594 | 10 | 28.4403 |
| 20 | 39.2321 | 20 | 38.4129 |
| 30 | 49.2048 | 30 | 48.3856 |
| 40 | 59.1775 | 40 | 58.3583 |
| 50 | 16 19 09.1502 | 50 | 16 24 08.3310 |
| 16 22 00 | 19.1229 | 16 27 00 | 18.3037 |
| 10 | 29.0956 | 10 | 28.2764 |
| 20 | 39.0683 | 20 | 38.2491 |
| 30 | 49.0409 | 30 | 48.2218 |
| 40 | 59.0136 | 40 | 58.1945 |
| 50 | 16 20 08.9863 | 50 | 16 25 08.1672 |
| 16 23 00 | 18.9590 | 16 28 00 | 18.1399 |
| 10 | 28.9317 | 10 | 28.1126 |
| 20 | 38.9044 | 20 | 38.0853 |
| 30 | 48.8771 | 30 | 48.0580 |
| 40 | 58.8498 | 40 | 58.0307 |
| 50 | 16 21 08.8225 | 50 | 16 26 08.0034 |
| 16 24 00 | 18.7952 | 16 29 00 | 17.9761 |
| 10 | 28.7679 | 10 | 27.9488 |
| 20 | 38.7406 | 20 | 37.9215 |
| 30 | 48.7133 | 30 | 47.8942 |
| 40 | 58.6860 | 40 | 57.8669 |
| 50 | 16 22 08.6587 | 50 | 16 27 07.8396 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 16 30 00 | 16 32 42.6318 | 16 35 00 | 16 37 43.4532 |
| 10 | 52.6592 | 10 | 53.4806 |
| 20 | 16 33 02.6866 | 20 | 16 38 03.5079 |
| 30 | 12.7139 | 30 | 13.5353 |
| 40 | 22.7413 | 40 | 23.5627 |
| 50 | 32.7687 | 50 | 33.5901 |
| 16 31 00 | 42.7961 | 16 36 00 | 43.6174 |
| 10 | 52.8235 | 10 | 53.6448 |
| 20 | 16 34 02.8508 | 20 | 16 39 03.6722 |
| 30 | 12.8782 | 30 | 13.6996 |
| 40 | 22.9056 | 40 | 23.7270 |
| 50 | 32.9330 | 50 | 33.7543 |
| 16 32 00 | 42.9604 | 16 37 00 | 43.7817 |
| 10 | 52.9877 | 10 | 53.8091 |
| 20 | 16 35 03.0151 | 20 | 16 40 03.8365 |
| 30 | 13.0425 | 30 | 13.8639 |
| 40 | 23.0699 | 40 | 23.8912 |
| 50 | 33.0972 | 50 | 33.9186 |
| 16 33 00 | 43.1246 | 16 38 00 | 43.9460 |
| 10 | 53.1520 | 10 | 53.9734 |
| 20 | 16 36 03.1794 | 20 | 16 41 04.0008 |
| 30 | 13.2068 | 30 | 14.0281 |
| 40 | 23.2341 | 40 | 24.0555 |
| 50 | 33.2615 | 50 | 34.0829 |
| 16 34 00 | 43.2889 | 16 39 00 | 44.1103 |
| 10 | 53.3163 | 10 | 54.1377 |
| 20 | 16 37 03.3437 | 20 | 16 42 04.1650 |
| 30 | 13.3710 | 30 | 14.1924 |
| 40 | 23.3984 | 40 | 24.2198 |
| 50 | 33.4258 | 50 | 34.2472 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 16 30 00 | 16 27 17.8123 | 16 35 00 | 16 32 16.9931 |
| 10 | 27.7849 | 10 | 26.9658 |
| 20 | 37.7576 | 20 | 36.9385 |
| 30 | 47.7303 | 30 | 46.9112 |
| 40 | 57.7030 | 40 | 56.8839 |
| 50 | 16 28 07.6757 | 50 | 16 33 06.8566 |
| 16 31 00 | 17.6484 | 16 36 00 | 16.8293 |
| 10 | 27.6211 | 10 | 26.8020 |
| 20 | 37.5938 | 20 | 36.7747 |
| 30 | 47.5665 | 30 | 46.7474 |
| 40 | 57.5392 | 40 | 56.7201 |
| 50 | 16 29 07.5119 | 50 | 16 34 06.6928 |
| 16 32 00 | 17.4846 | 16 37 00 | 16.6655 |
| 10 | 27.4573 | 10 | 26.6382 |
| 20 | 37.4300 | 20 | 36.6109 |
| 30 | 47.4027 | 30 | 46.5836 |
| 40 | 57.3754 | 40 | 56.5563 |
| 50 | 16 30 07.3481 | 50 | 16 35 06.5289 |
| 16 33 00 | 17.3208 | 16 38 00 | 16.5016 |
| 10 | 27.2935 | 10 | 26.4743 |
| 20 | 37.2662 | 20 | 36.4470 |
| 30 | 47.2389 | 30 | 46.4197 |
| 40 | 57.2116 | 40 | 56.3924 |
| 50 | 16 31 07.1843 | 50 | 16 36 06.3651 |
| 16 34 00 | 17.1569 | 16 39 00 | 16.3378 |
| 10 | 27.1296 | 10 | 26.3105 |
| 20 | 37.1023 | 20 | 36.2832 |
| 30 | 47.0750 | 30 | 46.2559 |
| 40 | 57.0477 | 40 | 56.2286 |
| 50 | 16 32 07.0204 | 50 | 16 37 06.2013 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 16 40 00 | 16 42 44.2745 | 16 45 00 | 16 47 45.0959 |
| 10 | 54.3019 | 10 | 55.1233 |
| 20 | 16 43 04.3293 | 20 | 16 48 05.1507 |
| 30 | 14.3567 | 30 | 15.1781 |
| 40 | 24.3841 | 40 | 25.2054 |
| 50 | 34.4114 | 50 | 35.2328 |
| 16 41 00 | 44.4388 | 16 46 00 | 45.2602 |
| 10 | 54.4662 | 10 | 55.2876 |
| 20 | 16 44 04.4936 | 20 | 16 49 05.3150 |
| 30 | 14.5210 | 30 | 15.3423 |
| 40 | 24.5483 | 40 | 25.3697 |
| 50 | 34.5757 | 50 | 35.3971 |
| 16 42 00 | 44.6031 | 16 47 00 | 45.4245 |
| 10 | 54.6305 | 10 | 55.4518 |
| 20 | 16 45 04.6579 | 20 | 16 50 05.4792 |
| 30 | 14.6852 | 30 | 15.5066 |
| 40 | 24.7126 | 40 | 25.5340 |
| 50 | 34.7400 | 50 | 35.5614 |
| 16 43 00 | 44.7674 | 16 48 00 | 45.5887 |
| 10 | 54.7948 | 10 | 55.6161 |
| 20 | 16 46 04.8221 | 20 | 16 51 05.6435 |
| 30 | 14.8495 | 30 | 15.6709 |
| 40 | 24.8769 | 40 | 25.6983 |
| 50 | 34.9043 | 50 | 35.7256 |
| 16 44 00 | 44.9316 | 16 49 00 | 45.7530 |
| 10 | 54.9590 | 10 | 55.7804 |
| 20 | 16 47 04.9864 | 20 | 16 52 05.8078 |
| 30 | 15.0138 | 30 | 15.8352 |
| 40 | 25.0412 | 40 | 25.8625 |
| 50 | 35.0685 | 50 | 35.8899 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 16 40 00 | 16 37 16.1740 | 16 45 00 | 16 42 15.3549 |
| 10 | 26.1467 | 10 | 25.3276 |
| 20 | 36.1194 | 20 | 35.3003 |
| 30 | 46.0921 | 30 | 45.2729 |
| 40 | 56.0648 | 40 | 55.2456 |
| 50 | 16 38 06.0375 | 50 | 16 43 05.2183 |
| 16 41 00 | 16.0102 | 16 46 00 | 15.1910 |
| 10 | 25.9829 | 10 | 25.1637 |
| 20 | 35.9556 | 20 | 35.1364 |
| 30 | 45.9283 | 30 | 45.1091 |
| 40 | 55.9009 | 40 | 55.0818 |
| 50 | 16 39 05.8736 | 50 | 16 44 05.0545 |
| 16 42 00 | 15.8463 | 16 47 00 | 15.0272 |
| 10 | 25.8190 | 10 | 24.9999 |
| 20 | 35.7917 | 20 | 34.9726 |
| 30 | 45.7644 | 30 | 44.9453 |
| 40 | 55.7371 | 40 | 54.9180 |
| 50 | 16 40 05.7098 | 50 | 16 45 04.8907 |
| 16 43 00 | 15.6825 | 16 48 00 | 14.8634 |
| 10 | 25.6552 | 10 | 24.8361 |
| 20 | 35.6279 | 20 | 34.8088 |
| 30 | 45.6006 | 30 | 44.7815 |
| 40 | 55.5733 | 40 | 54.7542 |
| 50 | 16 41 05.5460 | 50 | 16 46 04.7269 |
| 16 44 00 | 15.5187 | 16 49 00 | 14.6996 |
| 10 | 25.4914 | 10 | 24.6723 |
| 20 | 35.4641 | 20 | 34.6450 |
| 30 | 45.4368 | 30 | 44.6176 |
| 40 | 55.4095 | 40 | 54.5903 |
| 50 | 16 42 05.3822 | 50 | 16 47 04.5630 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 16 50 00 | 16 52 45.9173 | 16 55 00 | 16 57 46.7387 |
| 10 | 55.9447 | 10 | 56.7660 |
| 20 | 16 53 05.9721 | 20 | 16 58 06.7934 |
| 30 | 15.9994 | 30 | 16.8208 |
| 40 | 26.0268 | 40 | 26.8482 |
| 50 | 36.0542 | 50 | 36.8756 |
| 16 51 00 | 46.0816 | 16 56 00 | 46.9029 |
| 10 | 56.1089 | 10 | 56.9303 |
| 20 | 16 54 06.1363 | 20 | 16 59 06.9577 |
| 30 | 16.1637 | 30 | 16.9851 |
| 40 | 26.1911 | 40 | 27.0125 |
| 50 | 36.2185 | 50 | 37.0398 |
| 16 52 00 | 46.2458 | 16 57 00 | 47.0672 |
| 10 | 56.2732 | 10 | 57.0946 |
| 20 | 16 55 06.3006 | 20 | 17 00 07.1220 |
| 30 | 16.3280 | 30 | 17.1494 |
| 40 | 26.3554 | 40 | 27.1767 |
| 50 | 36.3827 | 50 | 37.2041 |
| 16 53 00 | 46.4101 | 16 58 00 | 47.2315 |
| 10 | 56.4375 | 10 | 57.2589 |
| 20 | 16 56 06.4649 | 20 | 17 01 07.2862 |
| 30 | 16.4923 | 30 | 17.3136 |
| 40 | 26.5196 | 40 | 27.3410 |
| 50 | 36.5470 | 50 | 37.3684 |
| 16 54 00 | 46.5744 | 16 59 00 | 47.3958 |
| 10 | 56.6018 | 10 | 57.4231 |
| 20 | 16 57 06.6291 | 20 | 17 02 07.4505 |
| 30 | 16.6565 | 30 | 17.4779 |
| 40 | 26.6839 | 40 | 27.5053 |
| 50 | 36.7113 | 50 | 37.5327 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 16 50 00 | 16 47 14.5357 | 16 55 00 | 16 52 13.7166 |
| 10 | 24.5084 | 10 | 23.6893 |
| 20 | 34.4811 | 20 | 33.6620 |
| 30 | 44.4538 | 30 | 43.6347 |
| 40 | 54.4265 | 40 | 53.6074 |
| 50 | 16 48 04.3992 | 50 | 16 53 03.5801 |
| 16 51 00 | 14.3719 | 16 56 00 | 13.5528 |
| 10 | 24.3446 | 10 | 23.5255 |
| 20 | 34.3173 | 20 | 33.4982 |
| 30 | 44.2900 | 30 | 43.4709 |
| 40 | 54.2627 | 40 | 53.4436 |
| 50 | 16 49 04.2354 | 50 | 16 54 03.4163 |
| 16 52 00 | 14.2081 | 16 57 00 | 13.3890 |
| 10 | 24.1808 | 10 | 23.3616 |
| 20 | 34.1535 | 20 | 33.3343 |
| 30 | 44.1262 | 30 | 43.3070 |
| 40 | 54.0989 | 40 | 53.2797 |
| 50 | 16 50 04.0716 | 50 | 16 55 03.2524 |
| 16 53 00 | 14.0443 | 16 58 00 | 13.2251 |
| 10 | 24.0170 | 10 | 23.1978 |
| 20 | 33.9896 | 20 | 33.1705 |
| 30 | 43.9623 | 30 | 43.1432 |
| 40 | 53.9350 | 40 | 53.1159 |
| 50 | 16 51 03.9077 | 50 | 16 56 03.0886 |
| 16 54 00 | 13.8804 | 16 59 00 | 13.0613 |
| 10 | 23.8531 | 10 | 23.0340 |
| 20 | 33.8258 | 20 | 33.0067 |
| 30 | 43.7985 | 30 | 42.9794 |
| 40 | 53.7712 | 40 | 52.9521 |
| 50 | 16 52 03.7439 | 50 | 16 57 02.9248 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 17 00 00 | 17 02 47.5600 | 17 05 00 | 17 07 48.3814 |
| 10 | 57.5874 | 10 | 58.4088 |
| 20 | 17 03 07.6148 | 20 | 17 08 08.4362 |
| 30 | 17.6422 | 30 | 18.4635 |
| 40 | 27.6696 | 40 | 28.4909 |
| 50 | 37.6969 | 50 | 38.5183 |
| 17 01 00 | 47.7243 | 17 06 00 | 48.5457 |
| 10 | 57.7517 | 10 | 58.5731 |
| 20 | 17 04 07.7791 | 20 | 17 09 08.6004 |
| 30 | 17.8065 | 30 | 18.6278 |
| 40 | 27.8338 | 40 | 28.6552 |
| 50 | 37.8612 | 50 | 38.6826 |
| 17 02 00 | 47.8886 | 17 07 00 | 48.7100 |
| 10 | 57.9160 | 10 | 58.7373 |
| 20 | 17 05 07.9433 | 20 | 17 10 08.7647 |
| 30 | 17.9707 | 30 | 18.7921 |
| 40 | 27.9981 | 40 | 28.8195 |
| 50 | 38.0255 | 50 | 38.8469 |
| 17 03 00 | 48.0529 | 17 08 00 | 48.8742 |
| 10 | 58.0802 | 10 | 58.9016 |
| 20 | 17 06 08.1076 | 20 | 17 11 08.9290 |
| 30 | 18.1350 | 30 | 18.9564 |
| 40 | 28.1624 | 40 | 28.9838 |
| 50 | 38.1898 | 50 | 39.0111 |
| 17 04 00 | 48.2171 | 17 09 00 | 49.0385 |
| 10 | 58.2445 | 10 | 59.0659 |
| 20 | 17 07 08.2719 | 20 | 17 12 09.0933 |
| 30 | 18.2993 | 30 | 19.1206 |
| 40 | 28.3267 | 40 | 29.1480 |
| 50 | 38.3540 | 50 | 39.1754 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 17 00 00 | 16 57 12.8975 | 17 05 00 | 17 02 12.0783 |
| 10 | 22.8702 | 10 | 22.0510 |
| 20 | 32.8429 | 20 | 32.0237 |
| 30 | 42.8156 | 30 | 41.9964 |
| 40 | 52.7883 | 40 | 51.9691 |
| 50 | 16 58 02.7610 | 50 | 17 03 01.9418 |
| 17 01 00 | 12.7336 | 17 06 00 | 11.9145 |
| 10 | 22.7063 | 10 | 21.8872 |
| 20 | 32.6790 | 20 | 31.8599 |
| 30 | 42.6517 | 30 | 41.8326 |
| 40 | 52.6244 | 40 | 51.8053 |
| 50 | 16 59 02.5971 | 50 | 17 04 01.7780 |
| 17 02 00 | 12.5698 | 17 07 00 | 11.7507 |
| 10 | 22.5425 | 10 | 21.7234 |
| 20 | 32.5152 | 20 | 31.6961 |
| 30 | 42.4879 | 30 | 41.6688 |
| 40 | 52.4606 | 40 | 51.6415 |
| 50 | 17 00 02.4333 | 50 | 17 05 01.6142 |
| 17 03 00 | 12.4060 | 17 08 00 | 11.5869 |
| 10 | 22.3787 | 10 | 21.5596 |
| 20 | 32.3514 | 20 | 31.5323 |
| 30 | 42.3241 | 30 | 41.5050 |
| 40 | 52.2968 | 40 | 51.4776 |
| 50 | 17 01 02.2695 | 50 | 17 06 01.4503 |
| 17 04 00 | 12.2422 | 17 09 00 | 11.4230 |
| 10 | 22.2149 | 10 | 21.3957 |
| 20 | 32.1876 | 20 | 31.3684 |
| 30 | 42.1603 | 30 | 41.3411 |
| 40 | 52.1330 | 40 | 51.3138 |
| 50 | 17 02 02.1056 | 50 | 17 07 01.2865 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 17 10 00 | 17 12 49.2028 | 17 15 00 | 17 17 50.0242 |
| 10 | 59.2302 | 10 | 17 18 00.0515 |
| 20 | 17 13 09.2575 | 20 | 10.0789 |
| 30 | 19.2849 | 30 | 20.1063 |
| 40 | 29.3123 | 40 | 30.1337 |
| 50 | 39.3397 | 50 | 40.1611 |
| 17 11 00 | 49.3671 | 17 16 00 | 50.1884 |
| 10 | 59.3944 | 10 | 17 19 00.2158 |
| 20 | 17 14 09.4218 | 20 | 10.2432 |
| 30 | 19.4492 | 30 | 20.2706 |
| 40 | 29.4766 | 40 | 30.2979 |
| 50 | 39.5040 | 50 | 40.3253 |
| 17 12 00 | 49.5313 | 17 17 00 | 50.3527 |
| 10 | 59.5587 | 10 | 17 20 00.3801 |
| 20 | 17 15 09.5861 | 20 | 10.4075 |
| 30 | 19.6135 | 30 | 20.4348 |
| 40 | 29.6408 | 40 | 30.4622 |
| 50 | 39.6682 | 50 | 40.4896 |
| 17 13 00 | 49.6956 | 17 18 00 | 50.5170 |
| 10 | 59.7230 | 10 | 17 21 00.5444 |
| 20 | 17 16 09.7504 | 20 | 10.5717 |
| 30 | 19.7777 | 30 | 20.5991 |
| 40 | 29.8051 | 40 | 30.6265 |
| 50 | 39.8325 | 50 | 40.6539 |
| 17 14 00 | 49.8599 | 17 19 00 | 50.6813 |
| 10 | 59.8873 | 10 | 17 22 00.7086 |
| 20 | 17 17 09.9146 | 20 | 10.7360 |
| 30 | 19.9420 | 30 | 20.7634 |
| 40 | 29.9694 | 40 | 30.7908 |
| 50 | 39.9968 | 50 | 40.8182 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 17 10 00 | 17 07 11.2592 | 17 15 00 | 17 12 10.4401 |
| 10 | 21.2319 | 10 | 20.4128 |
| 20 | 31.2046 | 20 | 30.3855 |
| 30 | 41.1773 | 30 | 40.3582 |
| 40 | 51.1500 | 40 | 50.3309 |
| 50 | 17 08 01.1227 | 50 | 17 13 00.3036 |
| 17 11 00 | 11.0954 | 17 16 00 | 10.2763 |
| 10 | 21.0681 | 10 | 20.2490 |
| 20 | 31.0408 | 20 | 30.2216 |
| 30 | 41.0135 | 30 | 40.1943 |
| 40 | 50.9862 | 40 | 50.1670 |
| 50 | 17 09 00.9589 | 50 | 17 14 00.1397 |
| 17 12 00 | 10.9316 | 17 17 00 | 10.1124 |
| 10 | 20.9043 | 10 | 20.0851 |
| 20 | 30.8770 | 20 | 30.0578 |
| 30 | 40.8496 | 30 | 40.0305 |
| 40 | 50.8223 | 40 | 50.0032 |
| 50 | 17 10 00.7950 | 50 | 59.9759 |
| 17 13 00 | 10.7677 | 17 18 00 | 17 15 09.9486 |
| 10 | 20.7404 | 10 | 19.9213 |
| 20 | 30.7131 | 20 | 29.8940 |
| 30 | 40.6858 | 30 | 39.8667 |
| 40 | 50.6585 | 40 | 49.8394 |
| 50 | 17 11 00.6312 | 50 | 59.8121 |
| 17 14 00 | 10.6039 | 17 19 00 | 17 16 09.7848 |
| 10 | 20.5766 | 10 | 19.7575 |
| 20 | 30.5493 | 20 | 29.7302 |
| 30 | 40.5220 | 30 | 39.7029 |
| 40 | 50.4947 | 40 | 49.6756 |
| 50 | 17 12 00.4674 | 50 | 59.6483 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 17 20 00 | 17 22 50.8455 | 17 25 00 | 17 27 51.6669 |
| 10 | 17 23 00.8729 | 10 | 17 28 01.6943 |
| 20 | 10.9003 | 20 | 11.7217 |
| 30 | 20.9277 | 30 | 21.7490 |
| 40 | 30.9550 | 40 | 31.7764 |
| 50 | 40.9824 | 50 | 41.8038 |
| 17 21 00 | 51.0098 | 17 26 00 | 51.8312 |
| 10 | 17 24 01.0372 | 10 | 17 29 01.8586 |
| 20 | 11.0646 | 20 | 11.8859 |
| 30 | 21.0919 | 30 | 21.9133 |
| 40 | 31.1193 | 40 | 31.9407 |
| 50 | 41.1467 | 50 | 41.9681 |
| 17 22 00 | 51.1741 | 17 27 00 | 51.9955 |
| 10 | 17 25 01.2015 | 10 | 17 30 02.0228 |
| 20 | 11.2288 | 20 | 12.0502 |
| 30 | 21.2562 | 30 | 22.0776 |
| 40 | 31.2836 | 40 | 32.1050 |
| 50 | 41.3110 | 50 | 42.1323 |
| 17 23 00 | 51.3384 | 17 28 00 | 52.1597 |
| 10 | 17 26 01.3657 | 10 | 17 31 02.1871 |
| 20 | 11.3931 | 20 | 12.2145 |
| 30 | 21.4205 | 30 | 22.2419 |
| 40 | 31.4479 | 40 | 32.2692 |
| 50 | 41.4752 | 50 | 42.2966 |
| 17 24 00 | 51.5026 | 17 29 00 | 52.3240 |
| 10 | 17 27 01.5300 | 10 | 17 32 02.3514 |
| 20 | 11.5574 | 20 | 12.3788 |
| 30 | 21.5848 | 30 | 22.4061 |
| 40 | 31.6121 | 40 | 32.4335 |
| 50 | 41.6395 | 50 | 42.4609 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 17 20 00 | 17 17 09.6210 | 17 25 00 | 17 22 08.8018 |
| 10 | 19.5936 | 10 | 18.7745 |
| 20 | 29.5663 | 20 | 28.7472 |
| 30 | 39.5390 | 30 | 38.7199 |
| 40 | 49.5117 | 40 | 48.6926 |
| 50 | 59.4844 | 50 | 58.6653 |
| 17 21 00 | 17 18 09.4571 | 17 26 00 | 17 23 08.6380 |
| 10 | 19.4298 | 10 | 18.6107 |
| 20 | 29.4025 | 20 | 28.5834 |
| 30 | 39.3752 | 30 | 38.5561 |
| 40 | 49.3479 | 40 | 48.5288 |
| 50 | 59.3206 | 50 | 58.5015 |
| 17 22 00 | 17 19 09.2933 | 17 27 00 | 17 24 08.4742 |
| 10 | 19.2660 | 10 | 18.4469 |
| 20 | 29.2387 | 20 | 28.4196 |
| 30 | 39.2114 | 30 | 38.3923 |
| 40 | 49.1841 | 40 | 48.3650 |
| 50 | 59.1568 | 50 | 58.3376 |
| 17 23 00 | 17 20 09.1295 | 17 28 00 | 17 25 08.3103 |
| 10 | 19.1022 | 10 | 18.2830 |
| 20 | 29.0749 | 20 | 28.2557 |
| 30 | 39.0476 | 30 | 38.2284 |
| 40 | 49.0203 | 40 | 48.2011 |
| 50 | 58.9930 | 50 | 58.1738 |
| 17 24 00 | 17 21 08.9656 | 17 29 00 | 17 26 08.1465 |
| 10 | 18.9383 | 10 | 18.1192 |
| 20 | 28.9110 | 20 | 28.0919 |
| 30 | 38.8837 | 30 | 38.0646 |
| 40 | 48.8564 | 40 | 48.0373 |
| 50 | 58.8291 | 50 | 58.0100 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 17 30 00 | 17 32 52.4883 | 17 35 00 | 17 37 53.3096 |
| 10 | 17 33 02.5157 | 10 | 17 38 03.3370 |
| 20 | 12.5430 | 20 | 13.3644 |
| 30 | 22.5704 | 30 | 23.3918 |
| 40 | 32.5978 | 40 | 33.4192 |
| 50 | 42.6252 | 50 | 43.4465 |
| 17 31 00 | 52.6525 | 17 36 00 | 53.4739 |
| 10 | 17 34 02.6799 | 10 | 17 39 03.5013 |
| 20 | 12.7073 | 20 | 13.5287 |
| 30 | 22.7347 | 30 | 23.5561 |
| 40 | 32.7621 | 40 | 33.5834 |
| 50 | 42.7894 | 50 | 43.6108 |
| 17 32 00 | 52.8168 | 17 37 00 | 53.6382 |
| 10 | 17 35 02.8442 | 10 | 17 40 03.6656 |
| 20 | 12.8716 | 20 | 13.6930 |
| 30 | 22.8990 | 30 | 23.7203 |
| 40 | 32.9263 | 40 | 33.7477 |
| 50 | 42.9537 | 50 | 43.7751 |
| 17 33 00 | 52.9811 | 17 38 00 | 53.8025 |
| 10 | 17 36 03.0085 | 10 | 17 41 03.8299 |
| 20 | 13.0359 | 20 | 13.8572 |
| 30 | 23.0632 | 30 | 23.8846 |
| 40 | 33.0906 | 40 | 33.9120 |
| 50 | 43.1180 | 50 | 43.9394 |
| 17 34 00 | 53.1454 | 17 39 00 | 53.9667 |
| 10 | 17 37 03.1728 | 10 | 17 42 03.9941 |
| 20 | 13.2001 | 20 | 14.0215 |
| 30 | 23.2275 | 30 | 24.0489 |
| 40 | 33.2549 | 40 | 34.0763 |
| 50 | 43.2823 | 50 | 44.1036 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 17 30 00 | 17 27 07.9827 | 17 35 00 | 17 32 07.1636 |
| 10 | 17.9554 | 10 | 17.1363 |
| 20 | 27.9281 | 20 | 27.1090 |
| 30 | 37.9008 | 30 | 37.0816 |
| 40 | 47.8735 | 40 | 47.0543 |
| 50 | 57.8462 | 50 | 57.0270 |
| 17 31 00 | 17 28 07.8189 | 17 36 00 | 17 33 06.9997 |
| 10 | 17.7916 | 10 | 16.9724 |
| 20 | 27.7643 | 20 | 26.9451 |
| 30 | 37.7370 | 30 | 36.9178 |
| 40 | 47.7096 | 40 | 46.8905 |
| 50 | 57.6823 | 50 | 56.8632 |
| 17 32 00 | 17 29 07.6550 | 17 37 00 | 17 34 06.8359 |
| 10 | 17.6277 | 10 | 16.8086 |
| 20 | 27.6004 | 20 | 26.7813 |
| 30 | 37.5731 | 30 | 36.7540 |
| 40 | 47.5458 | 40 | 46.7267 |
| 50 | 57.5185 | 50 | 56.6994 |
| 17 33 00 | 17 30 07.4912 | 17 38 00 | 17 35 06.6721 |
| 10 | 17.4639 | 10 | 16.6448 |
| 20 | 27.4366 | 20 | 26.6175 |
| 30 | 37.4093 | 30 | 36.5902 |
| 40 | 47.3820 | 40 | 46.5629 |
| 50 | 57.3547 | 50 | 56.5356 |
| 17 34 00 | 17 31 07.3274 | 17 39 00 | 17 36 06.5083 |
| 10 | 17.3001 | 10 | 16.4810 |
| 20 | 27.2728 | 20 | 26.4536 |
| 30 | 37.2455 | 30 | 36.4263 |
| 40 | 47.2182 | 40 | 46.3990 |
| 50 | 57.1909 | 50 | 56.3717 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 17 40 00 | 17 42 54.1310 | 17 45 00 | 17 47 54.9524 |
| 10 | 17 43 04.1584 | 10 | 17 48 04.9798 |
| 20 | 14.1858 | 20 | 15.0072 |
| 30 | 24.2132 | 30 | 25.0345 |
| 40 | 34.2405 | 40 | 35.0619 |
| 50 | 44.2679 | 50 | 45.0893 |
| 17 41 00 | 54.2953 | 17 46 00 | 55.1167 |
| 10 | 17 44 04.3227 | 10 | 17 49 05.1440 |
| 20 | 14.3501 | 20 | 15.1714 |
| 30 | 24.3774 | 30 | 25.1988 |
| 40 | 34.4048 | 40 | 35.2262 |
| 50 | 44.4322 | 50 | 45.2536 |
| 17 42 00 | 54.4596 | 17 47 00 | 55.2809 |
| 10 | 17 45 04.4869 | 10 | 17 50 05.3083 |
| 20 | 14.5143 | 20 | 15.3357 |
| 30 | 24.5417 | 30 | 25.3631 |
| 40 | 34.5691 | 40 | 35.3905 |
| 50 | 44.5965 | 50 | 45.4178 |
| 17 43 00 | 54.6238 | 17 48 00 | 55.4452 |
| 10 | 17 46 04.6512 | 10 | 17 51 05.4726 |
| 20 | 14.6786 | 20 | 15.5000 |
| 30 | 24.7060 | 30 | 25.5274 |
| 40 | 34.7334 | 40 | 35.5547 |
| 50 | 44.7607 | 50 | 45.5821 |
| 17 44 00 | 54.7881 | 17 49 00 | 55.6095 |
| 10 | 17 47 04.8155 | 10 | 17 52 05.6369 |
| 20 | 14.8429 | 20 | 15.6642 |
| 30 | 24.8703 | 30 | 25.6916 |
| 40 | 34.8976 | 40 | 35.7190 |
| 50 | 44.9250 | 50 | 45.7464 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 17 40 00 | 17 37 06.3444 | 17 45 00 | 17 42 05.5253 |
| 10 | 16.3171 | 10 | 15.4980 |
| 20 | 26.2898 | 20 | 25.4707 |
| 30 | 36.2625 | 30 | 35.4434 |
| 40 | 46.2352 | 40 | 45.4161 |
| 50 | 56.2079 | 50 | 55.3888 |
| 17 41 00 | 17 38 06.1806 | 17 46 00 | 17 43 05.3615 |
| 10 | 16.1533 | 10 | 15.3342 |
| 20 | 26.1260 | 20 | 25.3069 |
| 30 | 36.0987 | 30 | 35.2796 |
| 40 | 46.0714 | 40 | 45.2523 |
| 50 | 56.0441 | 50 | 55.2250 |
| 17 42 00 | 17 39 06.0168 | 17 47 00 | 17 44 05.1977 |
| 10 | 15.9895 | 10 | 15.1703 |
| 20 | 25.9622 | 20 | 25.1430 |
| 30 | 35.9349 | 30 | 35.1157 |
| 40 | 45.9076 | 40 | 45.0884 |
| 50 | 55.8803 | 50 | 55.0611 |
| 17 43 00 | 17 40 05.8530 | 17 48 00 | 17 45 05.0338 |
| 10 | 15.8257 | 10 | 15.0065 |
| 20 | 25.7983 | 20 | 24.9792 |
| 30 | 35.7710 | 30 | 34.9519 |
| 40 | 45.7437 | 40 | 44.9246 |
| 50 | 55.7164 | 50 | 54.8973 |
| 17 44 00 | 17 41 05.6891 | 17 49 00 | 17 46 04.8700 |
| 10 | 15.6618 | 10 | 14.8427 |
| 20 | 25.6345 | 20 | 24.8154 |
| 30 | 35.6072 | 30 | 34.7881 |
| 40 | 45.5799 | 40 | 44.7608 |
| 50 | 55.5526 | 50 | 54.7335 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 17 50 00 | 17 52 55.7738 | 17 55 00 | 17 57 56.5951 |
| 10 | 17 53 05.8011 | 10 | 17 58 06.6225 |
| 20 | 15.8285 | 20 | 16.6499 |
| 30 | 25.8559 | 30 | 26.6773 |
| 40 | 35.8833 | 40 | 36.7047 |
| 50 | 45.9107 | 50 | 46.7320 |
| 17 51 00 | 55.9380 | 17 56 00 | 56.7594 |
| 10 | 17 54 05.9654 | 10 | 17 59 06.7868 |
| 20 | 15.9928 | 20 | 16.8142 |
| 30 | 26.0202 | 30 | 26.8416 |
| 40 | 36.0476 | 40 | 36.8689 |
| 50 | 46.0749 | 50 | 46.8963 |
| 17 52 00 | 56.1023 | 17 57 00 | 56.9237 |
| 10 | 17 55 06.1297 | 10 | 18 00 06.9511 |
| 20 | 16.1571 | 20 | 16.9784 |
| 30 | 26.1845 | 30 | 27.0058 |
| 40 | 36.2118 | 40 | 37.0332 |
| 50 | 46.2392 | 50 | 47.0606 |
| 17 53 00 | 56.2666 | 17 58 00 | 57.0880 |
| 10 | 17 56 06.2940 | 10 | 18 01 07.1153 |
| 20 | 16.3213 | 20 | 17.1427 |
| 30 | 26.3487 | 30 | 27.1701 |
| 40 | 36.3761 | 40 | 37.1975 |
| 50 | 46.4035 | 50 | 47.2249 |
| 17 54 00 | 56.4309 | 17 59 00 | 57.2522 |
| 10 | 17 57 06.4582 | 10 | 18 02 07.2796 |
| 20 | 16.4856 | 20 | 17.3070 |
| 30 | 26.5130 | 30 | 27.3344 |
| 40 | 36.5404 | 40 | 37.3618 |
| 50 | 46.5678 | 50 | 47.3891 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 17 50 00 | 17 47 04.7062 | 17 55 00 | 17 52 03.8870 |
| 10 | 14.6789 | 10 | 13.8597 |
| 20 | 24.6516 | 20 | 23.8324 |
| 30 | 34.6243 | 30 | 33.8051 |
| 40 | 44.5970 | 40 | 43.7778 |
| 50 | 54.5697 | 50 | 53.7505 |
| 17 51 00 | 17 48 04.5423 | 17 56 00 | 17 53 03.7232 |
| 10 | 14.5150 | 10 | 13.6959 |
| 20 | 24.4877 | 20 | 23.6686 |
| 30 | 34.4604 | 30 | 33.6413 |
| 40 | 44.4331 | 40 | 43.6140 |
| 50 | 54.4058 | 50 | 53.5867 |
| 17 52 00 | 17 49 04.3785 | 17 57 00 | 17 54 03.5594 |
| 10 | 14.3512 | 10 | 13.5321 |
| 20 | 24.3239 | 20 | 23.5048 |
| 30 | 34.2966 | 30 | 33.4775 |
| 40 | 44.2693 | 40 | 43.4502 |
| 50 | 54.2420 | 50 | 53.4229 |
| 17 53 00 | 17 50 04.2147 | 17 58 00 | 17 55 03.3956 |
| 10 | 14.1874 | 10 | 13.3683 |
| 20 | 24.1601 | 20 | 23.3410 |
| 30 | 34.1328 | 30 | 33.3137 |
| 40 | 44.1055 | 40 | 43.2863 |
| 50 | 54.0782 | 50 | 53.2590 |
| 17 54 00 | 17 51 04.0509 | 17 59 00 | 17 56 03.2317 |
| 10 | 14.0236 | 10 | 13.2044 |
| 20 | 23.9963 | 20 | 23.1771 |
| 30 | 33.9690 | 30 | 33.1498 |
| 40 | 43.9417 | 40 | 43.1225 |
| 50 | 53.9143 | 50 | 53.0952 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 18 00 00 | 18 02 57.4165 | 18 05 00 | 18 07 58.2379 |
| 10 | 18 03 07.4439 | 10 | 18 08 08.2653 |
| 20 | 17.4713 | 20 | 18.2926 |
| 30 | 27.4986 | 30 | 28.3200 |
| 40 | 37.5260 | 40 | 38.3474 |
| 50 | 47.5534 | 50 | 48.3748 |
| 18 01 00 | 57.5808 | 18 06 00 | 58.4022 |
| 10 | 18 04 07.6082 | 10 | 18 09 08.4295 |
| 20 | 17.6355 | 20 | 18.4569 |
| 30 | 27.6629 | 30 | 28.4843 |
| 40 | 37.6903 | 40 | 38.5117 |
| 50 | 47.7177 | 50 | 48.5391 |
| 18 02 00 | 57.7451 | 18 07 00 | 58.5664 |
| 10 | 18 05 07.7724 | 10 | 18 10 08.5938 |
| 20 | 17.7998 | 20 | 18.6212 |
| 30 | 27.8272 | 30 | 28.6486 |
| 40 | 37.8546 | 40 | 38.6759 |
| 50 | 47.8820 | 50 | 48.7033 |
| 18 03 00 | 57.9093 | 18 08 00 | 58.7307 |
| 10 | 18 06 07.9367 | 10 | 18 11 08.7581 |
| 20 | 17.9641 | 20 | 18.7855 |
| 30 | 27.9915 | 30 | 28.8128 |
| 40 | 38.0189 | 40 | 38.8402 |
| 50 | 48.0462 | 50 | 48.8676 |
| 18 04 00 | 58.0736 | 18 09 00 | 58.8950 |
| 10 | 18 07 08.1010 | 10 | 18 12 08.9224 |
| 20 | 18.1284 | 20 | 18.9497 |
| 30 | 28.1557 | 30 | 28.9771 |
| 40 | 38.1831 | 40 | 39.0045 |
| 50 | 48.2105 | 50 | 49.0319 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 18 00 00 | 17 57 03.0679 | 18 05 00 | 18 02 02.2488 |
| 10 | 13.0406 | 10 | 12.2215 |
| 20 | 23.0133 | 20 | 22.1942 |
| 30 | 32.9860 | 30 | 32.1669 |
| 40 | 42.9587 | 40 | 42.1396 |
| 50 | 52.9314 | 50 | 52.1123 |
| 18 01 00 | 17 58 02.9041 | 18 06 00 | 18 03 02.0850 |
| 10 | 12.8768 | 10 | 12.0577 |
| 20 | 22.8495 | 20 | 22.0303 |
| 30 | 32.8222 | 30 | 32.0030 |
| 40 | 42.7949 | 40 | 41.9757 |
| 50 | 52.7676 | 50 | 51.9484 |
| 18 02 00 | 17 59 02.7403 | 18 07 00 | 18 04 01.9211 |
| 10 | 12.7130 | 10 | 11.8938 |
| 20 | 22.6857 | 20 | 21.8665 |
| 30 | 32.6583 | 30 | 31.8392 |
| 40 | 42.6310 | 40 | 41.8119 |
| 50 | 52.6037 | 50 | 51.7846 |
| 18 03 00 | 18 00 02.5764 | 18 08 00 | 18 05 01.7573 |
| 10 | 12.5491 | 10 | 11.7300 |
| 20 | 22.5218 | 20 | 21.7027 |
| 30 | 32.4945 | 30 | 31.6754 |
| 40 | 42.4672 | 40 | 41.6481 |
| 50 | 52.4399 | 50 | 51.6208 |
| 18 04 00 | 18 01 02.4126 | 18 09 00 | 18 06 01.5935 |
| 10 | 12.3853 | 10 | 11.5662 |
| 20 | 22.3580 | 20 | 21.5389 |
| 30 | 32.3307 | 30 | 31.5116 |
| 40 | 42.3034 | 40 | 41.4843 |
| 50 | 52.2761 | 50 | 51.4570 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 18 10 00 | 18 12 59.0593 | 18 15 00 | 18 17 59.8806 |
| 10 | 18 13 09.0866 | 10 | 18 18 09.9080 |
| 20 | 19.1140 | 20 | 19.9354 |
| 30 | 29.1414 | 30 | 29.9628 |
| 40 | 39.1688 | 40 | 39.9901 |
| 50 | 49.1962 | 50 | 50.0175 |
| 18 11 00 | 59.2235 | 18 16 00 | 18 19 00.0449 |
| 10 | 18 14 09.2509 | 10 | 10.0723 |
| 20 | 19.2783 | 20 | 20.0997 |
| 30 | 29.3057 | 30 | 30.1270 |
| 40 | 39.3330 | 40 | 40.1544 |
| 50 | 49.3604 | 50 | 50.1818 |
| 18 12 00 | 59.3878 | 18 17 00 | 18 20 00.2092 |
| 10 | 18 15 09.4152 | 10 | 10.2366 |
| 20 | 19.4426 | 20 | 20.2639 |
| 30 | 29.4699 | 30 | 30.2913 |
| 40 | 39.4973 | 40 | 40.3187 |
| 50 | 49.5247 | 50 | 50.3461 |
| 18 13 00 | 59.5521 | 18 18 00 | 18 21 00.3735 |
| 10 | 18 16 09.5795 | 10 | 10.4008 |
| 20 | 19.6068 | 20 | 20.4282 |
| 30 | 29.6342 | 30 | 30.4556 |
| 40 | 39.6616 | 40 | 40.4830 |
| 50 | 49.6890 | 50 | 50.5103 |
| 18 14 00 | 59.7164 | 18 19 00 | 18 22 00.5377 |
| 10 | 18 17 09.7437 | 10 | 10.5651 |
| 20 | 19.7711 | 20 | 20.5925 |
| 30 | 29.7985 | 30 | 30.6199 |
| 40 | 39.8259 | 40 | 40.6472 |
| 50 | 49.8533 | 50 | 50.6746 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 18 10 00 | 18 07 01.4297 | 18 15 00 | 18 12 00.6105 |
| 10 | 11.4023 | 10 | 10.5832 |
| 20 | 21.3750 | 20 | 20.5559 |
| 30 | 31.3477 | 30 | 30.5286 |
| 40 | 41.3204 | 40 | 40.5013 |
| 50 | 51.2931 | 50 | 50.4740 |
| 18 11 00 | 18 08 01.2658 | 18 16 00 | 18 13 00.4467 |
| 10 | 11.2385 | 10 | 10.4194 |
| 20 | 21.2112 | 20 | 20.3921 |
| 30 | 31.1839 | 30 | 30.3648 |
| 40 | 41.1566 | 40 | 40.3375 |
| 50 | 51.1293 | 50 | 50.3102 |
| 18 12 00 | 18 09 01.1020 | 18 17 00 | 18 14 00.2829 |
| 10 | 11.0747 | 10 | 10.2556 |
| 20 | 21.0474 | 20 | 20.2283 |
| 30 | 31.0201 | 30 | 30.2010 |
| 40 | 40.9928 | 40 | 40.1737 |
| 50 | 50.9655 | 50 | 50.1463 |
| 18 13 00 | 18 10 00.9382 | 18 18 00 | 18 15 00.1190 |
| 10 | 10.9109 | 10 | 10.0917 |
| 20 | 20.8836 | 20 | 20.0644 |
| 30 | 30.8563 | 30 | 30.0371 |
| 40 | 40.8290 | 40 | 40.0098 |
| 50 | 50.8017 | 50 | 49.9825 |
| 18 14 00 | 18 11 00.7743 | 18 19 00 | 59.9552 |
| 10 | 10.7470 | 10 | 18 16 09.9279 |
| 20 | 20.7197 | 20 | 19.9006 |
| 30 | 30.6924 | 30 | 29.8733 |
| 40 | 40.6651 | 40 | 39.8460 |
| 50 | 50.6378 | 50 | 49.8187 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 18 20 00 | 18 23 00.7020 | 18 25 00 | 18 28 01.5234 |
| 10 | 10.7294 | 10 | 11.5508 |
| 20 | 20.7568 | 20 | 21.5781 |
| 30 | 30.7841 | 30 | 31.6055 |
| 40 | 40.8115 | 40 | 41.6329 |
| 50 | 50.8389 | 50 | 51.6603 |
| 18 21 00 | 18 24 00.8663 | 18 26 00 | 18 29 01.6876 |
| 10 | 10.8937 | 10 | 11.7150 |
| 20 | 20.9210 | 20 | 21.7424 |
| 30 | 30.9484 | 30 | 31.7698 |
| 40 | 40.9758 | 40 | 41.7972 |
| 50 | 51.0032 | 50 | 51.8245 |
| 18 22 00 | 18 25 01.0306 | 18 27 00 | 18 30 01.8519 |
| 10 | 11.0579 | 10 | 11.8793 |
| 20 | 21.0853 | 20 | 21.9067 |
| 30 | 31.1127 | 30 | 31.9341 |
| 40 | 41.1401 | 40 | 41.9614 |
| 50 | 51.1674 | 50 | 51.9888 |
| 18 23 00 | 18 26 01.1948 | 18 28 00 | 18 31 02.0162 |
| 10 | 11.2222 | 10 | 12.0436 |
| 20 | 21.2496 | 20 | 22.0710 |
| 30 | 31.2770 | 30 | 32.0983 |
| 40 | 41.3043 | 40 | 42.1257 |
| 50 | 51.3317 | 50 | 52.1531 |
| 18 24 00 | 18 27 01.3591 | 18 29 00 | 18 32 02.1805 |
| 10 | 11.3865 | 10 | 12.2079 |
| 20 | 21.4139 | 20 | 22.2352 |
| 30 | 31.4412 | 30 | 32.2626 |
| 40 | 41.4686 | 40 | 42.2900 |
| 50 | 51.4960 | 50 | 52.3174 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 18 20 00 | 18 16 59.7914 | 18 25 00 | 18 21 58.9723 |
| 10 | 18 17 09.7641 | 10 | 18 22 08.9450 |
| 20 | 19.7368 | 20 | 18.9177 |
| 30 | 29.7095 | 30 | 28.8903 |
| 40 | 39.6822 | 40 | 38.8630 |
| 50 | 49.6549 | 50 | 48.8357 |
| 18 21 00 | 59.6276 | 18 26 00 | 58.8084 |
| 10 | 18 18 09.6003 | 10 | 18 23 08.7811 |
| 20 | 19.5730 | 20 | 18.7538 |
| 30 | 29.5457 | 30 | 28.7265 |
| 40 | 39.5183 | 40 | 38.6992 |
| 50 | 49.4910 | 50 | 48.6719 |
| 18 22 00 | 59.4637 | 18 27 00 | 58.6446 |
| 10 | 18 19 09.4364 | 10 | 18 24 08.6173 |
| 20 | 19.4091 | 20 | 18.5900 |
| 30 | 29.3818 | 30 | 28.5627 |
| 40 | 39.3545 | 40 | 38.5354 |
| 50 | 49.3272 | 50 | 48.5081 |
| 18 23 00 | 59.2999 | 18 28 00 | 58.4808 |
| 10 | 18 20 09.2726 | 10 | 18 25 08.4535 |
| 20 | 19.2453 | 20 | 18.4262 |
| 30 | 29.2180 | 30 | 28.3989 |
| 40 | 39.1907 | 40 | 38.3716 |
| 50 | 49.1634 | 50 | 48.3443 |
| 18 24 00 | 59.1361 | 18 29 00 | 58.3170 |
| 10 | 18 21 09.1088 | 10 | 18 26 08.2897 |
| 20 | 19.0815 | 20 | 18.2623 |
| 30 | 29.0542 | 30 | 28.2350 |
| 40 | 39.0269 | 40 | 38.2077 |
| 50 | 48.9996 | 50 | 48.1804 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 18 30 00 | 18 33 02.3447 | 18 35 00 | 18 38 03.1661 |
| 10 | 12.3721 | 10 | 13.1935 |
| 20 | 22.3995 | 20 | 23.2209 |
| 30 | 32.4269 | 30 | 33.2483 |
| 40 | 42.4543 | 40 | 43.2756 |
| 50 | 52.4816 | 50 | 53.3030 |
| 18 31 00 | 18 34 02.5090 | 18 36 00 | 18 39 03.3304 |
| 10 | 12.5364 | 10 | 13.3578 |
| 20 | 22.5638 | 20 | 23.3852 |
| 30 | 32.5912 | 30 | 33.4125 |
| 40 | 42.6185 | 40 | 43.4399 |
| 50 | 52.6459 | 50 | 53.4673 |
| 18 32 00 | 18 35 02.6733 | 18 37 00 | 18 40 03.4947 |
| 10 | 12.7007 | 10 | 13.5220 |
| 20 | 22.7281 | 20 | 23.5494 |
| 30 | 32.7554 | 30 | 33.5768 |
| 40 | 42.7828 | 40 | 43.6042 |
| 50 | 52.8102 | 50 | 53.6316 |
| 18 33 00 | 18 36 02.8376 | 18 38 00 | 18 41 03.6589 |
| 10 | 12.8650 | 10 | 13.6863 |
| 20 | 22.8923 | 20 | 23.7137 |
| 30 | 32.9197 | 30 | 33.7411 |
| 40 | 42.9471 | 40 | 43.7685 |
| 50 | 52.9745 | 50 | 53.7958 |
| 18 34 00 | 18 37 03.0018 | 18 39 00 | 18 42 03.8232 |
| 10 | 13.0292 | 10 | 13.8506 |
| 20 | 23.0566 | 20 | 23.8780 |
| 30 | 33.0840 | 30 | 33.9054 |
| 40 | 43.1114 | 40 | 43.9327 |
| 50 | 53.1387 | 50 | 53.9601 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 18 30 00 | 18 26 58.1531 | 18 35 00 | 18 31 57.3340 |
| 10 | 18 27 08.1258 | 10 | 18 32 07.3067 |
| 20 | 18.0985 | 20 | 17.2794 |
| 30 | 28.0712 | 30 | 27.2521 |
| 40 | 38.0439 | 40 | 37.2248 |
| 50 | 48.0166 | 50 | 47.1975 |
| 18 31 00 | 57.9893 | 18 36 00 | 57.1702 |
| 10 | 18 28 07.9620 | 10 | 18 33 07.1429 |
| 20 | 17.9347 | 20 | 17.1156 |
| 30 | 27.9074 | 30 | 27.0883 |
| 40 | 37.8801 | 40 | 37.0610 |
| 50 | 47.8528 | 50 | 47.0337 |
| 18 32 00 | 57.8255 | 18 37 00 | 57.0064 |
| 10 | 18 29 07.7982 | 10 | 18 34 06.9790 |
| 20 | 17.7709 | 20 | 16.9517 |
| 30 | 27.7436 | 30 | 26.9244 |
| 40 | 37.7163 | 40 | 36.8971 |
| 50 | 47.6890 | 50 | 46.8698 |
| 18 33 00 | 57.6617 | 18 38 00 | 56.8425 |
| 10 | 18 30 07.6343 | 10 | 18 35 06.8152 |
| 20 | 17.6070 | 20 | 16.7879 |
| 30 | 27.5797 | 30 | 26.7606 |
| 40 | 37.5524 | 40 | 36.7333 |
| 50 | 47.5251 | 50 | 46.7060 |
| 18 34 00 | 57.4978 | 18 39 00 | 56.6787 |
| 10 | 18 31 07.4705 | 10 | 18 36 06.6514 |
| 20 | 17.4432 | 20 | 16.6241 |
| 30 | 27.4159 | 30 | 26.5968 |
| 40 | 37.3886 | 40 | 36.5695 |
| 50 | 47.3613 | 50 | 46.5422 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 18 40 00 | 18 43 03.9875 | 18 45 00 | 18 48 04.8089 |
| 10 | 14.0149 | 10 | 14.8362 |
| 20 | 24.0423 | 20 | 24.8636 |
| 30 | 34.0696 | 30 | 34.8910 |
| 40 | 44.0970 | 40 | 44.9184 |
| 50 | 54.1244 | 50 | 54.9458 |
| 18 41 00 | 18 44 04.1518 | 18 46 00 | 18 49 04.9731 |
| 10 | 14.1791 | 10 | 15.0005 |
| 20 | 24.2065 | 20 | 25.0279 |
| 30 | 34.2339 | 30 | 35.0553 |
| 40 | 44.2613 | 40 | 45.0827 |
| 50 | 54.2887 | 50 | 55.1100 |
| 18 42 00 | 18 45 04.3160 | 18 47 00 | 18 50 05.1374 |
| 10 | 14.3434 | 10 | 15.1648 |
| 20 | 24.3708 | 20 | 25.1922 |
| 30 | 34.3982 | 30 | 35.2196 |
| 40 | 44.4256 | 40 | 45.2469 |
| 50 | 54.4529 | 50 | 55.2743 |
| 18 43 00 | 18 46 04.4803 | 18 48 00 | 18 51 05.3017 |
| 10 | 14.5077 | 10 | 15.3291 |
| 20 | 24.5351 | 20 | 25.3564 |
| 30 | 34.5625 | 30 | 35.3838 |
| 40 | 44.5898 | 40 | 45.4112 |
| 50 | 54.6172 | 50 | 55.4386 |
| 18 44 00 | 18 47 04.6446 | 18 49 00 | 18 52 05.4660 |
| 10 | 14.6720 | 10 | 15.4933 |
| 20 | 24.6993 | 20 | 25.5207 |
| 30 | 34.7267 | 30 | 35.5481 |
| 40 | 44.7541 | 40 | 45.5755 |
| 50 | 54.7815 | 50 | 55.6029 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 18 40 00 | 18 36 56.5149 | 18 45 00 | 18 41 55.6957 |
| 10 | 18 37 06.4876 | 10 | 18 42 05.6684 |
| 20 | 16.4603 | 20 | 15.6411 |
| 30 | 26.4330 | 30 | 25.6138 |
| 40 | 36.4057 | 40 | 35.5865 |
| 50 | 46.3784 | 50 | 45.5592 |
| 18 41 00 | 56.3510 | 18 46 00 | 55.5319 |
| 10 | 18 38 06.3237 | 10 | 18 43 05.5046 |
| 20 | 16.2964 | 20 | 15.4773 |
| 30 | 26.2691 | 30 | 25.4500 |
| 40 | 36.2418 | 40 | 35.4227 |
| 50 | 46.2145 | 50 | 45.3954 |
| 18 42 00 | 56.1872 | 18 47 00 | 55.3681 |
| 10 | 18 39 06.1599 | 10 | 18 44 05.3408 |
| 20 | 16.1326 | 20 | 15.3135 |
| 30 | 26.1053 | 30 | 25.2862 |
| 40 | 36.0780 | 40 | 35.2589 |
| 50 | 46.0507 | 50 | 45.2316 |
| 18 43 00 | 56.0234 | 18 48 00 | 55.2043 |
| 10 | 18 40 05.9961 | 10 | 18 45 05.1770 |
| 20 | 15.9688 | 20 | 15.1497 |
| 30 | 25.9415 | 30 | 25.1224 |
| 40 | 35.9142 | 40 | 35.0950 |
| 50 | 45.8869 | 50 | 45.0677 |
| 18 44 00 | 55.8596 | 18 49 00 | 55.0404 |
| 10 | 18 41 05.8323 | 10 | 18 46 05.0131 |
| 20 | 15.8050 | 20 | 14.9858 |
| 30 | 25.7777 | 30 | 24.9585 |
| 40 | 35.7504 | 40 | 34.9312 |
| 50 | 45.7230 | 50 | 44.9039 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 18 50 00 | 18 53 05.6302 | 18 55 00 | 18 58 06.4516 |
| 10 | 15.6576 | 10 | 16.4790 |
| 20 | 25.6850 | 20 | 26.5064 |
| 30 | 35.7124 | 30 | 36.5337 |
| 40 | 45.7398 | 40 | 46.5611 |
| 50 | 55.7671 | 50 | 56.5885 |
| 18 51 00 | 18 54 05.7945 | 18 56 00 | 18 59 06.6159 |
| 10 | 15.8219 | 10 | 16.6433 |
| 20 | 25.8493 | 20 | 26.6706 |
| 30 | 35.8767 | 30 | 36.6980 |
| 40 | 45.9040 | 40 | 46.7254 |
| 50 | 55.9314 | 50 | 56.7528 |
| 18 52 00 | 18 55 05.9588 | 18 57 00 | 19 00 06.7802 |
| 10 | 15.9862 | 10 | 16.8075 |
| 20 | 26.0135 | 20 | 26.8349 |
| 30 | 36.0409 | 30 | 36.8623 |
| 40 | 46.0683 | 40 | 46.8897 |
| 50 | 56.0957 | 50 | 56.9171 |
| 18 53 00 | 18 56 06.1231 | 18 58 00 | 19 01 06.9444 |
| 10 | 16.1504 | 10 | 16.9718 |
| 20 | 26.1778 | 20 | 26.9992 |
| 30 | 36.2052 | 30 | 37.0266 |
| 40 | 46.2326 | 40 | 47.0540 |
| 50 | 56.2600 | 50 | 57.0813 |
| 18 54 00 | 18 57 06.2873 | 18 59 00 | 19 02 07.1087 |
| 10 | 16.3147 | 10 | 17.1361 |
| 20 | 26.3421 | 20 | 27.1635 |
| 30 | 36.3695 | 30 | 37.1908 |
| 40 | 46.3969 | 40 | 47.2182 |
| 50 | 56.4242 | 50 | 57.2456 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 18 50 00 | 18 46 54.8766 | 18 55 00 | 18 51 54.0575 |
| 10 | 18 47 04.8493 | 10 | 18 52 04.0302 |
| 20 | 14.8220 | 20 | 14.0029 |
| 30 | 24.7947 | 30 | 23.9756 |
| 40 | 34.7674 | 40 | 33.9483 |
| 50 | 44.7401 | 50 | 43.9210 |
| 18 51 00 | 54.7128 | 18 56 00 | 53.8937 |
| 10 | 18 48 04.6855 | 10 | 18 53 03.8664 |
| 20 | 14.6582 | 20 | 13.8390 |
| 30 | 24.6309 | 30 | 23.8117 |
| 40 | 34.6036 | 40 | 33.7844 |
| 50 | 44.5763 | 50 | 43.7571 |
| 18 52 00 | 54.5490 | 18 57 00 | 53.7298 |
| 10 | 18 49 04.5217 | 10 | 18 54 03.7025 |
| 20 | 14.4944 | 20 | 13.6752 |
| 30 | 24.4670 | 30 | 23.6479 |
| 40 | 34.4397 | 40 | 33.6206 |
| 50 | 44.4124 | 50 | 43.5933 |
| 18 53 00 | 54.3851 | 18 58 00 | 53.5660 |
| 10 | 18 50 04.3578 | 10 | 18 55 03.5387 |
| 20 | 14.3305 | 20 | 13.5114 |
| 30 | 24.3032 | 30 | 23.4841 |
| 40 | 34.2759 | 40 | 33.4568 |
| 50 | 44.2486 | 50 | 43.4295 |
| 18 54 00 | 54.2213 | 18 59 00 | 53.4022 |
| 10 | 18 51 04.1940 | 10 | 18 56 03.3749 |
| 20 | 14.1667 | 20 | 13.3476 |
| 30 | 24.1394 | 30 | 23.3203 |
| 40 | 34.1121 | 40 | 33.2930 |
| 50 | 44.0848 | 50 | 43.2657 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 19 00 00 | 19 03 07.2730 | 19 05 00 | 19 08 08.0944 |
| 10 | 17.3004 | 10 | 18.1217 |
| 20 | 27.3277 | 20 | 28.1491 |
| 30 | 37.3551 | 30 | 38.1765 |
| 40 | 47.3825 | 40 | 48.2039 |
| 50 | 57.4099 | 50 | 58.2313 |
| 19 01 00 | 19 04 07.4373 | 19 06 00 | 19 09 08.2586 |
| 10 | 17.4646 | 10 | 18.2860 |
| 20 | 27.4920 | 20 | 28.3134 |
| 30 | 37.5194 | 30 | 38.3408 |
| 40 | 47.5468 | 40 | 48.3681 |
| 50 | 57.5742 | 50 | 58.3955 |
| 19 02 00 | 19 05 07.6015 | 19 07 00 | 19 10 08.4229 |
| 10 | 17.6289 | 10 | 18.4503 |
| 20 | 27.6563 | 20 | 28.4777 |
| 30 | 37.6837 | 30 | 38.5050 |
| 40 | 47.7110 | 40 | 48.5324 |
| 50 | 57.7384 | 50 | 58.5598 |
| 19 03 00 | 19 06 07.7658 | 19 08 00 | 19 11 08.5872 |
| 10 | 17.7932 | 10 | 18.6146 |
| 20 | 27.8206 | 20 | 28.6419 |
| 30 | 37.8479 | 30 | 38.6693 |
| 40 | 47.8753 | 40 | 48.6967 |
| 50 | 57.9027 | 50 | 58.7241 |
| 19 04 00 | 19 07 07.9301 | 19 09 00 | 19 12 08.7515 |
| 10 | 17.9575 | 10 | 18.7788 |
| 20 | 27.9848 | 20 | 28.8062 |
| 30 | 38.0122 | 30 | 38.8336 |
| 40 | 48.0396 | 40 | 48.8610 |
| 50 | 58.0670 | 50 | 58.8884 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 19 00 00 | 18 56 53.2384 | 19 05 00 | 19 01 52.4192 |
| 10 | 18 57 03.2110 | 10 | 19 02 02.3919 |
| 20 | 13.1837 | 20 | 12.3646 |
| 30 | 23.1564 | 30 | 22.3373 |
| 40 | 33.1291 | 40 | 32.3100 |
| 50 | 43.1018 | 50 | 42.2827 |
| 19 01 00 | 53.0745 | 19 06 00 | 52.2554 |
| 10 | 18 58 03.0472 | 10 | 19 03 02.2281 |
| 20 | 13.0199 | 20 | 12.2008 |
| 30 | 22.9926 | 30 | 22.1735 |
| 40 | 32.9653 | 40 | 32.1462 |
| 50 | 42.9380 | 50 | 42.1189 |
| 19 02 00 | 52.9107 | 19 07 00 | 52.0916 |
| 10 | 18 59 02.8834 | 10 | 19 04 02.0643 |
| 20 | 12.8561 | 20 | 12.0370 |
| 30 | 22.8288 | 30 | 22.0097 |
| 40 | 32.8015 | 40 | 31.9824 |
| 50 | 42.7742 | 50 | 41.9550 |
| 19 03 00 | 52.7469 | 19 08 00 | 51.9277 |
| 10 | 19 00 02.7196 | 10 | 19 05 01.9004 |
| 20 | 12.6923 | 20 | 11.8731 |
| 30 | 22.6650 | 30 | 21.8458 |
| 40 | 32.6377 | 40 | 31.8185 |
| 50 | 42.6104 | 50 | 41.7912 |
| 19 04 00 | 52.5830 | 19 09 00 | 51.7639 |
| 10 | 19 01 02.5557 | 10 | 19 06 01.7366 |
| 20 | 12.5284 | 20 | 11.7093 |
| 30 | 22.5011 | 30 | 21.6820 |
| 40 | 32.4738 | 40 | 31.6547 |
| 50 | 42.4465 | 50 | 41.6274 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 19 10 00 | 19 13 08.9157 | 19 15 00 | 19 18 09.7371 |
| 10 | 18.9431 | 10 | 19.7645 |
| 20 | 28.9705 | 20 | 29.7919 |
| 30 | 38.9979 | 30 | 39.8192 |
| 40 | 49.0252 | 40 | 49.8466 |
| 50 | 59.0526 | 50 | 59.8740 |
| 19 11 00 | 19 14 09.0800 | 19 16 00 | 19 19 09.9014 |
| 10 | 19.1074 | 10 | 19.9288 |
| 20 | 29.1348 | 20 | 29.9561 |
| 30 | 39.1621 | 30 | 39.9835 |
| 40 | 49.1895 | 40 | 50.0109 |
| 50 | 59.2169 | 50 | 19 20 00.0383 |
| 19 12 00 | 19 15 09.2443 | 19 17 00 | 10.0657 |
| 10 | 19.2717 | 10 | 20.0930 |
| 20 | 29.2990 | 20 | 30.1204 |
| 30 | 39.3264 | 30 | 40.1478 |
| 40 | 49.3538 | 40 | 50.1752 |
| 50 | 59.3812 | 50 | 19 21 00.2025 |
| 19 13 00 | 19 16 09.4086 | 19 18 00 | 10.2299 |
| 10 | 19.4359 | 10 | 20.2573 |
| 20 | 29.4633 | 20 | 30.2847 |
| 30 | 39.4907 | 30 | 40.3121 |
| 40 | 49.5181 | 40 | 50.3394 |
| 50 | 59.5454 | 50 | 19 22 00.3668 |
| 19 14 00 | 19 17 09.5728 | 19 19 00 | 10.3942 |
| 10 | 19.6002 | 10 | 20.4216 |
| 20 | 29.6276 | 20 | 30.4490 |
| 30 | 39.6550 | 30 | 40.4763 |
| 40 | 49.6823 | 40 | 50.5037 |
| 50 | 59.7097 | 50 | 19 23 00.5311 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 19 10 00 | 19 06 51.6001 | 19 15 00 | 19 11 50.7810 |
| 10 | 19 07 01.5728 | 10 | 19 12 00.7537 |
| 20 | 11.5455 | 20 | 10.7264 |
| 30 | 21.5182 | 30 | 20.6990 |
| 40 | 31.4909 | 40 | 30.6717 |
| 50 | 41.4636 | 50 | 40.6444 |
| 19 11 00 | 51.4363 | 19 16 00 | 50.6171 |
| 10 | 19 08 01.4090 | 10 | 19 13 00.5898 |
| 20 | 11.3817 | 20 | 10.5625 |
| 30 | 21.3544 | 30 | 20.5352 |
| 40 | 31.3270 | 40 | 30.5079 |
| 50 | 41.2997 | 50 | 40.4806 |
| 19 12 00 | 51.2724 | 19 17 00 | 50.4533 |
| 10 | 19 09 01.2451 | 10 | 19 14 00.4260 |
| 20 | 11.2178 | 20 | 10.3987 |
| 30 | 21.1905 | 30 | 20.3714 |
| 40 | 31.1632 | 40 | 30.3441 |
| 50 | 41.1359 | 50 | 40.3168 |
| 19 13 00 | 51.1086 | 19 18 00 | 50.2895 |
| 10 | 19 10 01.0813 | 10 | 19 15 00.2622 |
| 20 | 11.0540 | 20 | 10.2349 |
| 30 | 21.0267 | 30 | 20.2076 |
| 40 | 30.9994 | 40 | 30.1803 |
| 50 | 40.9721 | 50 | 40.1530 |
| 19 14 00 | 50.9448 | 19 19 00 | 50.1257 |
| 10 | 19 11 00.9175 | 10 | 19 16 00.0984 |
| 20 | 10.8902 | 20 | 10.0710 |
| 30 | 20.8629 | 30 | 20.0437 |
| 40 | 30.8356 | 40 | 30.0164 |
| 50 | 40.8083 | 50 | 39.9891 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 19 20 00 | 19 23 10.5585 | 19 25 00 | 19 28 11.3798 |
| 10 | 20.5859 | 10 | 21.4072 |
| 20 | 30.6132 | 20 | 31.4346 |
| 30 | 40.6406 | 30 | 41.4620 |
| 40 | 50.6680 | 40 | 51.4894 |
| 50 | 19 24 00.6954 | 50 | 19 29 01.5167 |
| 19 21 00 | 10.7227 | 19 26 00 | 11.5441 |
| 10 | 20.7501 | 10 | 21.5715 |
| 20 | 30.7775 | 20 | 31.5989 |
| 30 | 40.8049 | 30 | 41.6263 |
| 40 | 50.8323 | 40 | 51.6536 |
| 50 | 19 25 00.8596 | 50 | 19 30 01.6810 |
| 19 22 00 | 10.8870 | 19 27 00 | 11.7084 |
| 10 | 20.9144 | 10 | 21.7358 |
| 20 | 30.9418 | 20 | 31.7632 |
| 30 | 40.9692 | 30 | 41.7905 |
| 40 | 50.9965 | 40 | 51.8179 |
| 50 | 19 26 01.0239 | 50 | 19 31 01.8453 |
| 19 23 00 | 11.0513 | 19 28 00 | 11.8727 |
| 10 | 21.0787 | 10 | 21.9001 |
| 20 | 31.1061 | 20 | 31.9274 |
| 30 | 41.1334 | 30 | 41.9548 |
| 40 | 51.1608 | 40 | 51.9822 |
| 50 | 19 27 01.1882 | 50 | 19 32 02.0096 |
| 19 24 00 | 11.2156 | 19 29 00 | 12.0369 |
| 10 | 21.2430 | 10 | 22.0643 |
| 20 | 31.2703 | 20 | 32.0917 |
| 30 | 41.2977 | 30 | 42.1191 |
| 40 | 51.3251 | 40 | 52.1465 |
| 50 | 19 28 01.3525 | 50 | 19 33 02.1738 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 19 20 00 | 19 16 49.9618 | 19 25 00 | 19 21 49.1427 |
| 10 | 59.9345 | 10 | 59.1154 |
| 20 | 19 17 09.9072 | 20 | 19 22 09.0881 |
| 30 | 19.8799 | 30 | 19.0608 |
| 40 | 29.8526 | 40 | 29.0335 |
| 50 | 39.8253 | 50 | 39.0062 |
| 19 21 00 | 49.7980 | 19 26 00 | 48.9789 |
| 10 | 59.7707 | 10 | 58.9516 |
| 20 | 19 18 09.7434 | 20 | 19 23 08.9243 |
| 30 | 19.7161 | 30 | 18.8970 |
| 40 | 29.6888 | 40 | 28.8697 |
| 50 | 39.6615 | 50 | 38.8424 |
| 19 22 00 | 49.6342 | 19 27 00 | 48.8150 |
| 10 | 59.6069 | 10 | 58.7877 |
| 20 | 19 19 09.5796 | 20 | 19 24 08.7604 |
| 30 | 19.5523 | 30 | 18.7331 |
| 40 | 29.5250 | 40 | 28.7058 |
| 50 | 39.4977 | 50 | 38.6785 |
| 19 23 00 | 49.4704 | 19 28 00 | 48.6512 |
| 10 | 59.4430 | 10 | 58.6239 |
| 20 | 19 20 09.4157 | 20 | 19 25 08.5966 |
| 30 | 19.3884 | 30 | 18.5693 |
| 40 | 29.3611 | 40 | 28.5420 |
| 50 | 39.3338 | 50 | 38.5147 |
| 19 24 00 | 49.3065 | 19 29 00 | 48.4874 |
| 10 | 59.2792 | 10 | 58.4601 |
| 20 | 19 21 09.2519 | 20 | 19 26 08.4328 |
| 30 | 19.2246 | 30 | 18.4055 |
| 40 | 29.1973 | 40 | 28.3782 |
| 50 | 39.1700 | 50 | 38.3509 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 19 30 00 | 19 33 12.2012 | 19 35 00 | 19 38 13.0226 |
| 10 | 22.2286 | 10 | 23.0500 |
| 20 | 32.2560 | 20 | 33.0774 |
| 30 | 42.2834 | 30 | 43.1047 |
| 40 | 52.3107 | 40 | 53.1321 |
| 50 | 19 34 02.3381 | 50 | 19 39 03.1595 |
| 19 31 00 | 12.3655 | 19 36 00 | 13.1869 |
| 10 | 22.3929 | 10 | 23.2142 |
| 20 | 32.4203 | 20 | 33.2416 |
| 30 | 42.4476 | 30 | 43.2690 |
| 40 | 52.4750 | 40 | 53.2964 |
| 50 | 19 35 02.5024 | 50 | 19 40 03.3238 |
| 19 32 00 | 12.5298 | 19 37 00 | 13.3511 |
| 10 | 22.5571 | 10 | 23.3785 |
| 20 | 32.5845 | 20 | 33.4059 |
| 30 | 42.6119 | 30 | 43.4333 |
| 40 | 52.6393 | 40 | 53.4607 |
| 50 | 19 36 02.6667 | 50 | 19 41 03.4880 |
| 19 33 00 | 12.6940 | 19 38 00 | 13.5154 |
| 10 | 22.7214 | 10 | 23.5428 |
| 20 | 32.7488 | 20 | 33.5702 |
| 30 | 42.7762 | 30 | 43.5976 |
| 40 | 52.8036 | 40 | 53.6249 |
| 50 | 19 37 02.8309 | 50 | 19 42 03.6523 |
| 19 34 00 | 12.8583 | 19 39 00 | 13.6797 |
| 10 | 22.8857 | 10 | 23.7071 |
| 20 | 32.9131 | 20 | 33.7344 |
| 30 | 42.9405 | 30 | 43.7618 |
| 40 | 52.9678 | 40 | 53.7892 |
| 50 | 19 38 02.9952 | 50 | 19 43 03.8166 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 19 30 00 | 19 26 48.3236 | 19 35 00 | 19 31 47.5044 |
| 10 | 58.2963 | 10 | 57.4771 |
| 20 | 19 27 08.2690 | 20 | 19 32 07.4498 |
| 30 | 18.2417 | 30 | 17.4225 |
| 40 | 28.2144 | 40 | 27.3952 |
| 50 | 38.1871 | 50 | 37.3679 |
| 19 31 00 | 48.1597 | 19 36 00 | 47.3406 |
| 10 | 58.1324 | 10 | 57.3133 |
| 20 | 19 28 08.1051 | 20 | 19 33 07.2860 |
| 30 | 18.0778 | 30 | 17.2587 |
| 40 | 28.0505 | 40 | 27.2314 |
| 50 | 38.0232 | 50 | 37.2041 |
| 19 32 00 | 47.9959 | 19 37 00 | 47.1768 |
| 10 | 57.9686 | 10 | 57.1495 |
| 20 | 19 29 07.9413 | 20 | 19 34 07.1222 |
| 30 | 17.9140 | 30 | 17.0949 |
| 40 | 27.8867 | 40 | 27.0676 |
| 50 | 37.8594 | 50 | 37.0403 |
| 19 33 00 | 47.8321 | 19 38 00 | 47.0130 |
| 10 | 57.8048 | 10 | 56.9857 |
| 20 | 19 30 07.7775 | 20 | 19 35 06.9584 |
| 30 | 17.7502 | 30 | 16.9311 |
| 40 | 27.7229 | 40 | 26.9037 |
| 50 | 37.6956 | 50 | 36.8764 |
| 19 34 00 | 47.6683 | 19 39 00 | 46.8491 |
| 10 | 57.6410 | 10 | 56.8218 |
| 20 | 19 31 07.6137 | 20 | 19 36 06.7945 |
| 30 | 17.5864 | 30 | 16.7672 |
| 40 | 27.5591 | 40 | 26.7399 |
| 50 | 37.5317 | 50 | 36.7126 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 19 40 00 | 19 43 13.8440 | 19 45 00 | 19 48 14.6653 |
| 10 | 23.8713 | 10 | 24.6927 |
| 20 | 33.8987 | 20 | 34.7201 |
| 30 | 43.9261 | 30 | 44.7475 |
| 40 | 53.9535 | 40 | 54.7749 |
| 50 | 19 44 03.9809 | 50 | 19 49 04.8022 |
| 19 41 00 | 14.0082 | 19 46 00 | 14.8296 |
| 10 | 24.0356 | 10 | 24.8570 |
| 20 | 34.0630 | 20 | 34.8844 |
| 30 | 44.0904 | 30 | 44.9118 |
| 40 | 54.1178 | 40 | 54.9391 |
| 50 | 19 45 04.1451 | 50 | 19 50 04.9665 |
| 19 42 00 | 14.1725 | 19 47 00 | 14.9939 |
| 10 | 24.1999 | 10 | 25.0213 |
| 20 | 34.2273 | 20 | 35.0486 |
| 30 | 44.2547 | 30 | 45.0760 |
| 40 | 54.2820 | 40 | 55.1034 |
| 50 | 19 46 04.3094 | 50 | 19 51 05.1308 |
| 19 43 00 | 14.3368 | 19 48 00 | 15.1582 |
| 10 | 24.3642 | 10 | 25.1855 |
| 20 | 34.3915 | 20 | 35.2129 |
| 30 | 44.4189 | 30 | 45.2403 |
| 40 | 54.4463 | 40 | 55.2677 |
| 50 | 19 47 04.4737 | 50 | 19 52 05.2951 |
| 19 44 00 | 14.5011 | 19 49 00 | 15.3224 |
| 10 | 24.5284 | 10 | 25.3498 |
| 20 | 34.5558 | 20 | 35.3772 |
| 30 | 44.5832 | 30 | 45.4046 |
| 40 | 54.6106 | 40 | 55.4320 |
| 50 | 19 48 04.6380 | 50 | 19 53 05.4593 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 19 40 00 | 19 36 46.6853 | 19 45 00 | 19 41 45.8662 |
| 10 | 56.6580 | 10 | 55.8389 |
| 20 | 19 37 06.6307 | 20 | 19 42 05.8116 |
| 30 | 16.6034 | 30 | 15.7843 |
| 40 | 26.5761 | 40 | 25.7570 |
| 50 | 36.5488 | 50 | 35.7297 |
| 19 41 00 | 46.5215 | 19 46 00 | 45.7024 |
| 10 | 56.4942 | 10 | 55.6751 |
| 20 | 19 38 06.4669 | 20 | 19 43 05.6477 |
| 30 | 16.4396 | 30 | 15.6204 |
| 40 | 26.4123 | 40 | 25.5931 |
| 50 | 36.3850 | 50 | 35.5658 |
| 19 42 00 | 46.3577 | 19 47 00 | 45.5385 |
| 10 | 56.3304 | 10 | 55.5112 |
| 20 | 19 39 06.3031 | 20 | 19 44 05.4839 |
| 30 | 16.2757 | 30 | 15.4566 |
| 40 | 26.2484 | 40 | 25.4293 |
| 50 | 36.2211 | 50 | 35.4020 |
| 19 43 00 | 46.1938 | 19 48 00 | 45.3747 |
| 10 | 56.1665 | 10 | 55.3474 |
| 20 | 19 40 06.1392 | 20 | 19 45 05.3201 |
| 30 | 16.1119 | 30 | 15.2928 |
| 40 | 26.0846 | 40 | 25.2655 |
| 50 | 36.0573 | 50 | 35.2382 |
| 19 44 00 | 46.0300 | 19 49 00 | 45.2109 |
| 10 | 56.0027 | 10 | 55.1836 |
| 20 | 19 41 05.9754 | 20 | 19 46 05.1563 |
| 30 | 15.9481 | 30 | 15.1290 |
| 40 | 25.9208 | 40 | 25.1017 |
| 50 | 35.8935 | 50 | 35.0744 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 19 50 00 | 19 53 15.4867 | 19 55 00 | 19 58 16.3081 |
| 10 | 25.5141 | 10 | 26.3355 |
| 20 | 35.5415 | 20 | 36.3628 |
| 30 | 45.5688 | 30 | 46.3902 |
| 40 | 55.5962 | 40 | 56.4176 |
| 50 | 19 54 05.6236 | 50 | 19 59 06.4450 |
| 19 51 00 | 15.6510 | 19 56 00 | 16.4724 |
| 10 | 25.6784 | 10 | 26.4997 |
| 20 | 35.7057 | 20 | 36.5271 |
| 30 | 45.7331 | 30 | 46.5545 |
| 40 | 55.7605 | 40 | 56.5819 |
| 50 | 19 55 05.7879 | 50 | 20 00 06.6093 |
| 19 52 00 | 15.8153 | 19 57 00 | 16.6366 |
| 10 | 25.8426 | 10 | 26.6640 |
| 20 | 35.8700 | 20 | 36.6914 |
| 30 | 45.8974 | 30 | 46.7188 |
| 40 | 55.9248 | 40 | 56.7461 |
| 50 | 19 56 05.9522 | 50 | 20 01 06.7735 |
| 19 53 00 | 15.9795 | 19 58 00 | 16.8009 |
| 10 | 26.0069 | 10 | 26.8283 |
| 20 | 36.0343 | 20 | 36.8557 |
| 30 | 46.0617 | 30 | 46.8830 |
| 40 | 56.0891 | 40 | 56.9104 |
| 50 | 19 57 06.1164 | 50 | 20 02 06.9378 |
| 19 54 00 | 16.1438 | 19 59 00 | 16.9652 |
| 10 | 26.1712 | 10 | 26.9926 |
| 20 | 36.1986 | 20 | 37.0199 |
| 30 | 46.2259 | 30 | 47.0473 |
| 40 | 56.2533 | 40 | 57.0747 |
| 50 | 19 58 06.2807 | 50 | 20 03 07.1021 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 19 50 00 | 19 46 45.0471 | 19 55 00 | 19 51 44.2279 |
| 10 | 55.0197 | 10 | 54.2006 |
| 20 | 19 47 04.9924 | 20 | 19 52 04.1733 |
| 30 | 14.9651 | 30 | 14.1460 |
| 40 | 24.9378 | 40 | 24.1187 |
| 50 | 34.9105 | 50 | 34.0914 |
| 19 51 00 | 44.8832 | 19 56 00 | 44.0641 |
| 10 | 54.8559 | 10 | 54.0368 |
| 20 | 19 48 04.8286 | 20 | 19 53 04.0095 |
| 30 | 14.8013 | 30 | 13.9822 |
| 40 | 24.7740 | 40 | 23.9549 |
| 50 | 34.7467 | 50 | 33.9276 |
| 19 52 00 | 44.7194 | 19 57 00 | 43.9003 |
| 10 | 54.6921 | 10 | 53.8730 |
| 20 | 19 49 04.6648 | 20 | 19 54 03.8457 |
| 30 | 14.6375 | 30 | 13.8184 |
| 40 | 24.6102 | 40 | 23.7911 |
| 50 | 34.5829 | 50 | 33.7637 |
| 19 53 00 | 44.5556 | 19 58 00 | 43.7364 |
| 10 | 54.5283 | 10 | 53.7091 |
| 20 | 19 50 04.5010 | 20 | 19 55 03.6818 |
| 30 | 14.4737 | 30 | 13.6545 |
| 40 | 24.4464 | 40 | 23.6272 |
| 50 | 34.4191 | 50 | 33.5999 |
| 19 54 00 | 44.3917 | 19 59 00 | 43.5726 |
| 10 | 54.3644 | 10 | 53.5453 |
| 20 | 19 51 04.3371 | 20 | 19 56 03.5180 |
| 30 | 14.3098 | 30 | 13.4907 |
| 40 | 24.2825 | 40 | 23.4634 |
| 50 | 34.2552 | 50 | 33.4361 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 20 00 00 | 20 03 17.1295 | 20 05 00 | 20 08 17.9508 |
| 10 | 27.1568 | 10 | 27.9782 |
| 20 | 37.1842 | 20 | 38.0056 |
| 30 | 47.2116 | 30 | 48.0330 |
| 40 | 57.2390 | 40 | 58.0603 |
| 50 | 20 04 07.2664 | 50 | 20 09 08.0877 |
| 20 01 00 | 17.2937 | 20 06 00 | 18.1151 |
| 10 | 27.3211 | 10 | 28.1425 |
| 20 | 37.3485 | 20 | 38.1699 |
| 30 | 47.3759 | 30 | 48.1972 |
| 40 | 57.4032 | 40 | 58.2246 |
| 50 | 20 05 07.4306 | 50 | 20 10 08.2520 |
| 20 02 00 | 17.4580 | 20 07 00 | 18.2794 |
| 10 | 27.4854 | 10 | 28.3068 |
| 20 | 37.5128 | 20 | 38.3341 |
| 30 | 47.5401 | 30 | 48.3615 |
| 40 | 57.5675 | 40 | 58.3889 |
| 50 | 20 06 07.5949 | 50 | 20 11 08.4163 |
| 20 03 00 | 17.6223 | 20 08 00 | 18.4437 |
| 10 | 27.6497 | 10 | 28.4710 |
| 20 | 37.6770 | 20 | 38.4984 |
| 30 | 47.7044 | 30 | 48.5258 |
| 40 | 57.7318 | 40 | 58.5532 |
| 50 | 20 07 07.7592 | 50 | 20 12 08.5805 |
| 20 04 00 | 17.7866 | 20 09 00 | 18.6079 |
| 10 | 27.8139 | 10 | 28.6353 |
| 20 | 37.8413 | 20 | 38.6627 |
| 30 | 47.8687 | 30 | 48.6901 |
| 40 | 57.8961 | 40 | 58.7174 |
| 50 | 20 08 07.9235 | 50 | 20 13 08.7448 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 20 00 00 | 19 56 43.4088 | 20 05 00 | 20 01 42.5897 |
| 10 | 53.3815 | 10 | 52.5624 |
| 20 | 19 57 03.3542 | 20 | 20 02 02.5351 |
| 30 | 13.3269 | 30 | 12.5077 |
| 40 | 23.2996 | 40 | 22.4804 |
| 50 | 33.2723 | 50 | 32.4531 |
| 20 01 00 | 43.2450 | 20 06 00 | 42.4258 |
| 10 | 53.2177 | 10 | 52.3985 |
| 20 | 19 58 03.1904 | 20 | 20 03 02.3712 |
| 30 | 13.1631 | 30 | 12.3439 |
| 40 | 23.1357 | 40 | 22.3166 |
| 50 | 33.1084 | 50 | 32.2893 |
| 20 02 00 | 43.0811 | 20 07 00 | 42.2620 |
| 10 | 53.0538 | 10 | 52.2347 |
| 20 | 19 59 03.0265 | 20 | 20 04 02.2074 |
| 30 | 12.9992 | 30 | 12.1801 |
| 40 | 22.9719 | 40 | 22.1528 |
| 50 | 32.9446 | 50 | 32.1255 |
| 20 03 00 | 42.9173 | 20 08 00 | 42.0982 |
| 10 | 52.8900 | 10 | 52.0709 |
| 20 | 20 00 02.8627 | 20 | 20 05 02.0436 |
| 30 | 12.8354 | 30 | 12.0163 |
| 40 | 22.8081 | 40 | 21.9890 |
| 50 | 32.7808 | 50 | 31.9617 |
| 20 04 00 | 42.7535 | 20 09 00 | 41.9344 |
| 10 | 52.7262 | 10 | 51.9071 |
| 20 | 20 01 02.6989 | 20 | 20 06 01.8797 |
| 30 | 12.6716 | 30 | 11.8524 |
| 40 | 22.6443 | 40 | 21.8251 |
| 50 | 32.6170 | 50 | 31.7978 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 20 10 00 | 20 13 18.7722 | 20 15 00 | 20 18 19.5936 |
| 10 | 28.7996 | 10 | 29.6210 |
| 20 | 38.8270 | 20 | 39.6483 |
| 30 | 48.8543 | 30 | 49.6757 |
| 40 | 58.8817 | 40 | 59.7031 |
| 50 | 20 14 08.9091 | 50 | 20 19 09.7305 |
| 20 11 00 | 18.9365 | 20 16 00 | 19.7579 |
| 10 | 28.9639 | 10 | 29.7852 |
| 20 | 38.9912 | 20 | 39.8126 |
| 30 | 49.0186 | 30 | 49.8400 |
| 40 | 59.0460 | 40 | 59.8674 |
| 50 | 20 15 09.0734 | 50 | 20 20 09.8947 |
| 20 12 00 | 19.1008 | 20 17 00 | 19.9221 |
| 10 | 29.1281 | 10 | 29.9495 |
| 20 | 39.1555 | 20 | 39.9769 |
| 30 | 49.1829 | 30 | 50.0043 |
| 40 | 59.2103 | 40 | 20 21 00.0316 |
| 50 | 20 16 09.2376 | 50 | 10.0590 |
| 20 13 00 | 19.2650 | 20 18 00 | 20.0864 |
| 10 | 29.2924 | 10 | 30.1138 |
| 20 | 39.3198 | 20 | 40.1412 |
| 30 | 49.3472 | 30 | 50.1685 |
| 40 | 59.3745 | 40 | 20 22 00.1959 |
| 50 | 20 17 09.4019 | 50 | 10.2233 |
| 20 14 00 | 19.4293 | 20 19 00 | 20.2507 |
| 10 | 29.4567 | 10 | 30.2781 |
| 20 | 39.4841 | 20 | 40.3054 |
| 30 | 49.5114 | 30 | 50.3328 |
| 40 | 59.5388 | 40 | 20 23 00.3602 |
| 50 | 20 18 09.5662 | 50 | 10.3876 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 20 10 00 | 20 06 41.7705 | 20 15 00 | 20 11 40.9514 |
| 10 | 51.7432 | 10 | 50.9241 |
| 20 | 20 07 01.7159 | 20 | 20 12 00.8968 |
| 30 | 11.6886 | 30 | 10.8695 |
| 40 | 21.6613 | 40 | 20.8422 |
| 50 | 31.6340 | 50 | 30.8149 |
| 20 11 00 | 41.6067 | 20 16 00 | 40.7876 |
| 10 | 51.5794 | 10 | 50.7603 |
| 20 | 20 08 01.5521 | 20 | 20 13 00.7330 |
| 30 | 11.5248 | 30 | 10.7057 |
| 40 | 21.4975 | 40 | 20.6784 |
| 50 | 31.4702 | 50 | 30.6511 |
| 20 12 00 | 41.4429 | 20 17 00 | 40.6237 |
| 10 | 51.4156 | 10 | 50.5964 |
| 20 | 20 09 01.3883 | 20 | 20 14 00.5691 |
| 30 | 11.3610 | 30 | 10.5418 |
| 40 | 21.3337 | 40 | 20.5145 |
| 50 | 31.3064 | 50 | 30.4872 |
| 20 13 00 | 41.2791 | 20 18 00 | 40.4599 |
| 10 | 51.2517 | 10 | 50.4326 |
| 20 | 20 10 01.2244 | 20 | 20 15 00.4053 |
| 30 | 11.1971 | 30 | 10.3780 |
| 40 | 21.1698 | 40 | 20.3507 |
| 50 | 31.1425 | 50 | 30.3234 |
| 20 14 00 | 41.1152 | 20 19 00 | 40.2961 |
| 10 | 51.0879 | 10 | 50.2688 |
| 20 | 20 11 01.0606 | 20 | 20 16 00.2415 |
| 30 | 11.0333 | 30 | 10.2142 |
| 40 | 21.0060 | 40 | 20.1869 |
| 50 | 30.9787 | 50 | 30.1596 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 20 20 00 | 20 23 20.4149 | 20 25 00 | 20 28 21.2363 |
| 10 | 30.4423 | 10 | 31.2637 |
| 20 | 40.4697 | 20 | 41.2911 |
| 30 | 50.4971 | 30 | 51.3185 |
| 40 | 20 24 00.5245 | 40 | 20 29 01.3458 |
| 50 | 10.5518 | 50 | 11.3732 |
| 20 21 00 | 20.5792 | 20 26 00 | 21.4006 |
| 10 | 30.6066 | 10 | 31.4280 |
| 20 | 40.6340 | 20 | 41.4554 |
| 30 | 50.6614 | 30 | 51.4827 |
| 40 | 20 25 00.6887 | 40 | 20 30 01.5101 |
| 50 | 10.7161 | 50 | 11.5375 |
| 20 22 00 | 20.7435 | 20 27 00 | 21.5649 |
| 10 | 30.7709 | 10 | 31.5922 |
| 20 | 40.7983 | 20 | 41.6196 |
| 30 | 50.8256 | 30 | 51.6470 |
| 40 | 20 26 00.8530 | 40 | 20 31 01.6744 |
| 50 | 10.8804 | 50 | 11.7018 |
| 20 23 00 | 20.9078 | 20 28 00 | 21.7291 |
| 10 | 30.9352 | 10 | 31.7565 |
| 20 | 40.9625 | 20 | 41.7839 |
| 30 | 50.9899 | 30 | 51.8113 |
| 40 | 20 27 01.0173 | 40 | 20 32 01.8387 |
| 50 | 11.0447 | 50 | 11.8660 |
| 20 24 00 | 21.0720 | 20 29 00 | 21.8934 |
| 10 | 31.0994 | 10 | 31.9208 |
| 20 | 41.1268 | 20 | 41.9482 |
| 30 | 51.1542 | 30 | 51.9756 |
| 40 | 20 28 01.1816 | 40 | 20 33 02.0029 |
| 50 | 11.2089 | 50 | 12.0303 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 20 20 00 | 20 16 40.1323 | 20 25 00 | 20 21 39.3131 |
| 10 | 50.1050 | 10 | 49.2858 |
| 20 | 20 17 00.0777 | 20 | 59.2585 |
| 30 | 10.0504 | 30 | 20 22 09.2312 |
| 40 | 20.0231 | 40 | 19.2039 |
| 50 | 29.9957 | 50 | 29.1766 |
| 20 21 00 | 39.9684 | 20 26 00 | 39.1493 |
| 10 | 49.9411 | 10 | 49.1220 |
| 20 | 59.9138 | 20 | 59.0947 |
| 30 | 20 18 09.8865 | 30 | 20 23 09.0674 |
| 40 | 19.8592 | 40 | 19.0401 |
| 50 | 29.8319 | 50 | 29.0128 |
| 20 22 00 | 39.8046 | 20 27 00 | 38.9855 |
| 10 | 49.7773 | 10 | 48.9582 |
| 20 | 59.7500 | 20 | 58.9309 |
| 30 | 20 19 09.7227 | 30 | 20 24 08.9036 |
| 40 | 19.6954 | 40 | 18.8763 |
| 50 | 29.6681 | 50 | 28.8490 |
| 20 23 00 | 39.6408 | 20 28 00 | 38.8217 |
| 10 | 49.6135 | 10 | 48.7944 |
| 20 | 59.5862 | 20 | 58.7671 |
| 30 | 20 20 09.5589 | 30 | 20 25 08.7398 |
| 40 | 19.5316 | 40 | 18.7124 |
| 50 | 29.5043 | 50 | 28.6851 |
| 20 24 00 | 39.4770 | 20 29 00 | 38.6578 |
| 10 | 49.4497 | 10 | 48.6305 |
| 20 | 59.4224 | 20 | 58.6032 |
| 30 | 20 21 09.3951 | 30 | 20 26 08.5759 |
| 40 | 19.3678 | 40 | 18.5486 |
| 50 | 29.3404 | 50 | 28.5213 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 20 30 00 | 20 33 22.0577 | 20 35 00 | 20 38 22.8791 |
| 10 | 32.0851 | 10 | 32.9064 |
| 20 | 42.1125 | 20 | 42.9338 |
| 30 | 52.1398 | 30 | 52.9612 |
| 40 | 20 34 02.1672 | 40 | 20 39 02.9886 |
| 50 | 12.1946 | 50 | 13.0160 |
| 20 31 00 | 22.2220 | 20 36 00 | 23.0433 |
| 10 | 32.2493 | 10 | 33.0707 |
| 20 | 42.2767 | 20 | 43.0981 |
| 30 | 52.3041 | 30 | 53.1255 |
| 40 | 20 35 02.3315 | 40 | 20 40 03.1529 |
| 50 | 12.3589 | 50 | 13.1802 |
| 20 32 00 | 22.3862 | 20 37 00 | 23.2076 |
| 10 | 32.4136 | 10 | 33.2350 |
| 20 | 42.4410 | 20 | 43.2624 |
| 30 | 52.4684 | 30 | 53.2898 |
| 40 | 20 36 02.4958 | 40 | 20 41 03.3171 |
| 50 | 12.5231 | 50 | 13.3445 |
| 20 33 00 | 22.5505 | 20 38 00 | 23.3719 |
| 10 | 32.5779 | 10 | 33.3993 |
| 20 | 42.6053 | 20 | 43.4266 |
| 30 | 52.6327 | 30 | 53.4540 |
| 40 | 20 37 02.6600 | 40 | 20 42 03.4814 |
| 50 | 12.6874 | 50 | 13.5088 |
| 20 34 00 | 22.7148 | 20 39 00 | 23.5362 |
| 10 | 32.7422 | 10 | 33.5635 |
| 20 | 42.7696 | 20 | 43.5909 |
| 30 | 52.7969 | 30 | 53.6183 |
| 40 | 20 38 02.8243 | 40 | 20 43 03.6457 |
| 50 | 12.8517 | 50 | 13.6731 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 20 30 00 | 20 26 38.4940 | 20 35 00 | 20 31 37.6749 |
| 10 | 48.4667 | 10 | 47.6476 |
| 20 | 58.4394 | 20 | 57.6203 |
| 30 | 20 27 08.4121 | 30 | 20 32 07.5930 |
| 40 | 18.3848 | 40 | 17.5657 |
| 50 | 28.3575 | 50 | 27.5384 |
| 20 31 00 | 38.3302 | 20 36 00 | 37.5111 |
| 10 | 48.3029 | 10 | 47.4838 |
| 20 | 58.2756 | 20 | 57.4564 |
| 30 | 20 28 08.2483 | 30 | 20 33 07.4291 |
| 40 | 18.2210 | 40 | 17.4018 |
| 50 | 28.1937 | 50 | 27.3745 |
| 20 32 00 | 38.1664 | 20 37 00 | 37.3472 |
| 10 | 48.1391 | 10 | 47.3199 |
| 20 | 58.1118 | 20 | 57.2926 |
| 30 | 20 29 08.0844 | 30 | 20 34 07.2653 |
| 40 | 18.0571 | 40 | 17.2380 |
| 50 | 28.0298 | 50 | 27.2107 |
| 20 33 00 | 38.0025 | 20 38 00 | 37.1834 |
| 10 | 47.9752 | 10 | 47.1561 |
| 20 | 57.9479 | 20 | 57.1288 |
| 30 | 20 30 07.9206 | 30 | 20 35 07.1015 |
| 40 | 17.8933 | 40 | 17.0742 |
| 50 | 27.8660 | 50 | 27.0469 |
| 20 34 00 | 37.8387 | 20 39 00 | 37.0196 |
| 10 | 47.8114 | 10 | 46.9923 |
| 20 | 57.7841 | 20 | 56.9650 |
| 30 | 20 31 07.7568 | 30 | 20 36 06.9377 |
| 40 | 17.7295 | 40 | 16.9104 |
| 50 | 27.7022 | 50 | 26.8831 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 20 40 00 | 20 43 23.7004 | 20 45 00 | 20 48 24.5218 |
| 10 | 33.7278 | 10 | 34.5492 |
| 20 | 43.7552 | 20 | 44.5766 |
| 30 | 53.7826 | 30 | 54.6039 |
| 40 | 20 44 03.8100 | 40 | 20 49 04.6313 |
| 50 | 13.8373 | 50 | 14.6587 |
| 20 41 00 | 23.8647 | 20 46 00 | 24.6861 |
| 10 | 33.8921 | 10 | 34.7135 |
| 20 | 43.9195 | 20 | 44.7408 |
| 30 | 53.9469 | 30 | 54.7682 |
| 40 | 20 45 03.9742 | 40 | 20 50 04.7956 |
| 50 | 14.0016 | 50 | 14.8230 |
| 20 42 00 | 24.0290 | 20 47 00 | 24.8504 |
| 10 | 34.0564 | 10 | 34.8777 |
| 20 | 44.0837 | 20 | 44.9051 |
| 30 | 54.1111 | 30 | 54.9325 |
| 40 | 20 46 04.1385 | 40 | 20 51 04.9599 |
| 50 | 14.1659 | 50 | 14.9873 |
| 20 43 00 | 24.1933 | 20 48 00 | 25.0146 |
| 10 | 34.2206 | 10 | 35.0420 |
| 20 | 44.2480 | 20 | 45.0694 |
| 30 | 54.2754 | 30 | 55.0968 |
| 40 | 20 47 04.3028 | 40 | 20 52 05.1242 |
| 50 | 14.3302 | 50 | 15.1515 |
| 20 44 00 | 24.3575 | 20 49 00 | 25.1789 |
| 10 | 34.3849 | 10 | 35.2063 |
| 20 | 44.4123 | 20 | 45.2337 |
| 30 | 54.4397 | 30 | 55.2610 |
| 40 | 20 48 04.4671 | 40 | 20 53 05.2884 |
| 50 | 14.4944 | 50 | 15.3158 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 20 40 00 | 20 36 36.8558 | 20 45 00 | 20 41 36.0366 |
| 10 | 46.8284 | 10 | 46.0093 |
| 20 | 56.8011 | 20 | 55.9820 |
| 30 | 20 37 06.7738 | 30 | 20 42 05.9547 |
| 40 | 16.7465 | 40 | 15.9274 |
| 50 | 26.7192 | 50 | 25.9001 |
| 20 41 00 | 36.6919 | 20 46 00 | 35.8728 |
| 10 | 46.6646 | 10 | 45.8455 |
| 20 | 56.6373 | 20 | 55.8182 |
| 30 | 20 38 06.6100 | 30 | 20 43 05.7909 |
| 40 | 16.5827 | 40 | 15.7636 |
| 50 | 26.5554 | 50 | 25.7363 |
| 20 42 00 | 36.5281 | 20 47 00 | 35.7090 |
| 10 | 46.5008 | 10 | 45.6817 |
| 20 | 56.4735 | 20 | 55.6544 |
| 30 | 20 39 06.4462 | 30 | 20 44 05.6271 |
| 40 | 16.4189 | 40 | 15.5998 |
| 50 | 26.3916 | 50 | 25.5724 |
| 20 43 00 | 36.3643 | 20 48 00 | 35.5451 |
| 10 | 46.3370 | 10 | 45.5178 |
| 20 | 56.3097 | 20 | 55.4905 |
| 30 | 20 40 06.2824 | 30 | 20 45 05.4632 |
| 40 | 16.2551 | 40 | 15.4359 |
| 50 | 26.2278 | 50 | 25.4086 |
| 20 44 00 | 36.2004 | 20 49 00 | 35.3813 |
| 10 | 46.1731 | 10 | 45.3540 |
| 20 | 56.1458 | 20 | 55.3267 |
| 30 | 20 41 06.1185 | 30 | 20 46 05.2994 |
| 40 | 16.0912 | 40 | 15.2721 |
| 50 | 26.0639 | 50 | 25.2448 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 20 50 00 | 20 53 25.3432 | 20 55 00 | 20 58 26.1646 |
| 10 | 35.3706 | 10 | 36.1919 |
| 20 | 45.3979 | 20 | 46.2193 |
| 30 | 55.4253 | 30 | 56.2467 |
| 40 | 20 54 05.4527 | 40 | 20 59 06.2741 |
| 50 | 15.4801 | 50 | 16.3015 |
| 20 51 00 | 25.5075 | 20 56 00 | 26.3288 |
| 10 | 35.5348 | 10 | 36.3562 |
| 20 | 45.5622 | 20 | 46.3836 |
| 30 | 55.5896 | 30 | 56.4110 |
| 40 | 20 55 05.6170 | 40 | 21 00 06.4383 |
| 50 | 15.6444 | 50 | 16.4657 |
| 20 52 00 | 25.6717 | 20 57 00 | 26.4931 |
| 10 | 35.6991 | 10 | 36.5205 |
| 20 | 45.7265 | 20 | 46.5479 |
| 30 | 55.7539 | 30 | 56.5752 |
| 40 | 20 56 05.7813 | 40 | 21 01 06.6026 |
| 50 | 15.8086 | 50 | 16.6300 |
| 20 53 00 | 25.8360 | 20 58 00 | 26.6574 |
| 10 | 35.8634 | 10 | 36.6848 |
| 20 | 45.8908 | 20 | 46.7121 |
| 30 | 55.9181 | 30 | 56.7395 |
| 40 | 20 57 05.9455 | 40 | 21 02 06.7669 |
| 50 | 15.9729 | 50 | 16.7943 |
| 20 54 00 | 26.0003 | 20 59 00 | 26.8217 |
| 10 | 36.0277 | 10 | 36.8490 |
| 20 | 46.0550 | 20 | 46.8764 |
| 30 | 56.0824 | 30 | 56.9038 |
| 40 | 20 58 06.1098 | 40 | 21 03 06.9312 |
| 50 | 16.1372 | 50 | 16.9586 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 20 50 00 | 20 46 35.2175 | 20 55 00 | 20 51 34.3984 |
| 10 | 45.1902 | 10 | 44.3711 |
| 20 | 55.1629 | 20 | 54.3438 |
| 30 | 20 47 05.1356 | 30 | 20 52 04.3164 |
| 40 | 15.1083 | 40 | 14.2891 |
| 50 | 25.0810 | 50 | 24.2618 |
| 20 51 00 | 35.0537 | 20 56 00 | 34.2345 |
| 10 | 45.0264 | 10 | 44.2072 |
| 20 | 54.9991 | 20 | 54.1799 |
| 30 | 20 48 04.9718 | 30 | 20 53 04.1526 |
| 40 | 14.9444 | 40 | 14.1253 |
| 50 | 24.9171 | 50 | 24.0980 |
| 20 52 00 | 34.8898 | 20 57 00 | 34.0707 |
| 10 | 44.8625 | 10 | 44.0434 |
| 20 | 54.8352 | 20 | 54.0161 |
| 30 | 20 49 04.8079 | 30 | 20 54 03.9888 |
| 40 | 14.7806 | 40 | 13.9615 |
| 50 | 24.7533 | 50 | 23.9342 |
| 20 53 00 | 34.7260 | 20 58 00 | 33.9069 |
| 10 | 44.6987 | 10 | 43.8796 |
| 20 | 54.6714 | 20 | 53.8523 |
| 30 | 20 50 04.6441 | 30 | 20 55 03.8250 |
| 40 | 14.6168 | 40 | 13.7977 |
| 50 | 24.5895 | 50 | 23.7704 |
| 20 54 00 | 34.5622 | 20 59 00 | 33.7431 |
| 10 | 44.5349 | 10 | 43.7158 |
| 20 | 54.5076 | 20 | 53.6884 |
| 30 | 20 51 04.4803 | 30 | 20 56 03.6611 |
| 40 | 14.4530 | 40 | 13.6338 |
| 50 | 24.4257 | 50 | 23.6065 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 21 00 00 | 21 03 26.9859 | 21 05 00 | 21 08 27.8073 |
| 10 | 37.0133 | 10 | 37.8347 |
| 20 | 47.0407 | 20 | 47.8621 |
| 30 | 57.0681 | 30 | 57.8894 |
| 40 | 21 04 07.0954 | 40 | 21 09 07.9168 |
| 50 | 17.1228 | 50 | 17.9442 |
| 21 01 00 | 27.1502 | 21 06 00 | 27.9716 |
| 10 | 37.1776 | 10 | 37.9990 |
| 20 | 47.2050 | 20 | 48.0263 |
| 30 | 57.2323 | 30 | 58.0537 |
| 40 | 21 05 07.2597 | 40 | 21 10 08.0811 |
| 50 | 17.2871 | 50 | 18.1085 |
| 21 02 00 | 27.3145 | 21 07 00 | 28.1359 |
| 10 | 37.3419 | 10 | 38.1632 |
| 20 | 47.3692 | 20 | 48.1906 |
| 30 | 57.3966 | 30 | 58.2180 |
| 40 | 21 06 07.4240 | 40 | 21 11 08.2454 |
| 50 | 17.4514 | 50 | 18.2727 |
| 21 03 00 | 27.4788 | 21 08 00 | 28.3001 |
| 10 | 37.5061 | 10 | 38.3275 |
| 20 | 47.5335 | 20 | 48.3549 |
| 30 | 57.5609 | 30 | 58.3823 |
| 40 | 21 07 07.5883 | 40 | 21 12 08.4096 |
| 50 | 17.6156 | 50 | 18.4370 |
| 21 04 00 | 27.6430 | 21 09 00 | 28.4644 |
| 10 | 37.6704 | 10 | 38.4918 |
| 20 | 47.6978 | 20 | 48.5192 |
| 30 | 57.7252 | 30 | 58.5465 |
| 40 | 21 08 07.7525 | 40 | 21 13 08.5739 |
| 50 | 17.7799 | 50 | 18.6013 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 21 00 00 | 20 56 33.5792 | 21 05 00 | 21 01 32.7601 |
| 10 | 43.5519 | 10 | 42.7328 |
| 20 | 53.5246 | 20 | 52.7055 |
| 30 | 20 57 03.4973 | 30 | 21 02 02.6782 |
| 40 | 13.4700 | 40 | 12.6509 |
| 50 | 23.4427 | 50 | 22.6236 |
| 21 01 00 | 33.4154 | 21 06 00 | 32.5963 |
| 10 | 43.3881 | 10 | 42.5690 |
| 20 | 53.3608 | 20 | 52.5417 |
| 30 | 20 58 03.3335 | 30 | 21 03 02.5144 |
| 40 | 13.3062 | 40 | 12.4871 |
| 50 | 23.2789 | 50 | 22.4598 |
| 21 02 00 | 33.2516 | 21 07 00 | 32.4324 |
| 10 | 43.2243 | 10 | 42.4051 |
| 20 | 53.1970 | 20 | 52.3778 |
| 30 | 20 59 03.1697 | 30 | 21 04 02.3505 |
| 40 | 13.1424 | 40 | 12.3232 |
| 50 | 23.1151 | 50 | 22.2959 |
| 21 03 00 | 33.0878 | 21 08 00 | 32.2686 |
| 10 | 43.0604 | 10 | 42.2413 |
| 20 | 53.0331 | 20 | 52.2140 |
| 30 | 21 00 03.0058 | 30 | 21 05 02.1867 |
| 40 | 12.9785 | 40 | 12.1594 |
| 50 | 22.9512 | 50 | 22.1321 |
| 21 04 00 | 32.9239 | 21 09 00 | 32.1048 |
| 10 | 42.8966 | 10 | 42.0775 |
| 20 | 52.8693 | 20 | 52.0502 |
| 30 | 21 01 02.8420 | 30 | 21 06 02.0229 |
| 40 | 12.8147 | 40 | 11.9956 |
| 50 | 22.7874 | 50 | 21.9683 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 21 10 00 | 21 13 28.6287 | 21 15 00 | 21 18 29.4500 |
| 10 | 38.6561 | 10 | 39.4774 |
| 20 | 48.6834 | 20 | 49.5048 |
| 30 | 58.7108 | 30 | 59.5322 |
| 40 | 21 14 08.7382 | 40 | 21 19 09.5596 |
| 50 | 18.7656 | 50 | 19.5869 |
| 21 11 00 | 28.7930 | 21 16 00 | 29.6143 |
| 10 | 38.8203 | 10 | 39.6417 |
| 20 | 48.8477 | 20 | 49.6691 |
| 30 | 58.8751 | 30 | 59.6965 |
| 40 | 21 15 08.9025 | 40 | 21 20 09.7238 |
| 50 | 18.9298 | 50 | 19.7512 |
| 21 12 00 | 28.9572 | 21 17 00 | 29.7786 |
| 10 | 38.9846 | 10 | 39.8060 |
| 20 | 49.0120 | 20 | 49.8334 |
| 30 | 59.0394 | 30 | 59.8607 |
| 40 | 21 16 09.0667 | 40 | 21 21 09.8881 |
| 50 | 19.0941 | 50 | 19.9155 |
| 21 13 00 | 29.1215 | 21 18 00 | 29.9429 |
| 10 | 39.1489 | 10 | 39.9703 |
| 20 | 49.1763 | 20 | 49.9976 |
| 30 | 59.2036 | 30 | 21 22 00.0250 |
| 40 | 21 17 09.2310 | 40 | 10.0524 |
| 50 | 19.2584 | 50 | 20.0798 |
| 21 14 00 | 29.2858 | 21 19 00 | 30.1071 |
| 10 | 39.3132 | 10 | 40.1345 |
| 20 | 49.3405 | 20 | 50.1619 |
| 30 | 59.3679 | 30 | 21 23 00.1893 |
| 40 | 21 18 09.3953 | 40 | 10.2167 |
| 50 | 19.4227 | 50 | 20.2440 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 21 10 00 | 21 06 31.9410 | 21 15 00 | 21 11 31.1218 |
| 10 | 41.9137 | 10 | 41.0945 |
| 20 | 51.8864 | 20 | 51.0672 |
| 30 | 21 07 01.8591 | 30 | 21 12 01.0399 |
| 40 | 11.8318 | 40 | 11.0126 |
| 50 | 21.8044 | 50 | 20.9853 |
| 21 11 00 | 31.7771 | 21 16 00 | 30.9580 |
| 10 | 41.7498 | 10 | 40.9307 |
| 20 | 51.7225 | 20 | 50.9034 |
| 30 | 21 08 01.6952 | 30 | 21 13 00.8761 |
| 40 | 11.6679 | 40 | 10.8488 |
| 50 | 21.6406 | 50 | 20.8215 |
| 21 12 00 | 31.6133 | 21 17 00 | 30.7942 |
| 10 | 41.5860 | 10 | 40.7669 |
| 20 | 51.5587 | 20 | 50.7396 |
| 30 | 21 09 01.5314 | 30 | 21 14 00.7123 |
| 40 | 11.5041 | 40 | 10.6850 |
| 50 | 21.4768 | 50 | 20.6577 |
| 21 13 00 | 31.4495 | 21 18 00 | 30.6304 |
| 10 | 41.4222 | 10 | 40.6031 |
| 20 | 51.3949 | 20 | 50.5758 |
| 30 | 21 10 01.3676 | 30 | 21 15 00.5485 |
| 40 | 11.3403 | 40 | 10.5211 |
| 50 | 21.3130 | 50 | 20.4938 |
| 21 14 00 | 31.2857 | 21 19 00 | 30.4665 |
| 10 | 41.2584 | 10 | 40.4392 |
| 20 | 51.2311 | 20 | 50.4119 |
| 30 | 21 11 01.2038 | 30 | 21 16 00.3846 |
| 40 | 11.1764 | 40 | 10.3573 |
| 50 | 21.1491 | 50 | 20.3300 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 21 20 00 | 21 23 30.2714 | 21 25 00 | 21 28 31.0928 |
| 10 | 40.2988 | 10 | 41.1202 |
| 20 | 50.3262 | 20 | 51.1476 |
| 30 | 21 24 00.3536 | 30 | 21 29 01.1749 |
| 40 | 10.3809 | 40 | 11.2023 |
| 50 | 20.4083 | 50 | 21.2297 |
| 21 21 00 | 30.4357 | 21 26 00 | 31.2571 |
| 10 | 40.4631 | 10 | 41.2844 |
| 20 | 50.4905 | 20 | 51.3118 |
| 30 | 21 25 00.5178 | 30 | 21 30 01.3392 |
| 40 | 10.5452 | 40 | 11.3666 |
| 50 | 20.5726 | 50 | 21.3940 |
| 21 22 00 | 30.6000 | 21 27 00 | 31.4213 |
| 10 | 40.6273 | 10 | 41.4487 |
| 20 | 50.6547 | 20 | 51.4761 |
| 30 | 21 26 00.6821 | 30 | 21 31 01.5035 |
| 40 | 10.7095 | 40 | 11.5309 |
| 50 | 20.7369 | 50 | 21.5582 |
| 21 23 00 | 30.7642 | 21 28 00 | 31.5856 |
| 10 | 40.7916 | 10 | 41.6130 |
| 20 | 50.8190 | 20 | 51.6404 |
| 30 | 21 27 00.8464 | 30 | 21 32 01.6678 |
| 40 | 10.8738 | 40 | 11.6951 |
| 50 | 20.9011 | 50 | 21.7225 |
| 21 24 00 | 30.9285 | 21 29 00 | 31.7499 |
| 10 | 40.9559 | 10 | 41.7773 |
| 20 | 50.9833 | 20 | 51.8047 |
| 30 | 21 28 01.0107 | 30 | 21 33 01.8320 |
| 40 | 11.0380 | 40 | 11.8594 |
| 50 | 21.0654 | 50 | 21.8868 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 21 20 00 | 21 16 30.3027 | 21 25 00 | 21 21 29.4836 |
| 10 | 40.2754 | 10 | 39.4563 |
| 20 | 50.2481 | 20 | 49.4290 |
| 30 | 21 17 00.2208 | 30 | 59.4017 |
| 40 | 10.1935 | 40 | 21 22 09.3744 |
| 50 | 20.1662 | 50 | 19.3471 |
| 21 21 00 | 30.1389 | 21 26 00 | 29.3198 |
| 10 | 40.1116 | 10 | 39.2925 |
| 20 | 50.0843 | 20 | 49.2651 |
| 30 | 21 18 00.0570 | 30 | 59.2378 |
| 40 | 10.0297 | 40 | 21 23 09.2105 |
| 50 | 20.0024 | 50 | 19.1832 |
| 21 22 00 | 29.9751 | 21 27 00 | 29.1559 |
| 10 | 39.9478 | 10 | 39.1286 |
| 20 | 49.9205 | 20 | 49.1013 |
| 30 | 59.8931 | 30 | 59.0740 |
| 40 | 21 19 09.8658 | 40 | 21 24 09.0467 |
| 50 | 19.8385 | 50 | 19.0194 |
| 21 23 00 | 29.8112 | 21 28 00 | 28.9921 |
| 10 | 39.7839 | 10 | 38.9648 |
| 20 | 49.7566 | 20 | 48.9375 |
| 30 | 59.7293 | 30 | 58.9102 |
| 40 | 21 20 09.7020 | 40 | 21 25 08.8829 |
| 50 | 19.6747 | 50 | 18.8556 |
| 21 24 00 | 29.6474 | 21 29 00 | 28.8283 |
| 10 | 39.6201 | 10 | 38.8010 |
| 20 | 49.5928 | 20 | 48.7737 |
| 30 | 59.5655 | 30 | 58.7464 |
| 40 | 21 21 09.5382 | 40 | 21 26 08.7191 |
| 50 | 19.5109 | 50 | 18.6918 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 21 30 00 | 21 33 31.9142 | 21 35 00 | 21 38 32.7355 |
| 10 | 41.9415 | 10 | 42.7629 |
| 20 | 51.9689 | 20 | 52.7903 |
| 30 | 21 34 01.9963 | 30 | 21 39 02.8177 |
| 40 | 12.0237 | 40 | 12.8451 |
| 50 | 22.0511 | 50 | 22.8724 |
| 21 31 00 | 32.0784 | 21 36 00 | 32.8998 |
| 10 | 42.1058 | 10 | 42.9272 |
| 20 | 52.1332 | 20 | 52.9546 |
| 30 | 21 35 02.1606 | 30 | 21 40 02.9820 |
| 40 | 12.1880 | 40 | 13.0093 |
| 50 | 22.2153 | 50 | 23.0367 |
| 21 32 00 | 32.2427 | 21 37 00 | 33.0641 |
| 10 | 42.2701 | 10 | 43.0915 |
| 20 | 52.2975 | 20 | 53.1188 |
| 30 | 21 36 02.3249 | 30 | 21 41 03.1462 |
| 40 | 12.3522 | 40 | 13.1736 |
| 50 | 22.3796 | 50 | 23.2010 |
| 21 33 00 | 32.4070 | 21 38 00 | 33.2284 |
| 10 | 42.4344 | 10 | 43.2557 |
| 20 | 52.4617 | 20 | 53.2831 |
| 30 | 21 37 02.4891 | 30 | 21 42 03.3105 |
| 40 | 12.5165 | 40 | 13.3379 |
| 50 | 22.5439 | 50 | 23.3653 |
| 21 34 00 | 32.5713 | 21 39 00 | 33.3926 |
| 10 | 42.5986 | 10 | 43.4200 |
| 20 | 52.6260 | 20 | 53.4474 |
| 30 | 21 38 02.6534 | 30 | 21 43 03.4748 |
| 40 | 12.6808 | 40 | 13.5022 |
| 50 | 22.7082 | 50 | 23.5295 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 21 30 00 | 21 26 28.6645 | 21 35 00 | 21 31 27.8453 |
| 10 | 38.6371 | 10 | 37.8180 |
| 20 | 48.6098 | 20 | 47.7907 |
| 30 | 58.5825 | 30 | 57.7634 |
| 40 | 21 27 08.5552 | 40 | 21 32 07.7361 |
| 50 | 18.5279 | 50 | 17.7088 |
| 21 31 00 | 28.5006 | 21 36 00 | 27.6815 |
| 10 | 38.4733 | 10 | 37.6542 |
| 20 | 48.4460 | 20 | 47.6269 |
| 30 | 58.4187 | 30 | 57.5996 |
| 40 | 21 28 08.3914 | 40 | 21 33 07.5723 |
| 50 | 18.3641 | 50 | 17.5450 |
| 21 32 00 | 28.3368 | 21 37 00 | 27.5177 |
| 10 | 38.3095 | 10 | 37.4904 |
| 20 | 48.2822 | 20 | 47.4631 |
| 30 | 58.2549 | 30 | 57.4358 |
| 40 | 21 29 08.2276 | 40 | 21 34 07.4085 |
| 50 | 18.2003 | 50 | 17.3811 |
| 21 33 00 | 28.1730 | 21 38 00 | 27.3538 |
| 10 | 38.1457 | 10 | 37.3265 |
| 20 | 48.1184 | 20 | 47.2992 |
| 30 | 58.0911 | 30 | 57.2719 |
| 40 | 21 30 08.0638 | 40 | 21 35 07.2446 |
| 50 | 18.0365 | 50 | 17.2173 |
| 21 34 00 | 28.0091 | 21 39 00 | 27.1900 |
| 10 | 37.9818 | 10 | 37.1627 |
| 20 | 47.9545 | 20 | 47.1354 |
| 30 | 57.9272 | 30 | 57.1081 |
| 40 | 21 31 07.8999 | 40 | 21 36 07.0808 |
| 50 | 17.8726 | 50 | 17.0535 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 21 40 00 | 21 43 33.5569 | 21 45 00 | 21 48 34.3783 |
| 10 | 43.5843 | 10 | 44.4057 |
| 20 | 53.6117 | 20 | 54.4330 |
| 30 | 21 44 03.6390 | 30 | 21 49 04.4604 |
| 40 | 13.6664 | 40 | 14.4878 |
| 50 | 23.6938 | 50 | 24.5152 |
| 21 41 00 | 33.7212 | 21 46 00 | 34.5426 |
| 10 | 43.7486 | 10 | 44.5699 |
| 20 | 53.7759 | 20 | 54.5973 |
| 30 | 21 45 03.8033 | 30 | 21 50 04.6247 |
| 40 | 13.8307 | 40 | 14.6521 |
| 50 | 23.8581 | 50 | 24.6795 |
| 21 42 00 | 33.8855 | 21 47 00 | 34.7068 |
| 10 | 43.9128 | 10 | 44.7342 |
| 20 | 53.9402 | 20 | 54.7616 |
| 30 | 21 46 03.9676 | 30 | 21 51 04.7890 |
| 40 | 13.9950 | 40 | 14.8164 |
| 50 | 24.0224 | 50 | 24.8437 |
| 21 43 00 | 34.0497 | 21 48 00 | 34.8711 |
| 10 | 44.0771 | 10 | 44.8985 |
| 20 | 54.1045 | 20 | 54.9259 |
| 30 | 21 47 04.1319 | 30 | 21 52 04.9532 |
| 40 | 14.1593 | 40 | 14.9806 |
| 50 | 24.1866 | 50 | 25.0080 |
| 21 44 00 | 34.2140 | 21 49 00 | 35.0354 |
| 10 | 44.2414 | 10 | 45.0628 |
| 20 | 54.2688 | 20 | 55.0901 |
| 30 | 21 48 04.2961 | 30 | 21 53 05.1175 |
| 40 | 14.3235 | 40 | 15.1449 |
| 50 | 24.3509 | 50 | 25.1723 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 21 40 00 | 21 36 27.0262 | 21 45 00 | 21 41 26.2071 |
| 10 | 36.9989 | 10 | 36.1798 |
| 20 | 46.9716 | 20 | 46.1525 |
| 30 | 56.9443 | 30 | 56.1251 |
| 40 | 21 37 06.9170 | 40 | 21 42 06.0978 |
| 50 | 16.8897 | 50 | 16.0705 |
| 21 41 00 | 26.8624 | 21 46 00 | 26.0432 |
| 10 | 36.8351 | 10 | 36.0159 |
| 20 | 46.8078 | 20 | 45.9886 |
| 30 | 56.7805 | 30 | 55.9613 |
| 40 | 21 38 06.7531 | 40 | 21 43 05.9340 |
| 50 | 16.7258 | 50 | 15.9067 |
| 21 42 00 | 26.6985 | 21 47 00 | 25.8794 |
| 10 | 36.6712 | 10 | 35.8521 |
| 20 | 46.6439 | 20 | 45.8248 |
| 30 | 56.6166 | 30 | 55.7975 |
| 40 | 21 39 06.5893 | 40 | 21 44 05.7702 |
| 50 | 16.5620 | 50 | 15.7429 |
| 21 43 00 | 26.5347 | 21 48 00 | 25.7156 |
| 10 | 36.5074 | 10 | 35.6883 |
| 20 | 46.4801 | 20 | 45.6610 |
| 30 | 56.4528 | 30 | 55.6337 |
| 40 | 21 40 06.4255 | 40 | 21 45 05.6064 |
| 50 | 16.3982 | 50 | 15.5791 |
| 21 44 00 | 26.3709 | 21 49 00 | 25.5518 |
| 10 | 36.3436 | 10 | 35.5245 |
| 20 | 46.3163 | 20 | 45.4971 |
| 30 | 56.2890 | 30 | 55.4698 |
| 40 | 21 41 06.2617 | 40 | 21 46 05.4425 |
| 50 | 16.2344 | 50 | 15.4152 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 21 50 00 | 21 53 35.1997 | 21 55 00 | 21 58 36.0210 |
| 10 | 45.2270 | 10 | 46.0484 |
| 20 | 55.2544 | 20 | 56.0758 |
| 30 | 21 54 05.2818 | 30 | 21 59 06.1032 |
| 40 | 15.3092 | 40 | 16.1305 |
| 50 | 25.3366 | 50 | 26.1579 |
| 21 51 00 | 35.3639 | 21 56 00 | 36.1853 |
| 10 | 45.3913 | 10 | 46.2127 |
| 20 | 55.4187 | 20 | 56.2401 |
| 30 | 21 55 05.4461 | 30 | 22 00 06.2674 |
| 40 | 15.4734 | 40 | 16.2948 |
| 50 | 25.5008 | 50 | 26.3222 |
| 21 52 00 | 35.5282 | 21 57 00 | 36.3496 |
| 10 | 45.5556 | 10 | 46.3770 |
| 20 | 55.5830 | 20 | 56.4043 |
| 30 | 21 56 05.6103 | 30 | 22 01 06.4317 |
| 40 | 15.6377 | 40 | 16.4591 |
| 50 | 25.6651 | 50 | 26.4865 |
| 21 53 00 | 35.6925 | 21 58 00 | 36.5139 |
| 10 | 45.7199 | 10 | 46.5412 |
| 20 | 55.7472 | 20 | 56.5686 |
| 30 | 21 57 05.7746 | 30 | 22 02 06.5960 |
| 40 | 15.8020 | 40 | 16.6234 |
| 50 | 25.8294 | 50 | 26.6507 |
| 21 54 00 | 35.8568 | 21 59 00 | 36.6781 |
| 10 | 45.8841 | 10 | 46.7055 |
| 20 | 55.9115 | 20 | 56.7329 |
| 30 | 21 58 05.9389 | 30 | 22 03 06.7603 |
| 40 | 15.9663 | 40 | 16.7876 |
| 50 | 25.9937 | 50 | 26.8150 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 21 50 00 | 21 46 25.3879 | 21 55 00 | 21 51 24.5688 |
| 10 | 35.3606 | 10 | 34.5415 |
| 20 | 45.3333 | 20 | 44.5142 |
| 30 | 55.3060 | 30 | 54.4869 |
| 40 | 21 47 05.2787 | 40 | 21 52 04.4596 |
| 50 | 15.2514 | 50 | 14.4323 |
| 21 51 00 | 25.2241 | 21 56 00 | 24.4050 |
| 10 | 35.1968 | 10 | 34.3777 |
| 20 | 45.1695 | 20 | 44.3504 |
| 30 | 55.1422 | 30 | 54.3231 |
| 40 | 21 48 05.1149 | 40 | 21 53 04.2958 |
| 50 | 15.0876 | 50 | 14.2685 |
| 21 52 00 | 25.0603 | 21 57 00 | 24.2411 |
| 10 | 35.0330 | 10 | 34.2138 |
| 20 | 45.0057 | 20 | 44.1865 |
| 30 | 54.9784 | 30 | 54.1592 |
| 40 | 21 49 04.9511 | 40 | 21 54 04.1319 |
| 50 | 14.9238 | 50 | 14.1046 |
| 21 53 00 | 24.8965 | 21 58 00 | 24.0773 |
| 10 | 34.8691 | 10 | 34.0500 |
| 20 | 44.8418 | 20 | 44.0227 |
| 30 | 54.8145 | 30 | 53.9954 |
| 40 | 21 50 04.7872 | 40 | 21 55 03.9681 |
| 50 | 14.7599 | 50 | 13.9408 |
| 21 54 00 | 24.7326 | 21 59 00 | 23.9135 |
| 10 | 34.7053 | 10 | 33.8862 |
| 20 | 44.6780 | 20 | 43.8589 |
| 30 | 54.6507 | 30 | 53.8316 |
| 40 | 21 51 04.6234 | 40 | 21 56 03.8043 |
| 50 | 14.5961 | 50 | 13.7770 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 22 00 00 | 22 03 36.8424 | 22 05 00 | 22 08 37.6638 |
| 10 | 46.8698 | 10 | 47.6912 |
| 20 | 56.8972 | 20 | 57.7185 |
| 30 | 22 04 06.9245 | 30 | 22 09 07.7459 |
| 40 | 16.9519 | 40 | 17.7733 |
| 50 | 26.9793 | 50 | 27.8007 |
| 22 01 00 | 37.0067 | 22 06 00 | 37.8281 |
| 10 | 47.0341 | 10 | 47.8554 |
| 20 | 57.0614 | 20 | 57.8828 |
| 30 | 22 05 07.0888 | 30 | 22 10 07.9102 |
| 40 | 17.1162 | 40 | 17.9376 |
| 50 | 27.1436 | 50 | 27.9649 |
| 22 02 00 | 37.1710 | 22 07 00 | 37.9923 |
| 10 | 47.1983 | 10 | 48.0197 |
| 20 | 57.2257 | 20 | 58.0471 |
| 30 | 22 06 07.2531 | 30 | 22 11 08.0745 |
| 40 | 17.2805 | 40 | 18.1018 |
| 50 | 27.3078 | 50 | 28.1292 |
| 22 03 00 | 37.3352 | 22 08 00 | 38.1566 |
| 10 | 47.3626 | 10 | 48.1840 |
| 20 | 57.3900 | 20 | 58.2114 |
| 30 | 22 07 07.4174 | 30 | 22 12 08.2387 |
| 40 | 17.4447 | 40 | 18.2661 |
| 50 | 27.4721 | 50 | 28.2935 |
| 22 04 00 | 37.4995 | 22 09 00 | 38.3209 |
| 10 | 47.5269 | 10 | 48.3483 |
| 20 | 57.5543 | 20 | 58.3756 |
| 30 | 22 08 07.5816 | 30 | 22 13 08.4030 |
| 40 | 17.6090 | 40 | 18.4304 |
| 50 | 27.6364 | 50 | 28.4578 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 22 00 00 | 21 56 23.7497 | 22 05 00 | 22 01 22.9305 |
| 10 | 33.7224 | 10 | 32.9032 |
| 20 | 43.6951 | 20 | 42.8759 |
| 30 | 53.6678 | 30 | 52.8486 |
| 40 | 21 57 03.6405 | 40 | 22 02 02.8213 |
| 50 | 13.6131 | 50 | 12.7940 |
| 22 01 00 | 23.5858 | 22 06 00 | 22.7667 |
| 10 | 33.5585 | 10 | 32.7394 |
| 20 | 43.5312 | 20 | 42.7121 |
| 30 | 53.5039 | 30 | 52.6848 |
| 40 | 21 58 03.4766 | 40 | 22 03 02.6575 |
| 50 | 13.4493 | 50 | 12.6302 |
| 22 02 00 | 23.4220 | 22 07 00 | 22.6029 |
| 10 | 33.3947 | 10 | 32.5756 |
| 20 | 43.3674 | 20 | 42.5483 |
| 30 | 53.3401 | 30 | 52.5210 |
| 40 | 21 59 03.3128 | 40 | 22 04 02.4937 |
| 50 | 13.2855 | 50 | 12.4664 |
| 22 03 00 | 23.2582 | 22 08 00 | 22.4391 |
| 10 | 33.2309 | 10 | 32.4118 |
| 20 | 43.2036 | 20 | 42.3845 |
| 30 | 53.1763 | 30 | 52.3571 |
| 40 | 22 00 03.1490 | 40 | 22 05 02.3298 |
| 50 | 13.1217 | 50 | 12.3025 |
| 22 04 00 | 23.0944 | 22 09 00 | 22.2752 |
| 10 | 33.0671 | 10 | 32.2479 |
| 20 | 43.0398 | 20 | 42.2206 |
| 30 | 53.0125 | 30 | 52.1933 |
| 40 | 22 01 02.9851 | 40 | 22 06 02.1660 |
| 50 | 12.9578 | 50 | 12.1387 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 22 10 00 | 22 13 38.4851 | 22 15 00 | 22 18 39.3065 |
| 10 | 48.5125 | 10 | 49.3339 |
| 20 | 58.5399 | 20 | 59.3613 |
| 30 | 22 14 08.5673 | 30 | 22 19 09.3887 |
| 40 | 18.5947 | 40 | 19.4160 |
| 50 | 28.6220 | 50 | 29.4434 |
| 22 11 00 | 38.6494 | 22 16 00 | 39.4708 |
| 10 | 48.6768 | 10 | 49.4982 |
| 20 | 58.7042 | 20 | 59.5256 |
| 30 | 22 15 08.7316 | 30 | 22 20 09.5529 |
| 40 | 18.7589 | 40 | 19.5803 |
| 50 | 28.7863 | 50 | 29.6077 |
| 22 12 00 | 38.8137 | 22 17 00 | 39.6351 |
| 10 | 48.8411 | 10 | 49.6624 |
| 20 | 58.8685 | 20 | 59.6898 |
| 30 | 22 16 08.8958 | 30 | 22 21 09.7172 |
| 40 | 18.9232 | 40 | 19.7446 |
| 50 | 28.9506 | 50 | 29.7720 |
| 22 13 00 | 38.9780 | 22 18 00 | 39.7993 |
| 10 | 49.0054 | 10 | 49.8267 |
| 20 | 59.0327 | 20 | 59.8541 |
| 30 | 22 17 09.0601 | 30 | 22 22 09.8815 |
| 40 | 19.0875 | 40 | 19.9089 |
| 50 | 29.1149 | 50 | 29.9362 |
| 22 14 00 | 39.1422 | 22 19 00 | 39.9636 |
| 10 | 49.1696 | 10 | 49.9910 |
| 20 | 59.1970 | 20 | 22 23 00.0184 |
| 30 | 22 18 09.2244 | 30 | 10.0458 |
| 40 | 19.2518 | 40 | 20.0731 |
| 50 | 29.2791 | 50 | 30.1005 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 22 10 00 | 22 06 22.1114 | 22 15 00 | 22 11 21.2923 |
| 10 | 32.0841 | 10 | 31.2650 |
| 20 | 42.0568 | 20 | 41.2377 |
| 30 | 52.0295 | 30 | 51.2104 |
| 40 | 22 07 02.0022 | 40 | 22 12 01.1831 |
| 50 | 11.9749 | 50 | 11.1558 |
| 22 11 00 | 21.9476 | 22 16 00 | 21.1285 |
| 10 | 31.9203 | 10 | 31.1012 |
| 20 | 41.8930 | 20 | 41.0738 |
| 30 | 51.8657 | 30 | 51.0465 |
| 40 | 22 08 01.8384 | 40 | 22 13 01.0192 |
| 50 | 11.8111 | 50 | 10.9919 |
| 22 12 00 | 21.7838 | 22 17 00 | 20.9646 |
| 10 | 31.7565 | 10 | 30.9373 |
| 20 | 41.7292 | 20 | 40.9100 |
| 30 | 51.7018 | 30 | 50.8827 |
| 40 | 22 09 01.6745 | 40 | 22 14 00.8554 |
| 50 | 11.6472 | 50 | 10.8281 |
| 22 13 00 | 21.6199 | 22 18 00 | 20.8008 |
| 10 | 31.5926 | 10 | 30.7735 |
| 20 | 41.5653 | 20 | 40.7462 |
| 30 | 51.5380 | 30 | 50.7189 |
| 40 | 22 10 01.5107 | 40 | 22 15 00.6916 |
| 50 | 11.4834 | 50 | 10.6643 |
| 22 14 00 | 21.4561 | 22 19 00 | 20.6370 |
| 10 | 31.4288 | 10 | 30.6097 |
| 20 | 41.4015 | 20 | 40.5824 |
| 30 | 51.3742 | 30 | 50.5551 |
| 40 | 22 11 01.3469 | 40 | 22 16 00.5278 |
| 50 | 11.3196 | 50 | 10.5005 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 22 20 00 | 22 23 40.1279 | 22 25 00 | 22 28 40.9493 |
| 10 | 50.1553 | 10 | 50.9766 |
| 20 | 22 24 00.1827 | 20 | 22 29 01.0040 |
| 30 | 10.2100 | 30 | 11.0314 |
| 40 | 20.2374 | 40 | 21.0588 |
| 50 | 30.2648 | 50 | 31.0862 |
| 22 21 00 | 40.2922 | 22 26 00 | 41.1135 |
| 10 | 50.3195 | 10 | 51.1409 |
| 20 | 22 25 00.3469 | 20 | 22 30 01.1683 |
| 30 | 10.3743 | 30 | 11.1957 |
| 40 | 20.4017 | 40 | 21.2231 |
| 50 | 30.4291 | 50 | 31.2504 |
| 22 22 00 | 40.4564 | 22 27 00 | 41.2778 |
| 10 | 50.4838 | 10 | 51.3052 |
| 20 | 22 26 00.5112 | 20 | 22 31 01.3326 |
| 30 | 10.5386 | 30 | 11.3600 |
| 40 | 20.5660 | 40 | 21.3873 |
| 50 | 30.5933 | 50 | 31.4147 |
| 22 23 00 | 40.6207 | 22 28 00 | 41.4421 |
| 10 | 50.6481 | 10 | 51.4695 |
| 20 | 22 27 00.6755 | 20 | 22 32 01.4968 |
| 30 | 10.7029 | 30 | 11.5242 |
| 40 | 20.7302 | 40 | 21.5516 |
| 50 | 30.7576 | 50 | 31.5790 |
| 22 24 00 | 40.7850 | 22 29 00 | 41.6064 |
| 10 | 50.8124 | 10 | 51.6337 |
| 20 | 22 28 00.8398 | 20 | 22 33 01.6611 |
| 30 | 10.8671 | 30 | 11.6885 |
| 40 | 20.8945 | 40 | 21.7159 |
| 50 | 30.9219 | 50 | 31.7433 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 22 20 00 | 22 16 20.4732 | 22 25 00 | 22 21 19.6540 |
| 10 | 30.4458 | 10 | 29.6267 |
| 20 | 40.4185 | 20 | 39.5994 |
| 30 | 50.3912 | 30 | 49.5721 |
| 40 | 22 17 00.3639 | 40 | 59.5448 |
| 50 | 10.3366 | 50 | 22 22 09.5175 |
| 22 21 00 | 20.3093 | 22 26 00 | 19.4902 |
| 10 | 30.2820 | 10 | 29.4629 |
| 20 | 40.2547 | 20 | 39.4356 |
| 30 | 50.2274 | 30 | 49.4083 |
| 40 | 22 18 00.2001 | 40 | 59.3810 |
| 50 | 10.1728 | 50 | 22 23 09.3537 |
| 22 22 00 | 20.1455 | 22 27 00 | 19.3264 |
| 10 | 30.1182 | 10 | 29.2991 |
| 20 | 40.0909 | 20 | 39.2718 |
| 30 | 50.0636 | 30 | 49.2445 |
| 40 | 22 19 00.0363 | 40 | 59.2172 |
| 50 | 10.0090 | 50 | 22 24 09.1898 |
| 22 23 00 | 19.9817 | 22 28 00 | 19.1625 |
| 10 | 29.9544 | 10 | 29.1352 |
| 20 | 39.9271 | 20 | 39.1079 |
| 30 | 49.8998 | 30 | 49.0806 |
| 40 | 59.8725 | 40 | 59.0533 |
| 50 | 22 20 09.8452 | 50 | 22 25 09.0260 |
| 22 24 00 | 19.8178 | 22 29 00 | 18.9987 |
| 10 | 29.7905 | 10 | 28.9714 |
| 20 | 39.7632 | 20 | 38.9441 |
| 30 | 49.7359 | 30 | 48.9168 |
| 40 | 59.7086 | 40 | 58.8895 |
| 50 | 22 21 09.6813 | 50 | 22 26 08.8622 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 22 30 00 | 22 33 41.7706 | 22 35 00 | 22 38 42.5920 |
| 10 | 51.7980 | 10 | 52.6194 |
| 20 | 22 34 01.8254 | 20 | 22 39 02.6468 |
| 30 | 11.8528 | 30 | 12.6741 |
| 40 | 21.8802 | 40 | 22.7015 |
| 50 | 31.9075 | 50 | 32.7289 |
| 22 31 00 | 41.9349 | 22 36 00 | 42.7563 |
| 10 | 51.9623 | 10 | 52.7837 |
| 20 | 22 35 01.9897 | 20 | 22 40 02.8110 |
| 30 | 12.0171 | 30 | 12.8384 |
| 40 | 22.0444 | 40 | 22.8658 |
| 50 | 32.0718 | 50 | 32.8932 |
| 22 32 00 | 42.0992 | 22 37 00 | 42.9206 |
| 10 | 52.1266 | 10 | 52.9479 |
| 20 | 22 36 02.1539 | 20 | 22 41 02.9753 |
| 30 | 12.1813 | 30 | 13.0027 |
| 40 | 22.2087 | 40 | 23.0301 |
| 50 | 32.2361 | 50 | 33.0575 |
| 22 33 00 | 42.2635 | 22 38 00 | 43.0848 |
| 10 | 52.2908 | 10 | 53.1122 |
| 20 | 22 37 02.3182 | 20 | 22 42 03.1396 |
| 30 | 12.3456 | 30 | 13.1670 |
| 40 | 22.3730 | 40 | 23.1944 |
| 50 | 32.4004 | 50 | 33.2217 |
| 22 34 00 | 42.4277 | 22 39 00 | 43.2491 |
| 10 | 52.4551 | 10 | 53.2765 |
| 20 | 22 38 02.4825 | 20 | 22 43 03.3039 |
| 30 | 12.5099 | 30 | 13.3312 |
| 40 | 22.5373 | 40 | 23.3586 |
| 50 | 32.5646 | 50 | 33.3860 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 22 30 00 | 22 26 18.8349 | 22 35 00 | 22 31 18.0158 |
| 10 | 28.8076 | 10 | 27.9885 |
| 20 | 38.7803 | 20 | 37.9612 |
| 30 | 48.7530 | 30 | 47.9338 |
| 40 | 58.7257 | 40 | 57.9065 |
| 50 | 22 27 08.6984 | 50 | 22 32 07.8792 |
| 22 31 00 | 18.6711 | 22 36 00 | 17.8519 |
| 10 | 28.6438 | 10 | 27.8246 |
| 20 | 38.6165 | 20 | 37.7973 |
| 30 | 48.5892 | 30 | 47.7700 |
| 40 | 58.5618 | 40 | 57.7427 |
| 50 | 22 28 08.5345 | 50 | 22 33 07.7154 |
| 22 32 00 | 18.5072 | 22 37 00 | 17.6881 |
| 10 | 28.4799 | 10 | 27.6608 |
| 20 | 38.4526 | 20 | 37.6335 |
| 30 | 48.4253 | 30 | 47.6062 |
| 40 | 58.3980 | 40 | 57.5789 |
| 50 | 22 29 08.3707 | 50 | 22 34 07.5516 |
| 22 33 00 | 18.3434 | 22 38 00 | 17.5243 |
| 10 | 28.3161 | 10 | 27.4970 |
| 20 | 38.2888 | 20 | 37.4697 |
| 30 | 48.2615 | 30 | 47.4424 |
| 40 | 58.2342 | 40 | 57.4151 |
| 50 | 22 30 08.2069 | 50 | 22 35 07.3878 |
| 22 34 00 | 18.1796 | 22 39 00 | 17.3605 |
| 10 | 28.1523 | 10 | 27.3332 |
| 20 | 38.1250 | 20 | 37.3058 |
| 30 | 48.0977 | 30 | 47.2785 |
| 40 | 58.0704 | 40 | 57.2512 |
| 50 | 22 31 08.0431 | 50 | 22 36 07.2239 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 22 40 00 | 22 43 43.4134 | 22 45 00 | 22 48 44.2348 |
| 10 | 53.4408 | 10 | 54.2621 |
| 20 | 22 44 03.4681 | 20 | 22 49 04.2895 |
| 30 | 13.4955 | 30 | 14.3169 |
| 40 | 23.5229 | 40 | 24.3443 |
| 50 | 33.5503 | 50 | 34.3717 |
| 22 41 00 | 43.5777 | 22 46 00 | 44.3990 |
| 10 | 53.6050 | 10 | 54.4264 |
| 20 | 22 45 03.6324 | 20 | 22 50 04.4538 |
| 30 | 13.6598 | 30 | 14.4812 |
| 40 | 23.6872 | 40 | 24.5085 |
| 50 | 33.7146 | 50 | 34.5359 |
| 22 42 00 | 43.7419 | 22 47 00 | 44.5633 |
| 10 | 53.7693 | 10 | 54.5907 |
| 20 | 22 46 03.7967 | 20 | 22 51 04.6181 |
| 30 | 13.8241 | 30 | 14.6454 |
| 40 | 23.8515 | 40 | 24.6728 |
| 50 | 33.8788 | 50 | 34.7002 |
| 22 43 00 | 43.9062 | 22 48 00 | 44.7276 |
| 10 | 53.9336 | 10 | 54.7550 |
| 20 | 22 47 03.9610 | 20 | 22 52 04.7823 |
| 30 | 13.9883 | 30 | 14.8097 |
| 40 | 24.0157 | 40 | 24.8371 |
| 50 | 34.0431 | 50 | 34.8645 |
| 22 44 00 | 44.0705 | 22 49 00 | 44.8919 |
| 10 | 54.0979 | 10 | 54.9192 |
| 20 | 22 48 04.1252 | 20 | 22 53 04.9466 |
| 30 | 14.1526 | 30 | 14.9740 |
| 40 | 24.1800 | 40 | 25.0014 |
| 50 | 34.2074 | 50 | 35.0288 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 22 40 00 | 22 36 17.1966 | 22 45 00 | 22 41 16.3775 |
| 10 | 27.1693 | 10 | 26.3502 |
| 20 | 37.1420 | 20 | 36.3229 |
| 30 | 47.1147 | 30 | 46.2956 |
| 40 | 57.0874 | 40 | 56.2683 |
| 50 | 22 37 07.0601 | 50 | 22 42 06.2410 |
| 22 41 00 | 17.0328 | 22 46 00 | 16.2137 |
| 10 | 27.0055 | 10 | 26.1864 |
| 20 | 36.9782 | 20 | 36.1591 |
| 30 | 46.9509 | 30 | 46.1318 |
| 40 | 56.9236 | 40 | 56.1045 |
| 50 | 22 38 06.8963 | 50 | 22 43 06.0772 |
| 22 42 00 | 16.8690 | 22 47 00 | 16.0498 |
| 10 | 26.8417 | 10 | 26.0225 |
| 20 | 36.8144 | 20 | 35.9952 |
| 30 | 46.7871 | 30 | 45.9679 |
| 40 | 56.7598 | 40 | 55.9406 |
| 50 | 22 39 06.7325 | 50 | 22 44 05.9133 |
| 22 43 00 | 16.7052 | 22 48 00 | 15.8860 |
| 10 | 26.6778 | 10 | 25.8587 |
| 20 | 36.6505 | 20 | 35.8314 |
| 30 | 46.6232 | 30 | 45.8041 |
| 40 | 56.5959 | 40 | 55.7768 |
| 50 | 22 40 06.5686 | 50 | 22 45 05.7495 |
| 22 44 00 | 16.5413 | 22 49 00 | 15.7222 |
| 10 | 26.5140 | 10 | 25.6949 |
| 20 | 36.4867 | 20 | 35.6676 |
| 30 | 46.4594 | 30 | 45.6403 |
| 40 | 56.4321 | 40 | 55.6130 |
| 50 | 22 41 06.4048 | 50 | 22 46 05.5857 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 22 50 00 | 22 53 45.0561 | 22 55 00 | 22 58 45.8775 |
| 10 | 55.0835 | 10 | 55.9049 |
| 20 | 22 54 05.1109 | 20 | 22 59 05.9323 |
| 30 | 15.1383 | 30 | 15.9596 |
| 40 | 25.1656 | 40 | 25.9870 |
| 50 | 35.1930 | 50 | 36.0144 |
| 22 51 00 | 45.2204 | 22 56 00 | 46.0418 |
| 10 | 55.2478 | 10 | 56.0692 |
| 20 | 22 55 05.2752 | 20 | 23 00 06.0965 |
| 30 | 15.3025 | 30 | 16.1239 |
| 40 | 25.3299 | 40 | 26.1513 |
| 50 | 35.3573 | 50 | 36.1787 |
| 22 52 00 | 45.3847 | 22 57 00 | 46.2061 |
| 10 | 55.4121 | 10 | 56.2334 |
| 20 | 22 56 05.4394 | 20 | 23 01 06.2608 |
| 30 | 15.4668 | 30 | 16.2882 |
| 40 | 25.4942 | 40 | 26.3156 |
| 50 | 35.5216 | 50 | 36.3429 |
| 22 53 00 | 45.5490 | 22 58 00 | 46.3703 |
| 10 | 55.5763 | 10 | 56.3977 |
| 20 | 22 57 05.6037 | 20 | 23 02 06.4251 |
| 30 | 15.6311 | 30 | 16.4525 |
| 40 | 25.6585 | 40 | 26.4798 |
| 50 | 35.6858 | 50 | 36.5072 |
| 22 54 00 | 45.7132 | 22 59 00 | 46.5346 |
| 10 | 55.7406 | 10 | 56.5620 |
| 20 | 22 58 05.7680 | 20 | 23 03 06.5894 |
| 30 | 15.7954 | 30 | 16.6167 |
| 40 | 25.8227 | 40 | 26.6441 |
| 50 | 35.8501 | 50 | 36.6715 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 22 50 00 | 22 46 15.5584 | 22 55 00 | 22 51 14.7392 |
| 10 | 25.5311 | 10 | 24.7119 |
| 20 | 35.5038 | 20 | 34.6846 |
| 30 | 45.4765 | 30 | 44.6573 |
| 40 | 55.4492 | 40 | 54.6300 |
| 50 | 22 47 05.4218 | 50 | 22 52 04.6027 |
| 22 51 00 | 15.3945 | 22 56 00 | 14.5754 |
| 10 | 25.3672 | 10 | 24.5481 |
| 20 | 35.3399 | 20 | 34.5208 |
| 30 | 45.3126 | 30 | 44.4935 |
| 40 | 55.2853 | 40 | 54.4662 |
| 50 | 22 48 05.2580 | 50 | 22 53 04.4389 |
| 22 52 00 | 15.2307 | 22 57 00 | 14.4116 |
| 10 | 25.2034 | 10 | 24.3843 |
| 20 | 35.1761 | 20 | 34.3570 |
| 30 | 45.1488 | 30 | 44.3297 |
| 40 | 55.1215 | 40 | 54.3024 |
| 50 | 22 49 05.0942 | 50 | 22 54 04.2751 |
| 22 53 00 | 15.0669 | 22 58 00 | 14.2478 |
| 10 | 25.0396 | 10 | 24.2205 |
| 20 | 35.0123 | 20 | 34.1932 |
| 30 | 44.9850 | 30 | 44.1658 |
| 40 | 54.9577 | 40 | 54.1385 |
| 50 | 22 50 04.9304 | 50 | 22 55 04.1112 |
| 22 54 00 | 14.9031 | 22 59 00 | 14.0839 |
| 10 | 24.8758 | 10 | 24.0566 |
| 20 | 34.8485 | 20 | 34.0293 |
| 30 | 44.8212 | 30 | 44.0020 |
| 40 | 54.7938 | 40 | 53.9747 |
| 50 | 22 51 04.7665 | 50 | 22 56 03.9474 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 23 00 00 | 23 03 46.6989 | 23 05 00 | 23 08 47.5202 |
| 10 | 56.7263 | 10 | 57.5476 |
| 20 | 23 04 06.7536 | 20 | 23 09 07.5750 |
| 30 | 16.7810 | 30 | 17.6024 |
| 40 | 26.8084 | 40 | 27.6298 |
| 50 | 36.8358 | 50 | 37.6571 |
| 23 01 00 | 46.8632 | 23 06 00 | 47.6845 |
| 10 | 56.8905 | 10 | 57.7119 |
| 20 | 23 05 06.9179 | 20 | 23 10 07.7393 |
| 30 | 16.9453 | 30 | 17.7667 |
| 40 | 26.9727 | 40 | 27.7940 |
| 50 | 37.0000 | 50 | 37.8214 |
| 23 02 00 | 47.0274 | 23 07 00 | 47.8488 |
| 10 | 57.0548 | 10 | 57.8762 |
| 20 | 23 06 07.0822 | 20 | 23 11 07.9036 |
| 30 | 17.1096 | 30 | 17.9309 |
| 40 | 27.1369 | 40 | 27.9583 |
| 50 | 37.1643 | 50 | 37.9857 |
| 23 03 00 | 47.1917 | 23 08 00 | 48.0131 |
| 10 | 57.2191 | 10 | 58.0405 |
| 20 | 23 07 07.2465 | 20 | 23 12 08.0678 |
| 30 | 17.2738 | 30 | 18.0952 |
| 40 | 27.3012 | 40 | 28.1226 |
| 50 | 37.3286 | 50 | 38.1500 |
| 23 04 00 | 47.3560 | 23 09 00 | 48.1773 |
| 10 | 57.3834 | 10 | 58.2047 |
| 20 | 23 08 07.4107 | 20 | 23 13 08.2321 |
| 30 | 17.4381 | 30 | 18.2595 |
| 40 | 27.4655 | 40 | 28.2869 |
| 50 | 37.4929 | 50 | 38.3142 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 23 00 00 | 22 56 13.9201 | 23 05 00 | 23 01 13.1010 |
| 10 | 23.8928 | 10 | 23.0737 |
| 20 | 33.8655 | 20 | 33.0464 |
| 30 | 43.8382 | 30 | 43.0191 |
| 40 | 53.8109 | 40 | 52.9918 |
| 50 | 22 57 03.7836 | 50 | 23 02 02.9645 |
| 23 01 00 | 13.7563 | 23 06 00 | 12.9372 |
| 10 | 23.7290 | 10 | 22.9098 |
| 20 | 33.7017 | 20 | 32.8825 |
| 30 | 43.6744 | 30 | 42.8552 |
| 40 | 53.6471 | 40 | 52.8279 |
| 50 | 22 58 03.6198 | 50 | 23 03 02.8006 |
| 23 02 00 | 13.5925 | 23 07 00 | 12.7733 |
| 10 | 23.5652 | 10 | 22.7460 |
| 20 | 33.5378 | 20 | 32.7187 |
| 30 | 43.5105 | 30 | 42.6914 |
| 40 | 53.4832 | 40 | 52.6641 |
| 50 | 22 59 03.4559 | 50 | 23 04 02.6368 |
| 23 03 00 | 13.4286 | 23 08 00 | 12.6095 |
| 10 | 23.4013 | 10 | 22.5822 |
| 20 | 33.3740 | 20 | 32.5549 |
| 30 | 43.3467 | 30 | 42.5276 |
| 40 | 53.3194 | 40 | 52.5003 |
| 50 | 23 00 03.2921 | 50 | 23 05 02.4730 |
| 23 04 00 | 13.2648 | 23 09 00 | 12.4457 |
| 10 | 23.2375 | 10 | 22.4184 |
| 20 | 33.2102 | 20 | 32.3911 |
| 30 | 43.1829 | 30 | 42.3638 |
| 40 | 53.1556 | 40 | 52.3365 |
| 50 | 23 01 03.1283 | 50 | 23 06 02.3092 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 23 10 00 | 23 13 48.3416 | 23 15 00 | 23 18 49.1630 |
| 10 | 58.3690 | 10 | 59.1904 |
| 20 | 23 14 08.3964 | 20 | 23 19 09.2178 |
| 30 | 18.4238 | 30 | 19.2451 |
| 40 | 28.4511 | 40 | 29.2725 |
| 50 | 38.4785 | 50 | 39.2999 |
| 23 11 00 | 48.5059 | 23 16 00 | 49.3273 |
| 10 | 58.5333 | 10 | 59.3546 |
| 20 | 23 15 08.5607 | 20 | 23 20 09.3820 |
| 30 | 18.5880 | 30 | 19.4094 |
| 40 | 28.6154 | 40 | 29.4368 |
| 50 | 38.6428 | 50 | 39.4642 |
| 23 12 00 | 48.6702 | 23 17 00 | 49.4915 |
| 10 | 58.6975 | 10 | 59.5189 |
| 20 | 23 16 08.7249 | 20 | 23 21 09.5463 |
| 30 | 18.7523 | 30 | 19.5737 |
| 40 | 28.7797 | 40 | 29.6011 |
| 50 | 38.8071 | 50 | 39.6284 |
| 23 13 00 | 48.8344 | 23 18 00 | 49.6558 |
| 10 | 58.8618 | 10 | 59.6832 |
| 20 | 23 17 08.8892 | 20 | 23 22 09.7106 |
| 30 | 18.9166 | 30 | 19.7380 |
| 40 | 28.9440 | 40 | 29.7653 |
| 50 | 38.9713 | 50 | 39.7927 |
| 23 14 00 | 48.9987 | 23 19 00 | 49.8201 |
| 10 | 59.0261 | 10 | 59.8475 |
| 20 | 23 18 09.0535 | 20 | 23 23 09.8749 |
| 30 | 19.0809 | 30 | 19.9022 |
| 40 | 29.1082 | 40 | 29.9296 |
| 50 | 39.1356 | 50 | 39.9570 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 23 10 00 | 23 06 12.2819 | 23 15 00 | 23 11 11.4627 |
| 10 | 22.2545 | 10 | 21.4354 |
| 20 | 32.2272 | 20 | 31.4081 |
| 30 | 42.1999 | 30 | 41.3808 |
| 40 | 52.1726 | 40 | 51.3535 |
| 50 | 23 07 02.1453 | 50 | 23 12 01.3262 |
| 23 11 00 | 12.1180 | 23 16 00 | 11.2989 |
| 10 | 22.0907 | 10 | 21.2716 |
| 20 | 32.0634 | 20 | 31.2443 |
| 30 | 42.0361 | 30 | 41.2170 |
| 40 | 52.0088 | 40 | 51.1897 |
| 50 | 23 08 01.9815 | 50 | 23 13 01.1624 |
| 23 12 00 | 11.9542 | 23 17 00 | 11.1351 |
| 10 | 21.9269 | 10 | 21.1078 |
| 20 | 31.8996 | 20 | 31.0805 |
| 30 | 41.8723 | 30 | 41.0532 |
| 40 | 51.8450 | 40 | 51.0259 |
| 50 | 23 09 01.8177 | 50 | 23 14 00.9985 |
| 23 13 00 | 11.7904 | 23 18 00 | 10.9712 |
| 10 | 21.7631 | 10 | 20.9439 |
| 20 | 31.7358 | 20 | 30.9166 |
| 30 | 41.7085 | 30 | 40.8893 |
| 40 | 51.6812 | 40 | 50.8620 |
| 50 | 23 10 01.6539 | 50 | 23 15 00.8347 |
| 23 14 00 | 11.6265 | 23 19 00 | 10.8074 |
| 10 | 21.5992 | 10 | 20.7801 |
| 20 | 31.5719 | 20 | 30.7528 |
| 30 | 41.5446 | 30 | 40.7255 |
| 40 | 51.5173 | 40 | 50.6982 |
| 50 | 23 11 01.4900 | 50 | 23 16 00.6709 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 23 20 00 | 23 23 49.9844 | 23 25 00 | 23 28 50.8057 |
| 10 | 23 24 00.0117 | 10 | 23 29 00.8331 |
| 20 | 10.0391 | 20 | 10.8605 |
| 30 | 20.0665 | 30 | 20.8879 |
| 40 | 30.0939 | 40 | 30.9153 |
| 50 | 40.1213 | 50 | 40.9426 |
| 23 21 00 | 50.1486 | 23 26 00 | 50.9700 |
| 10 | 23 25 00.1760 | 10 | 23 30 00.9974 |
| 20 | 10.2034 | 20 | 11.0248 |
| 30 | 20.2308 | 30 | 21.0522 |
| 40 | 30.2582 | 40 | 31.0795 |
| 50 | 40.2855 | 50 | 41.1069 |
| 23 22 00 | 50.3129 | 23 27 00 | 51.1343 |
| 10 | 23 26 00.3403 | 10 | 23 31 01.1617 |
| 20 | 10.3677 | 20 | 11.1890 |
| 30 | 20.3951 | 30 | 21.2164 |
| 40 | 30.4224 | 40 | 31.2438 |
| 50 | 40.4498 | 50 | 41.2712 |
| 23 23 00 | 50.4772 | 23 28 00 | 51.2986 |
| 10 | 23 27 00.5046 | 10 | 23 32 01.3259 |
| 20 | 10.5319 | 20 | 11.3533 |
| 30 | 20.5593 | 30 | 21.3807 |
| 40 | 30.5867 | 40 | 31.4081 |
| 50 | 40.6141 | 50 | 41.4355 |
| 23 24 00 | 50.6415 | 23 29 00 | 51.4628 |
| 10 | 23 28 00.6688 | 10 | 23 33 01.4902 |
| 20 | 10.6962 | 20 | 11.5176 |
| 30 | 20.7236 | 30 | 21.5450 |
| 40 | 30.7510 | 40 | 31.5724 |
| 50 | 40.7784 | 50 | 41.5997 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 23 20 00 | 23 16 10.6436 | 23 25 00 | 23 21 09.8245 |
| 10 | 20.6163 | 10 | 19.7972 |
| 20 | 30.5890 | 20 | 29.7699 |
| 30 | 40.5617 | 30 | 39.7425 |
| 40 | 50.5344 | 40 | 49.7152 |
| 50 | 23 17 00.5071 | 50 | 59.6879 |
| 23 21 00 | 10.4798 | 23 26 00 | 23 22 09.6606 |
| 10 | 20.4525 | 10 | 19.6333 |
| 20 | 30.4252 | 20 | 29.6060 |
| 30 | 40.3979 | 30 | 39.5787 |
| 40 | 50.3705 | 40 | 49.5514 |
| 50 | 23 18 00.3432 | 50 | 59.5241 |
| 23 22 00 | 10.3159 | 23 27 00 | 23 23 09.4968 |
| 10 | 20.2886 | 10 | 19.4695 |
| 20 | 30.2613 | 20 | 29.4422 |
| 30 | 40.2340 | 30 | 39.4149 |
| 40 | 50.2067 | 40 | 49.3876 |
| 50 | 23 19 00.1794 | 50 | 59.3603 |
| 23 23 00 | 10.1521 | 23 28 00 | 23 24 09.3330 |
| 10 | 20.1248 | 10 | 19.3057 |
| 20 | 30.0975 | 20 | 29.2784 |
| 30 | 40.0702 | 30 | 39.2511 |
| 40 | 50.0429 | 40 | 49.2238 |
| 50 | 23 20 00.0156 | 50 | 59.1965 |
| 23 24 00 | 09.9883 | 23 29 00 | 23 25 09.1692 |
| 10 | 19.9610 | 10 | 19.1419 |
| 20 | 29.9337 | 20 | 29.1145 |
| 30 | 39.9064 | 30 | 39.0872 |
| 40 | 49.8791 | 40 | 49.0599 |
| 50 | 59.8518 | 50 | 59.0326 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 23 30 00 | 23 33 51.6271 | 23 35 00 | 23 38 52.4485 |
| 10 | 23 34 01.6545 | 10 | 23 39 02.4759 |
| 20 | 11.6819 | 20 | 12.5032 |
| 30 | 21.7092 | 30 | 22.5306 |
| 40 | 31.7366 | 40 | 32.5580 |
| 50 | 41.7640 | 50 | 42.5854 |
| 23 31 00 | 51.7914 | 23 36 00 | 52.6128 |
| 10 | 23 35 01.8188 | 10 | 23 40 02.6401 |
| 20 | 11.8461 | 20 | 12.6675 |
| 30 | 21.8735 | 30 | 22.6949 |
| 40 | 31.9009 | 40 | 32.7223 |
| 50 | 41.9283 | 50 | 42.7497 |
| 23 32 00 | 51.9557 | 23 37 00 | 52.7770 |
| 10 | 23 36 01.9830 | 10 | 23 41 02.8044 |
| 20 | 12.0104 | 20 | 12.8318 |
| 30 | 22.0378 | 30 | 22.8592 |
| 40 | 32.0652 | 40 | 32.8866 |
| 50 | 42.0926 | 50 | 42.9139 |
| 23 33 00 | 52.1199 | 23 38 00 | 52.9413 |
| 10 | 23 37 02.1473 | 10 | 23 42 02.9687 |
| 20 | 12.1747 | 20 | 12.9961 |
| 30 | 22.2021 | 30 | 23.0234 |
| 40 | 32.2295 | 40 | 33.0508 |
| 50 | 42.2568 | 50 | 43.0782 |
| 23 34 00 | 52.2842 | 23 39 00 | 53.1056 |
| 10 | 23 38 02.3116 | 10 | 23 43 03.1330 |
| 20 | 12.3390 | 20 | 13.1603 |
| 30 | 22.3663 | 30 | 23.1877 |
| 40 | 32.3937 | 40 | 33.2151 |
| 50 | 42.4211 | 50 | 43.2425 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 23 30 00 | 23 26 09.0053 | 23 35 00 | 23 31 08.1862 |
| 10 | 18.9780 | 10 | 18.1589 |
| 20 | 28.9507 | 20 | 28.1316 |
| 30 | 38.9234 | 30 | 38.1043 |
| 40 | 48.8961 | 40 | 48.0770 |
| 50 | 58.8688 | 50 | 58.0497 |
| 23 31 00 | 23 27 08.8415 | 23 36 00 | 23 32 08.0224 |
| 10 | 18.8142 | 10 | 17.9951 |
| 20 | 28.7869 | 20 | 27.9678 |
| 30 | 38.7596 | 30 | 37.9405 |
| 40 | 48.7323 | 40 | 47.9132 |
| 50 | 58.7050 | 50 | 57.8859 |
| 23 32 00 | 23 28 08.6777 | 23 37 00 | 23 33 07.8585 |
| 10 | 18.6504 | 10 | 17.8312 |
| 20 | 28.6231 | 20 | 27.8039 |
| 30 | 38.5958 | 30 | 37.7766 |
| 40 | 48.5685 | 40 | 47.7493 |
| 50 | 58.5412 | 50 | 57.7220 |
| 23 33 00 | 23 29 08.5139 | 23 38 00 | 23 34 07.6947 |
| 10 | 18.4865 | 10 | 17.6674 |
| 20 | 28.4592 | 20 | 27.6401 |
| 30 | 38.4319 | 30 | 37.6128 |
| 40 | 48.4046 | 40 | 47.5855 |
| 50 | 58.3773 | 50 | 57.5582 |
| 23 34 00 | 23 30 08.3500 | 23 39 00 | 23 35 07.5309 |
| 10 | 18.3227 | 10 | 17.5036 |
| 20 | 28.2954 | 20 | 27.4763 |
| 30 | 38.2681 | 30 | 37.4490 |
| 40 | 48.2408 | 40 | 47.4217 |
| 50 | 58.2135 | 50 | 57.3944 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 23 40 00 | 23 43 53.2699 | 23 45 00 | 23 48 54.0912 |
| 10 | 23 44 03.2972 | 10 | 23 49 04.1186 |
| 20 | 13.3246 | 20 | 14.1460 |
| 30 | 23.3520 | 30 | 24.1734 |
| 40 | 33.3794 | 40 | 34.2007 |
| 50 | 43.4068 | 50 | 44.2281 |
| 23 41 00 | 53.4341 | 23 46 00 | 54.2555 |
| 10 | 23 45 03.4615 | 10 | 23 50 04.2829 |
| 20 | 13.4889 | 20 | 14.3103 |
| 30 | 23.5163 | 30 | 24.3376 |
| 40 | 33.5436 | 40 | 34.3650 |
| 50 | 43.5710 | 50 | 44.3924 |
| 23 42 00 | 53.5984 | 23 47 00 | 54.4198 |
| 10 | 23 46 03.6258 | 10 | 23 51 04.4472 |
| 20 | 13.6532 | 20 | 14.4745 |
| 30 | 23.6805 | 30 | 24.5019 |
| 40 | 33.7079 | 40 | 34.5293 |
| 50 | 43.7353 | 50 | 44.5567 |
| 23 43 00 | 53.7627 | 23 48 00 | 54.5841 |
| 10 | 23 47 03.7901 | 10 | 23 52 04.6114 |
| 20 | 13.8174 | 20 | 14.6388 |
| 30 | 23.8448 | 30 | 24.6662 |
| 40 | 33.8722 | 40 | 34.6936 |
| 50 | 43.8996 | 50 | 44.7209 |
| 23 44 00 | 53.9270 | 23 49 00 | 54.7483 |
| 10 | 23 48 03.9543 | 10 | 23 53 04.7757 |
| 20 | 13.9817 | 20 | 14.8031 |
| 30 | 24.0091 | 30 | 24.8305 |
| 40 | 34.0365 | 40 | 34.8578 |
| 50 | 44.0639 | 50 | 44.8852 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 23 40 00 | 23 36 07.3671 | 23 45 00 | 23 41 06.5479 |
| 10 | 17.3398 | 10 | 16.5206 |
| 20 | 27.3125 | 20 | 26.4933 |
| 30 | 37.2852 | 30 | 36.4660 |
| 40 | 47.2579 | 40 | 46.4387 |
| 50 | 57.2305 | 50 | 56.4114 |
| 23 41 00 | 23 37 07.2032 | 23 46 00 | 23 42 06.3841 |
| 10 | 17.1759 | 10 | 16.3568 |
| 20 | 27.1486 | 20 | 26.3295 |
| 30 | 37.1213 | 30 | 36.3022 |
| 40 | 47.0940 | 40 | 46.2749 |
| 50 | 57.0667 | 50 | 56.2476 |
| 23 42 00 | 23 38 07.0394 | 23 47 00 | 23 43 06.2203 |
| 10 | 17.0121 | 10 | 16.1930 |
| 20 | 26.9848 | 20 | 26.1657 |
| 30 | 36.9575 | 30 | 36.1384 |
| 40 | 46.9302 | 40 | 46.1111 |
| 50 | 56.9029 | 50 | 56.0838 |
| 23 43 00 | 23 39 06.8756 | 23 48 00 | 23 44 06.0565 |
| 10 | 16.8483 | 10 | 16.0292 |
| 20 | 26.8210 | 20 | 26.0019 |
| 30 | 36.7937 | 30 | 35.9745 |
| 40 | 46.7664 | 40 | 45.9472 |
| 50 | 56.7391 | 50 | 55.9199 |
| 23 44 00 | 23 40 06.7118 | 23 49 00 | 23 45 05.8926 |
| 10 | 16.6845 | 10 | 15.8653 |
| 20 | 26.6572 | 20 | 25.8380 |
| 30 | 36.6299 | 30 | 35.8107 |
| 40 | 46.6025 | 40 | 45.7834 |
| 50 | 56.5752 | 50 | 55.7561 |

