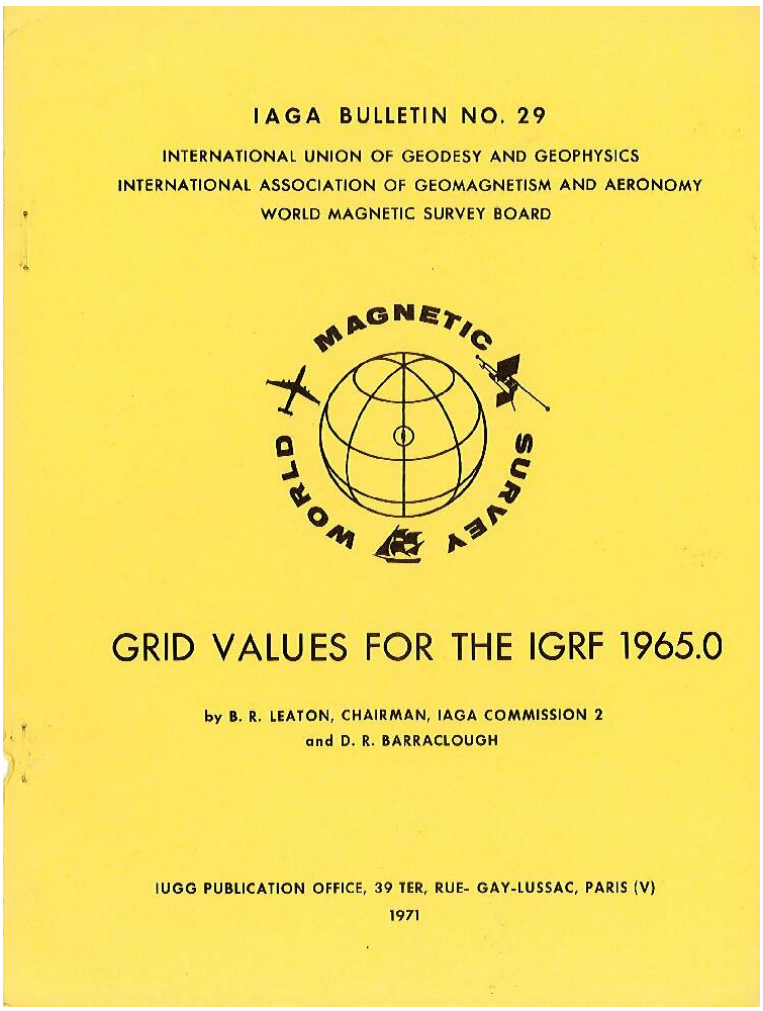


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INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
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WORLD MAGNETIC SURVEY BOARD


# GRID VALUES FOR THE IGRF 1965.0

by B. R. LEATON, CHAIRMAN, IAGA COMMISSION 2
and D. R. BARRACLOUGH

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1971

# GRID VALUES FOR THE IGRF 1965.0

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The International Geomagnetic Reference Field 1965.0 (IGRF 1965.0) was chosen in October 1968 by Working Group No. 4, Analysis of the Geomagnetic Field, in Commission 2 of the International Association of Geomagnetism and Aeronomy (IAGA). The reference field was subsequently endorsed by the IAGA World Magnetic Survey Board and by the IAGA Executive Committee.

The IGRF is a series of solid spherical harmonics and their derivatives in geocentric spherical coordinates describing the geomagnetic potential V and the field components through

$$V = a \sum_{n=1}^{n=8} \sum_{m=0}^{m=n} \left( \frac{a}{r} \right)^{n+1} \left[ g_n^m \cos m\lambda + h_n^m \sin m\lambda \right] P_n^m (\cos \theta)$$

$$X = \frac{1}{r} \frac{\partial V}{\partial \theta} \quad ; \qquad Y = - \frac{1}{r \sin\theta} \frac{\partial V}{\partial \lambda} \quad ; \qquad Z = \frac{\partial V}{\partial r}$$

where X, Y, and Z represent, respectively, the northward, eastward, and downward components of the intensity in geocentric coordinates; a, the radius (6371.2 km) of the reference sphere; r, the radial distance from the center of the reference sphere; $\theta$, the colatitude; $\lambda$, the east longitude; $P_n^m (\cos \theta)$, an associated Legendre function

of degree n and order m; $g_n^m$ and $h_n^m$, spherical harmonic coefficients, of which there are 80, up to n=m=8, for the main field as well as for the secular variations.

The epoch is 1965.0 and the reference field applies to the period 1955.0 to 1972.0. For dates after the epoch 1972.0 recommendations will be made at the 15th General Assembly of the International Union of Geodesy and Geophysics (IUGG).

The IGRF coefficients were published in three journals by IAGA Commission 2 Working Group No. 4 [1969] and in IAGA Bulletin No. 28 [1971] which also contains discussions of the evaluations leading to the IGRF and a set of IGRF charts by B.R. Leaton.

Grid values of all seven elements and their annual secular change for the epoch 1965.0 are given in Tables 1A to 7B in this IAGA Bulletin. For all elements except total intensity T, values are given for every 5° of latitude and longitude. For T, the grid is 2° x 2°. Values are accurate to the last place given. A FORTRAN program developed by Malin [1969] specifically for synthesizing from the IGRF was used to compute X, Y, Z and T, whence D, H and I were then derived. Values of annual secular change were deduced from the differences between values similarly synthesized for the epochs 1965.5 and 1964.5.

The IGRF is defined such that the secular changes of X, Y and Z are linear. The secular changes of the derived elements

D, H, I and T are, therefore, not linear. For this reason, there may be small differences between the tabulated values of D, H, $\dot{I}$ and $\dot{T}$ and those calculated from the first terms of a Taylor expansion. For this reason also, where mutual consistency is required, it is necessary to compute values of D, H, (I or T) for epochs other than 1965.0 from interpolated values of X, Y (and Z).

It is recommended that, in general, second difference interpolation is used for non-grid positions. It is suggested that Gauss' forward formula be used for this purpose:

Let $f_{-1}$, $f_o$, $f_1$ be successive grid values, then $f_p$, the value at a point intermediate between $f_o$ and $f_1$, one pth the distance between $f_o$ and $f_1$ is given by $f_p = f_o + p(f_1 - f_o) + Gd$

where $G = 0.5\ p\ (p-1)$

and $d = f_1 - 2f_o + f_{-1}$.

Interpolation should first be performed in latitude for the three appropriate grid longitudes. From these three values, interpolation should then be performed in longitude. To permit second difference interpolation for the highest latitudes additional artificial values have been given at the top and bottom of all tables except those for D and $\dot{D}$ where the method is unsuitable owing to singularities at the geographical poles. Values of D for latitudes above 85° should be derived from corresponding values of X and Y.

It may not be necessary to employ second difference inter-

polation in all cases. This is true particularly for T due to the closer grid spacing. Fabiano and Peddie [1969] have shown that the maximum error due to using only linear interpolation in the T tables is about 20γ. As a guide to where the second difference, d, is unimportant, note that the maximum numerical value of G is 0.125, corresponding to p = 0.5.

This Bulletin also contains a list of publications by the International Association of Geomagnetism and Aeronomy.

## Acknowledgments

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TABLE 1 A IGRF DECLINATION (D)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (EAST POSITIVE)

| E.LONG. / LAT. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. / LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 N | -40.40 | -35.40 | -30.40 | -25.40 | -20.40 | -15.40 | -10.40 | -5.40 | -0.40 | 4.60 | 9.60 | 14.60 | 19.60 | 24.60 | 29.60 | 90 N |
| 85 N | -23.70 | -19.01 | -14.39 | -9.84 | -5.36 | -0.95 | 3.38 | 7.62 | 11.77 | 15.83 | 19.77 | 23.59 | 27.27 | 30.80 | 34.15 | 85 N |
| 80 N | -18.90 | -14.45 | -10.07 | -5.76 | -1.53 | 2.61 | 6.65 | 10.57 | 14.38 | 18.04 | 21.54 | 24.85 | 27.93 | 30.74 | 33.23 | 80 N |
| 75 N | -16.58 | -12.41 | -8.32 | -4.31 | -0.40 | 3.42 | 7.12 | 10.70 | 14.13 | 17.38 | 20.44 | 23.25 | 25.78 | 27.96 | 29.71 | 75 N |
| 70 N | -14.94 | -11.14 | -7.42 | -3.78 | -0.25 | 3.18 | 6.49 | 9.66 | 12.68 | 15.50 | 18.10 | 20.44 | 22.45 | 24.06 | 25.19 | 70 N |
| 65 N | -13.45 | -10.06 | -6.77 | -3.56 | -0.46 | 2.54 | 5.43 | 8.18 | 10.77 | 13.17 | 15.34 | 17.23 | 18.79 | 19.94 | 20.61 | 65 N |
| 60 N | -12.00 | -9.03 | -6.17 | -3.40 | -0.73 | 1.84 | 4.30 | 6.63 | 8.81 | 10.81 | 12.58 | 14.08 | 15.25 | 16.04 | 16.38 | 60 N |
| 55 N | -10.62 | -8.03 | -5.56 | -3.19 | -0.93 | 1.23 | 3.29 | 5.23 | 7.03 | 8.65 | 10.06 | 11.20 | 12.04 | 12.53 | 12.64 | 55 N |
| 50 N | -9.41 | -7.13 | -4.98 | -2.95 | -1.04 | 0.77 | 2.48 | 4.06 | 5.52 | 6.79 | 7.86 | 8.69 | 9.23 | 9.48 | 9.42 | 50 N |
| 45 N | -8.44 | -6.39 | -4.48 | -2.72 | -1.09 | 0.42 | 1.83 | 3.12 | 4.27 | 5.25 | 6.03 | 6.57 | 6.86 | 6.90 | 6.70 | 45 N |
| 40 N | -7.76 | -5.86 | -4.13 | -2.57 | -1.16 | 0.13 | 1.30 | 2.35 | 3.27 | 4.01 | 4.54 | 4.84 | 4.91 | 4.77 | 4.46 | 40 N |
| 35 N | -7.39 | -5.57 | -3.96 | -2.54 | -1.29 | -0.17 | 0.82 | 1.70 | 2.44 | 3.00 | 3.35 | 3.47 | 3.36 | 3.07 | 2.66 | 35 N |
| 30 N | -7.31 | -5.54 | -3.99 | -2.67 | -1.53 | -0.54 | 0.34 | 1.11 | 1.74 | 2.18 | 2.41 | 2.39 | 2.14 | 1.74 | 1.26 | 30 N |
| 25 N | -7.53 | -5.77 | -4.26 | -2.99 | -1.92 | -1.00 | -0.18 | 0.53 | 1.10 | 1.49 | 1.64 | 1.53 | 1.19 | 0.69 | 0.16 | 25 N |
| 20 N | -8.04 | -6.26 | -4.76 | -3.51 | -2.47 | -1.57 | -0.77 | -0.07 | 0.50 | 0.87 | 0.98 | 0.81 | 0.40 | -0.16 | -0.74 | 20 N |
| 15 N | -8.86 | -7.04 | -5.51 | -4.25 | -3.20 | -2.28 | -1.46 | -0.72 | -0.12 | 0.26 | 0.36 | 0.15 | -0.32 | -0.94 | -1.56 | 15 N |
| 10 N | -9.99 | -8.13 | -6.55 | -5.24 | -4.13 | -3.15 | -2.25 | -1.45 | -0.79 | -0.38 | -0.30 | -0.55 | -1.09 | -1.77 | -2.41 | 10 N |
| 5 N | -11.46 | -9.56 | -7.91 | -6.52 | -5.31 | -4.22 | -3.21 | -2.30 | -1.58 | -1.14 | -1.08 | -1.40 | -2.02 | -2.77 | -3.45 | 5 N |
| 0 | -13.30 | -11.37 | -9.65 | -8.14 | -6.79 | -5.55 | -4.38 | -3.35 | -2.56 | -2.12 | -2.12 | -2.54 | -3.28 | -4.13 | -4.83 | 0 |
| 5 S | -15.54 | -13.61 | -11.82 | -10.18 | -8.65 | -7.21 | -5.87 | -4.71 | -3.86 | -3.46 | -3.57 | -4.17 | -5.07 | -6.03 | -6.77 | 5 S |
| 10 S | -18.12 | -16.27 | -14.44 | -12.67 | -10.97 | -9.32 | -7.80 | -6.53 | -5.67 | -5.37 | -5.69 | -6.51 | -7.63 | -8.72 | -9.47 | 10 S |
| 15 S | -20.91 | -19.24 | -17.46 | -15.63 | -13.78 | -11.97 | -10.31 | -9.00 | -8.22 | -8.13 | -8.73 | -9.86 | -11.21 | -12.42 | -13.16 | 15 S |
| 20 S | -23.63 | -22.26 | -20.66 | -18.89 | -17.02 | -15.16 | -13.49 | -12.27 | -11.72 | -11.96 | -12.93 | -14.39 | -15.96 | -17.25 | -17.93 | 20 S |
| 25 S | -25.86 | -24.90 | -23.62 | -22.08 | -20.38 | -18.68 | -17.23 | -16.31 | -16.15 | -16.83 | -18.20 | -19.95 | -21.68 | -23.01 | -23.62 | 25 S |
| 30 S | -27.19 | -26.67 | -25.80 | -24.65 | -23.33 | -22.05 | -21.08 | -20.69 | -21.07 | -22.23 | -23.97 | -25.94 | -27.78 | -29.14 | -29.75 | 30 S |
| 35 S | -27.36 | -27.24 | -26.81 | -26.13 | -25.36 | -24.70 | -24.40 | -24.68 | -25.67 | -27.29 | -29.33 | -31.49 | -33.44 | -34.91 | -35.66 | 35 S |
| 40 S | -26.43 | -26.67 | -26.65 | -26.49 | -26.33 | -26.37 | -26.80 | -27.77 | -29.31 | -31.34 | -33.66 | -36.01 | -38.14 | -39.84 | -40.91 | 40 S |
| 45 S | -24.75 | -25.32 | -25.73 | -26.10 | -26.57 | -27.28 | -28.39 | -29.95 | -31.97 | -34.34 | -36.90 | -39.47 | -41.84 | -43.86 | -45.35 | 45 S |
| 50 S | -22.74 | -23.69 | -24.57 | -25.48 | -26.54 | -27.87 | -29.54 | -31.58 | -33.97 | -36.61 | -39.40 | -42.18 | -44.83 | -47.20 | -49.18 | 50 S |
| 55 S | -20.80 | -22.20 | -23.58 | -25.03 | -26.64 | -28.49 | -30.62 | -33.04 | -35.71 | -38.59 | -41.57 | -44.57 | -47.48 | -50.22 | -52.69 | 55 S |
| 60 S | -19.17 | -21.06 | -22.95 | -24.93 | -27.05 | -29.35 | -31.87 | -34.60 | -37.53 | -40.60 | -43.78 | -46.98 | -50.16 | -53.25 | -56.18 | 60 S |
| 65 S | -17.99 | -20.37 | -22.78 | -25.26 | -27.84 | -30.56 | -33.44 | -36.46 | -39.63 | -42.91 | -46.29 | -49.72 | -53.16 | -56.59 | -59.97 | 65 S |
| 70 S | -17.34 | -20.21 | -23.11 | -26.06 | -29.09 | -32.21 | -35.43 | -38.76 | -42.20 | -45.73 | -49.35 | -53.03 | -56.77 | -60.55 | -64.36 | 70 S |
| 75 S | -17.30 | -20.64 | -24.01 | -27.43 | -30.90 | -34.43 | -38.03 | -41.70 | -45.46 | -49.30 | -53.21 | -57.20 | -61.27 | -65.42 | -69.64 | 75 S |
| 80 S | -18.02 | -21.84 | -25.69 | -29.58 | -33.50 | -37.47 | -41.49 | -45.57 | -49.71 | -53.92 | -58.20 | -62.55 | -66.99 | -71.51 | -76.12 | 80 S |
| 85 S | -19.80 | -24.15 | -28.52 | -32.92 | -37.35 | -41.81 | -46.30 | -50.84 | -55.42 | -60.04 | -64.72 | -69.45 | -74.24 | -79.09 | -84.01 | 85 S |
| 90 S | -23.22 | -28.22 | -33.22 | -38.22 | -43.22 | -48.22 | -53.22 | -58.22 | -63.22 | -68.22 | -73.22 | -78.22 | -83.22 | -88.22 | -93.22 | 90 S |
| LAT. / E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | LAT. / E.LONG. |

To obtain interpolated values of D near the geographic and geomagnetic poles, it is suggested that the values of X and Y for the required position are found by interpolation from the tables of these components ( Tables 4A and 5A ) and that the appropriate value of D is then calculated using the relation tan D = Y/X.

TABLE 1 A IGRF DECLINATION (D)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (EAST POSITIVE)

| E.LONG. / LAT. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. / LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 N | 19.60 | 24.60 | 29.60 | 34.60 | 39.60 | 44.60 | 49.60 | 54.60 | 59.60 | 64.60 | 69.60 | 74.60 | 79.60 | 84.60 | 89.60 | 90 N |
| 85 N | 27.27 | 30.80 | 34.15 | 37.30 | 40.22 | 42.87 | 45.23 | 47.23 | 48.84 | 50.00 | 50.67 | 50.84 | 50.48 | 49.67 | 48.48 | 85 N |
| 80 N | 27.93 | 30.74 | 33.23 | 35.31 | 36.90 | 37.88 | 38.08 | 37.32 | 35.43 | 32.23 | 27.72 | 22.15 | 16.10 | 10.33 | 5.51 | 80 N |
| 75 N | 25.78 | 27.96 | 29.71 | 30.92 | 31.46 | 31.17 | 29.84 | 27.26 | 23.29 | 17.98 | 11.67 | 5.06 | -0.99 | -5.87 | -9.30 | 75 N |
| 70 N | 22.45 | 24.06 | 25.19 | 25.73 | 25.55 | 24.50 | 22.42 | 19.19 | 14.81 | 9.47 | 3.65 | -2.04 | -7.00 | -10.83 | -13.41 | 70 N |
| 65 N | 18.79 | 19.94 | 20.61 | 20.70 | 20.12 | 18.75 | 16.52 | 13.39 | 9.42 | 4.83 | -0.01 | -4.66 | -8.71 | -11.87 | -14.01 | 65 N |
| 60 N | 15.25 | 16.04 | 16.38 | 16.21 | 15.46 | 14.08 | 12.02 | 9.30 | 5.99 | 2.26 | -1.65 | -5.42 | -8.75 | -11.42 | -13.29 | 60 N |
| 55 N | 12.04 | 12.53 | 12.64 | 12.33 | 11.56 | 10.32 | 8.58 | 6.36 | 3.72 | 0.77 | -2.33 | -5.36 | -8.11 | -10.38 | -12.04 | 55 N |
| 50 N | 9.23 | 9.48 | 9.42 | 9.04 | 8.33 | 7.28 | 5.90 | 4.18 | 2.15 | -0.12 | -2.53 | -4.94 | -7.19 | -9.11 | -10.56 | 50 N |
| 45 N | 6.86 | 6.90 | 6.70 | 6.28 | 5.66 | 4.83 | 3.79 | 2.53 | 1.06 | -0.62 | -2.45 | -4.33 | -6.14 | -7.74 | -8.98 | 45 N |
| 40 N | 4.91 | 4.77 | 4.46 | 4.02 | 3.49 | 2.87 | 2.15 | 1.30 | 0.30 | -0.88 | -2.20 | -3.62 | -5.04 | -6.33 | -7.37 | 40 N |
| 35 N | 3.36 | 3.07 | 2.66 | 2.21 | 1.76 | 1.33 | 0.89 | 0.40 | -0.20 | -0.93 | -1.82 | -2.84 | -3.90 | -4.92 | -5.76 | 35 N |
| 30 N | 2.14 | 1.74 | 1.26 | 0.80 | 0.42 | 0.14 | -0.06 | -0.24 | -0.48 | -0.84 | -1.35 | -2.01 | -2.77 | -3.53 | -4.17 | 30 N |
| 25 N | 1.19 | 0.69 | 0.16 | -0.31 | -0.63 | -0.76 | -0.75 | -0.67 | -0.60 | -0.63 | -0.82 | -1.18 | -1.66 | -2.19 | -2.65 | 25 N |
| 20 N | 0.40 | -0.16 | -0.74 | -1.21 | -1.46 | -1.47 | -1.27 | -0.95 | -0.61 | -0.36 | -0.27 | -0.36 | -0.61 | -0.94 | -1.24 | 20 N |
| 15 N | -0.32 | -0.94 | -1.56 | -2.01 | -2.20 | -2.08 | -1.70 | -1.15 | -0.57 | -0.07 | 0.26 | 0.39 | 0.33 | 0.17 | 0.01 | 15 N |
| 10 N | -1.09 | -1.77 | -2.41 | -2.85 | -2.95 | -2.70 | -2.13 | -1.37 | -0.56 | 0.17 | 0.71 | 1.02 | 1.14 | 1.11 | 1.06 | 10 N |
| 5 N | -2.02 | -2.77 | -3.45 | -3.85 | -3.86 | -3.45 | -2.68 | -1.70 | -0.66 | 0.28 | 1.02 | 1.50 | 1.75 | 1.85 | 1.90 | 5 N |
| 0 | -3.28 | -4.13 | -4.83 | -5.19 | -5.08 | -4.48 | -3.49 | -2.26 | -0.97 | 0.19 | 1.11 | 1.75 | 2.14 | 2.36 | 2.52 | 0 |
| 5 S | -5.07 | -6.03 | -6.77 | -7.06 | -6.79 | -5.97 | -4.70 | -3.18 | -1.62 | -0.22 | 0.91 | 1.73 | 2.28 | 2.63 | 2.92 | 5 S |
| 10 S | -7.63 | -8.72 | -9.47 | -9.67 | -9.20 | -8.09 | -6.49 | -4.63 | -2.75 | -1.05 | 0.34 | 1.38 | 2.12 | 2.66 | 3.10 | 10 S |
| 15 S | -11.21 | -12.42 | -13.16 | -13.21 | -12.49 | -11.05 | -9.06 | -6.79 | -4.50 | -2.43 | -0.71 | 0.63 | 1.64 | 2.43 | 3.10 | 15 S |
| 20 S | -15.96 | -17.25 | -17.93 | -17.81 | -16.81 | -15.00 | -12.58 | -9.83 | -7.05 | -4.50 | -2.34 | -0.59 | 0.80 | 1.92 | 2.91 | 20 S |
| 25 S | -21.68 | -23.01 | -23.62 | -23.35 | -22.12 | -20.00 | -17.16 | -13.91 | -10.57 | -7.44 | -4.69 | -2.39 | -0.49 | 1.11 | 2.52 | 25 S |
| 30 S | -27.78 | -29.14 | -29.75 | -29.45 | -28.15 | -25.88 | -22.78 | -19.12 | -15.22 | -11.42 | -7.96 | -4.93 | -2.34 | -0.10 | 1.89 | 30 S |
| 35 S | -33.44 | -34.91 | -35.66 | -35.54 | -34.44 | -32.33 | -29.26 | -25.42 | -21.11 | -16.66 | -12.38 | -8.46 | -4.96 | -1.86 | 0.92 | 35 S |
| 40 S | -38.14 | -39.84 | -40.91 | -41.19 | -40.57 | -38.95 | -36.31 | -32.70 | -28.30 | -23.41 | -18.33 | -13.38 | -8.73 | -4.48 | -0.62 | 40 S |
| 45 S | -41.84 | -43.86 | -45.35 | -46.20 | -46.26 | -45.43 | -43.60 | -40.71 | -36.78 | -31.91 | -26.34 | -20.38 | -14.37 | -8.58 | -3.19 | 45 S |
| 50 S | -44.83 | -47.20 | -49.18 | -50.66 | -51.52 | -51.65 | -50.92 | -49.20 | -46.35 | -42.28 | -36.97 | -30.51 | -23.19 | -15.45 | -7.82 | 50 S |
| 55 S | -47.48 | -50.22 | -52.69 | -54.81 | -56.49 | -57.64 | -58.15 | -57.89 | -56.69 | -54.31 | -50.50 | -44.94 | -37.40 | -27.93 | -17.16 | 55 S |
| 60 S | -50.16 | -53.25 | -56.18 | -58.91 | -61.38 | -63.54 | -65.30 | -66.60 | -67.30 | -67.25 | -66.18 | -63.67 | -59.03 | -51.20 | -38.86 | 60 S |
| 65 S | -53.16 | -56.59 | -59.97 | -63.27 | -66.47 | -69.54 | -72.46 | -75.20 | -77.75 | -80.06 | -82.08 | -83.70 | -84.76 | -84.86 | -83.07 | 65 S |
| 70 S | -56.77 | -60.55 | -64.36 | -68.18 | -72.03 | -75.89 | -79.79 | -83.73 | -87.76 | -91.91 | -96.26 | -100.93 | -106.10 | -112.07 | -119.42 | 70 S |
| 75 S | -61.27 | -65.42 | -69.64 | -73.95 | -78.35 | -82.86 | -87.49 | -92.29 | -97.28 | -102.52 | -108.08 | -114.05 | -120.53 | -127.69 | -135.67 | 75 S |
| 80 S | -66.99 | -71.51 | -76.12 | -80.84 | -85.67 | -90.62 | -95.71 | -100.96 | -106.38 | -112.00 | -117.85 | -123.93 | -130.29 | -136.94 | -143.90 | 80 S |
| 85 S | -74.24 | -79.09 | -84.01 | -88.99 | -94.05 | -99.19 | -104.40 | -109.70 | -115.08 | -120.55 | -126.10 | -131.74 | -137.47 | -143.28 | -149.16 | 85 S |
| 90 S | -83.22 | -88.22 | -93.22 | -98.22 | -103.22 | -108.22 | -113.22 | -118.22 | -123.22 | -128.22 | -133.22 | -138.22 | -143.22 | -148.22 | -153.22 | 90 S |
| LAT. / E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | LAT. / E.LONG. |

To obtain interpolated values of D near the geographic and geomagnetic poles, it is suggested that the values of X and Y for the required position are found by interpolation from the tables of these components ( Tables 4A and 5A ) and that the appropriate value of D is then calculated using the relation tan D = Y/X.

