

## ABC TABLES



| TABLE B HOUR ANGLE |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |        |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| Dec. °             | 30°  | 31°  | 32°  | 33°  | 34°  | 35°  | 36°  | 37°  | 38°  | 39°  | 40°  | 41°  | 42°  | 43°  | 44°  | 45°  | Dec. ° |
|                    | 330° | 329° | 328° | 327° | 326° | 325° | 324° | 323° | 322° | 321° | 320° | 319° | 318° | 317° | 316° | 315° |        |
| 0                  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | 0      |
| 1                  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .03  | .02  | 1      |
| 2                  | .07  | .07  | .07  | .06  | .06  | .06  | .06  | .06  | .06  | .06  | .05  | .05  | .05  | .05  | .05  | .05  | 2      |
| 3                  | .10  | .10  | .10  | .10  | .09  | .09  | .09  | .09  | .09  | .08  | .08  | .08  | .08  | .08  | .08  | .07  | 3      |
| 4                  | .14  | .14  | .13  | .13  | .13  | .12  | .12  | .12  | .11  | .11  | .11  | .11  | .10  | .10  | .10  | .10  | 4      |
| 5                  | .17  | .17  | .17  | .16  | .16  | .15  | .15  | .15  | .14  | .14  | .14  | .13  | .13  | .13  | .13  | .12  | 5      |
| 6                  | .21  | .20  | .20  | .19  | .19  | .18  | .18  | .17  | .17  | .17  | .16  | .16  | .16  | .15  | .15  | .15  | 6      |
| 7                  | .25  | .24  | .23  | .23  | .22  | .21  | .21  | .20  | .20  | .20  | .19  | .19  | .18  | .18  | .18  | .17  | 7      |
| 8                  | .28  | .27  | .27  | .26  | .25  | .25  | .24  | .23  | .23  | .22  | .22  | .21  | .21  | .21  | .20  | .20  | 8      |
| 9                  | .32  | .31  | .30  | .29  | .28  | .28  | .27  | .26  | .26  | .25  | .25  | .24  | .24  | .23  | .23  | .22  | 9      |
| 10                 | .35  | .34  | .33  | .32  | .32  | .31  | .30  | .29  | .29  | .28  | .27  | .27  | .26  | .26  | .25  | .25  | 10     |
| 11                 | .39  | .38  | .37  | .36  | .35  | .34  | .33  | .32  | .32  | .31  | .30  | .30  | .29  | .29  | .28  | .27  | 11     |
| 12                 | .43  | .41  | .40  | .39  | .38  | .37  | .36  | .35  | .35  | .34  | .33  | .32  | .32  | .31  | .31  | .30  | 12     |
| 13                 | .46  | .45  | .44  | .42  | .41  | .40  | .39  | .38  | .37  | .37  | .36  | .35  | .35  | .34  | .33  | .33  | 13     |
| 14                 | .50  | .48  | .47  | .46  | .45  | .43  | .42  | .41  | .40  | .40  | .39  | .38  | .37  | .37  | .36  | .35  | 14     |
| 15                 | .54  | .52  | .51  | .49  | .48  | .47  | .46  | .45  | .44  | .43  | .42  | .41  | .40  | .39  | .39  | .38  | 15     |
| 16                 | .57  | .56  | .54  | .53  | .51  | .50  | .49  | .48  | .47  | .46  | .45  | .44  | .43  | .42  | .41  | .41  | 16     |