| Solar. | Sidereal. | Solar. | Sidereal. |
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| 23 50 00 | 23 53 54.9126 | 23 55 00 | 23 58 55.7340 |
| 10 | 23 54 04.9400 | 10 | 23 59 05.7614 |
| 20 | 14.9674 | 20 | 15.7887 |
| 30 | 24.9947 | 30 | 25.8161 |
| 40 | 35.0221 | 40 | 35.8435 |
| 50 | 45.0495 | 50 | 45.8709 |
| 23 51 00 | 55.0769 | 23 56 00 | 55.8983 |
| 10 | 23 55 05.1043 | 10 | 24 00 05.9256 |
| 20 | 15.1316 | 20 | 15.9530 |
| 30 | 25.1590 | 30 | 25.9804 |
| 40 | 35.1864 | 40 | 36.0078 |
| 50 | 45.2138 | 50 | 46.0351 |
| 23 52 00 | 55.2412 | 23 57 00 | 56.0625 |
| 10 | 23 56 05.2685 | 10 | 24 01 06.0899 |
| 20 | 15.2959 | 20 | 16.1173 |
| 30 | 25.3233 | 30 | 26.1447 |
| 40 | 35.3507 | 40 | 36.1720 |
| 50 | 45.3780 | 50 | 46.1994 |
| 23 53 00 | 55.4054 | 23 58 00 | 56.2268 |
| 10 | 23 57 05.4328 | 10 | 24 02 06.2542 |
| 20 | 15.4602 | 20 | 16.2816 |
| 30 | 25.4876 | 30 | 26.3089 |
| 40 | 35.5149 | 40 | 36.3363 |
| 50 | 45.5423 | 50 | 46.3637 |
| 23 54 00 | 55.5697 | 23 59 00 | 56.3911 |
| 10 | 23 58 05.5971 | 10 | 24 03 06.4185 |
| 20 | 15.6245 | 20 | 16.4458 |
| 30 | 25.6518 | 30 | 26.4732 |
| 40 | 35.6792 | 40 | 36.5006 |
| 50 | 45.7066 | 50 | 46.5280 |