TABLE 1 A IGRF DECLINATION (D)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (EAST POSITIVE)

| E.LONG. / LAT. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 E.LONG. / LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 N | 79.60 | 84.60 | 89.60 | 94.60 | 99.60 | 104.60 | 109.60 | 114.60 | 119.60 | 124.60 | 129.60 | 134.60 | 139.60 | 144.60 | 149.60 | 90 N |
| 85 N | 50.48 | 49.67 | 48.48 | 47.08 | 45.67 | 44.46 | 43.65 | 43.38 | 43.76 | 44.81 | 46.56 | 48.99 | 52.10 | 55.88 | 60.33 | 85 N |
| 80 N | 16.10 | 10.33 | 5.51 | 2.01 | -0.12 | -0.98 | -0.79 | 0.28 | 2.06 | 4.40 | 7.20 | 10.39 | 13.88 | 17.64 | 21.63 | 80 N |
| 75 N | -0.99 | -5.87 | -9.30 | -11.29 | -12.03 | -11.73 | -10.58 | -8.76 | -6.40 | -3.62 | -0.50 | 2.89 | 6.50 | 10.27 | 14.16 | 75 N |
| 70 N | -7.00 | -10.83 | -13.41 | -14.78 | -15.09 | -14.49 | -13.16 | -11.22 | -8.79 | -5.96 | -2.83 | 0.54 | 4.09 | 7.76 | 11.50 | 70 N |
| 65 N | -8.71 | -11.87 | -14.01 | -15.15 | -15.37 | -14.77 | -13.47 | -11.60 | -9.24 | -6.50 | -3.45 | -0.18 | 3.26 | 6.78 | 10.35 | 65 N |
| 60 N | -8.75 | -11.42 | -13.29 | -14.33 | -14.55 | -14.03 | -12.85 | -11.09 | -8.86 | -6.23 | -3.30 | -0.15 | 3.13 | 6.49 | 9.84 | 60 N |
| 55 N | -8.11 | -10.38 | -12.04 | -13.00 | -13.25 | -12.81 | -11.74 | -10.11 | -8.01 | -5.51 | -2.72 | 0.29 | 3.41 | 6.56 | 9.68 | 55 N |
| 50 N | -7.19 | -9.11 | -10.56 | -11.44 | -11.70 | -11.33 | -10.36 | -8.84 | -6.85 | -4.48 | -1.83 | 1.01 | 3.94 | 6.87 | 9.72 | 50 N |
| 45 N | -6.14 | -7.74 | -8.98 | -9.76 | -10.01 | -9.67 | -8.78 | -7.35 | -5.47 | -3.22 | -0.71 | 1.95 | 4.67 | 7.33 | 9.88 | 45 N |
| 40 N | -5.04 | -6.33 | -7.37 | -8.04 | -8.23 | -7.91 | -7.05 | -5.70 | -3.91 | -1.78 | 0.58 | 3.05 | 5.52 | 7.88 | 10.08 | 40 N |
| 35 N | -3.90 | -4.92 | -5.76 | -6.29 | -6.42 | -6.08 | -5.25 | -3.94 | -2.23 | -0.22 | 1.98 | 4.24 | 6.43 | 8.46 | 10.27 | 35 N |
| 30 N | -2.77 | -3.53 | -4.17 | -4.57 | -4.62 | -4.25 | -3.42 | -2.16 | -0.53 | 1.37 | 3.39 | 5.42 | 7.31 | 8.98 | 10.39 | 30 N |
| 25 N | -1.66 | -2.19 | -2.65 | -2.92 | -2.89 | -2.48 | -1.66 | -0.44 | 1.10 | 2.87 | 4.71 | 6.49 | 8.09 | 9.41 | 10.42 | 25 N |
| 20 N | -0.61 | -0.94 | -1.24 | -1.40 | -1.29 | -0.85 | -0.04 | 1.12 | 2.58 | 4.20 | 5.86 | 7.40 | 8.71 | 9.70 | 10.37 | 20 N |
| 15 N | 0.33 | 0.17 | 0.01 | -0.04 | 0.12 | 0.59 | 1.38 | 2.48 | 3.83 | 5.31 | 6.78 | 8.10 | 9.16 | 9.88 | 10.26 | 15 N |
| 10 N | 1.14 | 1.11 | 1.06 | 1.10 | 1.32 | 1.80 | 2.57 | 3.61 | 4.86 | 6.20 | 7.50 | 8.63 | 9.48 | 9.99 | 10.17 | 10 N |
| 5 N | 1.75 | 1.85 | 1.90 | 2.02 | 2.30 | 2.80 | 3.55 | 4.53 | 5.68 | 6.90 | 8.06 | 9.03 | 9.73 | 10.09 | 10.15 | 5 N |
| 0 | 2.14 | 2.36 | 2.52 | 2.72 | 3.06 | 3.60 | 4.35 | 5.29 | 6.37 | 7.49 | 8.53 | 9.39 | 9.98 | 10.26 | 10.26 | 0 |
| 5 S | 2.28 | 2.63 | 2.92 | 3.23 | 3.66 | 4.25 | 5.03 | 5.96 | 6.99 | 8.03 | 8.99 | 9.78 | 10.31 | 10.56 | 10.55 | 5 S |
| 10 S | 2.12 | 2.66 | 3.10 | 3.57 | 4.12 | 4.81 | 5.64 | 6.59 | 7.61 | 8.61 | 9.53 | 10.27 | 10.78 | 11.03 | 11.05 | 10 S |
| 15 S | 1.64 | 2.43 | 3.10 | 3.76 | 4.49 | 5.32 | 6.26 | 7.27 | 8.30 | 9.30 | 10.20 | 10.93 | 11.44 | 11.73 | 11.81 | 15 S |
| 20 S | 0.80 | 1.92 | 2.91 | 3.85 | 4.82 | 5.85 | 6.93 | 8.04 | 9.14 | 10.17 | 11.08 | 11.82 | 12.36 | 12.70 | 12.85 | 20 S |
| 25 S | -0.49 | 1.11 | 2.52 | 3.84 | 5.14 | 6.43 | 7.72 | 8.99 | 10.18 | 11.27 | 12.22 | 12.99 | 13.57 | 13.96 | 14.18 | 25 S |
| 30 S | -2.34 | -0.10 | 1.89 | 3.72 | 5.45 | 7.10 | 8.68 | 10.15 | 11.49 | 12.68 | 13.68 | 14.49 | 15.11 | 15.55 | 15.82 | 30 S |
| 35 S | -4.96 | -1.86 | 0.92 | 3.44 | 5.75 | 7.88 | 9.83 | 11.58 | 13.12 | 14.43 | 15.52 | 16.37 | 17.02 | 17.48 | 17.78 | 35 S |
| 40 S | -8.73 | -4.48 | -0.62 | 2.86 | 5.98 | 8.77 | 11.22 | 13.35 | 15.14 | 16.61 | 17.79 | 18.69 | 19.35 | 19.81 | 20.10 | 40 S |
| 45 S | -14.37 | -8.58 | -3.19 | 1.68 | 6.00 | 9.73 | 12.90 | 15.53 | 17.66 | 19.34 | 20.62 | 21.56 | 22.23 | 22.66 | 22.92 | 45 S |
| 50 S | -23.19 | -15.45 | -7.82 | -0.74 | 5.48 | 10.73 | 14.99 | 18.36 | 20.96 | 22.90 | 24.31 | 25.29 | 25.94 | 26.34 | 26.55 | 50 S |
| 55 S | -37.40 | -27.93 | -17.16 | -6.25 | 3.60 | 11.67 | 17.89 | 22.47 | 25.75 | 28.04 | 29.58 | 30.58 | 31.19 | 31.51 | 31.64 | 55 S |
| 60 S | -59.03 | -51.20 | -38.86 | -21.77 | -3.07 | 12.49 | 23.21 | 30.04 | 34.27 | 36.84 | 38.34 | 39.15 | 39.52 | 39.60 | 39.50 | 60 S |
| 65 S | -84.76 | -84.86 | -83.07 | -76.51 | -52.44 | 12.88 | 44.01 | 52.48 | 55.23 | 55.96 | 55.80 | 55.21 | 54.41 | 53.52 | 52.60 | 65 S |
| 70 S | -106.10 | -112.07 | -119.42 | -129.21 | -143.59 | -166.20 | 162.14 | 132.54 | 112.92 | 100.58 | 92.24 | 86.13 | 81.37 | 77.48 | 74.20 | 70 S |
| 75 S | -120.53 | -127.69 | -135.67 | -144.67 | -154.84 | -166.22 | -178.62 | 168.43 | 155.63 | 143.62 | 132.84 | 123.41 | 115.25 | 108.18 | 102.03 | 75 S |
| 80 S | -130.29 | -136.94 | -143.90 | -151.15 | -158.70 | -166.51 | -174.51 | 177.37 | 169.23 | 161.17 | 153.29 | 145.68 | 138.38 | 131.45 | 124.88 | 80 S |
| 85 S | -137.47 | -143.28 | -149.16 | -155.11 | -161.12 | -167.17 | -173.26 | -179.36 | 174.54 | 168.45 | 162.40 | 156.39 | 150.45 | 144.58 | 138.79 | 85 S |
| 90 S | -143.22 | -148.22 | -153.22 | -158.22 | -163.22 | -168.22 | -173.22 | -178.22 | 176.78 | 171.78 | 166.78 | 161.78 | 156.78 | 151.78 | 146.78 | 90 S |
| E.LONG. / LAT. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 E.LONG. / LAT. |

To obtain interpolated values of D near the geographic and geomagnetic poles, it is suggested that the values of X and Y for the required position are found by interpolation from the tables of these components ( Tables 4A and 5A ) and that the appropriate value of D is then calculated using the relation tan D = Y/X.

TABLE 1 A IGRF DECLINATION (D)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (EAST POSITIVE)

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | 139.60 | 144.60 | 149.60 | 154.60 | 159.60 | 164.60 | 169.60 | 174.60 | 179.60 | -175.40 | -170.40 | -165.40 | -160.40 | -155.40 | -150.40 | 90 N |
| 85 N | 52.10 | 55.88 | 60.33 | 65.49 | 71.43 | 78.23 | 86.04 | 95.04 | 105.42 | 117.34 | 130.81 | 145.52 | 160.78 | 175.74 | -170.33 | 85 N |
| 80 N | 13.88 | 17.64 | 21.63 | 25.82 | 30.20 | 34.76 | 39.51 | 44.49 | 49.73 | 55.33 | 61.45 | 68.39 | 76.78 | 88.08 | 106.26 | 80 N |
| 75 N | 6.50 | 10.27 | 14.16 | 18.14 | 22.18 | 26.25 | 30.33 | 34.41 | 38.45 | 42.45 | 46.37 | 50.18 | 53.81 | 57.14 | 59.85 | 75 N |
| 70 N | 4.09 | 7.76 | 11.50 | 15.28 | 19.04 | 22.76 | 26.40 | 29.92 | 33.28 | 36.44 | 39.33 | 41.85 | 43.85 | 45.04 | 44.91 | 70 N |
| 65 N | 3.26 | 6.78 | 10.35 | 13.89 | 17.37 | 20.75 | 23.96 | 26.99 | 29.78 | 32.27 | 34.39 | 35.05 | 37.09 | 37.26 | 36.17 | 65 N |
| 60 N | 3.13 | 6.49 | 9.84 | 13.14 | 16.32 | 19.33 | 22.14 | 24.70 | 26.96 | 28.89 | 30.40 | 31.43 | 31.84 | 31.46 | 30.03 | 60 N |
| 55 N | 3.41 | 6.56 | 9.68 | 12.70 | 15.55 | 18.20 | 20.61 | 22.72 | 24.52 | 25.96 | 26.99 | 27.55 | 27.56 | 26.91 | 25.43 | 55 N |
| 50 N | 3.94 | 6.87 | 9.72 | 12.43 | 14.94 | 17.21 | 19.21 | 20.92 | 22.30 | 23.34 | 23.99 | 24.23 | 24.01 | 23.25 | 21.86 | 50 N |
| 45 N | 4.67 | 7.33 | 9.88 | 12.24 | 14.37 | 16.25 | 17.87 | 19.19 | 20.22 | 20.92 | 21.30 | 21.33 | 20.99 | 20.23 | 19.01 | 45 N |
| 40 N | 5.52 | 7.88 | 10.08 | 12.05 | 13.79 | 15.27 | 16.51 | 17.49 | 18.21 | 18.66 | 18.85 | 18.76 | 18.38 | 17.70 | 16.68 | 40 N |
| 35 N | 6.43 | 8.46 | 10.27 | 11.83 | 13.15 | 14.23 | 15.11 | 15.78 | 16.26 | 16.53 | 16.60 | 16.46 | 16.11 | 15.54 | 14.73 | 35 N |
| 30 N | 7.31 | 8.98 | 10.39 | 11.53 | 12.43 | 13.13 | 13.68 | 14.10 | 14.39 | 14.54 | 14.56 | 14.42 | 14.14 | 13.70 | 13.10 | 30 N |
| 25 N | 8.09 | 9.41 | 10.42 | 11.16 | 11.67 | 12.03 | 12.29 | 12.50 | 12.66 | 12.75 | 12.75 | 12.66 | 12.46 | 12.15 | 11.74 | 25 N |
| 20 N | 8.71 | 9.70 | 10.37 | 10.75 | 10.93 | 11.00 | 11.04 | 11.09 | 11.16 | 11.22 | 11.24 | 11.20 | 11.09 | 10.90 | 10.65 | 20 N |
| 15 N | 9.16 | 9.88 | 10.26 | 10.36 | 10.29 | 10.14 | 10.02 | 9.96 | 9.98 | 10.03 | 10.08 | 10.09 | 10.05 | 9.96 | 9.82 | 15 N |
| 10 N | 9.48 | 9.99 | 10.17 | 10.08 | 9.83 | 9.54 | 9.32 | 9.20 | 9.19 | 9.24 | 9.31 | 9.35 | 9.35 | 9.32 | 9.27 | 10 N |
| 5 N | 9.73 | 10.09 | 10.15 | 9.95 | 9.61 | 9.26 | 8.98 | 8.83 | 8.80 | 8.86 | 8.93 | 8.99 | 9.01 | 9.01 | 9.00 | 5 N |
| 0 | 9.98 | 10.26 | 10.26 | 10.02 | 9.67 | 9.30 | 9.02 | 8.87 | 8.83 | 8.88 | 8.95 | 9.00 | 9.02 | 9.02 | 9.02 | 0 |
| 5 S | 10.31 | 10.56 | 10.55 | 10.33 | 10.01 | 9.68 | 9.43 | 9.29 | 9.26 | 9.29 | 9.34 | 9.36 | 9.36 | 9.34 | 9.34 | 5 S |
| 10 S | 10.78 | 11.03 | 11.05 | 10.90 | 10.65 | 10.38 | 10.18 | 10.06 | 10.03 | 10.05 | 10.06 | 10.05 | 10.02 | 9.98 | 9.98 | 10 S |
| 15 S | 11.44 | 11.73 | 11.81 | 11.74 | 11.57 | 11.39 | 11.24 | 11.16 | 11.12 | 11.11 | 11.09 | 11.04 | 10.99 | 10.95 | 10.96 | 15 S |
| 20 S | 12.36 | 12.70 | 12.85 | 12.86 | 12.79 | 12.68 | 12.59 | 12.52 | 12.47 | 12.43 | 12.38 | 12.31 | 12.25 | 12.24 | 12.29 | 20 S |
| 25 S | 13.57 | 13.96 | 14.18 | 14.27 | 14.27 | 14.23 | 14.17 | 14.11 | 14.05 | 13.99 | 13.92 | 13.85 | 13.82 | 13.86 | 13.98 | 25 S |
| 30 S | 15.11 | 15.55 | 15.82 | 15.96 | 16.01 | 16.00 | 15.96 | 15.90 | 15.83 | 15.76 | 15.69 | 15.67 | 15.70 | 15.82 | 16.04 | 30 S |
| 35 S | 17.02 | 17.48 | 17.78 | 17.94 | 18.01 | 18.01 | 17.97 | 17.90 | 17.83 | 17.77 | 17.75 | 17.79 | 17.92 | 18.15 | 18.46 | 35 S |
| 40 S | 19.35 | 19.81 | 20.10 | 20.26 | 20.32 | 20.31 | 20.26 | 20.20 | 20.15 | 20.14 | 20.18 | 20.32 | 20.55 | 20.87 | 21.24 | 40 S |
| 45 S | 22.23 | 22.66 | 22.92 | 23.05 | 23.09 | 23.06 | 23.01 | 22.97 | 22.96 | 23.02 | 23.15 | 23.36 | 23.67 | 24.03 | 24.39 | 45 S |
| 50 S | 25.94 | 26.34 | 26.55 | 26.64 | 26.64 | 26.60 | 26.56 | 26.55 | 26.59 | 26.69 | 26.87 | 27.13 | 27.42 | 27.72 | 27.95 | 50 S |
| 55 S | 31.19 | 31.51 | 31.64 | 31.65 | 31.60 | 31.53 | 31.47 | 31.45 | 31.48 | 31.56 | 31.70 | 31.86 | 32.01 | 32.09 | 32.03 | 55 S |
| 60 S | 39.52 | 39.60 | 39.50 | 39.30 | 39.07 | 38.83 | 38.62 | 38.44 | 38.29 | 38.17 | 38.05 | 37.90 | 37.67 | 37.32 | 36.79 | 60 S |
| 65 S | 54.41 | 53.52 | 52.60 | 51.69 | 50.83 | 50.01 | 49.25 | 48.52 | 47.82 | 47.12 | 46.38 | 45.59 | 44.69 | 43.65 | 42.44 | 65 S |
| 70 S | 81.37 | 77.48 | 74.20 | 71.35 | 68.83 | 66.55 | 64.47 | 62.51 | 60.65 | 58.83 | 57.02 | 55.18 | 53.29 | 51.31 | 49.22 | 70 S |
| 75 S | 115.25 | 108.18 | 102.03 | 96.61 | 91.78 | 87.42 | 83.42 | 79.72 | 76.23 | 72.91 | 69.70 | 66.56 | 63.47 | 60.39 | 57.31 | 75 S |
| 80 S | 138.38 | 131.45 | 124.88 | 118.68 | 112.82 | 107.28 | 102.04 | 97.04 | 92.27 | 87.68 | 83.25 | 78.96 | 74.77 | 70.66 | 66.63 | 80 S |
| 85 S | 150.45 | 144.58 | 138.79 | 133.10 | 127.51 | 122.01 | 116.62 | 111.32 | 106.13 | 101.03 | 96.01 | 91.08 | 86.22 | 81.44 | 76.72 | 85 S |
| 90 S | 156.78 | 151.78 | 146.78 | 141.78 | 136.78 | 131.78 | 126.78 | 121.78 | 116.78 | 111.78 | 106.78 | 101.78 | 96.78 | 91.78 | 86.78 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

To obtain interpolated values of D near the geographic and geomagnetic poles, it is suggested that the values of X and Y for the required position are found by interpolation from the tables of these components ( Tables 4A and 5A ) and that the appropriate value of D is then calculated using the relation tan D = Y/X.

TABLE 1 A IGRF DECLINATION (D)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (EAST POSITIVE)