| 17                 | .61  | .59  | .58  | .56  | .55  | .53  | .52  | .51  | .50  | .49  | .48  | .47  | .46  | .45  | .44  | .43  | 17     |
| 18                 | .65  | .63  | .61  | .60  | .58  | .57  | .55  | .54  | .53  | .52  | .51  | .50  | .49  | .48  | .47  | .46  | 18     |
| 19                 | .69  | .67  | .65  | .63  | .62  | .60  | .59  | .57  | .56  | .55  | .54  | .52  | .51  | .50  | .50  | .49  | 19     |
| 20                 | .73  | .71  | .69  | .67  | .65  | .63  | .62  | .60  | .59  | .58  | .57  | .55  | .54  | .53  | .52  | .51  | 20     |
| 21                 | .77  | .75  | .72  | .70  | .69  | .67  | .65  | .64  | .62  | .61  | .60  | .59  | .57  | .56  | .55  | .54  | 21     |
| 22                 | .81  | .78  | .76  | .74  | .72  | .70  | .69  | .67  | .66  | .64  | .63  | .62  | .60  | .59  | .58  | .57  | 22     |
| 23                 | .85  | .82  | .80  | .78  | .76  | .74  | .72  | .71  | .69  | .67  | .66  | .65  | .63  | .62  | .61  | .60  | 23     |
| 24                 | .89  | .86  | .84  | .82  | .80  | .78  | .76  | .74  | .72  | .71  | .69  | .68  | .67  | .65  | .64  | .63  | 24     |
| 25                 | .93  | .91  | .88  | .86  | .83  | .81  | .79  | .77  | .76  | .74  | .73  | .71  | .70  | .68  | .67  | .66  | 25     |
| 26                 | .98  | .95  | .92  | .90  | .87  | .85  | .83  | .81  | .79  | .78  | .76  | .74  | .73  | .72  | .70  | .69  | 26     |
| 27                 | 1.02 | .99  | .96  | .94  | .91  | .89  | .87  | .85  | .83  | .81  | .79  | .78  | .76  | .75  | .73  | .72  | 27     |
| 28                 | 1.06 | 1.03 | 1.00 | .98  | .95  | .93  | .90  | .88  | .86  | .84  | .83  | .81  | .79  | .78  | .77  | .75  | 28     |
| 29                 | 1.11 | 1.08 | 1.05 | 1.02 | .99  | .97  | .94  | .92  | .90  | .88  | .86  | .84  | .83  | .81  | .80  | .78  | 29     |
| 30                 | 1.15 | 1.12 | 1.09 | 1.06 | 1.03 | 1.01 | .98  | .96  | .94  | .92  | .90  | .88  | .86  | .85  | .83  | .82  | 30     |
| 31                 | 1.20 | 1.17 | 1.13 | 1.10 | 1.07 | 1.05 | 1.02 | 1.00 | .98  | .95  | .93  | .92  | .90  | .88  | .87  | .85  | 31     |
| 32                 | 1.25 | 1.21 | 1.18 | 1.15 | 1.12 | 1.09 | 1.06 | 1.04 | 1.01 | .99  | .97  | .95  | .93  | .92  | .90  | .88  | 32     |
| 33                 | 1.30 | 1.26 | 1.23 | 1.19 | 1.16 | 1.13 | 1.11 | 1.08 | 1.05 | 1.03 | 1.01 | .99  | .97  | .95  | .93  | .92  | 33     |
| 34                 | 1.35 | 1.31 | 1.27 | 1.24 | 1.21 | 1.18 | 1.15 | 1.12 | 1.10 | 1.07 | 1.05 | 1.03 | 1.01 | .99  | .97  | .96  | 34     |
| 35                 | 1.40 | 1.36 | 1.32 | 1.29 | 1.25 | 1.22 | 1.19 | 1.16 | 1.14 | 1.11 | 1.09 | 1.07 | 1.05 | 1.03 | 1.01 | .99  | 35     |
| 36                 | 1.45 | 1.41 | 1.37 | 1.33 | 1.30 | 1.27 | 1.24 | 1.21 | 1.18 | 1.15 | 1.13 | 1.11 | 1.09 | 1.07 | 1.05 | 1.03 | 36     |