| Sidereal. | Solar. | Sidereal. | Solar. |
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| 23 50 00 | 23 46 05.7288 | 23 55 00 | 23 51 04.9097 |
| 10 | 15.7015 | 10 | 14.8824 |
| 20 | 25.6742 | 20 | 24.8551 |
| 30 | 35.6469 | 30 | 34.8278 |
| 40 | 45.6196 | 40 | 44.8005 |
| 50 | 55.5923 | 50 | 54.7732 |
| 23 51 00 | 23 47 05.5650 | 23 56 00 | 23 52 04.7459 |
| 10 | 15.5377 | 10 | 14.7185 |
| 20 | 25.5104 | 20 | 24.6912 |
| 30 | 35.4831 | 30 | 34.6639 |
| 40 | 45.4558 | 40 | 44.6366 |
| 50 | 55.4285 | 50 | 54.6093 |
| 23 52 00 | 23 48 05.4012 | 23 57 00 | 23 53 04.5820 |
| 10 | 15.3739 | 10 | 14.5547 |
| 20 | 25.3465 | 20 | 24.5274 |
| 30 | 35.3192 | 30 | 34.5001 |
| 40 | 45.2919 | 40 | 44.4728 |
| 50 | 55.2646 | 50 | 54.4455 |
| 23 53 00 | 23 49 05.2373 | 23 58 00 | 23 54 04.4182 |
| 10 | 15.2100 | 10 | 14.3909 |
| 20 | 25.1827 | 20 | 24.3636 |
| 30 | 35.1554 | 30 | 34.3363 |
| 40 | 45.1281 | 40 | 44.3090 |
| 50 | 55.1008 | 50 | 54.2817 |
| 23 54 00 | 23 50 05.0735 | 23 59 00 | 23 55 04.2544 |
| 10 | 15.0462 | 10 | 14.2271 |
| 20 | 25.0189 | 20 | 24.1998 |
| 30 | 34.9916 | 30 | 34.1725 |
| 40 | 44.9643 | 40 | 44.1452 |
| 50 | 54.9370 | 50 | 54.1179 |