| E.LONG. LAT. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 N | -160.40 | -155.40 | -150.40 | -145.40 | -140.40 | -135.40 | -130.40 | -125.40 | -120.40 | -115.40 | -110.40 | -105.40 | -100.40 | -95.40 | -90.40 | 90 N |
| 85 N | 160.78 | 175.74 | -170.33 | -157.77 | -146.60 | -136.64 | -127.70 | -119.56 | -112.06 | -105.05 | -98.44 | -92.15 | -86.11 | -80.28 | -74.62 | 85 N |
| 80 N | 76.78 | 88.08 | 106.26 | 141.72 | -167.91 | -136.74 | -120.35 | -109.69 | -101.52 | -94.60 | -88.39 | -82.61 | -77.11 | -71.81 | -66.64 | 80 N |
| 75 N | 53.81 | 57.14 | 59.85 | 61.03 | 56.12 | -22.72 | -80.97 | -84.37 | -82.81 | -79.87 | -76.35 | -72.51 | -68.49 | -64.33 | -60.08 | 75 N |
| 70 N | 43.85 | 45.04 | 44.91 | 42.35 | 34.82 | 16.75 | -15.25 | -42.58 | -55.53 | -60.47 | -61.65 | -60.88 | -58.99 | -56.39 | -53.33 | 70 N |
| 65 N | 37.09 | 37.26 | 36.17 | 33.16 | 27.13 | 16.63 | 0.94 | -17.08 | -31.98 | -41.51 | -46.66 | -48.87 | -49.18 | -48.24 | -46.43 | 65 N |
| 60 N | 31.84 | 31.46 | 30.03 | 27.18 | 22.40 | 15.18 | 5.31 | -6.39 | -17.97 | -27.47 | -34.14 | -38.18 | -40.16 | -40.59 | -39.90 | 60 N |
| 55 N | 27.56 | 26.91 | 25.43 | 22.92 | 19.12 | 13.79 | 6.85 | -1.39 | -10.13 | -18.26 | -24.88 | -29.64 | -32.59 | -34.00 | -34.18 | 55 N |
| 50 N | 24.01 | 23.25 | 21.86 | 19.73 | 16.70 | 12.64 | 7.47 | 1.31 | -5.47 | -12.24 | -18.29 | -23.15 | -26.58 | -28.63 | -29.44 | 50 N |
| 45 N | 20.99 | 20.23 | 19.01 | 17.25 | 14.85 | 11.70 | 7.72 | 2.94 | -2.47 | -8.14 | -13.56 | -18.26 | -21.90 | -24.35 | -25.64 | 45 N |
| 40 N | 18.38 | 17.70 | 16.68 | 15.27 | 13.38 | 10.93 | 7.82 | 4.02 | -0.40 | -5.22 | -10.07 | -14.53 | -18.23 | -20.95 | -22.63 | 40 N |
| 35 N | 16.11 | 15.54 | 14.73 | 13.64 | 12.19 | 10.29 | 7.84 | 4.78 | 1.11 | -3.03 | -7.39 | -11.60 | -15.31 | -18.24 | -20.23 | 35 N |
| 30 N | 14.14 | 13.70 | 13.10 | 12.29 | 11.21 | 9.76 | 7.84 | 5.35 | 2.27 | -1.33 | -5.27 | -9.26 | -12.94 | -16.03 | -18.31 | 30 N |
| 25 N | 12.46 | 12.15 | 11.74 | 11.18 | 10.41 | 9.33 | 7.83 | 5.80 | 3.20 | 0.04 | -3.55 | -7.33 | -10.98 | -14.19 | -16.74 | 25 N |
| 20 N | 11.09 | 10.90 | 10.65 | 10.29 | 9.77 | 8.99 | 7.83 | 6.18 | 3.96 | 1.16 | -2.12 | -5.71 | -9.31 | -12.64 | -15.42 | 20 N |
| 15 N | 10.05 | 9.96 | 9.82 | 9.62 | 9.29 | 8.75 | 7.86 | 6.52 | 4.61 | 2.12 | -0.92 | -4.33 | -7.89 | -11.30 | -14.31 | 15 N |
| 10 N | 9.35 | 9.32 | 9.27 | 9.17 | 8.99 | 8.63 | 7.96 | 6.85 | 5.20 | 2.95 | 0.14 | -3.13 | -6.64 | -10.13 | -13.33 | 10 N |
| 5 N | 9.01 | 9.01 | 9.00 | 8.97 | 8.89 | 8.66 | 8.15 | 7.24 | 5.79 | 3.74 | 1.09 | -2.06 | -5.54 | -9.10 | -12.47 | 5 N |
| 0 | 9.02 | 9.02 | 9.02 | 9.03 | 9.01 | 8.88 | 8.49 | 7.72 | 6.42 | 4.52 | 2.00 | -1.07 | -4.52 | -8.15 | -11.68 | 0 |
| 5 S | 9.36 | 9.34 | 9.34 | 9.37 | 9.40 | 9.33 | 9.04 | 8.37 | 7.18 | 5.38 | 2.94 | -0.08 | -3.55 | -7.25 | -10.93 | 5 S |
| 10 S | 10.02 | 9.98 | 9.98 | 10.03 | 10.09 | 10.07 | 9.85 | 9.25 | 8.13 | 6.39 | 3.99 | 0.97 | -2.54 | -6.34 | -10.17 | 10 S |
| 15 S | 10.99 | 10.95 | 10.96 | 11.03 | 11.13 | 11.16 | 10.98 | 10.43 | 9.34 | 7.62 | 5.20 | 2.14 | -1.44 | -5.35 | -9.35 | 15 S |
| 20 S | 12.25 | 12.24 | 12.29 | 12.41 | 12.56 | 12.64 | 12.49 | 11.95 | 10.87 | 9.11 | 6.65 | 3.52 | -0.17 | -4.21 | -8.37 | 20 S |
| 25 S | 13.82 | 13.86 | 13.98 | 14.18 | 14.39 | 14.51 | 14.38 | 13.82 | 12.70 | 10.89 | 8.35 | 5.12 | 1.32 | -2.85 | -7.15 | 25 S |
| 30 S | 15.70 | 15.82 | 16.04 | 16.32 | 16.59 | 16.73 | 16.58 | 15.97 | 14.77 | 12.88 | 10.25 | 6.93 | 3.05 | -1.21 | -5.62 | 30 S |
| 35 S | 17.92 | 18.15 | 18.46 | 18.81 | 19.10 | 19.21 | 18.99 | 18.29 | 16.98 | 14.98 | 12.26 | 8.89 | 4.97 | 0.68 | -3.75 | 35 S |
| 40 S | 20.55 | 20.87 | 21.24 | 21.60 | 21.85 | 21.86 | 21.50 | 20.63 | 19.17 | 17.05 | 14.27 | 10.89 | 7.00 | 2.78 | -1.59 | 40 S |
| 45 S | 23.67 | 24.03 | 24.39 | 24.68 | 24.79 | 24.60 | 24.02 | 22.93 | 21.28 | 19.04 | 16.21 | 12.85 | 9.07 | 4.99 | 0.78 | 45 S |
| 50 S | 27.42 | 27.72 | 27.95 | 28.04 | 27.89 | 27.42 | 26.53 | 25.18 | 23.32 | 20.95 | 18.08 | 14.79 | 11.14 | 7.26 | 3.27 | 50 S |
| 55 S | 32.01 | 32.09 | 32.03 | 31.78 | 31.25 | 30.39 | 29.14 | 27.48 | 25.39 | 22.88 | 19.99 | 16.75 | 13.26 | 9.58 | 5.82 | 55 S |
| 60 S | 37.67 | 37.32 | 36.79 | 36.03 | 35.00 | 33.67 | 32.01 | 30.01 | 27.67 | 25.01 | 22.07 | 18.87 | 15.50 | 11.99 | 8.44 | 60 S |
| 65 S | 44.69 | 43.65 | 42.44 | 41.02 | 39.38 | 37.50 | 35.37 | 32.99 | 30.37 | 27.52 | 24.49 | 21.29 | 17.97 | 14.57 | 11.14 | 65 S |
| 70 S | 53.29 | 51.31 | 49.22 | 47.00 | 44.65 | 42.14 | 39.47 | 36.66 | 33.70 | 30.62 | 27.42 | 24.12 | 20.76 | 17.36 | 13.95 | 70 S |
| 75 S | 63.47 | 60.39 | 57.31 | 54.20 | 51.04 | 47.84 | 44.58 | 41.27 | 37.90 | 34.48 | 31.01 | 27.50 | 23.98 | 20.43 | 16.89 | 75 S |
| 80 S | 74.77 | 70.66 | 66.63 | 62.64 | 58.70 | 54.78 | 50.88 | 47.00 | 43.12 | 39.25 | 35.39 | 31.53 | 27.67 | 23.82 | 19.98 | 80 S |
| 85 S | 86.22 | 81.44 | 76.72 | 72.06 | 67.45 | 62.89 | 58.37 | 53.89 | 49.44 | 45.02 | 40.63 | 36.26 | 31.91 | 27.57 | 23.25 | 85 S |
| 90 S | 96.78 | 91.78 | 86.78 | 81.78 | 76.78 | 71.78 | 66.78 | 61.78 | 56.78 | 51.78 | 46.78 | 41.78 | 36.78 | 31.78 | 26.78 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

To obtain interpolated values of D near the geographic and geomagnetic poles, it is suggested that the values of X and Y for the required position are found by interpolation from the tables of these components ( Tables 4A and 5A ) and that the appropriate value of D is then calculated using the relation tan D = Y/X.

TABLE 1 A IGRF DECLINATION (D)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (EAST POSITIVE)

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | -100.40 | -95.40 | -90.40 | -85.40 | -80.40 | -75.40 | -70.40 | -65.40 | -60.40 | -55.40 | -50.40 | -45.40 | -40.40 | -35.40 | -30.40 | 90 N |
| 85 N | -86.11 | -80.28 | -74.62 | -69.10 | -63.71 | -58.43 | -53.24 | -48.13 | -43.11 | -38.15 | -33.27 | -28.45 | -23.70 | -19.01 | -14.39 | 85 N |
| 80 N | -77.11 | -71.81 | -66.64 | -61.59 | -56.61 | -51.70 | -46.85 | -42.06 | -37.32 | -32.63 | -27.99 | -23.42 | -18.90 | -14.45 | -10.07 | 80 N |
| 75 N | -68.49 | -64.33 | -60.08 | -55.76 | -51.40 | -47.00 | -42.60 | -38.19 | -33.80 | -29.43 | -25.09 | -20.81 | -16.58 | -12.41 | -8.32 | 75 N |
| 70 N | -58.99 | -56.39 | -53.33 | -49.94 | -46.32 | -42.54 | -38.64 | -34.68 | -30.69 | -26.70 | -22.73 | -18.81 | -14.94 | -11.14 | -7.42 | 70 N |
| 65 N | -49.18 | -48.24 | -46.43 | -44.02 | -41.17 | -38.02 | -34.66 | -31.17 | -27.60 | -24.01 | -20.44 | -16.91 | -13.45 | -10.06 | -6.77 | 65 N |
| 60 N | -40.16 | -40.59 | -39.90 | -38.38 | -36.25 | -33.69 | -30.82 | -27.76 | -24.59 | -21.38 | -18.19 | -15.05 | -12.00 | -9.03 | -6.17 | 60 N |
| 55 N | -32.59 | -34.00 | -34.18 | -33.39 | -31.88 | -29.82 | -27.38 | -24.69 | -21.86 | -18.98 | -16.12 | -13.32 | -10.62 | -8.03 | -5.56 | 55 N |
| 50 N | -26.58 | -28.63 | -29.44 | -29.24 | -28.23 | -26.59 | -24.51 | -22.12 | -19.57 | -16.95 | -14.35 | -11.83 | -9.41 | -7.13 | -4.98 | 50 N |
| 45 N | -21.90 | -24.35 | -25.64 | -25.91 | -25.32 | -24.05 | -22.28 | -20.15 | -17.82 | -15.40 | -12.99 | -10.65 | -8.44 | -6.39 | -4.48 | 45 N |
| 40 N | -18.23 | -20.95 | -22.63 | -23.30 | -23.09 | -22.16 | -20.66 | -18.76 | -16.61 | -14.34 | -12.05 | -9.84 | -7.76 | -5.86 | -4.13 | 40 N |
| 35 N | -15.31 | -18.24 | -20.23 | -21.27 | -21.43 | -20.82 | -19.60 | -17.91 | -15.91 | -13.75 | -11.54 | -9.39 | -7.39 | -5.57 | -3.96 | 35 N |
| 30 N | -12.94 | -16.03 | -18.31 | -19.70 | -20.22 | -19.94 | -18.99 | -17.51 | -15.66 | -13.58 | -11.41 | -9.29 | -7.31 | -5.54 | -3.99 | 30 N |
| 25 N | -10.98 | -14.19 | -16.74 | -18.47 | -19.35 | -19.42 | -18.76 | -17.50 | -15.79 | -13.78 | -11.64 | -9.52 | -7.53 | -5.77 | -4.26 | 25 N |
| 20 N | -9.31 | -12.64 | -15.42 | -17.49 | -18.73 | -19.16 | -18.81 | -17.79 | -16.24 | -14.32 | -12.20 | -10.06 | -8.04 | -6.26 | -4.76 | 20 N |
| 15 N | -7.89 | -11.30 | -14.31 | -16.68 | -18.29 | -19.08 | -19.07 | -18.32 | -16.96 | -15.14 | -13.06 | -10.90 | -8.86 | -7.04 | -5.51 | 15 N |
| 10 N | -6.64 | -10.13 | -13.33 | -16.00 | -17.97 | -19.13 | -19.48 | -19.03 | -17.90 | -16.22 | -14.21 | -12.06 | -9.99 | -8.13 | -6.55 | 10 N |
| 5 N | -5.54 | -9.10 | -12.47 | -15.40 | -17.71 | -19.25 | -19.97 | -19.87 | -19.01 | -17.54 | -15.64 | -13.54 | -11.46 | -9.56 | -7.91 | 5 N |
| 0 | -4.52 | -8.15 | -11.68 | -14.86 | -17.49 | -19.40 | -20.50 | -20.78 | -20.26 | -19.05 | -17.35 | -15.35 | -13.30 | -11.37 | -9.65 | 0 |
| 5 S | -3.55 | -7.25 | -10.93 | -14.34 | -17.27 | -19.53 | -21.03 | -21.70 | -21.57 | -20.72 | -19.29 | -17.49 | -15.54 | -13.61 | -11.82 | 5 S |
| 10 S | -2.54 | -6.34 | -10.17 | -13.80 | -17.00 | -19.60 | -21.48 | -22.57 | -22.88 | -22.44 | -21.38 | -19.88 | -18.12 | -16.27 | -14.44 | 10 S |
| 15 S | -1.44 | -5.35 | -9.35 | -13.18 | -16.64 | -19.54 | -21.78 | -23.29 | -24.04 | -24.07 | -23.47 | -22.37 | -20.91 | -19.24 | -17.46 | 15 S |
| 20 S | -0.17 | -4.21 | -8.37 | -12.40 | -16.08 | -19.26 | -21.82 | -23.71 | -24.90 | -25.41 | -25.31 | -24.68 | -23.63 | -22.26 | -20.66 | 20 S |
| 25 S | 1.32 | -2.85 | -7.15 | -11.35 | -15.23 | -18.64 | -21.47 | -23.68 | -25.25 | -26.20 | -26.58 | -26.44 | -25.86 | -24.90 | -23.62 | 25 S |
| 30 S | 3.05 | -1.21 | -5.62 | -9.94 | -13.96 | -17.54 | -20.58 | -23.04 | -24.91 | -26.23 | -27.01 | -27.32 | -27.19 | -26.67 | -25.80 | 30 S |
| 35 S | 4.97 | 0.68 | -3.75 | -8.12 | -12.21 | -15.89 | -19.07 | -21.70 | -23.80 | -25.37 | -26.46 | -27.12 | -27.36 | -27.24 | -26.81 | 35 S |
| 40 S | 7.00 | 2.78 | -1.59 | -5.90 | -9.97 | -13.68 | -16.92 | -19.67 | -21.91 | -23.67 | -24.98 | -25.89 | -26.43 | -26.67 | -26.65 | 40 S |
| 45 S | 9.07 | 4.99 | 0.78 | -3.38 | -7.35 | -11.01 | -14.26 | -17.06 | -19.41 | -21.31 | -22.80 | -23.93 | -24.75 | -25.32 | -25.73 | 45 S |
| 50 S | 11.14 | 7.26 | 3.27 | -0.69 | -4.49 | -8.04 | -11.25 | -14.07 | -16.51 | -18.55 | -20.24 | -21.62 | -22.74 | -23.69 | -24.57 | 50 S |
| 55 S | 13.26 | 9.58 | 5.82 | 2.09 | -1.52 | -4.94 | -8.09 | -10.94 | -13.47 | -15.69 | -17.61 | -19.30 | -20.80 | -22.20 | -23.58 | 55 S |
| 60 S | 15.50 | 11.99 | 8.44 | 4.90 | 1.45 | -1.86 | -4.97 | -7.87 | -10.53 | -12.96 | -15.18 | -17.23 | -19.17 | -21.06 | -22.95 | 60 S |
| 65 S | 17.97 | 14.57 | 11.14 | 7.72 | 4.36 | 1.10 | -2.03 | -5.02 | -7.87 | -10.56 | -13.12 | -15.59 | -17.99 | -20.37 | -22.78 | 65 S |
| 70 S | 20.76 | 17.36 | 13.95 | 10.54 | 7.17 | 3.86 | 0.61 | -2.55 | -5.63 | -8.64 | -11.58 | -14.47 | -17.34 | -20.21 | -23.11 | 70 S |
| 75 S | 23.98 | 20.43 | 16.89 | 13.35 | 9.84 | 6.35 | 2.89 | -0.54 | -3.93 | -7.29 | -10.64 | -13.97 | -17.30 | -20.64 | -24.01 | 75 S |
| 80 S | 27.67 | 23.82 | 19.98 | 16.15 | 12.33 | 8.52 | 4.72 | 0.93 | -2.86 | -6.64 | -10.42 | -14.22 | -18.02 | -21.84 | -25.69 | 80 S |
| 85 S | 31.91 | 27.57 | 23.25 | 18.94 | 14.64 | 10.34 | 6.05 | 1.76 | -2.54 | -6.84 | -11.14 | -15.46 | -19.80 | -24.15 | -28.52 | 85 S |
| 90 S | 36.78 | 31.78 | 26.78 | 21.78 | 16.78 | 11.78 | 6.78 | 1.78 | -3.22 | -8.22 | -13.22 | -18.22 | -23.22 | -28.22 | -33.22 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

To obtain interpolated values of D near the geographic and geomagnetic poles, it is suggested that the values of X and Y for the required position are found by interpolation from the tables of these components ( Tables 4A and 5A ) and that the appropriate value of D is then calculated using the relation tan D = Y/X.

TABLE 1 B IGRF DECLINATION (D)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (EAST POSITIVE)

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 90 N |
| 85 N | 0.13 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.09 | 0.09 | 0.08 | 0.07 | 0.06 | 85 N |
| 80 N | 0.11 | 0.10 | 0.10 | 0.10 | 0.10 | 0.09 | 0.09 | 0.08 | 0.08 | 0.07 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 80 N |
| 75 N | 0.10 | 0.09 | 0.09 | 0.09 | 0.08 | 0.08 | 0.07 | 0.07 | 0.06 | 0.05 | 0.05 | 0.04 | 0.03 | 0.02 | 0.00 | 75 N |
| 70 N | 0.09 | 0.09 | 0.08 | 0.08 | 0.07 | 0.07 | 0.06 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | -0.00 | -0.01 | 70 N |
| 65 N | 0.09 | 0.09 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | -0.00 | -0.01 | -0.02 | 65 N |
| 60 N | 0.09 | 0.09 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.03 | 60 N |
| 55 N | 0.10 | 0.09 | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.02 | -0.03 | 55 N |
| 50 N | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | -0.00 | -0.01 | -0.02 | -0.03 | -0.03 | 50 N |
| 45 N | 0.11 | 0.11 | 0.09 | 0.08 | 0.07 | 0.05 | 0.04 | 0.03 | 0.01 | 0.00 | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | 45 N |
| 40 N | 0.12 | 0.11 | 0.10 | 0.08 | 0.07 | 0.05 | 0.04 | 0.02 | 0.01 | -0.00 | -0.01 | -0.02 | -0.03 | -0.03 | -0.03 | 40 N |
| 35 N | 0.12 | 0.11 | 0.10 | 0.08 | 0.07 | 0.05 | 0.04 | 0.02 | 0.01 | -0.00 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | 35 N |
| 30 N | 0.13 | 0.11 | 0.10 | 0.08 | 0.06 | 0.05 | 0.03 | 0.02 | 0.01 | -0.01 | -0.02 | -0.03 | -0.03 | -0.04 | -0.03 | 30 N |
| 25 N | 0.13 | 0.11 | 0.10 | 0.08 | 0.06 | 0.05 | 0.03 | 0.02 | 0.01 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.03 | 25 N |
| 20 N | 0.13 | 0.11 | 0.10 | 0.08 | 0.06 | 0.05 | 0.03 | 0.02 | 0.01 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.03 | 20 N |
| 15 N | 0.12 | 0.11 | 0.09 | 0.08 | 0.06 | 0.05 | 0.03 | 0.02 | 0.01 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.03 | 15 N |
| 10 N | 0.12 | 0.11 | 0.09 | 0.08 | 0.06 | 0.05 | 0.04 | 0.02 | 0.01 | -0.00 | -0.02 | -0.03 | -0.04 | -0.04 | -0.03 | 10 N |
| 5 N | 0.12 | 0.11 | 0.09 | 0.08 | 0.06 | 0.05 | 0.04 | 0.03 | 0.01 | -0.00 | -0.02 | -0.04 | -0.04 | -0.04 | -0.03 | 5 N |
| 0 | 0.12 | 0.11 | 0.10 | 0.08 | 0.07 | 0.05 | 0.04 | 0.03 | 0.01 | -0.01 | -0.02 | -0.04 | -0.05 | -0.04 | -0.03 | 0 |
| 5 S | 0.11 | 0.11 | 0.10 | 0.09 | 0.07 | 0.06 | 0.05 | 0.03 | 0.01 | -0.01 | -0.03 | -0.05 | -0.05 | -0.05 | -0.04 | 5 S |
| 10 S | 0.10 | 0.10 | 0.10 | 0.09 | 0.08 | 0.06 | 0.05 | 0.03 | 0.00 | -0.02 | -0.04 | -0.06 | -0.07 | -0.06 | -0.05 | 10 S |
| 15 S | 0.08 | 0.09 | 0.09 | 0.08 | 0.07 | 0.06 | 0.04 | 0.01 | -0.02 | -0.04 | -0.07 | -0.08 | -0.09 | -0.08 | -0.06 | 15 S |
| 20 S | 0.06 | 0.07 | 0.08 | 0.07 | 0.06 | 0.04 | 0.02 | -0.01 | -0.05 | -0.08 | -0.11 | -0.12 | -0.12 | -0.10 | -0.08 | 20 S |
| 25 S | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.01 | -0.02 | -0.06 | -0.10 | -0.13 | -0.15 | -0.16 | -0.15 | -0.13 | -0.10 | 25 S |
| 30 S | 0.02 | 0.03 | 0.03 | 0.03 | 0.01 | -0.02 | -0.06 | -0.11 | -0.15 | -0.18 | -0.20 | -0.20 | -0.18 | -0.16 | -0.12 | 30 S |
| 35 S | 0.02 | 0.02 | 0.02 | 0.01 | -0.02 | -0.06 | -0.10 | -0.15 | -0.19 | -0.22 | -0.23 | -0.22 | -0.21 | -0.18 | -0.15 | 35 S |
| 40 S | 0.02 | 0.03 | 0.02 | 0.00 | -0.03 | -0.07 | -0.12 | -0.17 | -0.21 | -0.23 | -0.24 | -0.24 | -0.22 | -0.20 | -0.17 | 40 S |
| 45 S | 0.03 | 0.03 | 0.02 | -0.00 | -0.04 | -0.08 | -0.13 | -0.17 | -0.21 | -0.23 | -0.24 | -0.24 | -0.23 | -0.22 | -0.20 | 45 S |
| 50 S | 0.04 | 0.03 | 0.02 | -0.01 | -0.04 | -0.08 | -0.13 | -0.17 | -0.20 | -0.22 | -0.24 | -0.24 | -0.24 | -0.24 | -0.23 | 50 S |
| 55 S | 0.03 | 0.02 | 0.01 | -0.02 | -0.05 | -0.09 | -0.12 | -0.16 | -0.19 | -0.21 | -0.23 | -0.24 | -0.24 | -0.25 | -0.25 | 55 S |
| 60 S | 0.02 | 0.01 | -0.01 | -0.03 | -0.06 | -0.09 | -0.12 | -0.15 | -0.17 | -0.20 | -0.21 | -0.23 | -0.24 | -0.25 | -0.25 | 60 S |
| 65 S | -0.00 | -0.01 | -0.03 | -0.04 | -0.07 | -0.09 | -0.11 | -0.14 | -0.16 | -0.18 | -0.20 | -0.21 | -0.23 | -0.24 | -0.25 | 65 S |
| 70 S | -0.02 | -0.03 | -0.04 | -0.06 | -0.07 | -0.09 | -0.11 | -0.13 | -0.14 | -0.16 | -0.18 | -0.19 | -0.21 | -0.22 | -0.23 | 70 S |
| 75 S | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.12 | -0.13 | -0.14 | -0.16 | -0.17 | -0.18 | -0.19 | -0.20 | 75 S |
| 80 S | -0.06 | -0.06 | -0.07 | -0.08 | -0.08 | -0.09 | -0.10 | -0.11 | -0.12 | -0.12 | -0.13 | -0.14 | -0.15 | -0.16 | -0.17 | 80 S |
| 85 S | -0.07 | -0.08 | -0.08 | -0.08 | -0.09 | -0.09 | -0.09 | -0.10 | -0.10 | -0.11 | -0.11 | -0.11 | -0.12 | -0.12 | -0.12 | 85 S |
| 90 S | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 1 B IGRF DECLINATION (D)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (EAST POSITIVE)