| 37                 | 1.51 | 1.46 | 1.42 | 1.38 | 1.35 | 1.31 | 1.28 | 1.25 | 1.22 | 1.20 | 1.17 | 1.15 | 1.13 | 1.10 | 1.08 | 1.07 | 37     |
| 38                 | 1.56 | 1.52 | 1.47 | 1.43 | 1.40 | 1.36 | 1.33 | 1.30 | 1.27 | 1.24 | 1.22 | 1.19 | 1.17 | 1.15 | 1.12 | 1.11 | 38     |
| 39                 | 1.62 | 1.57 | 1.53 | 1.49 | 1.45 | 1.41 | 1.38 | 1.35 | 1.32 | 1.29 | 1.26 | 1.23 | 1.21 | 1.19 | 1.17 | 1.15 | 39     |
| 40                 | 1.68 | 1.63 | 1.58 | 1.54 | 1.50 | 1.46 | 1.43 | 1.39 | 1.36 | 1.33 | 1.31 | 1.28 | 1.25 | 1.23 | 1.21 | 1.19 | 40     |
| 41                 | 1.74 | 1.69 | 1.64 | 1.60 | 1.55 | 1.52 | 1.48 | 1.44 | 1.41 | 1.38 | 1.35 | 1.33 | 1.30 | 1.27 | 1.25 | 1.23 | 41     |
| 42                 | 1.80 | 1.75 | 1.70 | 1.65 | 1.61 | 1.57 | 1.53 | 1.50 | 1.46 | 1.43 | 1.40 | 1.37 | 1.35 | 1.32 | 1.30 | 1.28 | 42     |
| 43                 | 1.87 | 1.81 | 1.76 | 1.71 | 1.67 | 1.63 | 1.59 | 1.55 | 1.51 | 1.48 | 1.45 | 1.42 | 1.39 | 1.37 | 1.34 | 1.32 | 43     |
| 44                 | 1.93 | 1.87 | 1.82 | 1.77 | 1.73 | 1.68 | 1.64 | 1.60 | 1.57 | 1.53 | 1.50 | 1.47 | 1.44 | 1.42 | 1.39 | 1.37 | 44     |
| 45                 | 2.00 | 1.94 | 1.89 | 1.84 | 1.79 | 1.74 | 1.70 | 1.66 | 1.62 | 1.59 | 1.56 | 1.52 | 1.49 | 1.47 | 1.44 | 1.41 | 45     |
| 46                 | 2.07 | 2.01 | 1.95 | 1.90 | 1.85 | 1.81 | 1.76 | 1.72 | 1.68 | 1.65 | 1.61 | 1.58 | 1.55 | 1.52 | 1.49 | 1.47 | 46     |
| 47                 | 2.14 | 2.08 | 2.02 | 1.97 | 1.92 | 1.87 | 1.82 | 1.78 | 1.74 | 1.70 | 1.67 | 1.63 | 1.60 | 1.57 | 1.54 | 1.52 | 47     |
| 48                 | 2.22 | 2.16 | 2.10 | 2.04 | 1.99 | 1.94 | 1.89 | 1.85 | 1.80 | 1.76 | 1.73 | 1.69 | 1.66 | 1.63 | 1.60 | 1.57 | 48     |
| 49                 | 2.30 | 2.23 | 2.17 | 2.11 | 2.06 | 2.01 | 1.96 | 1.91 | 1.87 | 1.83 | 1.79 | 1.75 | 1.72 | 1.69 | 1.66 | 1.63 | 49     |
| 50                 | 2.38 | 2.31 | 2.25 | 2.19 | 2.13 | 2.08 | 2.03 | 1.98 | 1.94 | 1.89 | 1.85 | 1.82 | 1.78 | 1.75 | 1.72 | 1.69 | 50     |
| 51                 | 2.47 | 2.40 | 2.33 | 2.27 | 2.21 | 2.15 | 2.10 | 2.05 | 2.01 | 1.96 | 1.92 | 1.88 | 1.85 | 1.81 | 1.78 | 1.75 | 51     |
| 52                 | 2.56 | 2.49 | 2.42 | 2.35 | 2.29 | 2.23 | 2.18 | 2.13 | 2.08 | 2.03 | 1.99 | 1.95 | 1.91 | 1.88 | 1.84 | 1.81 | 52     |
| 53                 | 2.65 | 2.58 | 2.50 | 2.44 | 2.37 | 2.31 | 2.26 | 2.21 | 2.16 | 2.11 | 2.06 | 2.02 | 1.98 | 1.95 | 1.91 | 1.88 | 53     |
| 54                 | 2.75 | 2.67 | 2.60 | 2.53 | 2.46 | 2.40 | 2.34 | 2.29 | 2.24 | 2.19 | 2.14 | 2.10 | 2.06 | 2.02 | 1.98 | 1.95 | 54     |
| 55                 | 2.86 | 2.77 | 2.70 | 2.62 | 2.55 | 2.49 | 2.43 | 2.37 | 2.32 | 2.27 | 2.22 | 2.18 | 2.13 | 2.09 | 2.06 | 2.02 | 55     |
| 56                 | 2.97 | 2.88 | 2.80 | 2.72 | 2.65 | 2.58 | 2.52 | 2.46 | 2.41 | 2.36 | 2.31 | 2.26 | 2.22 | 2.17 | 2.13 | 2.10 | 56     |