| Sol. | Sidereal. | | Sol. | Sidereal. | |
|------|-----------|---------|------|-----------|---------|
| d. | d. h. m. | s. | d. | d. h. m. | s. |
| 1 | 1 0 03 | 56.5553 | 32 | 32 2 06 | 09.7712 |
| 2 | 2 0 07 | 53.1107 | 33 | 33 2 10 | 06.3265 |
| 3 | 3 0 11 | 49.6660 | 34 | 34 2 14 | 02.8819 |
| 4 | 4 0 15 | 46.2214 | 35 | 35 2 17 | 59.4372 |
| 5 | 5 0 19 | 42.7767 | 36 | 36 2 21 | 55.9926 |
| 6 | 6 0 23 | 39.3321 | 37 | 37 2 25 | 52.5479 |
| 7 | 7 0 27 | 35.8874 | 38 | 38 2 29 | 49.1033 |
| 8 | 8 0 31 | 32.4428 | 39 | 39 2 33 | 45.6586 |
| 9 | 9 0 35 | 28.9981 | 40 | 40 2 37 | 42.2139 |
| 10 | 10 0 39 | 25.5535 | 41 | 41 2 41 | 38.7693 |
| 11 | 11 0 43 | 22.1088 | 42 | 42 2 45 | 35.3246 |
| 12 | 12 0 47 | 18.6642 | 43 | 43 2 49 | 31.8800 |
| 13 | 13 0 51 | 15.2195 | 44 | 44 2 53 | 28.4353 |
| 14 | 14 0 55 | 11.7749 | 45 | 45 2 57 | 24.9907 |
| 15 | 15 0 59 | 08.3302 | 46 | 46 3 01 | 21.5460 |
| 16 | 16 1 03 | 04.8856 | 47 | 47 3 05 | 18.1014 |
| 17 | 17 1 07 | 01.4409 | 48 | 48 3 09 | 14.6567 |
| 18 | 18 1 10 | 57.9963 | 49 | 49 3 13 | 11.2121 |
| 19 | 19 1 14 | 54.5516 | 50 | 50 3 17 | 07.7674 |
| 20 | 20 1 18 | 51.1070 | 51 | 51 3 21 | 04.3228 |
| 21 | 21 1 22 | 47.6623 | 52 | 52 3 25 | 00.8781 |
| 22 | 22 1 26 | 44.2177 | 53 | 53 3 28 | 57.4335 |
| 23 | 23 1 30 | 40.7730 | 54 | 54 3 32 | 53.9888 |
| 24 | 24 1 34 | 37.3284 | 55 | 55 3 36 | 50.5442 |
| 25 | 25 1 38 | 33.8837 | 56 | 56 3 40 | 47.0995 |
| 26 | 26 1 42 | 30.4391 | 57 | 57 3 44 | 43.6549 |
| 27 | 27 1 46 | 26.9944 | 58 | 58 3 48 | 40.2102 |
| 28 | 28 1 50 | 23.5498 | 59 | 59 3 52 | 36.7656 |
| 29 | 29 1 54 | 20.1051 | 60 | 60 3 56 | 33.3209 |
| 30 | 30 1 58 | 16.6605 | 61 | 61 4 00 | 29.8763 |
| 31 | 31 2 02 | 13.2158 | 62 | 62 4 04 | 26.4316 |