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 90 N |
| 85 N | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.02 | 0.00 | -0.02 | -0.05 | -0.09 | -0.14 | -0.20 | -0.27 | -0.34 | -0.42 | 85 N |
| 80 N | 0.05 | 0.04 | 0.03 | 0.02 | -0.00 | -0.03 | -0.06 | -0.10 | -0.16 | -0.23 | -0.30 | -0.37 | -0.42 | -0.45 | -0.44 | 80 N |
| 75 N | 0.03 | 0.02 | 0.00 | -0.01 | -0.03 | -0.06 | -0.09 | -0.13 | -0.18 | -0.22 | -0.26 | -0.28 | -0.27 | -0.26 | -0.23 | 75 N |
| 70 N | 0.01 | -0.00 | -0.01 | -0.03 | -0.05 | -0.07 | -0.09 | -0.12 | -0.15 | -0.17 | -0.18 | -0.18 | -0.16 | -0.15 | -0.13 | 70 N |
| 65 N | -0.00 | -0.01 | -0.02 | -0.04 | -0.05 | -0.06 | -0.08 | -0.09 | -0.11 | -0.11 | -0.12 | -0.11 | -0.10 | -0.09 | -0.08 | 65 N |
| 60 N | -0.01 | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.07 | -0.08 | -0.08 | -0.08 | -0.08 | -0.07 | -0.06 | -0.05 | 60 N |
| 55 N | -0.01 | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.04 | 55 N |
| 50 N | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.03 | -0.03 | 50 N |
| 45 N | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | 45 N |
| 40 N | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 40 N |
| 35 N | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.01 | -0.01 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 35 N |
| 30 N | -0.03 | -0.04 | -0.03 | -0.03 | -0.02 | -0.01 | -0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 30 N |
| 25 N | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | -0.00 | 0.01 | 0.01 | 0.01 | 0.01 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 25 N |
| 20 N | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | 0.00 | 0.01 | 0.02 | 0.02 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | 20 N |
| 15 N | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | 15 N |
| 10 N | -0.04 | -0.04 | -0.03 | -0.02 | -0.00 | 0.01 | 0.02 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 10 N |
| 5 N | -0.04 | -0.04 | -0.03 | -0.02 | -0.00 | 0.02 | 0.03 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 5 N |
| 0 | -0.05 | -0.04 | -0.03 | -0.02 | 0.00 | 0.02 | 0.03 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 0 |
| 5 S | -0.05 | -0.05 | -0.04 | -0.02 | -0.00 | 0.02 | 0.03 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 5 S |
| 10 S | -0.07 | -0.06 | -0.05 | -0.03 | -0.00 | 0.01 | 0.02 | 0.03 | 0.02 | 0.01 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | 10 S |
| 15 S | -0.09 | -0.08 | -0.06 | -0.04 | -0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.00 | 0.00 | 15 S |
| 20 S | -0.12 | -0.10 | -0.08 | -0.05 | -0.02 | -0.00 | 0.01 | 0.02 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 20 S |
| 25 S | -0.15 | -0.13 | -0.10 | -0.07 | -0.04 | -0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 25 S |
| 30 S | -0.18 | -0.16 | -0.12 | -0.09 | -0.06 | -0.03 | -0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 30 S |
| 35 S | -0.21 | -0.18 | -0.15 | -0.11 | -0.08 | -0.05 | -0.02 | -0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 35 S |
| 40 S | -0.22 | -0.20 | -0.17 | -0.15 | -0.12 | -0.09 | -0.06 | -0.03 | -0.01 | 0.01 | 0.03 | 0.05 | 0.06 | 0.07 | 0.07 | 40 S |
| 45 S | -0.23 | -0.22 | -0.20 | -0.18 | -0.16 | -0.14 | -0.11 | -0.08 | -0.06 | -0.02 | 0.01 | 0.04 | 0.06 | 0.08 | 0.09 | 45 S |
| 50 S | -0.24 | -0.24 | -0.23 | -0.22 | -0.20 | -0.19 | -0.17 | -0.15 | -0.13 | -0.10 | -0.06 | -0.02 | 0.03 | 0.07 | 0.11 | 50 S |
| 55 S | -0.24 | -0.25 | -0.25 | -0.24 | -0.24 | -0.24 | -0.23 | -0.23 | -0.22 | -0.20 | -0.18 | -0.14 | -0.08 | -0.01 | 0.08 | 55 S |
| 60 S | -0.24 | -0.25 | -0.25 | -0.26 | -0.26 | -0.27 | -0.28 | -0.28 | -0.29 | -0.30 | -0.31 | -0.32 | -0.32 | -0.28 | -0.17 | 60 S |
| 65 S | -0.23 | -0.24 | -0.25 | -0.26 | -0.27 | -0.28 | -0.29 | -0.31 | -0.33 | -0.35 | -0.39 | -0.43 | -0.50 | -0.60 | -0.76 | 65 S |
| 70 S | -0.21 | -0.22 | -0.23 | -0.24 | -0.26 | -0.27 | -0.28 | -0.30 | -0.32 | -0.34 | -0.37 | -0.40 | -0.45 | -0.52 | -0.60 | 70 S |
| 75 S | -0.18 | -0.19 | -0.20 | -0.21 | -0.22 | -0.23 | -0.25 | -0.26 | -0.27 | -0.28 | -0.30 | -0.31 | -0.33 | -0.34 | -0.35 | 75 S |
| 80 S | -0.15 | -0.16 | -0.17 | -0.17 | -0.18 | -0.19 | -0.19 | -0.20 | -0.20 | -0.21 | -0.21 | -0.22 | -0.22 | -0.22 | -0.21 | 80 S |
| 85 S | -0.12 | -0.12 | -0.12 | -0.13 | -0.13 | -0.13 | -0.13 | -0.14 | -0.14 | -0.14 | -0.14 | -0.14 | -0.14 | -0.13 | -0.13 | 85 S |
| 90 S | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 1 B IGRF DECLINATION (D)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (EAST POSITIVE)

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 90 N |
| 85 N | -0.27 | -0.34 | -0.42 | -0.50 | -0.57 | -0.63 | -0.68 | -0.71 | -0.73 | -0.74 | -0.75 | -0.76 | -0.76 | -0.78 | -0.79 | 85 N |
| 80 N | -0.42 | -0.45 | -0.44 | -0.41 | -0.38 | -0.34 | -0.31 | -0.29 | -0.27 | -0.25 | -0.24 | -0.23 | -0.23 | -0.22 | -0.23 | 80 N |
| 75 N | -0.27 | -0.26 | -0.23 | -0.20 | -0.18 | -0.16 | -0.14 | -0.13 | -0.12 | -0.11 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | 75 N |
| 70 N | -0.16 | -0.15 | -0.13 | -0.11 | -0.10 | -0.09 | -0.08 | -0.07 | -0.06 | -0.06 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | 70 N |
| 65 N | -0.10 | -0.09 | -0.08 | -0.07 | -0.06 | -0.05 | -0.04 | -0.04 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.03 | 65 N |
| 60 N | -0.07 | -0.06 | -0.05 | -0.05 | -0.04 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 60 N |
| 55 N | -0.05 | -0.04 | -0.04 | -0.03 | -0.03 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | 55 N |
| 50 N | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 50 N |
| 45 N | -0.03 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 45 N |
| 40 N | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 40 N |
| 35 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 35 N |
| 30 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 30 N |
| 25 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 25 N |
| 20 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 20 N |
| 15 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.02 | 15 N |
| 10 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 10 N |
| 5 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 5 N |
| 0 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0 |
| 5 S | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.04 | 0.04 | 0.04 | 5 S |
| 10 S | -0.01 | -0.01 | -0.01 | 0.00 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 10 S |
| 15 S | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 15 S |
| 20 S | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.04 | 20 S |
| 25 S | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.05 | 0.05 | 0.04 | 25 S |
| 30 S | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.04 | 30 S |
| 35 S | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.07 | 0.07 | 0.06 | 0.06 | 0.05 | 35 S |
| 40 S | 0.06 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.07 | 0.07 | 0.06 | 40 S |
| 45 S | 0.06 | 0.08 | 0.09 | 0.10 | 0.10 | 0.10 | 0.09 | 0.09 | 0.09 | 0.10 | 0.10 | 0.09 | 0.09 | 0.08 | 0.08 | 45 S |
| 50 S | 0.03 | 0.07 | 0.11 | 0.12 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.12 | 0.12 | 0.12 | 0.11 | 0.10 | 50 S |
| 55 S | -0.08 | -0.01 | 0.06 | 0.15 | 0.19 | 0.20 | 0.20 | 0.20 | 0.19 | 0.18 | 0.17 | 0.16 | 0.16 | 0.15 | 0.14 | 55 S |
| 60 S | -0.32 | -0.28 | -0.17 | 0.05 | 0.27 | 0.38 | 0.38 | 0.35 | 0.32 | 0.28 | 0.26 | 0.24 | 0.22 | 0.20 | 0.19 | 60 S |
| 65 S | -0.50 | -0.60 | -0.76 | -1.03 | -1.10 | 1.59 | 1.28 | 0.84 | 0.62 | 0.49 | 0.41 | 0.35 | 0.31 | 0.27 | 0.25 | 65 S |
| 70 S | -0.45 | -0.52 | -0.60 | -0.71 | -0.82 | -0.76 | -0.20 | 0.36 | 0.51 | 0.49 | 0.43 | 0.38 | 0.33 | 0.29 | 0.26 | 70 S |
| 75 S | -0.33 | -0.34 | -0.35 | -0.35 | -0.34 | -0.30 | -0.24 | -0.15 | -0.07 | 0.00 | 0.06 | 0.10 | 0.12 | 0.13 | 0.13 | 75 S |
| 80 S | -0.22 | -0.22 | -0.21 | -0.20 | -0.19 | -0.18 | -0.16 | -0.14 | -0.12 | -0.10 | -0.08 | -0.06 | -0.04 | -0.02 | -0.01 | 80 S |
| 85 S | -0.14 | -0.13 | -0.13 | -0.13 | -0.13 | -0.12 | -0.12 | -0.11 | -0.10 | -0.10 | -0.09 | -0.09 | -0.08 | -0.07 | -0.07 | 85 S |
| 90 S | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 1 B IGRF DECLINATION (D)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (EAST POSITIVE)

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 90 N |
| 85 N | -0.76 | -0.78 | -0.79 | -0.82 | -0.85 | -0.88 | -0.92 | -0.96 | -0.98 | -0.97 | -0.91 | -0.77 | -0.58 | -0.37 | -0.19 | 85 N |
| 80 N | -0.23 | -0.22 | -0.23 | -0.23 | -0.24 | -0.25 | -0.27 | -0.29 | -0.32 | -0.37 | -0.43 | -0.53 | -0.69 | -0.95 | -1.44 | 80 N |
| 75 N | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.11 | -0.12 | -0.13 | -0.14 | -0.15 | -0.17 | -0.20 | -0.24 | -0.30 | -0.39 | 75 N |
| 70 N | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.06 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.11 | -0.13 | -0.15 | -0.16 | 70 N |
| 65 N | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.07 | -0.08 | -0.09 | -0.09 | -0.10 | 65 N |
| 60 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | -0.04 | -0.05 | -0.06 | -0.06 | -0.07 | -0.07 | -0.07 | 60 N |
| 55 N | -0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.06 | -0.06 | -0.06 | 55 N |
| 50 N | 0.01 | 0.00 | 0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | 50 N |
| 45 N | 0.01 | 0.01 | 0.01 | 0.00 | -0.01 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | 45 N |
| 40 N | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | 40 N |
| 35 N | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.03 | -0.03 | -0.03 | 35 N |
| 30 N | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | 30 N |
| 25 N | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | 25 N |
| 20 N | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | 20 N |
| 15 N | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.03 | 15 N |
| 10 N | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | -0.03 | 10 N |
| 5 N | 0.04 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | -0.00 | -0.01 | -0.02 | -0.03 | 5 N |
| 0 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.03 | 0 |
| 5 S | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.03 | 5 S |
| 10 S | 0.05 | 0.04 | 0.04 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.02 | 10 S |
| 15 S | 0.05 | 0.04 | 0.04 | 0.03 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | 15 S |
| 20 S | 0.05 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | 20 S |
| 25 S | 0.05 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 25 S |
| 30 S | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 30 S |
| 35 S | 0.06 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 35 S |
| 40 S | 0.07 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 40 S |
| 45 S | 0.09 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 45 S |
| 50 S | 0.12 | 0.11 | 0.10 | 0.09 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.09 | 0.09 | 0.09 | 0.10 | 0.09 | 0.09 | 50 S |
| 55 S | 0.16 | 0.15 | 0.14 | 0.13 | **0.12** | **0.11** | **0.11** | **0.11** | **0.11** | **0.11** | **0.11** | **0.11** | **0.11** | **0.10** | 0.09 | 55 S |
| 60 S | 0.22 | 0.20 | 0.19 | 0.17 | 0.16 | 0.15 | 0.15 | 0.14 | 0.14 | 0.13 | 0.13 | 0.12 | 0.11 | 0.10 | 0.09 | 60 S |
| 65 S | 0.31 | 0.27 | 0.25 | 0.22 | 0.21 | 0.19 | 0.18 | 0.16 | 0.15 | 0.14 | 0.13 | 0.12 | 0.11 | 0.09 | 0.08 | 65 S |
| 70 S | 0.33 | 0.29 | 0.26 | 0.23 | 0.21 | 0.19 | 0.17 | 0.15 | 0.14 | 0.12 | 0.11 | 0.10 | 0.08 | 0.07 | 0.06 | 70 S |
| 75 S | 0.12 | 0.13 | 0.13 | 0.13 | 0.12 | 0.11 | 0.10 | 0.09 | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 75 S |
| 80 S | -0.04 | -0.02 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | 80 S |
| 85 S | -0.08 | -0.07 | -0.07 | -0.06 | -0.06 | -0.06 | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | 85 S |
| 90 S | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 1 B IGRF DECLINATION (D)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (EAST POSITIVE)

| E.LONG. / LAT. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. / LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 N | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 90 N |
| 85 N | -0.58 | -0.37 | -0.19 | -0.05 | 0.05 | 0.11 | 0.15 | 0.17 | 0.18 | 0.18 | 0.18 | 0.18 | 0.17 | 0.17 | 0.16 | 85 N |
| 80 N | -0.69 | -0.95 | -1.44 | -1.87 | -0.55 | 0.24 | 0.35 | 0.33 | 0.30 | 0.26 | 0.23 | 0.21 | 0.19 | 0.18 | 0.17 | 80 N |
| 75 N | -0.24 | -0.30 | -0.39 | -0.55 | -0.88 | 4.33 | 1.42 | 0.70 | 0.47 | 0.35 | 0.28 | 0.23 | 0.20 | 0.18 | 0.16 | 75 N |
| 70 N | -0.13 | -0.15 | -0.16 | -0.17 | -0.13 | 0.11 | 0.62 | 0.68 | 0.51 | 0.38 | 0.30 | 0.25 | 0.21 | 0.18 | 0.16 | 70 N |
| 65 N | -0.09 | -0.09 | -0.10 | -0.09 | -0.06 | 0.01 | 0.16 | 0.29 | 0.34 | 0.31 | 0.27 | 0.23 | 0.20 | 0.18 | 0.16 | 65 N |
| 60 N | -0.07 | -0.07 | -0.07 | -0.07 | -0.05 | -0.01 | 0.04 | 0.11 | 0.17 | 0.20 | 0.20 | 0.19 | 0.18 | 0.17 | 0.15 | 60 N |
| 55 N | -0.06 | -0.06 | -0.06 | -0.05 | -0.04 | -0.03 | -0.00 | 0.03 | 0.07 | 0.11 | 0.13 | 0.14 | 0.15 | 0.14 | 0.14 | 55 N |
| 50 N | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | 0.01 | 0.04 | 0.07 | 0.09 | 0.11 | 0.11 | 0.12 | 50 N |
| 45 N | -0.05 | -0.05 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | 0.02 | 0.04 | 0.06 | 0.08 | 0.10 | 45 N |
| 40 N | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.04 | -0.02 | 0.00 | 0.03 | 0.05 | 0.07 | 40 N |
| 35 N | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.07 | -0.06 | -0.05 | -0.03 | -0.01 | 0.02 | 0.04 | 35 N |
| 30 N | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.08 | -0.08 | -0.06 | -0.04 | -0.01 | 0.01 | 30 N |
| 25 N | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.05 | -0.06 | -0.08 | -0.09 | -0.09 | -0.09 | -0.08 | -0.06 | -0.04 | -0.01 | 25 N |
| 20 N | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.05 | -0.07 | -0.08 | -0.09 | -0.10 | -0.10 | -0.09 | -0.08 | -0.06 | -0.03 | 20 N |
| 15 N | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.11 | -0.10 | -0.09 | -0.08 | -0.06 | 15 N |
| 10 N | -0.01 | -0.02 | -0.03 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.11 | -0.11 | -0.10 | -0.09 | -0.07 | 10 N |
| 5 N | -0.01 | -0.02 | -0.03 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.11 | -0.11 | -0.11 | -0.10 | -0.09 | 5 N |
| 0 | -0.01 | -0.02 | -0.03 | -0.04 | -0.05 | -0.06 | -0.06 | -0.07 | -0.09 | -0.10 | -0.10 | -0.11 | -0.11 | -0.11 | -0.10 | 0 |
| 5 S | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.09 | -0.10 | -0.11 | -0.12 | -0.12 | -0.11 | 5 S |
| 10 S | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.07 | -0.09 | -0.10 | -0.11 | -0.12 | -0.12 | -0.12 | 10 S |
| 15 S | -0.00 | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.10 | -0.11 | -0.12 | -0.13 | -0.13 | 15 S |
| 20 S | 0.00 | 0.00 | -0.00 | -0.01 | -0.02 | -0.02 | -0.03 | -0.05 | -0.06 | -0.08 | -0.09 | -0.11 | -0.12 | -0.13 | -0.13 | 20 S |
| 25 S | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | -0.04 | -0.05 | -0.07 | -0.09 | -0.11 | -0.12 | -0.13 | -0.14 | 25 S |
| 30 S | 0.03 | 0.03 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.03 | -0.04 | -0.06 | -0.08 | -0.10 | -0.12 | -0.13 | -0.13 | 30 S |
| 35 S | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0.02 | 0.00 | -0.01 | -0.03 | -0.05 | -0.07 | -0.09 | -0.11 | -0.12 | -0.12 | 35 S |
| 40 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.03 | 0.02 | -0.00 | -0.02 | -0.04 | -0.06 | -0.08 | -0.09 | -0.10 | -0.11 | 40 S |
| 45 S | 0.08 | 0.08 | 0.08 | 0.07 | 0.06 | 0.04 | 0.03 | 0.01 | -0.01 | -0.03 | -0.05 | -0.06 | -0.08 | -0.08 | -0.09 | 45 S |
| 50 S | 0.10 | 0.09 | 0.09 | 0.08 | 0.07 | 0.05 | 0.03 | 0.01 | -0.00 | -0.02 | -0.04 | -0.05 | -0.06 | -0.06 | -0.06 | 50 S |
| 55 S | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.05 | 0.03 | 0.02 | 0.00 | -0.01 | -0.03 | -0.04 | -0.04 | -0.05 | -0.05 | 55 S |
| 60 S | 0.11 | 0.10 | 0.09 | 0.08 | 0.06 | 0.05 | 0.03 | 0.02 | 0.00 | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | 60 S |
| 65 S | 0.11 | 0.09 | 0.08 | 0.07 | 0.05 | 0.04 | 0.03 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | 65 S |
| 70 S | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | 70 S |
| 75 S | 0.05 | 0.04 | 0.03 | 0.02 | 0.02 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | 75 S |
| 80 S | 0.00 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | 80 S |
| 85 S | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | 85 S |
| 90 S | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | 90 S |
| LAT. / E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | LAT. / E.LONG. |

TABLE 1 B IGRF DECLINATION (D)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (EAST POSITIVE)