| 57                 | 3.08 | 2.99 | 2.91 | 2.83 | 2.75 | 2.68 | 2.62 | 2.56 | 2.50 | 2.45 | 2.40 | 2.35 | 2.30 | 2.26 | 2.22 | 2.18 | 57     |
| 58                 | 3.20 | 3.11 | 3.02 | 2.94 | 2.86 | 2.79 | 2.72 | 2.66 | 2.60 | 2.54 | 2.49 | 2.44 | 2.39 | 2.35 | 2.30 | 2.27 | 58     |
| 59                 | 3.33 | 3.23 | 3.14 | 3.06 | 2.98 | 2.90 | 2.83 | 2.77 | 2.70 | 2.64 | 2.59 | 2.54 | 2.49 | 2.44 | 2.40 | 2.36 | 59     |
| 60                 | 3.46 | 3.36 | 3.27 | 3.18 | 3.10 | 3.02 | 2.95 | 2.88 | 2.81 | 2.75 | 2.69 | 2.64 | 2.59 | 2.54 | 2.49 | 2.45 | 60     |
| Dec. °             | 150° | 149° | 148° | 147° | 146° | 145° | 144° | 143° | 142° | 141° | 140° | 139° | 138° | 137° | 136° | 135° | Dec. ° |
| Dec. °             | 210° | 211° | 212° | 213° | 214° | 215° | 216° | 217° | 218° | 219° | 220° | 221° | 222° | 223° | 224° | 225° | Dec. ° |

B - Always named the same as Declination

B - Always named the same as Declination

HOUR ANGLE

B

### TABLE C

| A ± B = |      | A & B CORRECTION |      |           |      |           |      |           |      |           |      |           |      |           |      |           |      | A ± B |      |
|---------|------|------------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-------|------|
|         |      | ·60' ·62'        |      | ·64' ·66' |      | ·68' ·70' |      | ·72' ·74' |      | ·76' ·78' |      | ·80' ·82' |      | ·84' ·86' |      | ·88' ·90' |      |       |      |
| Lat.    | °    | AZIMUTHS         |      |           |      |           |      |           |      |           |      |           |      |           |      |           |      | °     | Lat. |
|         |      | 0                | 59-0 | 58-2      | 57-4 | 56-6      | 55-8 | 55-0      | 54-2 | 53-5      | 52-8 | 52-0      | 51-3 | 50-6      | 50-0 | 49-3      | 48-7 |       |      |
| 5       | 59-1 | 58-3             | 57-5 | 56-7      | 55-9 | 55-1      | 54-3 | 53-6      | 52-9 | 52-2      | 51-5 | 50-8      | 50-1 | 49-4      | 48-8 | 48-1      | 5    |       |      |
| 10      | 59-4 | 58-6             | 57-8 | 57-0      | 56-2 | 55-4      | 54-7 | 53-9      | 53-2 | 52-5      | 51-8 | 51-1      | 50-4 | 49-7      | 49-1 | 48-4      | 10   |       |      |
| 14      | 59-8 | 59-0             | 58-2 | 57-4      | 56-6 | 55-8      | 55-1 | 54-3      | 53-6 | 52-9      | 52-2 | 51-5      | 50-8 | 50-2      | 49-5 | 48-9      | 14   |       |      |
| 18      | 60-3 | 59-5             | 58-7 | 57-9      | 57-1 | 56-3      | 55-6 | 54-9      | 54-1 | 53-4      | 52-7 | 52-1      | 51-4 | 50-7      | 50-1 | 49-4      | 18   |       |      |
| 20      | 60-6 | 59-8             | 59-0 | 58-2      | 57-4 | 56-7      | 55-9 | 55-2      | 54-5 | 53-8      | 53-1 | 52-4      | 51-7 | 51-1      | 50-4 | 49-8      | 20   |       |      |