| Sidereal. | | Sol. | | Sidereal. | | Sol. | |
|-----------|----------|---------|--|-----------|----------|---------|--|
| d. | d. h. m. | s. | | d. | d. h. m. | s. | |
| 1 | 0 23 56 | 04.0905 | | 32 | 31 21 54 | 10.8976 | |
| 2 | 1 23 52 | 08.1811 | | 33 | 32 21 50 | 14.9881 | |
| 3 | 2 23 48 | 12.2716 | | 34 | 33 21 46 | 19.0787 | |
| 4 | 3 23 44 | 16.3622 | | 35 | 34 21 42 | 23.1692 | |
| 5 | 4 23 40 | 20.4527 | | 36 | 35 21 38 | 27.2598 | |
| 6 | 5 23 36 | 24.5433 | | 37 | 36 21 34 | 31.3503 | |
| 7 | 6 23 32 | 28.6338 | | 38 | 37 21 30 | 35.4409 | |
| 8 | 7 23 28 | 32.7244 | | 39 | 38 21 26 | 39.5314 | |
| 9 | 8 23 24 | 36.8149 | | 40 | 39 21 22 | 43.6220 | |
| 10 | 9 23 20 | 40.9055 | | 41 | 40 21 18 | 47.7125 | |
| 11 | 10 23 16 | 44.9960 | | 42 | 41 21 14 | 51.8031 | |
| 12 | 11 23 12 | 49.0866 | | 43 | 42 21 10 | 55.8936 | |
| 13 | 12 23 08 | 53.1771 | | 44 | 43 21 06 | 59.9842 | |
| 14 | 13 23 04 | 57.2677 | | 45 | 44 21 03 | 04.0747 | |
| 15 | 14 23 01 | 01.3582 | | 46 | 45 20 59 | 08.1653 | |
| 16 | 15 22 57 | 05.4488 | | 47 | 46 20 55 | 12.2558 | |
| 17 | 16 22 53 | 09.5393 | | 48 | 47 20 51 | 16.3464 | |
| 18 | 17 22 49 | 13.6299 | | 49 | 48 20 47 | 20.4369 | |
| 19 | 18 22 45 | 17.7204 | | 50 | 49 20 43 | 24.5275 | |
| 20 | 19 22 41 | 21.8110 | | 51 | 50 20 39 | 28.6180 | |
| 21 | 20 22 37 | 25.9015 | | 52 | 51 20 35 | 32.7086 | |
| 22 | 21 22 33 | 29.9921 | | 53 | 52 20 31 | 36.7991 | |
| 23 | 22 22 29 | 34.0826 | | 54 | 53 20 27 | 40.8897 | |
| 24 | 23 22 25 | 38.1732 | | 55 | 54 20 23 | 44.9802 | |
| 25 | 24 22 21 | 42.2637 | | 56 | 55 20 19 | 49.0708 | |
| 26 | 25 22 17 | 46.3543 | | 57 | 56 20 15 | 53.1613 | |
| 27 | 26 22 13 | 50.4448 | | 58 | 57 20 11 | 57.2519 | |
| 28 | 27 22 09 | 54.5354 | | 59 | 58 20 08 | 01.3424 | |
| 29 | 28 22 05 | 58.6259 | | 60 | 59 20 04 | 05.4330 | |
| 30 | 29 22 02 | 02.7165 | | 61 | 60 20 00 | 09.5235 | |
| 31 | 30 21 58 | 06.8070 | | 62 | 61 19 56 | 13.6141 | |