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| 90 N | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 90 N |
| 85 N | 0.17 | 0.17 | 0.16 | 0.16 | 0.16 | 0.15 | 0.15 | 0.14 | 0.14 | 0.14 | 0.13 | 0.13 | 0.13 | 0.12 | 0.12 | 85 N |
| 80 N | 0.19 | 0.18 | 0.17 | 0.16 | 0.15 | 0.14 | 0.13 | 0.13 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 80 N |
| 75 N | 0.20 | 0.18 | 0.16 | 0.15 | 0.14 | 0.13 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.10 | 0.09 | 0.09 | 75 N |
| 70 N | 0.21 | 0.18 | 0.16 | 0.15 | 0.13 | 0.12 | 0.12 | 0.11 | 0.10 | 0.10 | 0.10 | 0.09 | 0.09 | 0.09 | 0.08 | 70 N |
| 65 N | 0.20 | 0.18 | 0.16 | 0.14 | 0.13 | 0.12 | 0.11 | 0.11 | 0.10 | 0.10 | 0.10 | 0.09 | 0.09 | 0.09 | 0.08 | 65 N |
| 60 N | 0.18 | 0.17 | 0.15 | 0.14 | 0.13 | 0.12 | 0.12 | 0.11 | 0.11 | 0.10 | 0.10 | 0.10 | 0.09 | 0.09 | 0.08 | 60 N |
| 55 N | 0.15 | 0.14 | 0.14 | 0.13 | 0.13 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.09 | 0.09 | 55 N |
| 50 N | 0.11 | 0.11 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 0.09 | 50 N |
| 45 N | 0.06 | 0.08 | 0.10 | 0.10 | 0.11 | 0.11 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.11 | 0.11 | 0.09 | 45 N |
| 40 N | 0.03 | 0.05 | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.12 | 0.12 | 0.13 | 0.12 | 0.12 | 0.11 | 0.10 | 40 N |
| 35 N | -0.01 | 0.02 | 0.04 | 0.06 | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.13 | 0.13 | 0.12 | 0.11 | 0.10 | 35 N |
| 30 N | -0.04 | -0.01 | 0.01 | 0.04 | 0.06 | 0.08 | 0.09 | 0.11 | 0.12 | 0.13 | 0.13 | 0.13 | 0.13 | 0.11 | 0.10 | 30 N |
| 25 N | -0.06 | -0.04 | -0.01 | 0.01 | 0.04 | 0.06 | 0.08 | 0.10 | 0.11 | 0.13 | 0.13 | 0.13 | 0.13 | 0.11 | 0.10 | 25 N |
| 20 N | -0.08 | -0.06 | -0.03 | -0.01 | 0.01 | 0.04 | 0.06 | 0.09 | 0.11 | 0.12 | 0.13 | 0.13 | 0.13 | 0.11 | 0.10 | 20 N |
| 15 N | -0.09 | -0.08 | -0.06 | -0.03 | -0.01 | 0.02 | 0.04 | 0.07 | 0.09 | 0.11 | 0.13 | 0.13 | 0.12 | 0.11 | 0.09 | 15 N |
| 10 N | -0.10 | -0.09 | -0.07 | -0.05 | -0.03 | -0.00 | 0.02 | 0.05 | 0.08 | 0.10 | 0.12 | 0.13 | 0.12 | 0.11 | 0.09 | 10 N |
| 5 N | -0.11 | -0.10 | -0.09 | -0.07 | -0.05 | -0.03 | 0.00 | 0.03 | 0.06 | 0.09 | 0.11 | 0.12 | 0.12 | 0.11 | 0.09 | 5 N |
| 0 | -0.11 | -0.11 | -0.10 | -0.09 | -0.07 | -0.05 | -0.02 | 0.01 | 0.05 | 0.08 | 0.10 | 0.11 | 0.12 | 0.11 | 0.10 | 0 |
| 5 S | -0.12 | -0.12 | -0.11 | -0.10 | -0.09 | -0.07 | -0.04 | -0.01 | 0.02 | 0.06 | 0.08 | 0.10 | 0.11 | 0.11 | 0.10 | 5 S |
| 10 S | -0.12 | -0.12 | -0.12 | -0.12 | -0.11 | -0.09 | -0.06 | -0.03 | -0.00 | 0.03 | 0.06 | 0.09 | 0.10 | 0.10 | 0.10 | 10 S |
| 15 S | -0.12 | -0.13 | -0.13 | -0.13 | -0.12 | -0.10 | -0.08 | -0.06 | -0.02 | 0.01 | 0.04 | 0.07 | 0.08 | 0.09 | 0.09 | 15 S |
| 20 S | -0.12 | -0.13 | -0.13 | -0.13 | -0.13 | -0.11 | -0.10 | -0.07 | -0.05 | -0.02 | 0.01 | 0.04 | 0.06 | 0.07 | 0.08 | 20 S |
| 25 S | -0.12 | -0.13 | -0.14 | -0.14 | -0.13 | -0.12 | -0.10 | -0.08 | -0.06 | -0.03 | -0.01 | 0.02 | 0.04 | 0.05 | 0.05 | 25 S |
| 30 S | -0.12 | -0.13 | -0.13 | -0.13 | -0.13 | -0.12 | -0.10 | -0.09 | -0.07 | -0.04 | -0.02 | 0.00 | 0.02 | 0.03 | 0.03 | 30 S |
| 35 S | -0.11 | -0.12 | -0.12 | -0.12 | -0.12 | -0.11 | -0.09 | -0.08 | -0.06 | -0.04 | -0.02 | 0.00 | 0.02 | 0.02 | 0.02 | 35 S |
| 40 S | -0.09 | -0.10 | -0.11 | -0.10 | -0.10 | -0.09 | -0.08 | -0.06 | -0.04 | -0.02 | -0.00 | 0.01 | 0.02 | 0.03 | 0.02 | 40 S |
| 45 S | -0.08 | -0.08 | -0.09 | -0.08 | -0.08 | -0.07 | -0.05 | -0.04 | -0.02 | -0.00 | 0.01 | 0.03 | 0.03 | 0.03 | 0.02 | 45 S |
| 50 S | -0.06 | -0.06 | -0.06 | -0.06 | -0.06 | -0.05 | -0.03 | -0.02 | -0.00 | 0.01 | 0.03 | 0.04 | 0.04 | 0.03 | 0.02 | 50 S |
| 55 S | -0.04 | -0.05 | -0.05 | -0.04 | -0.04 | -0.03 | -0.02 | -0.00 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | 0.01 | 55 S |
| 60 S | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.01 | 0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | -0.01 | 60 S |
| 65 S | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.03 | 65 S |
| 70 S | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | 70 S |
| 75 S | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.05 | -0.06 | 75 S |
| 80 S | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.06 | -0.06 | -0.07 | 80 S |
| 85 S | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.06 | -0.06 | -0.06 | -0.06 | -0.06 | -0.07 | -0.07 | -0.07 | -0.08 | -0.08 | 85 S |
| 90 S | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | 90 S |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 2 A IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 1712 | 1687 | 1651 | 1603 | 1544 | 1474 | 1398 | 1319 | 1243 | 1178 | 1134 | 1121 | 1147 | 1216 | 1325 | LAT. |
| 90 N | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 90 N |
| 85 N | 4919 | 4951 | 4967 | 4966 | 4948 | 4914 | 4862 | 4795 | 4711 | 4612 | 4497 | 4369 | 4226 | 4071 | 3906 | 85 N |
| 80 N | 7071 | 7131 | 7165 | 7173 | 7155 | 7110 | 7038 | 6938 | 6809 | 6651 | 6464 | 6247 | 6003 | 5731 | 5434 | 80 N |
| 75 N | 8997 | 9080 | 9135 | 9162 | 9161 | 9130 | 9068 | 8973 | 8843 | 8675 | 8467 | 8219 | 7928 | 7596 | 7225 | 75 N |
| 70 N | 10823 | 10921 | 10993 | 11041 | 11064 | 11061 | 11030 | 10966 | 10867 | 10729 | 10547 | 10318 | 10039 | 9709 | 9332 | 70 N |
| 65 N | 12683 | 12787 | 12870 | 12933 | 12978 | 13004 | 13007 | 12986 | 12935 | 12850 | 12725 | 12555 | 12338 | 12069 | 11752 | 65 N |
| 60 N | 14686 | 14788 | 14872 | 14942 | 15000 | 15045 | 15078 | 15094 | 15091 | 15065 | 15011 | 14925 | 14802 | 14639 | 14436 | 60 N |
| 55 N | 16890 | 16988 | 17069 | 17138 | 17199 | 17253 | 17302 | 17344 | 17380 | 17407 | 17423 | 17425 | 17410 | 17377 | 17324 | 55 N |
| 50 N | 19301 | 19400 | 19480 | 19547 | 19607 | 19663 | 19720 | 19780 | 19843 | 19911 | 19986 | 20069 | 20160 | 20260 | 20367 | 50 N |
| 45 N | 21866 | 21981 | 22071 | 22145 | 22211 | 22275 | 22342 | 22417 | 22503 | 22603 | 22725 | 22873 | 23055 | 23274 | 23528 | 45 N |
| 40 N | 24481 | 24631 | 24751 | 24852 | 24942 | 25031 | 25124 | 25225 | 25337 | 25469 | 25628 | 25827 | 26079 | 26390 | 26760 | 40 N |
| 35 N | 26995 | 27202 | 27376 | 27529 | 27672 | 27812 | 27953 | 28099 | 28252 | 28420 | 28614 | 28852 | 29152 | 29525 | 29974 | 35 N |
| 30 N | 29226 | 29506 | 29755 | 29986 | 30207 | 30425 | 30640 | 30851 | 31061 | 31274 | 31506 | 31777 | 32110 | 32521 | 33013 | 30 N |
| 25 N | 30974 | 31332 | 31670 | 31995 | 32313 | 32625 | 32930 | 33221 | 33498 | 33767 | 34041 | 34346 | 34707 | 35142 | 35655 | 25 N |
| 20 N | 32057 | 32481 | 32902 | 33322 | 33738 | 34147 | 34540 | 34911 | 35257 | 35584 | 35908 | 36253 | 36647 | 37109 | 37638 | 20 N |
| 15 N | 32335 | 32797 | 33278 | 33772 | 34267 | 34753 | 35216 | 35650 | 36054 | 36436 | 36813 | 37211 | 37654 | 38158 | 38719 | 15 N |
| 10 N | 31749 | 32203 | 32703 | 33231 | 33765 | 34288 | 34787 | 35255 | 35696 | 36124 | 36557 | 37020 | 37533 | 38106 | 38726 | 10 N |
| 5 N | 30339 | 30731 | 31194 | 31700 | 32220 | 32730 | 33218 | 33684 | 34140 | 34602 | 35094 | 35634 | 36239 | 36908 | 37618 | 5 N |
| 0 | 28253 | 28527 | 28893 | 29316 | 29760 | 30203 | 30636 | 31068 | 31517 | 32006 | 32557 | 33185 | 33899 | 34684 | 35507 | 0 |
| 5 S | 25723 | 25834 | 26049 | 26332 | 26648 | 26978 | 27322 | 27696 | 28126 | 28637 | 29249 | 29971 | 30800 | 31709 | 32652 | 5 S |
| 10 S | 23030 | 22952 | 22980 | 23083 | 23235 | 23425 | 23662 | 23972 | 24382 | 24916 | 25590 | 26406 | 27345 | 28368 | 29414 | 10 S |
| 15 S | 20453 | 20186 | 20019 | 19930 | 19907 | 19953 | 20087 | 20340 | 20739 | 21303 | 22042 | 22944 | 23978 | 25087 | 26199 | 15 S |
| 20 S | 18216 | 17789 | 17448 | 17187 | 17011 | 16937 | 16993 | 17211 | 17616 | 18221 | 19023 | 20000 | 21101 | 22254 | 23374 | 20 S |
| 25 S | 16464 | 15925 | 15459 | 15078 | 14798 | 14651 | 14670 | 14886 | 15319 | 15974 | 16836 | 17865 | 18995 | 20136 | 21199 | 25 S |
| 30 S | 15259 | 14663 | 14137 | 13702 | 13387 | 13228 | 13260 | 13510 | 13991 | 14698 | 15603 | 16650 | 17759 | 18831 | 19773 | 30 S |
| 35 S | 14599 | 14002 | 13479 | 13058 | 12773 | 12659 | 12746 | 13056 | 13592 | 14337 | 15253 | 16272 | 17306 | 18254 | 19027 | 35 S |
| 40 S | 14451 | 13896 | 13427 | 13072 | 12863 | 12830 | 12994 | 13366 | 13941 | 14693 | 15573 | 16511 | 17418 | 18199 | 18774 | 40 S |
| 45 S | 14759 | 14277 | 13893 | 13631 | 13516 | 13570 | 13803 | 14215 | 14793 | 15505 | 16297 | 17103 | 17841 | 18428 | 18794 | 45 S |
| 50 S | 15448 | 15053 | 14762 | 14594 | 14564 | 14683 | 14953 | 15366 | 15900 | 16520 | 17178 | 17811 | 18351 | 18730 | 18890 | 50 S |
| 55 S | 16416 | 16107 | 15898 | 15803 | 15827 | 15973 | 16235 | 16599 | 17041 | 17527 | 18013 | 18449 | 18780 | 18953 | 18924 | 55 S |
| 60 S | 17528 | 17290 | 17140 | 17084 | 17122 | 17249 | 17457 | 17728 | 18039 | 18360 | 18657 | 18889 | 19017 | 19003 | 18813 | 60 S |
| 65 S | 18606 | 18420 | 18302 | 18250 | 18264 | 18334 | 18451 | 18599 | 18758 | 18904 | 19013 | 19056 | 19005 | 18835 | 18524 | 65 S |
| 70 S | 19434 | 19284 | 19175 | 19104 | 19069 | 19061 | 19071 | 19089 | 19098 | 19084 | 19030 | 18917 | 18729 | 18451 | 18069 | 70 S |
| 75 S | 19777 | 19653 | 19544 | 19447 | 19360 | 19278 | 19195 | 19104 | 18995 | 18861 | 18692 | 18479 | 18213 | 17887 | 17495 | 75 S |
| 80 S | 19417 | 19319 | 19217 | 19109 | 18995 | 18873 | 18739 | 18591 | 18426 | 18240 | 18029 | 17792 | 17524 | 17224 | 16890 | 80 S |
| 85 S | 18209 | 18148 | 18076 | 17994 | 17902 | 17799 | 17686 | 17562 | 17428 | 17281 | 17124 | 16956 | 16776 | 16585 | 16385 | 85 S |
| 90 S | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 90 S |
| LAT. | 13356 | 13467 | 13603 | 13762 | 13942 | 14139 | 14352 | 14577 | 14812 | 15054 | 15300 | 15548 | 15796 | 16040 | 16279 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 2 A IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 1147 | 1216 | 1325 | 1469 | 1641 | 1832 | 2038 | 2253 | 2474 | 2695 | 2915 | 3131 | 3341 | 3543 | 3736 | LAT. |
| 90 N | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 90 N |
| 85 N | 4226 | 4071 | 3906 | 3730 | 3547 | 3359 | 3168 | 2976 | 2788 | 2606 | 2433 | 2275 | 2133 | 2012 | 1912 | 85 N |
| 80 N | 6003 | 5731 | 5434 | 5115 | 4780 | 4435 | 4088 | 3751 | 3438 | 3167 | 2956 | 2824 | 2782 | 2829 | 2952 | 80 N |
| 75 N | 7928 | 7596 | 7225 | 6820 | 6390 | 5947 | 5509 | 5101 | 4754 | 4502 | 4377 | 4397 | 4560 | 4843 | 5212 | 75 N |
| 70 N | 10039 | 9709 | 9332 | 8912 | 8462 | 7999 | 7550 | 7149 | 6839 | 6661 | 6647 | 6809 | 7136 | 7592 | 8135 | 70 N |
| 65 N | 12338 | 12069 | 11752 | 11391 | 10999 | 10597 | 10212 | 9883 | 9653 | 9563 | 9644 | 9905 | 10330 | 10885 | 11523 | 65 N |
| 60 N | 14802 | 14639 | 14436 | 14198 | 13934 | 13660 | 13402 | 13193 | 13070 | 13070 | 13220 | 13530 | 13988 | 14564 | 15212 | 60 N |
| 55 N | 17410 | 17377 | 17324 | 17251 | 17163 | 17067 | 16978 | 16918 | 16915 | 16997 | 17188 | 17499 | 17925 | 18442 | 19011 | 55 N |
| 50 N | 20160 | 20260 | 20367 | 20476 | 20583 | 20684 | 20780 | 20878 | 20990 | 21135 | 21334 | 21599 | 21932 | 22318 | 22729 | 50 N |
| 45 N | 23055 | 23274 | 23528 | 23808 | 24100 | 24388 | 24655 | 24891 | 25094 | 25273 | 25443 | 25618 | 25806 | 26005 | 26197 | 45 N |
| 40 N | 26079 | 26390 | 26760 | 27177 | 27619 | 28054 | 28452 | 28785 | 29040 | 29215 | 29318 | 29367 | 29377 | 29355 | 29297 | 40 N |
| 35 N | 29152 | 29525 | 29974 | 30483 | 31022 | 31549 | 32021 | 32399 | 32658 | 32788 | 32796 | 32699 | 32518 | 32271 | 31965 | 35 N |
| 30 N | 32110 | 32521 | 33013 | 33569 | 34152 | 34714 | 35203 | 35573 | 35794 | 35852 | 35751 | 35510 | 35154 | 34707 | 34188 | 30 N |
| 25 N | 34707 | 35142 | 35655 | 36225 | 36814 | 37367 | 37830 | 38156 | 38315 | 38292 | 38092 | 37733 | 37244 | 36652 | 35982 | 25 N |
| 20 N | 36647 | 37109 | 37638 | 38213 | 38790 | 39314 | 39735 | 40008 | 40107 | 40022 | 39758 | 39333 | 38774 | 38112 | 37371 | 20 N |
| 15 N | 37654 | 38158 | 38719 | 39309 | 39882 | 40387 | 40776 | 41016 | 41088 | 40984 | 40713 | 40291 | 39742 | 39092 | 38368 | 15 N |
| 10 N | 37533 | 38106 | 38726 | 39359 | 39957 | 40472 | 40867 | 41117 | 41214 | 41155 | 40947 | 40605 | 40146 | 39591 | 38962 | 10 N |
| 5 N | 36239 | 36908 | 37618 | 38327 | 38986 | 39552 | 39998 | 40313 | 40496 | 40548 | 40475 | 40283 | 39984 | 39591 | 39120 | 5 N |
| 0 | 33899 | 34684 | 35507 | 36318 | 37067 | 37717 | 38255 | 38682 | 39003 | 39222 | 39338 | 39351 | 39261 | 39074 | 38800 | 0 |
| 5 S | 30800 | 31709 | 32652 | 33570 | 34416 | 35163 | 35811 | 36373 | 36860 | 37275 | 37609 | 37850 | 37990 | 38026 | 37961 | 5 S |
| 10 S | 27345 | 28368 | 29414 | 30421 | 31343 | 32166 | 32907 | 33591 | 34234 | 34837 | 35381 | 35843 | 36202 | 36448 | 36580 | 10 S |
| 15 S | 23978 | 25087 | 26199 | 27246 | 28192 | 29037 | 29816 | 30568 | 31317 | 32059 | 32767 | 33407 | 33947 | 34367 | 34663 | 15 S |
| 20 S | 21101 | 22254 | 23374 | 24394 | 25287 | 26072 | 26801 | 27531 | 28295 | 29091 | 29884 | 30630 | 31288 | 31830 | 32246 | 20 S |
| 25 S | 18995 | 20136 | 21199 | 22117 | 22874 | 23504 | 24079 | 24674 | 25337 | 26071 | 26844 | 27604 | 28301 | 28902 | 29391 | 25 S |
| 30 S | 17759 | 18831 | 19773 | 20523 | 21073 | 21467 | 21791 | 22137 | 22573 | 23119 | 23752 | 24420 | 25070 | 25663 | 26177 | 30 S |
| 35 S | 17306 | 18254 | 19027 | 19567 | 19869 | 19980 | 19988 | 19998 | 20098 | 20333 | 20703 | 21169 | 21684 | 22201 | 22694 | 35 S |
| 40 S | 17418 | 18199 | 18774 | 19090 | 19140 | 18963 | 18640 | 18276 | 17972 | 17802 | 17799 | 17956 | 18240 | 18610 | 19034 | 40 S |
| 45 S | 17841 | 18428 | 18794 | 18892 | 18712 | 18281 | 17662 | 16946 | 16233 | 15615 | 15163 | 14911 | 14864 | 15001 | 15292 | 45 S |
| 50 S | 18351 | 18730 | 18890 | 18792 | 18422 | 17794 | 16952 | 15961 | 14904 | 13871 | 12950 | 12218 | 11733 | 11521 | 11580 | 50 S |
| 55 S | 18780 | 18953 | 18924 | 18661 | 18148 | 17392 | 16417 | 15263 | 13987 | 12656 | 11345 | 10140 | 9133 | 8418 | 8069 | 55 S |
| 60 S | 19017 | 19003 | 18813 | 18423 | 17822 | 17008 | 15993 | 14799 | 13459 | 12011 | 10502 | 8983 | 7523 | 6212 | 5187 | 60 S |
| 65 S | 19005 | 18835 | 18524 | 18056 | 17420 | 16615 | 15646 | 14524 | 13266 | 11895 | 10433 | 8906 | 7339 | 5760 | 4198 | 65 S |
| 70 S | 18729 | 18451 | 18069 | 17574 | 16960 | 16226 | 15374 | 14412 | 13351 | 12203 | 10986 | 9717 | 8417 | 7110 | 5822 | 70 S |
| 75 S | 18213 | 17887 | 17495 | 17032 | 16496 | 15888 | 15211 | 14469 | 13671 | 12827 | 11950 | 11054 | 10157 | 9280 | 8447 | 75 S |
| 80 S | 17524 | 17224 | 16890 | 16522 | 16120 | 15686 | 15223 | 14734 | 14224 | 13701 | 13172 | 12646 | 12131 | 11640 | 11181 | 80 S |
| 85 S | 16776 | 16585 | 16385 | 16175 | 15957 | 15732 | 15503 | 15270 | 15037 | 14805 | 14578 | 14359 | 14150 | 13955 | 13776 | 85 S |
| 90 S | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 90 S |
| LAT. | 15796 | 16040 | 16279 | 16511 | 16734 | 16945 | 17144 | 17330 | 17501 | 17657 | 17797 | 17921 | 18029 | 18121 | 18197 | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 2 A IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 3341 | 3543 | 3736 | 3917 | 4087 | 4243 | 4385 | 4513 | 4626 | 4724 | 4805 | 4870 | 4919 | 4951 | 4967 | LAT. |
| 90 N | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 90 N |
| 85 N | 2133 | 2012 | 1912 | 1836 | 1783 | 1749 | 1732 | 1727 | 1728 | 1731 | 1732 | 1726 | 1712 | 1687 | 1651 | 85 N |
| 80 N | 2782 | 2829 | 2952 | 3131 | 3344 | 3571 | 3797 | 4008 | 4194 | 4350 | 4468 | 4546 | 4582 | 4573 | 4519 | 80 N |
| 75 N | 4560 | 4843 | 5212 | 5631 | 6067 | 6496 | 6898 | 7258 | 7566 | 7815 | 7999 | 8117 | 8167 | 8148 | 8060 | 75 N |
| 70 N | 7136 | 7592 | 8135 | 8721 | 9312 | 9877 | 10394 | 10844 | 11219 | 11510 | 11717 | 11837 | 11871 | 11823 | 11692 | 70 N |
| 65 N | 10330 | 10885 | 11523 | 12198 | 12865 | 13489 | 14045 | 14514 | 14887 | 15161 | 15337 | 15419 | 15411 | 15317 | 15142 | 65 N |
| 60 N | 13988 | 14564 | 15212 | 15884 | 16535 | 17128 | 17635 | 18040 | 18338 | 18531 | 18625 | 18628 | 18552 | 18403 | 18186 | 60 N |
| 55 N | 17925 | 18442 | 19011 | 19588 | 20129 | 20598 | 20970 | 21234 | 21389 | 21442 | 21409 | 21303 | 21140 | 20930 | 20680 | 55 N |
| 50 N | 21932 | 22318 | 22729 | 23127 | 23476 | 23744 | 23912 | 23973 | 23934 | 23809 | 23619 | 23385 | 23126 | 22855 | 22580 | 50 N |
| 45 N | 25806 | 26005 | 26197 | 26357 | 26458 | 26475 | 26396 | 26222 | 25965 | 25647 | 25293 | 24928 | 24574 | 24246 | 23952 | 45 N |
| 40 N | 29377 | 29355 | 29297 | 29191 | 29020 | 28771 | 28439 | 28030 | 27563 | 27063 | 26559 | 26076 | 25638 | 25259 | 24948 | 40 N |
| 35 N | 32518 | 32271 | 31965 | 31601 | 31174 | 30679 | 30119 | 29508 | 28866 | 28220 | 27598 | 27024 | 26519 | 26098 | 25772 | 35 N |
| 30 N | 35154 | 34707 | 34188 | 33607 | 32970 | 32280 | 31549 | 30791 | 30029 | 29288 | 28591 | 27961 | 27414 | 26964 | 26623 | 30 N |
| 25 N | 37244 | 36652 | 35982 | 35252 | 34475 | 33663 | 32829 | 31993 | 31175 | 30397 | 29677 | 29031 | 28469 | 28005 | 27651 | 25 N |
| 20 N | 38774 | 38112 | 37371 | 36575 | 35741 | 34885 | 34024 | 33179 | 32369 | 31610 | 30914 | 30290 | 29744 | 29283 | 28921 | 20 N |
| 15 N | 39742 | 39092 | 38368 | 37590 | 36780 | 35955 | 35136 | 34343 | 33593 | 32901 | 32271 | 31704 | 31200 | 30762 | 30402 | 15 N |
| 10 N | 40146 | 39591 | 38962 | 38279 | 37561 | 36830 | 36105 | 35410 | 34761 | 34168 | 33633 | 33150 | 32712 | 32316 | 31967 | 10 N |
| 5 N | 39984 | 39591 | 39120 | 38589 | 38015 | 37419 | 36826 | 36257 | 35731 | 35258 | 34835 | 34452 | 34095 | 33755 | 33429 | 5 N |
| 0 | 39261 | 39074 | 38800 | 38453 | 38050 | 37613 | 37168 | 36738 | 36344 | 35995 | 35689 | 35412 | 35144 | 34869 | 34577 | 0 |
| 5 S | 37990 | 38026 | 37961 | 37807 | 37581 | 37306 | 37009 | 36717 | 36451 | 36223 | 36029 | 35854 | 35675 | 35469 | 35221 | 5 S |
| 10 S | 36202 | 36448 | 36580 | 36607 | 36546 | 36422 | 36264 | 36099 | 35951 | 35832 | 35740 | 35659 | 35565 | 35431 | 35238 | 10 S |