| 22      | 60-9 | 60-1             | 59-3 | 58-5      | 57-8 | 57-0      | 56-3 | 55-5      | 54-8 | 54-1      | 53-4 | 52-8      | 52-1 | 51-4      | 50-8 | 50-2      | 22   |       |      |
| 24      | 61-3 | 60-5             | 59-7 | 58-9      | 58-2 | 57-4      | 56-7 | 55-9      | 55-2 | 54-5      | 53-8 | 53-2      | 52-5 | 51-8      | 51-2 | 50-6      | 24   |       |      |
| 26      | 61-7 | 60-9             | 60-1 | 59-3      | 58-6 | 57-8      | 57-1 | 56-4      | 55-7 | 55-0      | 54-3 | 53-6      | 52-9 | 52-3      | 51-7 | 51-0      | 26   |       |      |
| 28      | 62-1 | 61-3             | 60-5 | 59-8      | 59-0 | 58-3      | 57-6 | 56-8      | 56-1 | 55-4      | 54-8 | 54-1      | 53-4 | 52-8      | 52-2 | 51-5      | 28   |       |      |
| 30      | 62-5 | 61-8             | 61-0 | 60-2      | 59-5 | 58-8      | 58-1 | 57-3      | 56-6 | 56-0      | 55-3 | 54-6      | 54-0 | 53-3      | 52-7 | 52-1      | 30   |       |      |
| 31      | 62-8 | 62-0             | 61-3 | 60-5      | 59-8 | 59-0      | 58-3 | 57-6      | 56-9 | 56-2      | 55-6 | 54-9      | 54-2 | 53-6      | 53-0 | 52-4      | 31   |       |      |
| 32      | 63-0 | 62-3             | 61-5 | 60-8      | 60-0 | 59-3      | 58-6 | 57-9      | 57-2 | 56-5      | 55-8 | 55-2      | 54-5 | 53-9      | 53-3 | 52-7      | 32   |       |      |
| 33      | 63-3 | 62-5             | 61-8 | 61-0      | 60-3 | 59-6      | 58-9 | 58-2      | 57-5 | 56-8      | 56-1 | 55-5      | 54-8 | 54-2      | 53-6 | 53-0      | 33   |       |      |
| 34      | 63-6 | 62-8             | 62-1 | 61-3      | 60-6 | 59-9      | 59-2 | 58-5      | 57-8 | 57-1      | 56-4 | 55-8      | 55-1 | 54-5      | 53-9 | 53-3      | 34   |       |      |
| 35      | 63-8 | 63-1             | 62-3 | 61-6      | 60-9 | 60-2      | 59-5 | 58-8      | 58-1 | 57-4      | 56-8 | 56-1      | 55-5 | 54-8      | 54-2 | 53-6      | 35   |       |      |
| 36      | 64-1 | 63-4             | 62-6 | 61-9      | 61-2 | 60-5      | 59-8 | 59-1      | 58-4 | 57-7      | 57-1 | 56-4      | 55-8 | 55-2      | 54-6 | 53-9      | 36   |       |      |
| 37      | 64-4 | 63-7             | 62-9 | 62-2      | 61-5 | 60-8      | 60-1 | 59-4      | 58-7 | 58-1      | 57-4 | 56-8      | 56-1 | 55-5      | 54-9 | 54-3      | 37   |       |      |
| 38      | 64-7 | 64-0             | 63-2 | 62-5      | 61-8 | 61-1      | 60-4 | 59-8      | 59-1 | 58-4      | 57-8 | 57-1      | 56-5 | 55-9      | 55-3 | 54-7      | 38   |       |      |
| 39      | 65-0 | 64-3             | 63-6 | 62-8      | 62-1 | 61-5      | 60-8 | 60-1      | 59-4 | 58-8      | 58-1 | 57-5      | 56-9 | 56-2      | 55-6 | 55-0      | 39   |       |      |
| 40      | 65-3 | 64-6             | 63-9 | 63-2      | 62-5 | 61-8      | 61-1 | 60-5      | 59-8 | 59-1      | 58-5 | 57-9      | 57-2 | 56-6      | 56-0 | 55-4      | 40   |       |      |