| Sol. | Sidereal. | | Sol. | Sidereal. | |
|------|-----------|---------|------|-----------|---------|
| d. | d. h.m. | s. | d. | d. h.m. | s. |
| 63 | 63 4 08 | 22.9870 | 94 | 94 6 10 | 36.2028 |
| 64 | 64 4 12 | 19.5423 | 95 | 95 6 14 | 32.7581 |
| 65 | 65 4 16 | 16.0977 | 96 | 96 6 18 | 29.3135 |
| 66 | 66 4 20 | 12.6530 | 97 | 97 6 22 | 25.8688 |
| 67 | 67 4 24 | 09.2084 | 98 | 98 6 26 | 22.4242 |
| 68 | 68 4 28 | 05.7637 | 99 | 99 6 30 | 18.9795 |
| 69 | 69 4 32 | 02.3191 | 100 | 100 6 34 | 15.5349 |
| 70 | 70 4 35 | 58.8744 | 101 | 101 6 38 | 12.0902 |
| 71 | 71 4 39 | 55.4298 | 102 | 102 6 42 | 08.6456 |
| 72 | 72 4 43 | 51.9851 | 103 | 103 6 46 | 05.2009 |
| 73 | 73 4 47 | 48.5405 | 104 | 104 6 50 | 01.7563 |
| 74 | 74 4 51 | 45.0958 | 105 | 105 6 53 | 58.3116 |
| 75 | 75 4 55 | 41.6512 | 106 | 106 6 57 | 54.8670 |
| 76 | 76 4 59 | 38.2065 | 107 | 107 7 01 | 51.4223 |
| 77 | 77 5 03 | 34.7618 | 108 | 108 7 05 | 47.9777 |
| 78 | 78 5 07 | 31.3172 | 109 | 109 7 09 | 44.5330 |
| 79 | 79 5 11 | 27.8725 | 110 | 110 7 13 | 41.0884 |
| 80 | 80 5 15 | 24.4279 | 111 | 111 7 17 | 37.6437 |
| 81 | 81 5 19 | 20.9832 | 112 | 112 7 21 | 34.1991 |
| 82 | 82 5 23 | 17.5386 | 113 | 113 7 25 | 30.7544 |
| 83 | 83 5 27 | 14.0939 | 114 | 114 7 29 | 27.3098 |
| 84 | 84 5 31 | 10.6493 | 115 | 115 7 33 | 23.8651 |
| 85 | 85 5 35 | 07.2046 | 116 | 116 7 37 | 20.4204 |
| 86 | 86 5 39 | 03.7600 | 117 | 117 7 41 | 16.9758 |
| 87 | 87 5 43 | 00.3153 | 118 | 118 7 45 | 13.5311 |
| 88 | 88 5 46 | 56.8707 | 119 | 119 7 49 | 10.0865 |
| 89 | 89 5 50 | 53.4260 | 120 | 120 7 53 | 06.6418 |
| 90 | 90 5 54 | 49.9814 | 121 | 121 7 57 | 03.1972 |
| 91 | 91 5 58 | 46.5367 | 122 | 122 8 00 | 59.7525 |
| 92 | 92 6 02 | 43.0921 | 123 | 123 8 04 | 56.3079 |
| 93 | 93 6 06 | 39.6474 | 124 | 124 8 08 | 52.8632 |