| 15 S | 33947 | 34367 | 34663 | 34843 | 34924 | 34933 | 34898 | 34848 | 34806 | 34784 | 34783 | 34787 | 34772 | 34714 | 34588 | 15 S |
| 20 S | 31288 | 31830 | 32246 | 32544 | 32740 | 32861 | 32935 | 32989 | 33045 | 33114 | 33196 | 33280 | 33345 | 33366 | 33322 | 20 S |
| 25 S | 28301 | 28902 | 29391 | 29771 | 30058 | 30277 | 30451 | 30605 | 30758 | 30917 | 31085 | 31251 | 31399 | 31509 | 31562 | 25 S |
| 30 S | 25070 | 25663 | 26177 | 26609 | 26970 | 27278 | 27553 | 27812 | 28068 | 28327 | 28589 | 28847 | 29088 | 29298 | 29462 | 30 S |
| 35 S | 21684 | 22201 | 22694 | 23151 | 23574 | 23971 | 24353 | 24728 | 25102 | 25477 | 25849 | 26212 | 26560 | 26880 | 27163 | 35 S |
| 40 S | 18240 | 18610 | 19034 | 19488 | 19962 | 20449 | 20947 | 21453 | 21961 | 22468 | 22967 | 23451 | 23916 | 24354 | 24759 | 40 S |
| 45 S | 14864 | 15001 | 15292 | 15704 | 16209 | 16782 | 17400 | 18045 | 18700 | 19351 | 19988 | 20604 | 21192 | 21749 | 22271 | 45 S |
| 50 S | 11733 | 11521 | 11580 | 11879 | 12372 | 13008 | 13739 | 14522 | 15326 | 16125 | 16905 | 17654 | 18366 | 19038 | 19670 | 50 S |
| 55 S | 9133 | 8418 | 8069 | 8110 | 8499 | 9150 | 9970 | 10882 | 11828 | 12771 | 13687 | 14564 | 15395 | 16178 | 16914 | 55 S |
| 60 S | 7523 | 6212 | 5187 | 4628 | 4663 | 5224 | 6111 | 7151 | 8240 | 9323 | 10370 | 11367 | 12310 | 13199 | 14036 | 60 S |
| 65 S | 7339 | 5760 | 4198 | 2701 | 1436 | 1259 | 2326 | 3604 | 4873 | 6093 | 7251 | 8347 | 9382 | 10361 | 11290 | 65 S |
| 70 S | 8417 | 7110 | 5822 | 4595 | 3499 | 2683 | 2404 | 2774 | 3553 | 4496 | 5489 | 6486 | 7466 | 8423 | 9355 | 70 S |
| 75 S | 10157 | 9280 | 8447 | 7686 | 7030 | 6515 | 6176 | 6034 | 6096 | 6342 | 6743 | 7260 | 7862 | 8523 | 9223 | 75 S |
| 80 S | 12131 | 11640 | 11181 | 10768 | 10410 | 10119 | 9901 | 9764 | 9711 | 9742 | 9854 | 10043 | 10300 | 10618 | 10988 | 80 S |
| 85 S | 14150 | 13955 | 13776 | 13616 | 13478 | 13365 | 13278 | 13218 | 13187 | 13186 | 13214 | 13271 | 13356 | 13467 | 13603 | 85 S |
| 90 S | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 90 S |
| LAT. | 18029 | 18121 | 18197 | 18258 | 18304 | 18336 | 18354 | 18359 | 18351 | 18332 | 18302 | 18261 | 18209 | 18148 | 18076 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 2 A IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 4919 | 4951 | 4967 | 4966 | 4948 | 4914 | 4862 | 4795 | 4711 | 4612 | 4497 | 4369 | 4226 | 4071 | 3906 | LAT. |
| 90 N | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 90 N |
| 85 N | 1712 | 1687 | 1651 | 1603 | 1544 | 1474 | 1398 | 1319 | 1243 | 1178 | 1134 | 1121 | 1147 | 1216 | 1325 | 85 N |
| 80 N | 4582 | 4573 | 4519 | 4420 | 4276 | 4088 | 3858 | 3588 | 3280 | 2937 | 2563 | 2163 | 1743 | 1317 | 913 | 80 N |
| 75 N | 8167 | 8148 | 8060 | 7905 | 7683 | 7396 | 7045 | 6632 | 6160 | 5632 | 5052 | 4423 | 3750 | 3041 | 2302 | 75 N |
| 70 N | 11871 | 11823 | 11692 | 11481 | 11191 | 10823 | 10378 | 9856 | 9259 | 8589 | 7851 | 7048 | 6188 | 5283 | 4348 | 70 N |
| 65 N | 15411 | 15317 | 15142 | 14886 | 14552 | 14137 | 13642 | 13063 | 12401 | 11656 | 10829 | 9926 | 8956 | 7934 | 6882 | 65 N |
| 60 N | 18552 | 18403 | 18186 | 17904 | 17557 | 17139 | 16648 | 16078 | 15424 | 14684 | 13856 | 12945 | 11960 | 10914 | 9834 | 60 N |
| 55 N | 21140 | 20930 | 20680 | 20392 | 20062 | 19685 | 19252 | 18753 | 18180 | 17525 | 16785 | 15959 | 15054 | 14081 | 13061 | 55 N |
| 50 N | 23126 | 22855 | 22580 | 22302 | 22015 | 21711 | 21378 | 21001 | 20566 | 20063 | 19482 | 18819 | 18075 | 17255 | 16373 | 50 N |
| 45 N | 24574 | 24246 | 23952 | 23692 | 23461 | 23248 | 23037 | 22810 | 22549 | 22237 | 21861 | 21410 | 20880 | 20268 | 19578 | 45 N |
| 40 N | 25638 | 25259 | 24948 | 24708 | 24533 | 24410 | 24323 | 24250 | 24168 | 24057 | 23897 | 23674 | 23375 | 22993 | 22521 | 40 N |
| 35 N | 26519 | 26098 | 25772 | 25544 | 25412 | 25364 | 25383 | 25444 | 25522 | 25590 | 25626 | 25610 | 25527 | 25362 | 25102 | 35 N |
| 30 N | 27414 | 26964 | 26623 | 26397 | 26289 | 26288 | 26380 | 26537 | 26730 | 26932 | 27115 | 27259 | 27345 | 27357 | 27276 | 30 N |
| 25 N | 28469 | 28005 | 27651 | 27417 | 27309 | 27323 | 27443 | 27644 | 27896 | 28168 | 28432 | 28669 | 28860 | 28988 | 29034 | 25 N |
| 20 N | 29744 | 29283 | 28921 | 28671 | 28543 | 28536 | 28638 | 28826 | 29071 | 29344 | 29619 | 29876 | 30100 | 30278 | 30392 | 20 N |
| 15 N | 31200 | 30762 | 30402 | 30132 | 29965 | 29906 | 29946 | 30067 | 30245 | 30453 | 30671 | 30883 | 31077 | 31242 | 31366 | 15 N |
| 10 N | 32712 | 32316 | 31967 | 31678 | 31462 | 31327 | 31271 | 31283 | 31345 | 31439 | 31550 | 31667 | 31781 | 31887 | 31974 | 10 N |
| 5 N | 34095 | 33755 | 33429 | 33126 | 32859 | 32638 | 32467 | 32346 | 32267 | 32220 | 32197 | 32190 | 32198 | 32214 | 32233 | 5 N |
| 0 | 35144 | 34869 | 34577 | 34270 | 33960 | 33658 | 33377 | 33124 | 32903 | 32714 | 32555 | 32423 | 32317 | 32233 | 32166 | 0 |
| 5 S | 35675 | 35469 | 35221 | 34927 | 34593 | 34234 | 33868 | 33510 | 33174 | 32868 | 32595 | 32355 | 32147 | 31967 | 31811 | 5 S |
| 10 S | 35565 | 35431 | 35238 | 34976 | 34649 | 34272 | 33865 | 33450 | 33047 | 32669 | 32322 | 32006 | 31720 | 31460 | 31222 | 10 S |
| 15 S | 34772 | 34714 | 34588 | 34383 | 34100 | 33753 | 33361 | 32949 | 32538 | 32143 | 31770 | 31419 | 31087 | 30770 | 30463 | 15 S |
| 20 S | 33345 | 33366 | 33322 | 33201 | 33000 | 32731 | 32411 | 32061 | 31702 | 31344 | 30993 | 30647 | 30304 | 29958 | 29608 | 20 S |
| 25 S | 31399 | 31509 | 31562 | 31547 | 31462 | 31311 | 31109 | 30870 | 30609 | 30333 | 30044 | 29741 | 29420 | 29078 | 28717 | 25 S |
| 30 S | 29088 | 29298 | 29462 | 29571 | 29620 | 29613 | 29555 | 29456 | 29322 | 29158 | 28962 | 28732 | 28467 | 28166 | 27835 | 30 S |
| 35 S | 26560 | 26880 | 27163 | 27403 | 27594 | 27735 | 27828 | 27877 | 27881 | 27842 | 27757 | 27627 | 27450 | 27231 | 26977 | 35 S |
| 40 S | 23916 | 24354 | 24759 | 25125 | 25450 | 25731 | 25965 | 26152 | 26291 | 26381 | 26420 | 26410 | 26354 | 26258 | 26128 | 40 S |
| 45 S | 21192 | 21749 | 22271 | 22756 | 23200 | 23602 | 23959 | 24271 | 24536 | 24754 | 24926 | 25057 | 25150 | 25213 | 25248 | 45 S |
| 50 S | 18366 | 19038 | 19670 | 20261 | 20809 | 21317 | 21783 | 22208 | 22595 | 22944 | 23261 | 23549 | 23815 | 24060 | 24284 | 50 S |
| 55 S | 15395 | 16178 | 16914 | 17603 | 18251 | 18858 | 19430 | 19969 | 20481 | 20970 | 21441 | 21898 | 22344 | 22777 | 23191 | 55 S |
| 60 S | 12310 | 13199 | 14036 | 14826 | 15575 | 16289 | 16973 | 17635 | 18281 | 18915 | 19541 | 20161 | 20774 | 21373 | 21949 | 60 S |
| 65 S | 9382 | 10361 | 11290 | 12176 | 13025 | 13844 | 14642 | 15423 | 16194 | 16956 | 17711 | 18459 | 19192 | 19905 | 20586 | 65 S |
| 70 S | 7466 | 8423 | 9355 | 10262 | 11149 | 12018 | 12872 | 13715 | 14546 | 15368 | 16177 | 16970 | 17742 | 18485 | 19190 | 70 S |
| 75 S | 7862 | 8523 | 9223 | 9949 | 10691 | 11443 | 12199 | 12956 | 13709 | 14455 | 15189 | 15906 | 16601 | 17268 | 17900 | 75 S |
| 80 S | 10300 | 10618 | 10988 | 11402 | 11851 | 12329 | 12827 | 13340 | 13862 | 14387 | 14910 | 15425 | 15930 | 16417 | 16884 | 80 S |
| 85 S | 13356 | 13467 | 13603 | 13762 | 13942 | 14139 | 14352 | 14577 | 14812 | 15054 | 15300 | 15548 | 15796 | 16040 | 16279 | 85 S |
| 90 S | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 90 S |
| LAT. | 18209 | 18148 | 18076 | 17994 | 17902 | 17799 | 17686 | 17562 | 17428 | 17281 | 17124 | 16956 | 16776 | 16585 | 16385 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 2222 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 2 A IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 4226 | 4071 | 3906 | 3730 | 3547 | 3359 | 3168 | 2976 | 2788 | 2606 | 2433 | 2275 | 2133 | 2012 | 1912 | LAT. |
| 90 N | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 90 N |
| 85 N | 1147 | 1216 | 1325 | 1469 | 1641 | 1832 | 2038 | 2253 | 2474 | 2695 | 2915 | 3131 | 3341 | 3543 | 3736 | 85 N |
| 80 N | 1743 | 1317 | 913 | 625 | 667 | 1009 | 1454 | 1927 | 2405 | 2877 | 3335 | 3776 | 4195 | 4590 | 4958 | 80 N |
| 75 N | 3750 | 3041 | 2302 | 1542 | 780 | 248 | 872 | 1635 | 2391 | 3124 | 3826 | 4490 | 5111 | 5685 | 6211 | 75 N |
| 70 N | 6188 | 5283 | 4348 | 3410 | 2524 | 1824 | 1512 | 2040 | 2809 | 3679 | 4557 | 5403 | 6197 | 6927 | 7587 | 70 N |
| 65 N | 8956 | 7934 | 6882 | 5839 | 4865 | 4068 | 3607 | 3624 | 4098 | 4864 | 5763 | 6692 | 7592 | 8431 | 9189 | 65 N |
| 60 N | 11960 | 10914 | 9834 | 8759 | 7749 | 6888 | 6290 | 6063 | 6248 | 6790 | 7567 | 8462 | 9381 | 10264 | 11074 | 60 N |
| 55 N | 15054 | 14081 | 13061 | 12030 | 11038 | 10156 | 9471 | 9074 | 9026 | 9328 | 9915 | 10588 | 11547 | 12412 | 13226 | 55 N |
| 50 N | 18075 | 17255 | 16373 | 15454 | 14537 | 13676 | 12946 | 12427 | 12190 | 12268 | 12641 | 13244 | 13987 | 14782 | 15561 | 50 N |
| 45 N | 20880 | 20268 | 19578 | 18823 | 18028 | 17234 | 16500 | 15901 | 15512 | 15390 | 15551 | 15961 | 16552 | 17242 | 17957 | 45 N |
| 40 N | 23375 | 22993 | 22521 | 21959 | 21319 | 20626 | 19927 | 19289 | 18789 | 18498 | 18460 | 18674 | 19098 | 19661 | 20292 | 40 N |
| 35 N | 25527 | 25362 | 25102 | 24737 | 24263 | 23694 | 23062 | 22422 | 21852 | 21429 | 21219 | 21248 | 21501 | 21927 | 22463 | 35 N |
| 30 N | 27345 | 27357 | 27276 | 27084 | 26770 | 26331 | 25787 | 25180 | 24579 | 24065 | 23716 | 23583 | 23674 | 23963 | 24397 | 30 N |
| 25 N | 28860 | 28988 | 29034 | 28978 | 28797 | 28481 | 28034 | 27484 | 26888 | 26325 | 25877 | 25610 | 25557 | 25713 | 26042 | 25 N |
| 20 N | 30100 | 30278 | 30392 | 30420 | 30337 | 30123 | 29770 | 29292 | 28731 | 28155 | 27645 | 27279 | 27105 | 27133 | 27358 | 20 N |
| 15 N | 31077 | 31242 | 31366 | 31428 | 31403 | 31263 | 30991 | 30587 | 30078 | 29517 | 28981 | 28547 | 28277 | 28199 | 28308 | 15 N |
| 10 N | 31781 | 31887 | 31974 | 32026 | 32018 | 31920 | 31708 | 31369 | 30915 | 30387 | 29849 | 29374 | 29030 | 28854 | 28852 | 10 N |
| 5 N | 32198 | 32214 | 32233 | 32241 | 32214 | 32125 | 31944 | 31650 | 31244 | 30751 | 30223 | 29727 | 29327 | 29066 | 28956 | 5 N |
| 0 | 32317 | 32233 | 32166 | 32106 | 32033 | 31920 | 31739 | 31464 | 31085 | 30618 | 30102 | 29593 | 29149 | 28815 | 28604 | 0 |
| 5 S | 32147 | 31957 | 31811 | 31671 | 31530 | 31367 | 31155 | 30868 | 30492 | 30033 | 29519 | 28996 | 28517 | 28119 | 27817 | 5 S |
| 10 S | 31720 | 31460 | 31222 | 30998 | 30778 | 30547 | 30280 | 29955 | 29556 | 29083 | 28557 | 28016 | 27503 | 27051 | 26672 | 10 S |
| 15 S | 31087 | 30770 | 30463 | 30164 | 29867 | 29560 | 29227 | 28849 | 28409 | 27905 | 27353 | 26785 | 26237 | 25738 | 25296 | 15 S |
| 20 S | 30304 | 29958 | 29608 | 29253 | 28893 | 28522 | 28127 | 27694 | 27208 | 26666 | 26081 | 25481 | 24897 | 24356 | 23863 | 20 S |
| 25 S | 29420 | 29078 | 28717 | 28339 | 27947 | 27540 | 27109 | 26639 | 26118 | 25544 | 24927 | 24295 | 23677 | 23096 | 22561 | 25 S |
| 30 S | 28467 | 28156 | 27835 | 27478 | 27100 | 26701 | 26272 | 25799 | 25271 | 24684 | 24051 | 23395 | 22748 | 22133 | 21559 | 30 S |
| 35 S | 27450 | 27231 | 26977 | 26693 | 26384 | 26046 | 25669 | 25237 | 24738 | 24170 | 23545 | 22885 | 22222 | 21579 | 20970 | 35 S |
| 40 S | 26354 | 26258 | 26128 | 25969 | 25782 | 25557 | 25280 | 24935 | 24508 | 23996 | 23411 | 22775 | 22116 | 21461 | 20824 | 40 S |
| 45 S | 25150 | 25213 | 25248 | 25256 | 25232 | 25150 | 25023 | 24802 | 24484 | 24065 | 23555 | 22975 | 22350 | 21705 | 21058 | 45 S |
| 50 S | 23815 | 24060 | 24284 | 24482 | 24641 | 24742 | 24766 | 24692 | 24508 | 24211 | 23808 | 23316 | 22758 | 22156 | 21529 | 50 S |
| 55 S | 22344 | 22777 | 23191 | 23575 | 23911 | 24181 | 24364 | 24441 | 24402 | 24243 | 23969 | 23593 | 23134 | 22611 | 22043 | 55 S |
| 60 S | 20774 | 21373 | 21949 | 22487 | 22970 | 23380 | 23698 | 23911 | 24008 | 23988 | 23852 | 23611 | 23279 | 22871 | 22404 | 60 S |
| 65 S | 19192 | 19905 | 20586 | 21222 | 21797 | 22299 | 22712 | 23027 | 23237 | 23339 | 23336 | 23234 | 23044 | 22776 | 22445 | 65 S |
| 70 S | 17742 | 18485 | 19190 | 19846 | 20445 | 20975 | 21429 | 21800 | 22084 | 22279 | 22387 | 22412 | 22360 | 22240 | 22062 | 70 S |
| 75 S | 16601 | 17268 | 17900 | 18491 | 19035 | 19525 | 19959 | 20330 | 20638 | 20882 | 21062 | 21180 | 21241 | 21250 | 21212 | 75 S |
| 80 S | 15930 | 16417 | 16884 | 17326 | 17739 | 18121 | 18468 | 18779 | 19052 | 19286 | 19483 | 19641 | 19764 | 19852 | 19909 | 80 S |
| 85 S | 15796 | 16040 | 16279 | 16511 | 16734 | 16945 | 17144 | 17330 | 17501 | 17657 | 17797 | 17921 | 18029 | 18121 | 18197 | 85 S |
| 90 S | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 90 S |
| LAT. | 16776 | 16585 | 16385 | 16175 | 15957 | 15732 | 15503 | 15270 | 15037 | 14805 | 14578 | 14359 | 14150 | 13955 | 13776 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 2 A IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 2133 | 2012 | 1912 | 1836 | 1783 | 1749 | 1732 | 1727 | 1728 | 1731 | 1732 | 1726 | 1712 | 1687 | 1651 LAT. |
| 90 N | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 | 2552 90 N |
| 85 N | 3341 | 3543 | 3736 | 3917 | 4087 | 4243 | 4385 | 4513 | 4626 | 4724 | 4805 | 4870 | 4919 | 4951 | 4967 85 N |
| 80 N | 4195 | 4590 | 4958 | 5298 | 5610 | 5892 | 6145 | 6369 | 6564 | 6731 | 6871 | 6984 | 7071 | 7131 | 7165 80 N |
| 75 N | 5111 | 5635 | 6211 | 6686 | 7112 | 7490 | 7822 | 8110 | 8357 | 8567 | 8742 | 8885 | 8997 | 9080 | 9135 75 N |
| 70 N | 6197 | 6927 | 7587 | 8174 | 8690 | 9137 | 9521 | 9847 | 10122 | 10351 | 10542 | 10697 | 10823 | 10921 | 10993 70 N |
| 65 N | 7592 | 8431 | 9189 | 9858 | 10438 | 10931 | 11346 | 11690 | 11974 | 12208 | 12399 | 12555 | 12683 | 12787 | 12870 65 N |
| 60 N | 9381 | 10264 | 11074 | 11791 | 2408 | 12927 | 13357 | 13709 | 13994 | 14224 | 14411 | 14562 | 14686 | 14788 | 14872 60 N |
| 55 N | 11547 | 12412 | 13226 | 13956 | 14588 | 15120 | 15559 | 15916 | 16204 | 16436 | 16621 | 16770 | 16890 | 16988 | 17069 55 N |
| 50 N | 13987 | 14782 | 15561 | 16277 | 16908 | 17447 | 17897 | 18268 | 18572 | 18818 | 19017 | 19176 | 19301 | 19400 | 19480 50 N |
| 45 N | 16552 | 17242 | 17957 | 18641 | 19262 | 19809 | 20279 | 20679 | 21017 | 21300 | 21532 | 21719 | 21866 | 21981 | 22071 45 N |
| 40 N | 19098 | 19661 | 20292 | 20931 | 21539 | 22097 | 22598 | 23042 | 23432 | 23770 | 24055 | 24291 | 24481 | 24631 | 24751 40 N |
| 35 N | 21501 | 21927 | 22463 | 23049 | 23640 | 24210 | 24745 | 25240 | 25690 | 26093 | 26445 | 26745 | 26995 | 27202 | 27376 35 N |
| 30 N | 23674 | 23963 | 24397 | 24921 | 25486 | 26060 | 26622 | 27159 | 27661 | 28123 | 28538 | 28905 | 29226 | 29506 | 29755 30 N |
| 25 N | 25557 | 25713 | 26042 | 26493 | 27017 | 27576 | 28141 | 28692 | 29218 | 29711 | 30168 | 30588 | 30974 | 31332 | 31670 25 N |
| 20 N | 27105 | 27138 | 27358 | 27723 | 28183 | 28696 | 29225 | 29747 | 30248 | 30727 | 31185 | 31626 | 32057 | 32481 | 32902 20 N |
| 15 N | 28277 | 28199 | 28308 | 28571 | 28940 | 29368 | 29813 | 30251 | 30671 | 31076 | 31481 | 31897 | 32335 | 32797 | 33278 15 N |
| 10 N | 29030 | 28854 | 28852 | 28999 | 29250 | 29554 | 29869 | 30168 | 30448 | 30722 | 31016 | 31353 | 31749 | 32203 | 32703 10 N |
| 5 N | 29327 | 29066 | 28956 | 28978 | 29089 | 29240 | 29387 | 29508 | 29603 | 29699 | 29832 | 30039 | 30339 | 30731 | 31194 5 N |
| 0 | 29149 | 28815 | 28604 | 28499 | 28463 | 28447 | 28410 | 28333 | 28223 | 28116 | 28059 | 28096 | 28253 | 28527 | 28893 0 |
| 5 S | 28517 | 28119 | 27817 | 27596 | 27419 | 27241 | 27026 | 26759 | 26452 | 26145 | 25892 | 25742 | 25723 | 25834 | 26049 5 S |
| 10 S | 27503 | 27051 | 26672 | 26350 | 26052 | 25736 | 25371 | 24944 | 24473 | 23996 | 23568 | 23236 | 23030 | 22952 | 22980 10 S |
| 15 S | 26237 | 25738 | 25296 | 24896 | 24504 | 24085 | 23609 | 23069 | 22480 | 21880 | 21316 | 20831 | 20453 | 20186 | 20019 15 S |
| 20 S | 24897 | 24356 | 23863 | 23403 | 22947 | 22459 | 21916 | 21309 | 20654 | 19981 | 19328 | 18732 | 18216 | 17789 | 17448 20 S |
| 25 S | 23677 | 23096 | 22561 | 22056 | 21555 | 21027 | 20449 | 19815 | 19134 | 18430 | 17733 | 17071 | 16464 | 15925 | 15459 25 S |
| 30 S | 22748 | 22133 | 21559 | 21015 | 20480 | 19925 | 19332 | 18691 | 18009 | 17304 | 16596 | 15908 | 15259 | 14663 | 14137 30 S |
| 35 S | 22222 | 21579 | 20970 | 20389 | 19819 | 19241 | 18635 | 17994 | 17321 | 16628 | 15931 | 15249 | 14599 | 14002 | 13479 35 S |
| 40 S | 22116 | 21461 | 20824 | 20208 | 19603 | 18996 | 18374 | 17730 | 17067 | 16392 | 15719 | 15066 | 14451 | 13896 | 13427 40 S |
| 45 S | 22350 | 21705 | 21058 | 20418 | 19784 | 19150 | 18510 | 17862 | 17207 | 16556 | 15919 | 15314 | 14759 | 14277 | 13893 45 S |
| 50 S | 22758 | 22156 | 21529 | 20890 | 20247 | 19602 | 18956 | 18312 | 17676 | 17057 | 16469 | 15927 | 15448 | 15053 | 14762 50 S |
| 55 S | 23134 | 22611 | 22043 | 21446 | 20831 | 20208 | 19586 | 18971 | 18375 | 17807 | 17282 | 16813 | 16416 | 16107 | 15898 55 S |
| 60 S | 23279 | 22871 | 22404 | 21894 | 21356 | 20803 | 20247 | 19700 | 19175 | 18682 | 18235 | 17847 | 17528 | 17290 | 17140 60 S |
| 65 S | 23044 | 22776 | 22445 | 22066 | 21651 | 21215 | 20771 | 20332 | 19909 | 19515 | 19160 | 18855 | 18606 | 18420 | 18302 65 S |
| 70 S | 22360 | 22240 | 22062 | 21836 | 21574 | 21287 | 20986 | 20682 | 20385 | 20105 | 19848 | 19623 | 19434 | 19284 | 19175 70 S |
| 75 S | 21241 | 21250 | 21212 | 21134 | 21023 | 20887 | 20732 | 20567 | 20397 | 20229 | 20067 | 19915 | 19777 | 19653 | 19544 75 S |
| 80 S | 19764 | 19852 | 19909 | 19937 | 19939 | 19920 | 19881 | 19827 | 19761 | 19685 | 19601 | 19512 | 19417 | 19319 | 19217 80 S |
| 85 S | 18029 | 18121 | 18197 | 18258 | 18304 | 18336 | 18354 | 18359 | 18351 | 18332 | 18302 | 18261 | 18209 | 18148 | 18076 85 S |
| 90 S | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 | 16134 90 S |
| LAT. | 14150 | 13955 | 13776 | 13616 | 13478 | 13365 | 13278 | 13218 | 13187 | 13186 | 13214 | 13271 | 13356 | 13467 | 13603 LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 E.LONG. |