| 41      | 65-6 | 64-9             | 64-2 | 63-5      | 62-8 | 62-2      | 61-5 | 60-8      | 60-2 | 59-5      | 58-9 | 58-2      | 57-6 | 57-0      | 56-4 | 55-8      | 41   |       |      |
| 42      | 66-0 | 65-3             | 64-6 | 63-9      | 63-2 | 62-5      | 61-9 | 61-2      | 60-5 | 59-9      | 59-3 | 58-6      | 58-0 | 57-4      | 56-8 | 56-2      | 42   |       |      |
| 43      | 66-3 | 65-6             | 64-9 | 64-2      | 63-6 | 62-9      | 62-2 | 61-6      | 60-9 | 60-3      | 59-7 | 59-0      | 58-4 | 57-8      | 57-2 | 56-6      | 43   |       |      |
| 44      | 66-7 | 66-0             | 65-3 | 64-6      | 63-9 | 63-3      | 62-6 | 62-0      | 61-3 | 60-7      | 60-1 | 59-5      | 58-9 | 58-3      | 57-7 | 57-1      | 44   |       |      |
| 45      | 67-0 | 66-3             | 65-7 | 65-0      | 64-3 | 63-7      | 63-0 | 62-4      | 61-7 | 61-1      | 60-5 | 59-9      | 59-3 | 58-7      | 58-1 | 57-6      | 45   |       |      |
| 46      | 67-4 | 66-7             | 66-0 | 65-4      | 64-7 | 64-1      | 63-4 | 62-8      | 62-2 | 61-5      | 60-9 | 60-3      | 59-7 | 59-1      | 58-6 | 58-0      | 46   |       |      |
| 47      | 67-7 | 67-1             | 66-4 | 65-8      | 65-1 | 64-5      | 63-8 | 63-2      | 62-6 | 62-0      | 61-4 | 60-8      | 60-2 | 59-6      | 59-0 | 58-5      | 47   |       |      |
| 48      | 68-1 | 67-5             | 66-8 | 66-2      | 65-5 | 64-9      | 64-3 | 63-7      | 63-0 | 62-4      | 61-8 | 61-2      | 60-7 | 60-1      | 59-5 | 58-9      | 48   |       |      |
| 49      | 68-5 | 67-9             | 67-2 | 66-6      | 66-0 | 65-3      | 64-7 | 64-1      | 63-5 | 62-9      | 62-3 | 61-7      | 61-1 | 60-6      | 60-0 | 59-4      | 49   |       |      |
| 50      | 68-9 | 68-3             | 67-6 | 67-0      | 66-4 | 65-8      | 65-2 | 64-6      | 64-0 | 63-4      | 62-8 | 62-2      | 61-6 | 61-1      | 60-5 | 60-0      | 50   |       |      |
| 51      | 69-3 | 68-7             | 68-1 | 67-4      | 66-8 | 66-2      | 65-6 | 65-0      | 64-4 | 63-9      | 63-3 | 62-7      | 62-1 | 61-6      | 61-0 | 60-5      | 51   |       |      |
| 52      | 69-7 | 69-1             | 68-5 | 67-9      | 67-3 | 66-7      | 66-1 | 65-5      | 64-9 | 64-4      | 63-8 | 63-2      | 62-7 | 62-1      | 61-6 | 61-0      | 52   |       |      |
| 53      | 70-1 | 69-5             | 68-9 | 68-3      | 67-7 | 67-2      | 66-6 | 66-0      | 65-4 | 64-9      | 64-3 | 63-7      | 63-2 | 62-6      | 62-1 | 61-6      | 53   |       |      |
| 54      | 70-6 | 70-0             | 69-4 | 68-8      | 68-2 | 67-6      | 67-1 | 66-5      | 65-9 | 65-4      | 64-8 | 64-3      | 63-7 | 63-2      | 62-6 | 62-1      | 54   |       |      |
| 55      | 71-0 | 70-4             | 69-8 | 69-3      | 68-7 | 68-1      | 67-6 | 67-0      | 66-4 | 65-9      | 65-4 | 64-8      | 64-3 | 63-7      | 63-2 | 62-7      | 55   |       |      |