| Sidereal. | | Sol. | | Sidereal. | | Sol. | |
|-----------|----------|---------|--|-----------|-----------|---------|--|
| d. | d. h. m. | s. | | d. | d. h. m. | s. | |
| 63 | 62 19 52 | 17.7046 | | 94 | 93 17 50 | 24.5117 | |
| 64 | 63 19 48 | 21.7952 | | 95 | 94 17 46 | 28.6022 | |
| 65 | 64 19 44 | 25.8857 | | 96 | 95 17 42 | 32.6928 | |
| 66 | 65 19 40 | 29.9763 | | 97 | 96 17 38 | 36.7833 | |
| 67 | 66 19 36 | 34.0668 | | 98 | 97 17 34 | 40.8739 | |
| 68 | 67 19 32 | 38.1574 | | 99 | 98 17 30 | 44.9644 | |
| 69 | 68 19 28 | 42.2479 | | 100 | 99 17 26 | 49.0550 | |
| 70 | 69 19 24 | 46.3385 | | 101 | 100 17 22 | 53.1455 | |
| 71 | 70 19 20 | 50.4290 | | 102 | 101 17 18 | 57.2361 | |
| 72 | 71 19 16 | 54.5196 | | 103 | 102 17 15 | 01.3266 | |
| 73 | 72 19 12 | 58.6101 | | 104 | 103 17 11 | 05.4172 | |
| 74 | 73 19 09 | 02.7007 | | 105 | 104 17 07 | 09.5077 | |
| 75 | 74 19 05 | 06.7912 | | 106 | 105 17 03 | 13.5983 | |
| 76 | 75 19 01 | 10.8818 | | 107 | 106 16 59 | 17.6888 | |
| 77 | 76 18 57 | 14.9723 | | 108 | 107 16 55 | 21.7794 | |
| 78 | 77 18 53 | 19.0629 | | 109 | 108 16 51 | 25.8699 | |
| 79 | 78 18 49 | 23.1534 | | 110 | 109 16 47 | 29.9605 | |
| 80 | 79 18 45 | 27.2440 | | 111 | 110 16 43 | 34.0510 | |
| 81 | 80 18 41 | 31.3345 | | 112 | 111 16 39 | 38.1416 | |
| 82 | 81 18 37 | 35.4251 | | 113 | 112 16 35 | 42.2321 | |
| 83 | 82 18 33 | 39.5156 | | 114 | 113 16 31 | 46.3227 | |
| 84 | 83 18 29 | 43.6062 | | 115 | 114 16 27 | 50.4132 | |
| 85 | 84 18 25 | 47.6967 | | 116 | 115 16 23 | 54.5038 | |
| 86 | 85 18 21 | 51.7873 | | 117 | 116 16 19 | 58.5943 | |
| 87 | 86 18 17 | 55.8778 | | 118 | 117 16 16 | 02.6849 | |
| 88 | 87 18 13 | 59.9684 | | 119 | 118 16 12 | 06.7754 | |
| 89 | 88 18 10 | 04.0589 | | 120 | 119 16 08 | 10.8660 | |
| 90 | 89 18 06 | 08.1495 | | 121 | 120 16 04 | 14.9565 | |
| 91 | 90 18 02 | 12.2400 | | 122 | 121 16 00 | 19.0471 | |
| 92 | 91 17 58 | 16.3306 | | 123 | 122 15 56 | 23.1376 | |
| 93 | 92 17 54 | 20.4211 | | 124 | 123 15 52 | 27.2282 | |

| Sol. | Sidereal. | | | Sol. | Sidereal. | | |
|------|-----------|-------|---------|------|-----------|-------|---------|
| d. | d. | h. m. | s. | d. | d. | h. m. | s. |
| 125 | 125 | 8 12 | 49.4186 | 156 | 156 | 10 15 | 02.6344 |
| 126 | 126 | 8 16 | 45.9739 | 157 | 157 | 10 18 | 59.1897 |
| 127 | 127 | 8 20 | 42.5293 | 158 | 158 | 10 22 | 55.7451 |
| 128 | 128 | 8 24 | 39.0846 | 159 | 159 | 10 26 | 52.3004 |
| 129 | 129 | 8 28 | 35.6400 | 160 | 160 | 10 30 | 48.8558 |
| 130 | 130 | 8 32 | 32.1953 | 161 | 161 | 10 34 | 45.4111 |
| 131 | 131 | 8 36 | 28.7507 | 162 | 162 | 10 38 | 41.9665 |
| 132 | 132 | 8 40 | 25.3060 | 163 | 163 | 10 42 | 38.5218 |
| 133 | 133 | 8 44 | 21.8614 | 164 | 164 | 10 46 | 35.0772 |
| 134 | 134 | 8 48 | 18.4167 | 165 | 165 | 10 50 | 31.6325 |
| 135 | 135 | 8 52 | 14.9721 | 166 | 166 | 10 54 | 28.1879 |
| 136 | 136 | 8 56 | 11.5274 | 167 | 167 | 10 58 | 24.7432 |
| 137 | 137 | 9 00 | 08.0828 | 168 | 168 | 11 02 | 21.2986 |
| 138 | 138 | 9 04 | 04.6381 | 169 | 169 | 11 06 | 17.8539 |
| 139 | 139 | 9 08 | 01.1935 | 170 | 170 | 11 10 | 14.4093 |
| 140 | 140 | 9 11 | 57.7488 | 171 | 171 | 11 14 | 10.9646 |
| 141 | 141 | 9 15 | 54.3042 | 172 | 172 | 11 18 | 07.5200 |
| 142 | 142 | 9 19 | 50.8595 | 173 | 173 | 11 22 | 04.0753 |
| 143 | 143 | 9 23 | 47.4149 | 174 | 174 | 11 26 | 00.6307 |
| 144 | 144 | 9 27 | 43.9702 | 175 | 175 | 11 29 | 57.1860 |
| 145 | 145 | 9 31 | 40.5256 | 176 | 176 | 11 33 | 53.7414 |
| 146 | 146 | 9 35 | 37.0809 | 177 | 177 | 11 37 | 50.2967 |
| 147 | 147 | 9 39 | 33.6363 | 178 | 178 | 11 41 | 46.8521 |
| 148 | 148 | 9 43 | 30.1916 | 179 | 179 | 11 45 | 43.4074 |
| 149 | 149 | 9 47 | 26.7470 | 180 | 180 | 11 49 | 39.9628 |
| 150 | 150 | 9 51 | 23.3023 | 181 | 181 | 11 53 | 36.5181 |
| 151 | 151 | 9 55 | 19.8577 | 182 | 182 | 11 57 | 33.0735 |
| 152 | 152 | 9 59 | 16.4130 | 183 | 183 | 12 01 | 29.6288 |
| 153 | 153 | 10 03 | 12.9684 | 184 | 184 | 12 05 | 26.1842 |
| 154 | 154 | 10 07 | 09.5237 | 185 | 185 | 12 09 | 22.7395 |
| 155 | 155 | 10 11 | 06.0790 | 186 | 186 | 12 13 | 19.2949 |

| Sidereal. | | | | Sol. | | | | Sidereal. | | | | Sol. | | | |
|-----------|-----|-------|---------|------|-----|-------|---------|-----------|----|-------|----|------|----|-------|----|
| d. | d. | h. m. | s. | d. | d. | h. m. | s. | d. | d. | h. m. | s. | d. | d. | h. m. | s. |
| 125 | 124 | 15 48 | 31.3187 | 156 | 155 | 13 46 | 38.1258 | | | | | | | | |
| 126 | 125 | 15 44 | 35.4093 | 157 | 156 | 13 42 | 42.2163 | | | | | | | | |
| 127 | 126 | 15 40 | 39.4998 | 158 | 157 | 13 38 | 46.3069 | | | | | | | | |
| 128 | 127 | 15 36 | 43.5904 | 159 | 158 | 13 34 | 50.3974 | | | | | | | | |
| 129 | 128 | 15 32 | 47.6809 | 160 | 159 | 13 30 | 54.4880 | | | | | | | | |
| 130 | 129 | 15 28 | 51.7715 | 161 | 160 | 13 26 | 58.5785 | | | | | | | | |
| 131 | 130 | 15 24 | 55.8620 | 162 | 161 | 13 23 | 02.6691 | | | | | | | | |
| 132 | 131 | 15 20 | 59.9526 | 163 | 162 | 13 19 | 06.7596 | | | | | | | | |
| 133 | 132 | 15 17 | 04.0431 | 164 | 163 | 13 15 | 10.8502 | | | | | | | | |
| 134 | 133 | 15 13 | 08.1337 | 165 | 164 | 13 11 | 14.9407 | | | | | | | | |
| 135 | 134 | 15 09 | 12.2242 | 166 | 165 | 13 07 | 19.0313 | | | | | | | | |
| 136 | 135 | 15 05 | 16.3148 | 167 | 166 | 13 03 | 23.1218 | | | | | | | | |
| 137 | 136 | 15 01 | 20.4053 | 168 | 167 | 12 59 | 27.2124 | | | | | | | | |
| 138 | 137 | 14 57 | 24.4959 | 169 | 168 | 12 55 | 31.3029 | | | | | | | | |
| 139 | 138 | 14 53 | 28.5864 | 170 | 169 | 12 51 | 35.3935 | | | | | | | | |
| 140 | 139 | 14 49 | 32.6770 | 171 | 170 | 12 47 | 39.4840 | | | | | | | | |
| 141 | 140 | 14 45 | 36.7675 | 172 | 171 | 12 43 | 43.5746 | | | | | | | | |
| 142 | 141 | 14 41 | 40.8581 | 173 | 172 | 12 39 | 47.6651 | | | | | | | | |
| 143 | 142 | 14 37 | 44.9486 | 174 | 173 | 12 35 | 51.7557 | | | | | | | | |
| 144 | 143 | 14 33 | 49.0392 | 175 | 174 | 12 31 | 55.8462 | | | | | | | | |
| 145 | 144 | 14 29 | 53.1297 | 176 | 175 | 12 27 | 59.9368 | | | | | | | | |
| 146 | 145 | 14 25 | 57.2203 | 177 | 176 | 12 24 | 04.0273 | | | | | | | | |
| 147 | 146 | 14 22 | 01.3108 | 178 | 177 | 12 20 | 08.1179 | | | | | | | | |
| 148 | 147 | 14 18 | 05.4014 | 179 | 178 | 12 16 | 12.2084 | | | | | | | | |
| 149 | 148 | 14 14 | 09.4919 | 180 | 179 | 12 12 | 16.2990 | | | | | | | | |
| 150 | 149 | 14 10 | 13.5825 | 181 | 180 | 12 08 | 20.3895 | | | | | | | | |
| 151 | 150 | 14 06 | 17.6730 | 182 | 181 | 12 04 | 24.4801 | | | | | | | | |
| 152 | 151 | 14 02 | 21.7636 | 183 | 182 | 12 00 | 28.5706 | | | | | | | | |
| 153 | 152 | 13 58 | 25.8541 | 184 | 183 | 11 56 | 32.6612 | | | | | | | | |
| 154 | 153 | 13 54 | 29.9447 | 185 | 184 | 11 52 | 36.7517 | | | | | | | | |
| 155 | 154 | 13 50 | 34.0352 | 186 | 185 | 11 48 | 40.8423 | | | | | | | | |