TABLE 2 B IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -0.2 | 0.1 | 0.1 | -0.2 | -0.8 | -1.7 | -3.1 | -4.9 | -7.2 | -9.9 | -12.9 | -15.8 | -18.3 | -19.9 | -20.7 | LAT. |
| 90 N | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | 90 N |
| 85 N | -10.1 | -10.1 | -10.1 | -10.2 | -10.4 | -10.6 | -10.8 | -11.2 | -11.5 | -12.0 | -12.4 | -12.9 | -13.5 | -14.0 | -14.6 | 85 N |
| 80 N | -2.4 | -2.3 | -2.4 | -2.6 | -2.9 | -3.3 | -3.7 | -4.3 | -4.9 | -5.7 | -6.5 | -7.4 | -8.3 | -9.3 | -10.3 | 80 N |
| 75 N | 4.5 | 4.4 | 4.2 | 3.8 | 3.4 | 2.8 | 2.2 | 1.5 | 0.8 | -0.1 | -1.1 | -2.1 | -3.2 | -4.3 | -5.4 | 75 N |
| 70 N | 10.6 | 10.1 | 9.4 | 8.8 | 8.1 | 7.3 | 6.6 | 5.9 | 5.1 | 4.4 | 3.6 | 2.7 | 1.8 | 0.9 | 0.0 | 70 N |
| 65 N | 16.2 | 14.9 | 13.6 | 12.3 | 11.2 | 10.2 | 9.3 | 8.6 | 8.0 | 7.5 | 7.0 | 6.6 | 6.2 | 5.9 | 5.5 | 65 N |
| 60 N | 21.5 | 19.1 | 16.8 | 14.8 | 13.0 | 11.6 | 10.6 | 9.8 | 9.4 | 9.3 | 9.3 | 9.5 | 9.7 | 10.1 | 10.4 | 60 N |
| 55 N | 26.5 | 22.8 | 19.4 | 16.4 | 14.0 | 12.1 | 10.8 | 10.1 | 9.8 | 9.9 | 10.4 | 11.2 | 12.2 | 13.3 | 14.4 | 55 N |
| 50 N | 31.0 | 26.0 | 21.5 | 17.7 | 14.6 | 12.3 | 10.8 | 9.9 | 9.6 | 10.0 | 10.9 | 12.2 | 14.0 | 15.9 | 17.8 | 50 N |
| 45 N | 34.2 | 28.3 | 23.1 | 18.8 | 15.3 | 12.8 | 11.0 | 10.0 | 9.7 | 10.2 | 11.3 | 13.1 | 15.5 | 18.3 | 21.0 | 45 N |
| 40 N | 35.9 | 29.6 | 24.3 | 19.9 | 16.5 | 13.9 | 12.1 | 11.1 | 10.7 | 11.1 | 12.4 | 14.6 | 17.5 | 21.0 | 24.3 | 40 N |
| 35 N | 35.5 | 29.8 | 25.0 | 21.1 | 18.2 | 16.0 | 14.4 | 13.3 | 12.8 | 13.1 | 14.4 | 16.8 | 20.2 | 24.1 | 27.9 | 35 N |
| 30 N | 33.2 | 28.8 | 25.3 | 22.5 | 20.4 | 18.8 | 17.5 | 16.5 | 15.9 | 16.0 | 17.2 | 19.6 | 23.1 | 27.2 | 31.1 | 30 N |
| 25 N | 29.3 | 26.8 | 25.0 | 23.7 | 22.7 | 21.7 | 20.8 | 19.9 | 19.2 | 19.1 | 20.0 | 22.2 | 25.5 | 29.3 | 32.7 | 25 N |
| 20 N | 23.9 | 23.7 | 23.7 | 23.9 | 23.9 | 23.6 | 22.9 | 22.0 | 21.2 | 20.9 | 21.5 | 23.2 | 26.0 | 29.1 | 31.7 | 20 N |
| 15 N | 16.9 | 18.9 | 20.8 | 22.1 | 22.8 | 22.9 | 22.4 | 21.5 | 20.6 | 20.1 | 20.4 | 21.6 | 23.6 | 25.7 | 27.1 | 15 N |
| 10 N | 8.1 | 11.9 | 15.0 | 17.1 | 18.1 | 18.3 | 17.8 | 17.0 | 16.2 | 15.8 | 15.9 | 16.6 | 17.8 | 18.8 | 19.0 | 10 N |
| 5 N | -3.2 | 1.6 | 5.4 | 7.8 | 8.8 | 9.0 | 8.5 | 8.0 | 7.6 | 7.5 | 7.8 | 8.4 | 9.2 | 9.4 | 8.7 | 5 N |
| 0 | -17.3 | -12.3 | -8.5 | -6.2 | -5.2 | -5.0 | -5.1 | -5.1 | -4.6 | -3.8 | -2.8 | -1.7 | -0.9 | -0.9 | -1.9 | 0 |
| 5 S | -34.2 | -29.8 | -26.3 | -24.1 | -23.0 | -22.4 | -21.7 | -20.5 | -18.7 | -16.5 | -14.1 | -12.0 | -10.4 | -9.8 | -10.5 | 5 S |
| 10 S | -52.9 | -49.4 | -46.4 | -44.2 | -42.6 | -40.9 | -38.8 | -35.9 | -32.2 | -28.1 | -23.9 | -20.0 | -17.0 | -15.4 | -15.2 | 10 S |
| 15 S | -71.3 | -68.9 | -66.2 | -63.6 | -60.8 | -57.5 | -53.4 | -48.4 | -42.5 | -36.2 | -29.8 | -23.9 | -19.3 | -16.4 | -15.2 | 15 S |
| 20 S | -87.3 | -85.6 | -82.7 | -79.1 | -74.7 | -69.3 | -62.8 | -55.4 | -47.3 | -38.7 | -30.2 | -22.5 | -16.5 | -12.6 | -10.8 | 20 S |
| 25 S | -98.7 | -96.9 | -93.3 | -88.2 | -81.7 | -74.0 | -65.2 | -55.6 | -45.4 | -34.9 | -24.8 | -15.9 | -9.3 | -5.3 | -3.8 | 25 S |
| 30 S | -104.3 | -101.5 | -96.6 | -89.6 | -81.1 | -71.2 | -60.3 | -48.9 | -37.2 | -25.6 | -14.8 | -5.9 | 0.3 | 3.3 | 3.6 | 30 S |
| 35 S | -103.6 | -99.3 | -92.7 | -83.9 | -73.6 | -62.1 | -49.9 | -37.5 | -25.2 | -13.5 | -3.3 | 4.6 | 9.4 | 10.8 | 9.3 | 35 S |
| 40 S | -97.3 | -91.3 | -83.0 | -73.0 | -61.5 | -49.3 | -36.8 | -24.5 | -12.7 | -2.0 | 6.8 | 12.9 | 15.8 | 15.4 | 12.0 | 40 S |
| 45 S | -86.5 | -79.0 | -69.8 | -59.1 | -47.6 | -35.7 | -23.9 | -12.6 | -2.3 | 6.6 | 13.4 | 17.6 | 18.7 | 16.7 | 12.1 | 45 S |
| 50 S | -73.0 | -64.8 | -55.3 | -45.0 | -34.2 | -23.4 | -13.1 | -3.6 | 4.8 | 11.6 | 16.4 | 18.9 | 18.7 | 15.9 | 10.7 | 50 S |
| 55 S | -58.8 | -50.6 | -41.7 | -32.3 | -22.9 | -13.8 | -5.3 | 2.3 | 8.7 | 13.7 | 16.8 | 18.1 | 17.2 | 14.3 | 9.6 | 55 S |
| 60 S | -45.1 | -37.7 | -29.9 | -21.9 | -14.2 | -6.8 | -0.1 | 5.7 | 10.5 | 14.0 | 16.1 | 16.8 | 16.0 | 13.7 | 10.2 | 60 S |
| 65 S | -32.4 | -26.2 | -19.9 | -13.5 | -7.4 | -1.7 | 3.4 | 7.8 | 11.4 | 14.1 | 15.8 | 16.5 | 16.2 | 15.0 | 13.0 | 65 S |
| 70 S | -20.1 | -15.4 | -10.7 | -6.0 | -1.5 | 2.8 | 6.6 | 10.0 | 12.8 | 15.1 | 16.7 | 17.8 | 18.3 | 18.3 | 17.8 | 70 S |
| 75 S | -7.6 | -4.5 | -1.3 | 1.9 | 5.0 | 8.0 | 10.8 | 13.3 | 15.6 | 17.6 | 19.2 | 20.6 | 21.7 | 22.6 | 23.3 | 75 S |
| 80 S | 5.5 | 7.2 | 9.1 | 10.9 | 12.8 | 14.7 | 16.5 | 18.3 | 20.0 | 21.6 | 23.1 | 24.4 | 25.8 | 27.0 | 28.1 | 80 S |
| 85 S | 19.1 | 19.7 | 20.5 | 21.3 | 22.1 | 23.0 | 23.9 | 24.8 | 25.8 | 26.7 | 27.6 | 28.6 | 29.5 | 30.4 | 31.4 | 85 S |
| 90 S | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 90 S |
| LAT. | 44.2 | 43.8 | 43.4 | 42.8 | 42.1 | 41.3 | 40.4 | 39.4 | 38.3 | 37.1 | 35.9 | 34.7 | 33.4 | 32.0 | 30.7 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 2 B IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | LAT. |
| | -18.3 | -19.9 | -20.7 | -20.9 | -20.6 | -20.0 | -19.3 | -18.5 | -17.8 | -17.0 | -16.2 | -15.5 | -14.8 | -14.2 | -13.6 | |
| 90 N | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | 90 N |
| 85 N | -13.5 | -14.0 | -14.6 | -15.2 | -15.8 | -16.3 | -16.8 | -17.2 | -17.6 | -17.7 | -17.7 | -17.5 | -16.9 | -16.1 | -14.9 | 85 N |
| 80 N | -8.3 | -9.3 | -10.3 | -11.3 | -12.3 | -13.1 | -13.7 | -13.9 | -13.7 | -12.7 | -10.8 | -8.0 | -4.3 | -0.3 | 3.6 | 80 N |
| 75 N | -3.2 | -4.3 | -5.4 | -6.5 | -7.4 | -8.1 | -8.3 | -7.9 | -6.7 | -4.3 | -1.0 | 3.1 | 7.3 | 11.2 | 14.5 | 75 N |
| 70 N | 1.8 | 0.9 | 0.0 | -0.8 | -1.4 | -1.6 | -1.4 | -0.4 | 1.4 | 4.1 | 7.6 | 11.3 | 14.9 | 18.0 | 20.5 | 70 N |
| 65 N | 6.2 | 5.9 | 5.5 | 5.2 | 5.1 | 5.3 | 5.9 | 7.1 | 8.9 | 11.3 | 14.1 | 17.0 | 19.7 | 22.0 | 23.6 | 65 N |
| 60 N | 9.7 | 10.1 | 10.4 | 10.8 | 11.2 | 11.7 | 12.4 | 13.5 | 14.9 | 16.6 | 18.5 | 20.5 | 22.3 | 23.6 | 24.4 | 60 N |
| 55 N | 12.2 | 13.3 | 14.4 | 15.5 | 16.4 | 17.1 | 17.8 | 18.4 | 19.1 | 20.0 | 21.0 | 22.0 | 22.8 | 23.3 | 23.3 | 55 N |
| 50 N | 14.0 | 15.9 | 17.8 | 19.5 | 20.8 | 21.6 | 22.0 | 22.0 | 21.8 | 21.7 | 21.6 | 21.7 | 21.7 | 21.6 | 21.0 | 50 N |
| 45 N | 15.5 | 18.3 | 21.0 | 23.3 | 24.8 | 25.5 | 25.4 | 24.5 | 23.3 | 22.1 | 21.1 | 20.4 | 19.8 | 19.2 | 18.4 | 45 N |
| 40 N | 17.5 | 21.0 | 24.3 | 27.1 | 28.7 | 29.1 | 28.2 | 26.4 | 24.1 | 21.8 | 19.9 | 18.6 | 17.7 | 16.9 | 16.1 | 40 N |
| 35 N | 20.2 | 24.1 | 27.9 | 30.8 | 32.3 | 32.1 | 30.3 | 27.5 | 24.2 | 21.0 | 18.5 | 16.7 | 15.7 | 15.1 | 14.5 | 35 N |
| 30 N | 23.1 | 27.2 | 31.1 | 33.8 | 34.8 | 33.8 | 31.2 | 27.4 | 23.3 | 19.5 | 16.7 | 14.9 | 14.1 | 13.8 | 13.6 | 30 N |
| 25 N | 25.5 | 29.3 | 32.7 | 34.8 | 35.0 | 33.2 | 29.8 | 25.4 | 21.0 | 17.1 | 14.4 | 12.9 | 12.5 | 12.6 | 13.0 | 25 N |
| 20 N | 26.0 | 29.1 | 31.7 | 32.8 | 32.0 | 29.4 | 25.5 | 21.1 | 16.9 | 13.6 | 11.4 | 10.5 | 10.6 | 11.2 | 11.9 | 20 N |
| 15 N | 23.6 | 25.7 | 27.1 | 27.0 | 25.2 | 22.1 | 18.3 | 14.5 | 11.2 | 8.9 | 7.7 | 7.5 | 8.0 | 9.0 | 9.9 | 15 N |
| 10 N | 17.8 | 18.8 | 19.0 | 17.9 | 15.4 | 12.3 | 9.1 | 6.5 | 4.7 | 3.7 | 3.6 | 4.1 | 5.0 | 5.9 | 6.7 | 10 N |
| 5 N | 9.2 | 9.4 | 8.7 | 6.9 | 4.2 | 1.6 | -0.4 | -1.4 | -1.4 | -0.9 | -0.1 | 0.8 | 1.6 | 2.2 | 2.4 | 5 N |
| 0 | -0.9 | -0.9 | -1.9 | -3.9 | -6.1 | -7.7 | -8.1 | -7.3 | -5.6 | -3.9 | -2.5 | -1.7 | -1.5 | -1.7 | -2.3 | 0 |
| 5 S | -10.4 | -9.8 | -10.5 | -11.9 | -13.3 | -13.6 | -12.3 | -9.8 | -6.9 | -4.5 | -3.1 | -2.9 | -3.7 | -5.2 | -6.9 | 5 S |
| 10 S | -17.0 | -15.4 | -15.2 | -15.8 | -16.0 | -15.0 | -12.3 | -8.7 | -5.1 | -2.6 | -1.8 | -2.7 | -4.8 | -7.7 | -10.7 | 10 S |
| 15 S | -19.3 | -16.4 | -15.2 | -14.9 | -14.2 | -12.3 | -8.9 | -4.8 | -1.2 | 0.8 | 0.6 | -1.5 | -5.1 | -9.2 | -13.3 | 15 S |
| 20 S | -16.5 | -12.6 | -10.8 | -10.2 | -9.3 | -7.3 | -4.0 | -0.2 | 2.7 | 3.8 | 2.6 | -0.6 | -5.1 | -10.1 | -14.9 | 20 S |
| 25 S | -9.3 | -5.3 | -3.8 | -3.7 | -3.6 | -2.6 | -0.4 | 2.2 | 4.2 | 4.3 | 2.4 | -1.3 | -6.1 | -11.2 | -15.9 | 25 S |
| 30 S | 0.3 | 3.3 | 3.6 | 2.3 | 0.5 | -0.5 | -0.3 | 0.5 | 1.0 | 0.5 | -1.6 | -5.0 | -9.1 | -13.3 | -17.1 | 30 S |
| 35 S | 9.4 | 10.8 | 9.3 | 5.8 | 1.7 | -1.9 | -4.6 | -6.2 | -7.3 | -8.5 | -10.2 | -12.5 | -15.0 | -17.4 | -19.4 | 35 S |
| 40 S | 15.8 | 15.4 | 12.0 | 6.6 | 0.2 | -6.2 | -11.7 | -16.1 | -19.2 | -21.3 | -22.7 | -23.6 | -23.9 | -23.9 | -23.6 | 40 S |
| 45 S | 18.7 | 16.7 | 12.1 | 5.3 | -2.6 | -10.9 | -18.7 | -25.5 | -30.9 | -34.5 | -36.4 | -36.5 | -35.2 | -32.9 | -30.1 | 45 S |
| 50 S | 18.7 | 15.9 | 10.7 | 3.7 | -4.5 | -13.3 | -22.1 | -30.3 | -37.4 | -43.0 | -46.6 | -47.9 | -46.7 | -43.5 | -38.9 | 50 S |
| 55 S | 17.2 | 14.3 | 9.6 | 3.4 | -3.9 | -11.8 | -19.9 | -27.8 | -35.2 | -41.8 | -47.3 | -51.3 | -53.3 | -52.6 | -49.0 | 55 S |
| 60 S | 16.0 | 13.7 | 10.2 | 5.6 | 0.2 | -5.7 | -11.8 | -17.9 | -23.8 | -29.4 | -34.8 | -40.0 | -45.2 | -50.2 | -53.9 | 60 S |
| 65 S | 16.2 | 15.0 | 13.0 | 10.4 | 7.3 | 3.8 | 0.3 | -3.2 | -6.5 | -9.6 | -12.4 | -15.0 | -17.6 | -20.6 | -24.9 | 65 S |
| 70 S | 18.3 | 18.3 | 17.8 | 17.0 | 15.9 | 14.7 | 13.5 | 12.5 | 11.6 | 11.1 | 11.1 | 11.6 | 12.8 | 15.0 | 18.7 | 70 S |
| 75 S | 21.7 | 22.6 | 23.3 | 23.8 | 24.2 | 24.6 | 25.0 | 25.5 | 26.3 | 27.2 | 28.5 | 30.2 | 32.4 | 35.1 | 38.3 | 75 S |
| 80 S | 25.8 | 27.0 | 28.1 | 29.2 | 30.3 | 31.4 | 32.5 | 33.7 | 34.9 | 36.2 | 37.6 | 39.0 | 40.7 | 42.4 | 44.1 | 80 S |
| 85 S | 29.5 | 30.4 | 31.4 | 32.3 | 33.2 | 34.1 | 34.9 | 35.8 | 36.7 | 37.5 | 38.4 | 39.2 | 40.0 | 40.8 | 41.5 | 85 S |
| 90 S | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 90 S |
| | 33.4 | 32.0 | 30.7 | 29.3 | 28.0 | 26.7 | 25.4 | 24.2 | 23.0 | 21.9 | 20.9 | 20.0 | 19.2 | 18.5 | 18.0 | |
| LAT. | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 E.LONG. |