| 56      | 71-5 | 70-9             | 70-3 | 69-7      | 69-2 | 68-6      | 68-1 | 67-5      | 67-0 | 66-4      | 65-9 | 65-4      | 64-9 | 64-3      | 63-8 | 63-3      | 56   |       |      |
| 57      | 71-9 | 71-3             | 70-8 | 70-2      | 69-7 | 69-1      | 68-6 | 68-0      | 67-5 | 67-0      | 66-5 | 65-9      | 65-4 | 64-9      | 64-4 | 63-9      | 57   |       |      |
| 58      | 72-4 | 71-8             | 71-3 | 70-7      | 70-2 | 69-6      | 69-1 | 68-6      | 68-1 | 67-5      | 67-0 | 66-5      | 66-0 | 65-5      | 65-0 | 64-5      | 58   |       |      |
| 59      | 72-8 | 72-3             | 71-8 | 71-2      | 70-7 | 70-2      | 69-7 | 69-1      | 68-6 | 68-1      | 67-6 | 67-1      | 66-6 | 66-1      | 65-6 | 65-1      | 59   |       |      |
| 60      | 73-3 | 72-8             | 72-3 | 71-7      | 71-2 | 70-7      | 70-2 | 69-7      | 69-2 | 68-7      | 68-2 | 67-7      | 67-2 | 66-7      | 66-3 | 65-8      | 60   |       |      |
| 61      | 73-8 | 73-3             | 72-8 | 72-3      | 71-8 | 71-3      | 70-8 | 70-3      | 69-8 | 69-3      | 68-8 | 68-3      | 67-8 | 67-4      | 66-9 | 66-4      | 61   |       |      |
| 62      | 74-3 | 73-8             | 73-3 | 72-8      | 72-3 | 71-8      | 71-3 | 70-8      | 70-4 | 69-9      | 69-4 | 68-9      | 68-5 | 68-0      | 67-6 | 67-1      | 62   |       |      |
| 63      | 74-8 | 74-3             | 73-8 | 73-3      | 72-8 | 72-4      | 71-9 | 71-4      | 71-0 | 70-5      | 70-0 | 69-6      | 69-1 | 68-7      | 68-2 | 67-8      | 63   |       |      |
| 64      | 75-3 | 74-8             | 74-3 | 73-9      | 73-4 | 72-9      | 72-5 | 72-0      | 71-6 | 71-1      | 70-7 | 70-2      | 69-8 | 69-3      | 68-9 | 68-5      | 64   |       |      |
| 65      | 75-8 | 75-3             | 74-9 | 74-4      | 74-0 | 73-5      | 73-1 | 72-6      | 72-2 | 71-8      | 71-3 | 70-9      | 70-5 | 70-0      | 69-6 | 69-2      | 65   |       |      |
| 66      | 76-3 | 75-8             | 75-4 | 75-0      | 74-5 | 74-1      | 73-7 | 73-2      | 72-8 | 72-4      | 72-0 | 71-6      | 71-1 | 70-7      | 70-3 | 69-9      | 66   |       |      |
| 67      | 76-8 | 76-4             | 76-0 | 75-5      | 75-1 | 74-7      | 74-3 | 73-9      | 73-5 | 73-1      | 72-6 | 72-2      | 71-8 | 71-4      | 71-0 | 70-6      | 67   |       |      |
| 68      | 77-3 | 76-9             | 76-5 | 76-1      | 75-7 | 75-3      | 74-9 | 74-5      | 74-1 | 73-7      | 73-3 | 72-9      | 72-5 | 72-1      | 71-8 | 71-4      | 68   |       |      |

A & B Same Names } RULE TO FIND { A & B Different names  
 take Sum, (add) } C CORRECTION { take Difference (Sub.)  
 C CORRECTION, (A ± B) is named the same as the greater of these quantities.  
 AZIMUTH takes combined names of C Correction and Hour Angle