| Sol. | Sidereal. | | | Sol. | Sidereal. | | |
|------|-----------|-------|---------|------|-----------|-------|---------|
| d. | d. | h. m. | s. | d. | d. | h. m. | s. |
| 187 | 187 | 12 17 | 15.8502 | 218 | 218 | 14 19 | 29.0660 |
| 188 | 188 | 12 21 | 12.4056 | 219 | 219 | 14 23 | 25.6214 |
| 189 | 189 | 12 25 | 08.9609 | 220 | 220 | 14 27 | 22.1767 |
| 190 | 190 | 12 29 | 05.5163 | 221 | 221 | 14 31 | 18.7321 |
| 191 | 191 | 12 33 | 02.0716 | 222 | 222 | 14 35 | 15.2874 |
| 192 | 192 | 12 36 | 58.6269 | 223 | 223 | 14 39 | 11.8428 |
| 193 | 193 | 12 40 | 55.1823 | 224 | 224 | 14 43 | 08.3981 |
| 194 | 194 | 12 44 | 51.7376 | 225 | 225 | 14 47 | 04.9535 |
| 195 | 195 | 12 48 | 48.2930 | 226 | 226 | 14 51 | 01.5088 |
| 196 | 196 | 12 52 | 44.8483 | 227 | 227 | 14 54 | 58.0642 |
| 197 | 197 | 12 56 | 41.4037 | 228 | 228 | 14 58 | 54.6195 |
| 198 | 198 | 13 00 | 37.9590 | 229 | 229 | 15 02 | 51.1749 |
| 199 | 199 | 13 04 | 34.5144 | 230 | 230 | 15 06 | 47.7302 |
| 200 | 200 | 13 08 | 31.0697 | 231 | 231 | 15 10 | 44.2855 |
| 201 | 201 | 13 12 | 27.6251 | 232 | 232 | 15 14 | 40.8409 |
| 202 | 202 | 13 16 | 24.1804 | 233 | 233 | 15 18 | 37.3962 |
| 203 | 203 | 13 20 | 20.7358 | 234 | 234 | 15 22 | 33.9516 |
| 204 | 204 | 13 24 | 17.2911 | 235 | 235 | 15 26 | 30.5069 |
| 205 | 205 | 13 28 | 13.8465 | 236 | 236 | 15 30 | 27.0623 |
| 206 | 206 | 13 32 | 10.4018 | 237 | 237 | 15 34 | 23.6176 |
| 207 | 207 | 13 36 | 06.9572 | 238 | 238 | 15 38 | 20.1730 |
| 208 | 208 | 13 40 | 03.5125 | 239 | 239 | 15 42 | 16.7283 |
| 209 | 209 | 13 44 | 00.0679 | 240 | 240 | 15 46 | 13.2837 |
| 210 | 210 | 13 47 | 56.6232 | 241 | 241 | 15 50 | 09.8390 |
| 211 | 211 | 13 51 | 53.1786 | 242 | 242 | 15 54 | 06.3944 |
| 212 | 212 | 13 55 | 49.7339 | 243 | 243 | 15 58 | 02.9497 |
| 213 | 213 | 13 59 | 46.2893 | 244 | 244 | 16 01 | 59.5051 |
| 214 | 214 | 14 03 | 42.8446 | 245 | 245 | 16 05 | 56.0604 |
| 215 | 215 | 14 07 | 39.4000 | 246 | 246 | 16 09 | 52.6158 |
| 216 | 216 | 14 11 | 35.9553 | 247 | 247 | 16 13 | 49.1711 |
| 217 | 217 | 14 15 | 32.5107 | 248 | 248 | 16 17 | 45.7265 |

| Sidereal. | | | | Sol. | | | | Sidereal. | | | | Sol. | | | |
|-----------|-----|-------|---------|------|-----|-------|---------|-----------|----|-------|----|------|----|-------|----|
| d. | d. | h. m. | s. | d. | d. | h. m. | s. | d. | d. | h. m. | s. | d. | d. | h. m. | s. |
| 187 | 186 | 11 44 | 44.9328 | 218 | 217 | 9 42 | 51.7399 | | | | | | | | |
| 188 | 187 | 11 40 | 49.0234 | 219 | 218 | 9 38 | 55.8304 | | | | | | | | |
| 189 | 188 | 11 36 | 53.1139 | 220 | 219 | 9 34 | 59.9210 | | | | | | | | |
| 190 | 189 | 11 32 | 57.2045 | 221 | 220 | 9 31 | 04.0115 | | | | | | | | |
| 191 | 190 | 11 29 | 01.2950 | 222 | 221 | 9 27 | 08.1021 | | | | | | | | |
| 192 | 191 | 11 25 | 05.3856 | 223 | 222 | 9 23 | 12.1926 | | | | | | | | |
| 193 | 192 | 11 21 | 09.4761 | 224 | 223 | 9 19 | 16.2832 | | | | | | | | |
| 194 | 193 | 11 17 | 13.5667 | 225 | 224 | 9 15 | 20.3737 | | | | | | | | |
| 195 | 194 | 11 13 | 17.6572 | 226 | 225 | 9 11 | 24.4643 | | | | | | | | |
| 196 | 195 | 11 09 | 21.7478 | 227 | 226 | 9 07 | 28.5548 | | | | | | | | |
| 197 | 196 | 11 05 | 25.8383 | 228 | 227 | 9 03 | 32.6454 | | | | | | | | |
| 198 | 197 | 11 01 | 29.9289 | 229 | 228 | 8 59 | 36.7359 | | | | | | | | |
| 199 | 198 | 10 57 | 34.0194 | 230 | 229 | 8 55 | 40.8265 | | | | | | | | |
| 200 | 199 | 10 53 | 38.1100 | 231 | 230 | 8 51 | 44.9170 | | | | | | | | |
| 201 | 200 | 10 49 | 42.2005 | 232 | 231 | 8 47 | 49.0076 | | | | | | | | |
| 202 | 201 | 10 45 | 46.2911 | 233 | 232 | 8 43 | 53.0981 | | | | | | | | |
| 203 | 202 | 10 41 | 50.3816 | 234 | 233 | 8 39 | 57.1887 | | | | | | | | |
| 204 | 203 | 10 37 | 54.4722 | 235 | 234 | 8 36 | 01.2792 | | | | | | | | |
| 205 | 204 | 10 33 | 58.5627 | 236 | 235 | 8 32 | 05.3698 | | | | | | | | |
| 206 | 205 | 10 30 | 02.6533 | 237 | 236 | 8 28 | 09.4603 | | | | | | | | |
| 207 | 206 | 10 26 | 06.7438 | 238 | 237 | 8 24 | 13.5509 | | | | | | | | |
| 208 | 207 | 10 22 | 10.8344 | 239 | 238 | 8 20 | 17.6414 | | | | | | | | |
| 209 | 208 | 10 18 | 14.9249 | 240 | 239 | 8 16 | 21.7320 | | | | | | | | |
| 210 | 209 | 10 14 | 19.0155 | 241 | 240 | 8 12 | 25.8225 | | | | | | | | |
| 211 | 210 | 10 10 | 23.1060 | 242 | 241 | 8 08 | 29.9131 | | | | | | | | |
| 212 | 211 | 10 06 | 27.1966 | 243 | 242 | 8 04 | 34.0036 | | | | | | | | |
| 213 | 212 | 10 02 | 31.2871 | 244 | 243 | 8 00 | 38.0942 | | | | | | | | |
| 214 | 213 | 9 58 | 35.3777 | 245 | 244 | 7 56 | 42.1847 | | | | | | | | |
| 215 | 214 | 9 54 | 39.4682 | 246 | 245 | 7 52 | 46.2753 | | | | | | | | |
| 216 | 215 | 9 50 | 43.5588 | 247 | 246 | 7 48 | 50.3658 | | | | | | | | |
| 217 | 216 | 9 46 | 47.6493 | 248 | 247 | 7 44 | 54.4564 | | | | | | | | |

| Sol. | Sidereal. | | | Sol. | Sidereal. | | |
|------|-----------|-------|---------|------|-----------|-------|---------|
| d. | d. | h. m. | s. | d. | d. | h. m. | s. |
| 249 | 249 | 16 21 | 42.2818 | 280 | 280 | 18 23 | 55.4976 |
| 250 | 250 | 16 25 | 38.8372 | 281 | 281 | 18 27 | 52.0530 |
| 251 | 251 | 16 29 | 35.3925 | 282 | 282 | 18 31 | 48.6083 |
| 252 | 252 | 16 33 | 31.9479 | 283 | 283 | 18 35 | 45.1637 |
| 253 | 253 | 16 37 | 28.5032 | 284 | 284 | 18 39 | 41.7190 |
| 254 | 254 | 16 41 | 25.0586 | 285 | 285 | 18 43 | 38.2744 |
| 255 | 255 | 16 45 | 21.6139 | 286 | 286 | 18 47 | 34.8297 |
| 256 | 256 | 16 49 | 18.1693 | 287 | 287 | 18 51 | 31.3851 |
| 257 | 257 | 16 53 | 14.7246 | 288 | 288 | 18 55 | 27.9404 |
| 258 | 258 | 16 57 | 11.2800 | 289 | 289 | 18 59 | 24.4958 |
| 259 | 259 | 17 01 | 07.8353 | 290 | 290 | 19 03 | 21.0511 |
| 260 | 260 | 17 05 | 04.3907 | 291 | 291 | 19 07 | 17.6065 |
| 261 | 261 | 17 09 | 00.9460 | 292 | 292 | 19 11 | 14.1618 |
| 262 | 262 | 17 12 | 57.5014 | 293 | 293 | 19 15 | 10.7172 |
| 263 | 263 | 17 16 | 54.0567 | 294 | 294 | 19 19 | 07.2725 |
| 264 | 264 | 17 20 | 50.6121 | 295 | 295 | 19 23 | 03.8279 |
| 265 | 265 | 17 24 | 47.1674 | 296 | 296 | 19 27 | 00.3832 |
| 266 | 266 | 17 28 | 43.7228 | 297 | 297 | 19 30 | 56.9386 |
| 267 | 267 | 17 32 | 40.2781 | 298 | 298 | 19 34 | 53.4939 |
| 268 | 268 | 17 36 | 36.8334 | 299 | 299 | 19 38 | 50.0493 |
| 269 | 269 | 17 40 | 33.3888 | 300 | 300 | 19 42 | 46.6046 |
| 270 | 270 | 17 44 | 29.9441 | 301 | 301 | 19 46 | 43.1600 |
| 271 | 271 | 17 48 | 26.4995 | 302 | 302 | 19 50 | 39.7153 |
| 272 | 272 | 17 52 | 23.0548 | 303 | 303 | 19 54 | 36.2707 |
| 273 | 273 | 17 56 | 19.6102 | 304 | 304 | 19 58 | 32.8260 |
| 274 | 274 | 18 00 | 16.1655 | 305 | 305 | 20 02 | 29.3814 |
| 275 | 275 | 18 04 | 12.7209 | 306 | 306 | 20 06 | 25.9367 |
| 276 | 276 | 18 08 | 09.2762 | 307 | 307 | 20 10 | 22.4920 |
| 277 | 277 | 18 12 | 05.8316 | 308 | 308 | 20 14 | 19.0474 |
| 278 | 278 | 18 16 | 02.3869 | 309 | 309 | 20 18 | 15.6027 |
| 279 | 279 | 18 19 | 58.9423 | 310 | 310 | 20 22 | 12.1581 |

| Sidereal. | | | Sol. | | | Sidereal. | | | Sol. | | |
|-----------|-----|--------------|------|-----|--------------|-----------|----|---------|------|----|---------|
| d. | d. | h.m. s. | d. | d. | h.m. s. | d. | d. | h.m. s. | d. | d. | h.m. s. |
| 249 | 248 | 7 40 58.5469 | 280 | 279 | 5 39 05.3540 | | | | | | |
| 250 | 249 | 7 37 02.6375 | 281 | 280 | 5 35 09.4445 | | | | | | |
| 251 | 250 | 7 33 06.7280 | 282 | 281 | 5 31 13.5351 | | | | | | |
| 252 | 251 | 7 29 10.8186 | 283 | 282 | 5 27 17.6256 | | | | | | |
| 253 | 252 | 7 25 14.9091 | 284 | 283 | 5 23 21.7162 | | | | | | |
| 254 | 253 | 7 21 18.9997 | 285 | 284 | 5 19 25.8067 | | | | | | |
| 255 | 254 | 7 17 23.0902 | 286 | 285 | 5 15 29.8973 | | | | | | |
| 256 | 255 | 7 13 27.1808 | 287 | 286 | 5 11 33.9878 | | | | | | |
| 257 | 256 | 7 09 31.2713 | 288 | 287 | 5 07 38.0784 | | | | | | |
| 258 | 257 | 7 05 35.3619 | 289 | 288 | 5 03 42.1689 | | | | | | |
| 259 | 258 | 7 01 39.4524 | 290 | 289 | 4 59 46.2595 | | | | | | |
| 260 | 259 | 6 57 43.5430 | 291 | 290 | 4 55 50.3500 | | | | | | |
| 261 | 260 | 6 53 47.6335 | 292 | 291 | 4 51 54.4406 | | | | | | |
| 262 | 261 | 6 49 51.7241 | 293 | 292 | 4 47 58.5311 | | | | | | |
| 263 | 262 | 6 45 55.8146 | 294 | 293 | 4 44 02.6217 | | | | | | |
| 264 | 263 | 6 41 59.9052 | 295 | 294 | 4 40 06.7122 | | | | | | |
| 265 | 264 | 6 38 03.9957 | 296 | 295 | 4 36 10.8028 | | | | | | |
| 266 | 265 | 6 34 08.0863 | 297 | 296 | 4 32 14.8933 | | | | | | |
| 267 | 266 | 6 30 12.1768 | 298 | 297 | 4 28 18.9839 | | | | | | |
| 268 | 267 | 6 26 16.2674 | 299 | 298 | 4 24 23.0744 | | | | | | |
| 269 | 268 | 6 22 20.3579 | 300 | 299 | 4 20 27.1650 | | | | | | |
| 270 | 269 | 6 18 24.4485 | 301 | 300 | 4 16 31.2555 | | | | | | |
| 271 | 270 | 6 14 28.5390 | 302 | 301 | 4 12 35.3461 | | | | | | |
| 272 | 271 | 6 10 32.6296 | 303 | 302 | 4 08 39.4366 | | | | | | |
| 273 | 272 | 6 06 36.7201 | 304 | 303 | 4 04 43.5272 | | | | | | |
| 274 | 273 | 6 02 40.8107 | 305 | 304 | 4 00 47.6177 | | | | | | |
| 275 | 274 | 5 58 44.9012 | 306 | 305 | 3 56 51.7083 | | | | | | |
| 276 | 275 | 5 54 48.9918 | 307 | 306 | 3 52 55.7988 | | | | | | |
| 277 | 276 | 5 50 53.0823 | 308 | 307 | 3 48 59.8894 | | | | | | |
| 278 | 277 | 5 46 57.1729 | 309 | 308 | 3 45 03.9799 | | | | | | |
| 279 | 278 | 5 43 01.2634 | 310 | 309 | 3 41 08.0705 | | | | | | |

| Sol. | Sidereal. | | | Sol. | Sidereal. | | |
|------|-----------|-------|---------|------|-----------|-------|---------|
| d. | d. | h. m. | s. | d. | d. | h. m. | s. |
| 311 | 311 | 20 26 | 08.7134 | 339 | 339 | 22 16 | 32.2632 |
| 312 | 312 | 20 30 | 05.2688 | 340 | 340 | 22 20 | 28.8186 |
| 313 | 313 | 20 34 | 01.8241 | 341 | 341 | 22 24 | 25.3739 |
| 314 | 314 | 20 37 | 58.3795 | 342 | 342 | 22 28 | 21.9293 |
| 315 | 315 | 20 41 | 54.9348 | 343 | 343 | 22 32 | 18.4846 |
| 316 | 316 | 20 45 | 51.4902 | 344 | 344 | 22 36 | 15.0400 |
| 317 | 317 | 20 49 | 48.0455 | 345 | 345 | 22 40 | 11.5953 |
| 318 | 318 | 20 53 | 44.6009 | 346 | 346 | 22 44 | 08.1506 |
| 319 | 319 | 20 57 | 41.1562 | 347 | 347 | 22 48 | 04.7060 |
| 320 | 320 | 21 01 | 37.7116 | 348 | 348 | 22 52 | 01.2613 |
| 321 | 321 | 21 05 | 34.2669 | 349 | 349 | 22 55 | 57.8167 |
| 322 | 322 | 21 09 | 30.8223 | 350 | 350 | 22 59 | 54.3720 |
| 323 | 323 | 21 13 | 27.3776 | 351 | 351 | 23 03 | 50.9274 |
| 324 | 324 | 21 17 | 23.9330 | 352 | 352 | 23 07 | 47.4827 |
| 325 | 325 | 21 21 | 20.4883 | 353 | 353 | 23 11 | 44.0381 |
| 326 | 326 | 21 25 | 17.0437 | 354 | 354 | 23 15 | 40.5934 |
| 327 | 327 | 21 29 | 13.5990 | 355 | 355 | 23 19 | 37.1488 |
| 328 | 328 | 21 33 | 10.1544 | 356 | 356 | 23 23 | 33.7041 |
| 329 | 329 | 21 37 | 06.7097 | 357 | 357 | 23 27 | 30.2595 |
| 330 | 330 | 21 41 | 03.2651 | 358 | 358 | 23 31 | 26.8148 |
| 331 | 331 | 21 44 | 59.8204 | 359 | 359 | 23 35 | 23.3702 |
| 332 | 332 | 21 48 | 56.3758 | 360 | 360 | 23 39 | 19.9255 |
| 333 | 333 | 21 52 | 52.9311 | 361 | 361 | 23 43 | 16.4809 |
| 334 | 334 | 21 56 | 49.4865 | 362 | 362 | 23 47 | 13.0362 |
| 335 | 335 | 22 00 | 46.0418 | 363 | 363 | 23 51 | 09.5916 |
| 336 | 336 | 22 04 | 42.5972 | 364 | 364 | 23 55 | 06.1469 |
| 337 | 337 | 22 08 | 39.1525 | 365 | 365 | 23 59 | 02.7023 |
| 338 | 338 | 22 12 | 35.7079 | 366 | 367 | 0 02 | 59.2576 |

1461 1465 0 00 07.3644

TABLE
OF THE
COINCIDENCES
OF THE
SOLAR AND SIDEREAL
CLOCKS
DURING ONE DAY

| | Solar. | Sidereal. | Solar. | Sidereal. |
|------|------------|------------|------------|------------|
| | 0 00 00.00 | 0 00 00.00 | 3 02 37.27 | 3 03 07.27 |
| | 06 05.24 | 06 06.24 | 08 42.51 | 09 13.51 |
| | 12 10.48 | 12 12.48 | 14 47.75 | 15 19.75 |
| | 18 15.73 | 18 18.73 | 20 52.99 | 21 25.99 |
| | 24 20.97 | 24 24.97 | 26 58.24 | 27 32.24 |
| | 30 26.21 | 30 31.21 | 33 03.48 | 33 38.48 |
| | 36 31.45 | 36 37.45 | 39 08.72 | 39 44.72 |
| | 42 36.70 | 42 43.70 | 45 13.96 | 45 50.96 |
| | 48 41.94 | 48 49.94 | 51 19.20 | 51 57.20 |
| | 54 47.18 | 54 56.18 | 57 24.45 | 58 03.45 |
| 1 00 | 52.42 | 1 01 02.42 | 4 03 29.69 | 4 04 09.69 |
| | 06 57.66 | 07 08.66 | 09 34.93 | 10 15.93 |
| | 13 02.91 | 13 14.91 | 15 40.17 | 16 22.17 |
| | 19 08.15 | 19 21.15 | 21 45.42 | 22 28.42 |
| | 25 13.39 | 25 27.39 | 27 50.66 | 28 34.66 |
| | 31 18.63 | 31 33.63 | 33 55.90 | 34 40.90 |
| | 37 23.88 | 37 39.88 | 40 01.14 | 40 47.14 |
| | 43 29.12 | 43 46.12 | 46 06.38 | 46 53.38 |
| | 49 34.36 | 49 52.36 | 52 11.63 | 52 59.63 |
| | 55 39.60 | 55 58.60 | 58 16.87 | 59 05.87 |
| 2 01 | 44.84 | 2 02 04.84 | 5 04 22.11 | 5 05 12.11 |
| | 07 50.09 | 08 11.09 | 10 27.35 | 11 18.35 |
| | 13 55.33 | 14 17.33 | 16 32.60 | 17 24.60 |
| | 20 00.57 | 20 23.57 | 22 37.84 | 23 30.84 |
| | 26 05.81 | 26 29.81 | 28 43.08 | 29 37.08 |
| | 32 11.06 | 32 36.06 | 34 48.32 | 35 43.32 |
| | 38 16.30 | 38 42.30 | 40 53.56 | 41 49.56 |
| | 44 21.54 | 44 48.54 | 46 58.81 | 47 55.81 |
| | 50 26.78 | 50 54.78 | 53 04.05 | 54 02.05 |
| | 56 32.02 | 57 01.02 | 59 09.29 | 6 00 08.29 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|------------|------------|-------------|-------------|
| 6 05 14.53 | 6 06 14.53 | 9 07 51.80 | 9 09 21.80 |
| 11 19.78 | 12 20.78 | 13 57.04 | 15 28.04 |
| 17 25.02 | 18 27.02 | 20 02.28 | 21 34.28 |
| 23 30.26 | 24 33.26 | 26 07.53 | 27 40.53 |
| 29 35.50 | 30 39.50 | 32 12.77 | 33 46.77 |
| 35 40.74 | 36 45.74 | 38 18.01 | 39 53.01 |
| 41 45.99 | 42 51.99 | 44 23.25 | 45 59.25 |
| 47 51.23 | 48 58.23 | 50 28.50 | 52 05.50 |
| 53 56.47 | 55 04.47 | 56 33.74 | 58 11.74 |
| 7 00 01.71 | 7 01 10.71 | 10 02 38.98 | 10 04 17.98 |
| 06 06.96 | 07 16.96 | 08 44.22 | 10 24.22 |
| 12 12.20 | 13 23.20 | 14 49.46 | 16 30.46 |
| 18 17.44 | 19 29.44 | 20 54.71 | 22 36.71 |
| 24 22.68 | 25 35.68 | 26 59.95 | 28 42.95 |
| 30 27.92 | 31 41.92 | 33 05.19 | 34 49.19 |
| 36 33.17 | 37 48.17 | 39 10.43 | 40 55.43 |
| 42 38.41 | 43 54.41 | 45 15.68 | 47 01.68 |
| 48 43.65 | 50 00.65 | 51 20.92 | 53 07.92 |
| 54 48.89 | 56 06.89 | 57 26.16 | 59 14.16 |
| 8 00 54.14 | 8 02 13.14 | 11 03 31.40 | 11 05 20.40 |
| 06 59.38 | 08 19.38 | 09 36.64 | 11 26.64 |
| 13 04.62 | 14 25.62 | 15 41.89 | 17 32.89 |
| 19 09.86 | 20 31.86 | 21 47.13 | 23 39.13 |
| 25 15.10 | 26 38.10 | 27 52.37 | 29 45.37 |
| 31 20.35 | 32 44.35 | 33 57.61 | 35 51.61 |
| 37 25.59 | 38 50.59 | 40 02.85 | 41 57.85 |
| 43 30.83 | 44 56.83 | 46 08.10 | 48 04.10 |
| 49 36.07 | 51 03.07 | 52 13.34 | 54 10.34 |
| 55 41.32 | 57 09.32 | 58 18.58 | 12 00 16.58 |
| 9 01 46.56 | 9 03 15.56 | 12 04 23.82 | 06 22.82 |

| Solar. | | Sidereal. | | Solar. | | Sidereal. | |
|--------|-------|-----------|-------|--------|--------|-----------|--------|
| 12 10 | 29.07 | 12 12 | 29.07 | 15 13 | 06.33 | 15 15 | 36.33 |
| 16 | 34.31 | 18 | 35.31 | 19 | 11.57 | 21 | 42.57 |
| 22 | 39.55 | 24 | 41.55 | 25 | 16.82 | 27 | 48.82 |
| 28 | 44.79 | 30 | 47.79 | 31 | 22.06 | 33 | 55.06 |
| 34 | 50.03 | 36 | 54.03 | 37 | 27.30 | 40 | 01.30 |
| 40 | 55.28 | 43 | 00.28 | 43 | 32.54 | 46 | 07.54 |
| 47 | 00.52 | 49 | 06.52 | 49 | 37.79 | 52 | 13.79 |
| 53 | 05.76 | 55 | 12.76 | 55 | 43.03 | 58 | 20.03 |
| 59 | 11.00 | 13 01 | 19.00 | 16 01 | 48.27 | 16 04 | 26.27 |
| 13 05 | 16.25 | 07 | 25.25 | 07 | 53.51 | 10 | 32.51 |
| 11 | 21.49 | 13 | 31.49 | 13 | 58.75 | 16 | 38.75 |
| 17 | 26.73 | 19 | 37.73 | 20 | 03.100 | 22 | 44.100 |
| 23 | 31.97 | 25 | 43.97 | 26 | 09.24 | 28 | 51.24 |
| 29 | 37.21 | 31 | 50.21 | 32 | 14.48 | 34 | 57.48 |
| 35 | 42.46 | 37 | 56.46 | 38 | 19.72 | 41 | 03.72 |
| 41 | 47.70 | 44 | 02.70 | 44 | 24.97 | 47 | 09.97 |
| 47 | 52.94 | 50 | 08.94 | 50 | 30.21 | 53 | 16.21 |
| 53 | 58.18 | 56 | 15.18 | 56 | 35.45 | 59 | 22.45 |
| 14 00 | 03.43 | 14 02 | 21.43 | 17 02 | 40.69 | 17 05 | 28.69 |
| 06 | 08.67 | 08 | 27.67 | 08 | 45.93 | 11 | 34.93 |
| 12 | 13.91 | 14 | 33.91 | 14 | 51.18 | 17 | 41.18 |
| 18 | 19.15 | 20 | 40.15 | 20 | 56.42 | 23 | 47.42 |
| 24 | 24.39 | 26 | 46.39 | 27 | 01.66 | 29 | 53.66 |
| 30 | 29.64 | 32 | 52.64 | 33 | 06.90 | 35 | 59.90 |
| 36 | 34.88 | 38 | 58.88 | 39 | 12.15 | 42 | 06.15 |
| 42 | 40.12 | 45 | 05.12 | 45 | 17.39 | 48 | 12.39 |
| 48 | 45.36 | 51 | 11.36 | 51 | 22.63 | 54 | 18.63 |
| 54 | 50.61 | 57 | 17.61 | 57 | 27.87 | 18 00 | 24.87 |
| 15 00 | 55.85 | 15 03 | 23.85 | 18 03 | 33.11 | 06 | 31.11 |
| 07 | 01.09 | 09 | 30.09 | 09 | 38.36 | 12 | 37.36 |

| Solar. | Sidereal. | Solar. | Sidereal. |
|-------------|-------------|-------------|-------------|
| 18 15 43.60 | 18 18 43.60 | 21 18 20.87 | 21 21 50.87 |
| 21 48.84 | 24 49.84 | 24 26.11 | 27 57.11 |
| 27 54.08 | 30 56.08 | 30 31.35 | 34 03.35 |
| 33 59.33 | 37 02.33 | 36 36.59 | 40 09.59 |
| 40 04.57 | 43 08.57 | 42 41.83 | 46 15.83 |
| 46 09.81 | 49 14.81 | 48 47.08 | 52 22.08 |
| 52 15.05 | 55 21.05 | 54 52.32 | 58 28.32 |
| 58 20.29 | 19 01 27.29 | 22 00 57.56 | 22 04 34.56 |
| 19 04 25.54 | 07 33.54 | 07 02.80 | 10 40.80 |
| 10 30.78 | 13 39.78 | 13 08.05 | 16 47.05 |
| 16 36.02 | 19 46.02 | 19 13.29 | 22 53.29 |
| 22 41.26 | 25 52.26 | 25 18.53 | 28 59.53 |
| 28 46.51 | 31 58.51 | 31 23.77 | 35 05.77 |
| 34 51.75 | 38 04.75 | 37 29.01 | 41 12.01 |
| 40 56.99 | 44 10.99 | 43 34.26 | 47 18.26 |
| 47 02.23 | 50 17.23 | 49 39.50 | 53 24.50 |
| 53 07.47 | 56 23.47 | 55 44.74 | 59 30.74 |
| 59 12.72 | 20 02 29.72 | 23 01 49.98 | 23 05 36.98 |
| 20 05 17.96 | 08 35.96 | 07 55.23 | 11 43.23 |
| 11 23.20 | 14 42.20 | 14 00.47 | 17 49.47 |
| 17 28.44 | 20 48.44 | 20 05.71 | 23 55.71 |
| 23 33.69 | 26 54.69 | 26 10.95 | 30 01.95 |
| 29 38.93 | 33 00.93 | 32 16.19 | 36 08.19 |
| 35 44.17 | 39 07.17 | 38 21.44 | 42 14.44 |
| 41 49.41 | 45 13.41 | 44 26.68 | 48 20.68 |
| 47 54.65 | 51 19.65 | 50 31.92 | 54 26.92 |
| 53 59.90 | 57 25.90 | 56 37.16 | 24 00 33.16 |
| 21 00 05.14 | 21 03 32.14 | 24 02 42.41 | 06 39.41 |
| 06 10.38 | 09 38.38 | 08 47.65 | 12 45.65 |
| 12 15.62 | 15 44.62 | 14 52.89 | 18 51.89 |