TABLE 2 B IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | -14.8 | -14.2 | -13.6 | -13.0 | -12.4 | -12.0 | -11.5 | -11.2 | -10.8 | -10.6 | -10.4 | -10.2 | -10.1 | -10.1 | -10.1 | |
| 90 N | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | 90 N |
| 85 N | -16.9 | -16.1 | -14.9 | -13.4 | -11.6 | -9.7 | -7.8 | -6.0 | -4.3 | -2.9 | -1.7 | -0.8 | -0.2 | 0.1 | 0.1 | 85 N |
| 80 N | -4.3 | -0.3 | 3.6 | 7.0 | 9.9 | 12.2 | 14.1 | 15.4 | 16.5 | 17.2 | 17.7 | 18.0 | 18.2 | 18.2 | 18.2 | 80 N |
| 75 N | 7.3 | 11.2 | 14.5 | 17.2 | 19.2 | 20.6 | 21.6 | 22.2 | 22.5 | 22.6 | 22.5 | 22.3 | 22.0 | 21.6 | 21.2 | 75 N |
| 70 N | 14.9 | 18.0 | 20.5 | 22.3 | 23.6 | 24.3 | 24.5 | 24.4 | 24.1 | 23.5 | 22.8 | 22.0 | 21.2 | 20.4 | 19.7 | 70 N |
| 65 N | 19.7 | 22.0 | 23.6 | 24.7 | 25.1 | 25.0 | 24.5 | 23.7 | 22.7 | 21.5 | 20.2 | 18.9 | 17.7 | 16.5 | 15.5 | 65 N |
| 60 N | 22.3 | 23.6 | 24.4 | 24.6 | 24.3 | 23.5 | 22.3 | 20.9 | 19.3 | 17.6 | 15.9 | 14.3 | 12.8 | 11.4 | 10.3 | 60 N |
| 55 N | 22.8 | 23.3 | 23.3 | 22.8 | 21.8 | 20.5 | 18.8 | 16.9 | 15.0 | 13.0 | 11.2 | 9.5 | 8.0 | 6.6 | 5.4 | 55 N |
| 50 N | 21.7 | 21.6 | 21.0 | 20.0 | 18.6 | 16.9 | 14.9 | 12.9 | 10.9 | 9.0 | 7.3 | 5.7 | 4.3 | 3.1 | 2.0 | 50 N |
| 45 N | 19.8 | 19.2 | 18.4 | 17.2 | 15.6 | 13.8 | 11.8 | 9.8 | 7.9 | 6.2 | 4.7 | 3.4 | 2.2 | 1.1 | 0.2 | 45 N |
| 40 N | 17.7 | 16.9 | 16.1 | 15.0 | 13.5 | 11.8 | 10.0 | 8.2 | 6.5 | 4.9 | 3.6 | 2.4 | 1.4 | 0.5 | -0.5 | 40 N |
| 35 N | 15.7 | 15.1 | 14.5 | 13.7 | 12.6 | 11.1 | 9.5 | 7.9 | 6.2 | 4.7 | 3.4 | 2.2 | 1.2 | 0.2 | -0.8 | 35 N |
| 30 N | 14.1 | 13.8 | 13.6 | 13.3 | 12.5 | 11.4 | 9.9 | 8.4 | 6.7 | 5.1 | 3.5 | 2.1 | 0.7 | -0.6 | -1.9 | 30 N |
| 25 N | 12.5 | 12.6 | 13.0 | 13.0 | 12.6 | 11.8 | 10.5 | 8.9 | 7.1 | 5.2 | 3.3 | 1.3 | -0.6 | -2.4 | -4.2 | 25 N |
| 20 N | 10.6 | 11.2 | 11.9 | 12.3 | 12.1 | 11.5 | 10.3 | 8.7 | 6.8 | 4.6 | 2.2 | -0.3 | -2.9 | -5.3 | -7.7 | 20 N |
| 15 N | 8.0 | 9.0 | 9.9 | 10.4 | 10.3 | 9.8 | 8.7 | 7.2 | 5.3 | 3.0 | 0.3 | -2.6 | -5.7 | -8.8 | -11.7 | 15 N |
| 10 N | 5.0 | 5.9 | 6.7 | 7.0 | 6.9 | 6.4 | 5.5 | 4.2 | 2.6 | 0.4 | -2.2 | -5.2 | -8.5 | -11.9 | -15.1 | 10 N |
| 5 N | 1.6 | 2.2 | 2.4 | 2.3 | 1.9 | 1.4 | 0.7 | -0.2 | -1.3 | -2.9 | -5.0 | -7.7 | -10.8 | -14.1 | -17.3 | 5 N |
| 0 | -1.5 | -1.7 | -2.3 | -3.2 | -4.0 | -4.7 | -5.2 | -5.6 | -6.0 | -6.7 | -8.0 | -9.8 | -12.2 | -15.0 | -17.8 | 0 |
| 5 S | -3.7 | -5.2 | -6.9 | -8.7 | -10.1 | -11.0 | -11.3 | -11.3 | -10.9 | -10.7 | -10.8 | -11.5 | -12.9 | -14.8 | -16.8 | 5 S |
| 10 S | -4.8 | -7.7 | -10.7 | -13.4 | -15.5 | -16.7 | -17.0 | -16.6 | -15.6 | -14.5 | -13.5 | -13.0 | -13.2 | -13.9 | -15.0 | 10 S |
| 15 S | -5.1 | -9.2 | -13.3 | -16.9 | -19.5 | -21.0 | -21.4 | -20.9 | -19.5 | -17.7 | -15.9 | -14.3 | -13.4 | -13.2 | -13.4 | 15 S |
| 20 S | -5.1 | -10.1 | -14.9 | -18.9 | -21.8 | -23.6 | -24.2 | -23.7 | -22.3 | -20.2 | -17.8 | -15.7 | -14.0 | -13.0 | -12.6 | 20 S |
| 25 S | -6.1 | -11.2 | -15.9 | -19.8 | -22.6 | -24.4 | -25.1 | -24.8 | -23.6 | -21.6 | -19.2 | -16.8 | -14.8 | -13.6 | -13.1 | 25 S |
| 30 S | -9.1 | -13.3 | -17.1 | -20.2 | -22.4 | -23.9 | -24.6 | -24.5 | -23.6 | -21.9 | -19.7 | -17.4 | -15.6 | -14.6 | -14.4 | 30 S |
| 35 S | -15.0 | -17.4 | -19.4 | -21.0 | -22.2 | -23.0 | -23.3 | -23.2 | -22.4 | -21.0 | -19.2 | -17.4 | -16.0 | -15.5 | -15.9 | 35 S |
| 40 S | -23.9 | -23.9 | -23.6 | -23.1 | -22.7 | -22.4 | -22.1 | -21.6 | -20.8 | -19.5 | -18.1 | -16.7 | -15.8 | -15.8 | -16.9 | 40 S |
| 45 S | -35.2 | -32.9 | -30.1 | -27.4 | -25.0 | -23.1 | -21.7 | -20.5 | -19.2 | -17.8 | -16.4 | -15.3 | -14.8 | -15.2 | -16.7 | 45 S |
| 50 S | -46.7 | -43.5 | -38.9 | -34.0 | -29.5 | -25.7 | -22.7 | -20.3 | -18.2 | -16.3 | -14.6 | -13.4 | -12.8 | -13.2 | -14.7 | 50 S |
| 55 S | -53.3 | -52.6 | -49.0 | -43.2 | -36.5 | -30.3 | -25.1 | -20.9 | -17.4 | -14.5 | -12.2 | -10.5 | -9.6 | -9.5 | -10.5 | 55 S |
| 60 S | -45.2 | -50.2 | -53.9 | -53.4 | -46.6 | -36.3 | -27.0 | -19.8 | -14.5 | -10.4 | -7.3 | -4.9 | -3.4 | -2.7 | -2.8 | 60 S |
| 65 S | -17.6 | -20.6 | -24.9 | -32.8 | -49.8 | -42.9 | -15.5 | -4.8 | 0.6 | 4.0 | 6.5 | 8.3 | 9.6 | 10.4 | 10.7 | 65 S |
| 70 S | 12.8 | 15.0 | 18.7 | 24.6 | 34.2 | 47.9 | 58.0 | 55.0 | 47.3 | 41.4 | 37.5 | 35.1 | 33.4 | 32.1 | 31.0 | 70 S |
| 75 S | 32.4 | 35.1 | 38.3 | 42.1 | 46.3 | 50.6 | 54.4 | 57.1 | 58.2 | 58.0 | 56.7 | 54.8 | 52.8 | 50.7 | 48.6 | 75 S |
| 80 S | 40.7 | 42.4 | 44.1 | 45.9 | 47.7 | 49.4 | 50.8 | 52.1 | 53.0 | 53.5 | 53.6 | 53.4 | 52.9 | 52.1 | 51.0 | 80 S |
| 85 S | 40.0 | 40.8 | 41.5 | 42.2 | 42.8 | 43.3 | 43.7 | 44.1 | 44.3 | 44.5 | 44.5 | 44.4 | 44.2 | 43.8 | 43.4 | 85 S |
| 90 S | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 90 S |
| | 19.2 | 18.5 | 18.0 | 17.5 | 17.2 | 17.0 | 17.0 | 17.1 | 17.3 | 17.6 | 18.0 | 18.5 | 19.1 | 19.7 | 20.5 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 2 B IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -10.1 | -10.1 | -10.1 | -10.2 | -10.4 | -10.6 | -10.8 | -11.2 | -11.5 | -12.0 | -12.4 | -12.9 | -13.5 | -14.0 | -14.6 | LAT. |
| 90 N | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | 90 N |
| 85 N | -0.2 | 0.1 | 0.1 | -0.2 | -0.8 | -1.7 | -3.1 | -4.9 | -7.2 | -9.9 | -12.9 | -15.8 | -18.3 | -19.9 | -20.7 | 85 N |
| 80 N | 18.2 | 18.2 | 18.2 | 18.0 | 17.7 | 17.4 | 17.0 | 16.6 | 16.0 | 15.3 | 14.3 | 13.1 | 11.2 | 8.2 | 2.4 | 80 N |
| 75 N | 22.0 | 21.6 | 21.2 | 20.8 | 20.4 | 20.1 | 19.8 | 19.6 | 19.4 | 19.3 | 19.2 | 19.1 | 19.1 | 19.1 | 19.1 | 75 N |
| 70 N | 21.2 | 20.4 | 19.7 | 19.1 | 18.6 | 18.3 | 18.1 | 18.2 | 18.4 | 18.8 | 19.3 | 20.1 | 20.9 | 21.9 | 23.0 | 70 N |
| 65 N | 17.7 | 16.5 | 15.5 | 14.7 | 14.2 | 13.9 | 13.9 | 14.3 | 15.0 | 16.0 | 17.3 | 18.9 | 20.7 | 22.6 | 24.7 | 65 N |
| 60 N | 12.8 | 11.4 | 10.3 | 9.4 | 8.8 | 8.6 | 8.7 | 9.3 | 10.4 | 12.0 | 14.1 | 16.5 | 19.3 | 22.2 | 25.1 | 60 N |
| 55 N | 8.0 | 6.6 | 5.4 | 4.5 | 3.9 | 3.6 | 3.8 | 4.5 | 5.8 | 7.8 | 10.4 | 13.4 | 16.8 | 20.4 | 24.0 | 55 N |
| 50 N | 4.3 | 3.1 | 2.0 | 1.1 | 0.4 | -0.0 | -0.0 | 0.6 | 1.8 | 3.8 | 6.4 | 9.6 | 13.3 | 17.1 | 21.0 | 50 N |
| 45 N | 2.2 | 1.1 | 0.2 | -0.8 | -1.6 | -2.2 | -2.5 | -2.4 | -1.6 | -0.1 | 2.1 | 4.9 | 8.2 | 11.8 | 15.5 | 45 N |
| 40 N | 1.4 | 0.5 | -0.5 | -1.4 | -2.4 | -3.4 | -4.3 | -4.8 | -4.9 | -4.3 | -3.1 | -1.2 | 1.3 | 4.2 | 7.5 | 40 N |
| 35 N | 1.2 | 0.2 | -0.8 | -2.0 | -3.3 | -4.7 | -6.2 | -7.6 | -8.8 | -9.5 | -9.6 | -8.9 | -7.4 | -5.3 | -2.7 | 35 N |
| 30 N | 0.7 | -0.6 | -1.9 | -3.3 | -5.0 | -6.9 | -9.1 | -11.5 | -13.9 | -15.9 | -17.4 | -18.0 | -17.7 | -16.4 | -14.2 | 30 N |
| 25 N | -0.6 | -2.4 | -4.2 | -6.1 | -8.1 | -10.5 | -13.3 | -16.5 | -20.0 | -23.3 | -26.1 | -27.9 | -28.5 | -27.9 | -26.0 | 25 N |
| 20 N | -2.9 | -5.3 | -7.7 | -10.0 | -12.4 | -15.2 | -18.4 | -22.2 | -26.4 | -30.6 | -34.3 | -37.0 | -38.3 | -38.1 | -36.6 | 20 N |
| 15 N | -5.7 | -8.8 | -11.7 | -14.4 | -17.1 | -19.9 | -23.3 | -27.2 | -31.6 | -36.1 | -40.2 | -43.4 | -45.3 | -45.6 | -44.6 | 15 N |
| 10 N | -8.5 | -11.9 | -15.1 | -18.1 | -20.8 | -23.5 | -26.5 | -29.9 | -33.9 | -38.1 | -42.2 | -45.6 | -47.9 | -48.9 | -48.6 | 10 N |
| 5 N | -10.8 | -14.1 | -17.3 | -20.2 | -22.6 | -24.7 | -26.9 | -29.4 | -32.4 | -35.8 | -39.3 | -42.7 | -45.4 | -47.3 | -48.2 | 5 N |
| 0 | -12.2 | -15.0 | -17.8 | -20.2 | -22.0 | -23.3 | -24.3 | -25.4 | -27.0 | -29.1 | -31.8 | -35.0 | -38.1 | -41.1 | -43.6 | 0 |
| 5 S | -12.9 | -14.8 | -16.8 | -18.4 | -19.4 | -19.7 | -19.4 | -19.1 | -19.0 | -19.7 | -21.5 | -24.2 | -27.7 | -31.8 | -36.0 | 5 S |
| 10 S | -13.2 | -13.9 | -15.0 | -15.8 | -16.0 | -15.4 | -14.0 | -12.3 | -10.8 | -10.2 | -10.9 | -13.1 | -16.8 | -21.7 | -27.4 | 10 S |
| 15 S | -13.4 | -13.2 | -13.4 | -13.5 | -13.1 | -11.9 | -9.8 | -7.3 | -4.9 | -3.3 | -3.1 | -4.8 | -8.4 | -13.7 | -20.1 | 15 S |
| 20 S | -14.0 | -13.0 | -12.6 | -12.4 | -11.9 | -10.7 | -8.7 | -6.0 | -3.3 | -1.3 | -0.6 | -1.7 | -4.8 | -9.8 | -16.2 | 20 S |
| 25 S | -14.8 | -13.6 | -13.1 | -13.0 | -12.9 | -12.3 | -11.0 | -9.1 | -6.9 | -5.0 | -4.1 | -4.7 | -7.1 | -11.2 | -16.8 | 25 S |
| 30 S | -15.6 | -14.6 | -14.4 | -14.9 | -15.7 | -16.3 | -16.4 | -15.8 | -14.7 | -13.6 | -12.9 | -13.1 | -14.5 | -17.4 | -21.5 | 30 S |
| 35 S | -16.0 | -15.5 | -15.9 | -17.3 | -19.2 | -21.3 | -22.9 | -24.0 | -24.4 | -24.3 | -24.1 | -24.2 | -24.8 | -26.3 | -28.7 | 35 S |
| 40 S | -15.8 | -15.8 | -16.9 | -19.1 | -22.1 | -25.4 | -28.5 | -31.1 | -32.9 | -34.0 | -34.4 | -34.4 | -34.4 | -34.8 | -35.7 | 40 S |
| 45 S | -14.8 | -15.2 | -16.7 | -19.4 | -22.9 | -26.9 | -31.0 | -34.5 | -37.3 | -39.2 | -40.1 | -40.2 | -40.0 | -39.7 | -39.8 | 45 S |
| 50 S | -12.8 | -13.2 | -14.7 | -17.3 | -20.8 | -24.7 | -28.8 | -32.6 | -35.6 | -37.8 | -39.0 | -39.3 | -39.1 | -38.9 | -38.9 | 50 S |
| 55 S | -9.6 | -9.5 | -10.5 | -12.4 | -15.0 | -18.2 | -21.5 | -24.6 | -27.3 | -29.2 | -30.5 | -31.1 | -31.4 | -31.7 | -32.4 | 55 S |
| 60 S | -3.4 | -2.7 | -2.8 | -3.6 | -5.1 | -7.0 | -9.1 | -11.2 | -13.1 | -14.7 | -16.0 | -17.0 | -18.1 | -19.4 | -21.2 | 60 S |
| 65 S | 9.6 | 10.4 | 10.7 | 10.5 | 9.8 | 8.8 | 7.6 | 6.2 | 4.7 | 3.2 | 1.6 | -0.1 | -2.1 | -4.5 | -7.4 | 65 S |
| 70 S | 33.4 | 32.1 | 31.0 | 30.0 | 28.8 | 27.6 | 26.1 | 24.5 | 22.7 | 20.7 | 18.4 | 15.9 | 13.1 | 9.9 | 6.3 | 70 S |
| 75 S | 52.8 | 50.7 | 48.6 | 46.6 | 44.6 | 42.6 | 40.5 | 38.3 | 35.9 | 33.4 | 30.7 | 27.7 | 24.6 | 21.3 | 17.8 | 75 S |
| 80 S | 52.9 | 52.1 | 51.0 | 49.7 | 48.2 | 46.5 | 44.7 | 42.8 | 40.7 | 38.5 | 36.2 | 33.8 | 31.3 | 28.7 | 26.0 | 80 S |
| 85 S | 44.2 | 43.8 | 43.4 | 42.8 | 42.1 | 41.3 | 40.4 | 39.4 | 38.3 | 37.1 | 35.9 | 34.7 | 33.4 | 32.0 | 30.7 | 85 S |
| 90 S | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 90 S |
| LAT. | 19.1 | 19.7 | 20.5 | 21.3 | 22.1 | 23.0 | 23.9 | 24.8 | 25.8 | 26.7 | 27.6 | 28.6 | 29.5 | 30.4 | 31.4 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 2 B IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -13.5 | -14.0 | -14.6 | -15.2 | -15.8 | -16.3 | -16.8 | -17.2 | -17.6 | -17.7 | -17.7 | -17.5 | -16.9 | -16.1 | -14.9 | |
| 90 N | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | 90 N |
| 85 N | -18.3 | -19.9 | -20.7 | -20.9 | -20.6 | -20.0 | -19.3 | -18.5 | -17.8 | -17.0 | -16.2 | -15.5 | -14.8 | -14.2 | -13.6 | 85 N |
| 80 N | 11.2 | 8.2 | 2.4 | -10.1 | -21.4 | -21.4 | -19.4 | -17.6 | -16.0 | -14.5 | -13.2 | -11.9 | -10.7 | -9.6 | -8.5 | 80 N |
| 75 N | 19.1 | 19.1 | 19.1 | 19.5 | 21.1 | 14.8 | -8.9 | -10.7 | -10.4 | -9.6 | -8.4 | -7.1 | -5.7 | -4.2 | -2.8 | 75 N |
| 70 N | 20.9 | 21.9 | 23.0 | 24.4 | 26.0 | 26.3 | 19.7 | 8.7 | 2.6 | 0.2 | -0.2 | 0.4 | 1.5 | 3.0 | 4.5 | 70 N |
| 65 N | 20.7 | 22.6 | 24.7 | 26.8 | 28.7 | 29.7 | 28.4 | 23.8 | 18.1 | 13.9 | 11.9 | 11.4 | 11.9 | 13.1 | 14.5 | 65 N |
| 60 N | 19.3 | 22.2 | 25.1 | 28.0 | 30.5 | 32.5 | 33.4 | 32.5 | 30.3 | 27.8 | 26.0 | 25.2 | 25.4 | 26.3 | 27.5 | 60 N |
| 55 N | 16.8 | 20.4 | 24.0 | 27.5 | 30.8 | 33.7 | 36.2 | 38.1 | 39.1 | 39.5 | 39.6 | 39.9 | 40.5 | 41.4 | 42.4 | 55 N |
| 50 N | 13.3 | 17.1 | 21.0 | 24.8 | 28.5 | 32.3 | 36.3 | 40.3 | 44.3 | 47.8 | 50.8 | 53.1 | 54.9 | 56.3 | 57.4 | 50 N |
| 45 N | 8.2 | 11.8 | 15.5 | 19.3 | 23.3 | 27.7 | 32.8 | 38.7 | 45.2 | 51.7 | 57.7 | 62.5 | 66.1 | 68.5 | 70.0 | 45 N |
| 40 N | 1.3 | 4.2 | 7.5 | 11.0 | 15.1 | 19.9 | 25.9 | 33.1 | 41.5 | 50.4 | 59.0 | 66.3 | 71.8 | 75.5 | 77.5 | 40 N |
| 35 N | -7.4 | -5.3 | -2.7 | 0.6 | 4.5 | 9.5 | 15.9 | 23.9 | 33.4 | 43.8 | 54.2 | 63.4 | 70.6 | 75.5 | 78.2 | 35 N |
| 30 N | -17.7 | -16.4 | -14.2 | -11.2 | -7.4 | -2.4 | 3.9 | 11.8 | 21.5 | 32.3 | 43.5 | 53.7 | 62.0 | 67.9 | 71.4 | 30 N |
| 25 N | -28.5 | -27.9 | -26.0 | -23.2 | -19.5 | -14.9 | -9.0 | -1.8 | 7.1 | 17.2 | 28.0 | 38.3 | 47.0 | 53.5 | 57.6 | 25 N |
| 20 N | -38.3 | -38.1 | -36.6 | -34.1 | -30.7 | -26.6 | -21.7 | -15.8 | -8.5 | 0.0 | 9.4 | 18.8 | 27.2 | 33.9 | 38.5 | 20 N |
| 15 N | -45.3 | -45.6 | -44.6 | -42.5 | -39.8 | -36.6 | -33.0 | -28.9 | -23.7 | -17.4 | -10.0 | -2.2 | 5.4 | 11.8 | 16.8 | 15 N |
| 10 N | -47.9 | -48.9 | -48.6 | -47.5 | -45.9 | -44.1 | -42.2 | -40.1 | -37.3 | -33.4 | -28.3 | -22.3 | -16.0 | -10.0 | -4.9 | 10 N |
| 5 N | -45.4 | -47.3 | -48.2 | -48.6 | -48.6 | -48.6 | -48.7 | -48.7 | -48.1 | -46.5 | -43.7 | -39.5 | -34.5 | -29.2 | -24.2 | 5 N |
| 0 | -38.1 | -41.1 | -43.6 | -45.9 | -47.9 | -50.0 | -52.2 | -54.1 | -55.6 | -56.0 | -55.0 | -52.4 | -48.6 | -44.1 | -39.5 | 0 |
| 5 S | -27.7 | -31.8 | -36.0 | -40.3 | -44.5 | -48.7 | -52.8 | -56.6 | -59.6 | -61.6 | -61.9 | -60.6 | -57.8 | -54.1 | -50.2 | 5 S |
| 10 S | -16.8 | -21.7 | -27.4 | -33.5 | -39.6 | -45.6 | -51.3 | -56.5 | -60.8 | -63.7 | -65.1 | -64.7 | -62.8 | -59.9 | -56.8 | 10 S |
| 15 S | -8.4 | -13.7 | -20.1 | -27.3 | -34.7 | -42.0 | -48.8 | -54.8 | -59.9 | -63.5 | -65.5 | -65.9 | -64.7 | -62.7 | -60.5 | 15 S |
| 20 S | -4.8 | -9.8 | -16.2 | -23.6 | -31.3 | -39.0 | -46.3 | -52.8 | -58.3 | -62.4 | -64.9 | -65.8 | -65.3 | -64.2 | -63.0 | 20 S |
| 25 S | -7.1 | -11.2 | -16.8 | -23.4 | -30.5 | -37.9 | -44.9 | -51.5 | -57.1 | -61.5 | -64.5 | -65.9 | -66.2 | -65.9 | -65.7 | 25 S |
| 30 S | -14.5 | -17.4 | -21.5 | -26.6 | -32.5 | -38.8 | -45.3 | -51.5 | -57.1 | -61.8 | -65.2 | -67.2 | -68.2 | -68.7 | -69.3 | 30 S |
| 35 S | -24.8 | -26.3 | -28.7 | -32.1 | -36.4 | -41.4 | -47.0 | -52.8 | -58.4 | -63.2 | -67.0 | -69.7 | -71.4 | -72.6 | -74.0 | 35 S |
| 40 S | -34.4 | -34.8 | -35.7 | -37.6 | -40.5 | -44.4 | -49.2 | -54.6 | -60.1 | -65.1 | -69.3 | -72.6 | -75.0 | -76.9 | -78.7 | 40 S |
| 45 S | -40.0 | -39.7 | -39.8 | -40.8 | -42.8 | -46.1 | -50.4 | -55.6 | -61.0 | -66.2 | -70.8 | -74.6 | -77.6 | -79.9 | -82.1 | 45 S |
| 50 S | -39.1 | -38.9 | -38.9 | -39.8 | -41.8 | -44.9 | -49.2 | -54.2 | -59.7 | -65.0 | -69.9 | -74.1 | -77.5 | -80.3 | -82.5 | 50 S |
| 55 S | -31.4 | -31.7 | -32.4 | -33.9 | -36.4 | -39.9 | -44.4 | -49.6 | -55.0 | -60.4 | -65.5 | -69.9 | -73.5 | -76.5 | -78.8 | 55 S |
| 60 S | -18.1 | -19.4 | -21.2 | -23.7 | -27.0 | -31.1 | -35.9 | -41.1 | -46.5 | -51.9 | -56.8 | -61.2 | -64.9 | -67.9 | -70.1 | 60 S |
| 65 S | -2.1 | -4.5 | -7.4 | -10.8 | -14.8 | -19.4 | -24.3 | -29.4 | -34.5 | -39.5 | -44.2 | -48.3 | -51.8 | -54.6 | -56.7 | 65 S |
| 70 S | 13.1 | 9.9 | 6.3 | 2.4 | -1.8 | -6.2 | -10.9 | -15.5 | -20.1 | -24.5 | -28.5 | -32.1 | -35.1 | -37.6 | -39.4 | 70 S |
| 75 S | 24.6 | 21.3 | 17.8 | 14.2 | 10.4 | 6.6 | 2.8 | -1.0 | -4.7 | -8.1 | -11.2 | -14.0 | -16.4 | -18.4 | -19.8 | 75 S |
| 80 S | 31.3 | 28.7 | 26.0 | 23.3 | 20.6 | 17.9 | 15.2 | 12.6 | 10.2 | 7.9 | 5.8 | 4.0 | 2.3 | 1.0 | -0.0 | 80 S |
| 85 S | 33.4 | 32.0 | 30.7 | 29.3 | 28.0 | 26.7 | 25.4 | 24.2 | 23.0 | 21.9 | 20.9 | 20.0 | 19.2 | 18.5 | 18.0 | 85 S |
| 90 S | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 90 S |
| LAT. | 29.5 | 30.4 | 31.4 | 32.3 | 33.2 | 34.1 | 34.9 | 35.8 | 36.7 | 37.5 | 38.4 | 39.2 | 40.0 | 40.8 | 41.5 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 2 B IGRF HORIZONTAL COMPONENT (H)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -16.9 | -16.1 | -14.9 | -13.4 | -11.6 | -9.7 | -7.8 | -6.0 | -4.3 | -2.9 | -1.7 | -0.8 | -0.2 | 0.1 | 0.1 | LAT. |
| 90 N | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | -18.4 | 90 N |
| 85 N | -14.8 | -14.2 | -13.6 | -13.0 | -12.4 | -12.0 | -11.5 | -11.2 | -10.8 | -10.6 | -10.4 | -10.2 | -10.1 | -10.1 | -10.1 | 85 N |
| 80 N | -10.7 | -9.6 | -8.5 | -7.4 | -6.5 | -5.6 | -4.8 | -4.1 | -3.6 | -3.1 | -2.7 | -2.5 | -2.4 | -2.3 | -2.4 | 80 N |
| 75 N | -5.7 | -4.2 | -2.8 | -1.4 | -0.1 | 1.0 | 2.0 | 2.9 | 3.5 | 4.0 | 4.3 | 4.5 | 4.5 | 4.4 | 4.2 | 75 N |
| 70 N | 1.5 | 3.0 | 4.5 | 6.1 | 7.5 | 8.8 | 9.8 | 10.6 | 11.1 | 11.3 | 11.3 | 11.0 | 10.6 | 10.1 | 9.4 | 70 N |
| 65 N | 11.9 | 13.1 | 14.5 | 16.1 | 17.4 | 18.6 | 19.4 | 19.7 | 19.7 | 19.3 | 18.5 | 17.4 | 16.2 | 14.9 | 13.6 | 65 N |
| 60 N | 25.4 | 26.3 | 27.5 | 28.7 | 29.8 | 30.6 | 30.8 | 30.5 | 29.5 | 28.1 | 26.1 | 23.9 | 21.5 | 19.1 | 16.8 | 60 N |
| 55 N | 40.5 | 41.4 | 42.4 | 43.4 | 44.0 | 44.1 | 43.6 | 42.3 | 40.2 | 37.4 | 34.0 | 30.3 | 26.5 | 22.8 | 19.4 | 55 N |
| 50 N | 54.9 | 56.3 | 57.4 | 58.1 | 58.3 | 57.7 | 56.2 | 53.8 | 50.4 | 46.2 | 41.3 | 36.2 | 31.0 | 26.0 | 21.5 | 50 N |
| 45 N | 66.1 | 68.5 | 70.0 | 70.5 | 70.2 | 69.0 | 66.6 | 63.1 | 58.5 | 53.1 | 46.9 | 40.5 | 34.2 | 28.3 | 23.1 | 45 N |
| 40 N | 71.8 | 75.5 | 77.5 | 78.1 | 77.6 | 75.7 | 72.7 | 68.4 | 62.9 | 56.6 | 49.7 | 42.6 | 35.9 | 29.6 | 24.3 | 40 N |
| 35 N | 70.6 | 75.5 | 78.2 | 79.1 | 78.4 | 76.4 | 72.9 | 68.2 | 62.3 | 55.8 | 48.8 | 42.0 | 35.5 | 29.8 | 25.0 | 35 N |
| 30 N | 62.0 | 67.9 | 71.4 | 72.7 | 72.2 | 70.2 | 66.7 | 62.0 | 56.5 | 50.4 | 44.3 | 38.5 | 33.2 | 28.8 | 25.3 | 30 N |
| 25 N | 47.0 | 53.5 | 57.6 | 59.4 | 59.4 | 57.7 | 54.7 | 50.6 | 45.8 | 41.0 | 36.4 | 32.5 | 29.3 | 26.8 | 25.0 | 25 N |
| 20 N | 27.2 | 33.9 | 38.5 | 41.1 | 41.7 | 40.7 | 38.4 | 35.2 | 31.7 | 28.6 | 26.1 | 24.6 | 23.9 | 23.7 | 23.7 | 20 N |
| 15 N | 5.4 | 11.8 | 16.8 | 20.0 | 21.4 | 21.2 | 19.8 | 17.7 | 15.7 | 14.4 | 14.2 | 15.2 | 16.9 | 18.9 | 20.8 | 15 N |
| 10 N | -16.0 | -10.0 | -4.9 | -1.2 | 1.0 | 1.6 | 1.1 | -0.0 | -0.9 | -0.6 | 1.2 | 4.3 | 8.1 | 11.9 | 15.0 | 10 N |
| 5 N | -34.5 | -29.2 | -24.2 | -20.2 | -17.5 | -16.3 | -16.2 | -16.7 | -16.8 | -15.6 | -12.7 | -8.3 | -3.2 | 1.6 | 5.4 | 5 N |
| 0 | -48.6 | -44.1 | -39.5 | -35.5 | -32.7 | -31.3 | -31.2 | -31.6 | -31.7 | -30.5 | -27.4 | -22.7 | -17.3 | -12.3 | -8.5 | 0 |
| 5 S | -57.8 | -54.1 | -50.2 | -46.7 | -44.2 | -43.2 | -43.5 | -44.5 | -45.3 | -44.9 | -42.8 | -38.9 | -34.2 | -29.8 | -26.3 | 5 S |
| 10 S | -62.8 | -59.9 | -56.8 | -54.1 | -52.5 | -52.4 | -53.6 | -55.7 | -57.8 | -58.9 | -58.4 | -56.2 | -52.9 | -49.4 | -46.4 | 10 S |
| 15 S | -64.7 | -62.7 | -60.5 | -58.9 | -58.5 | -59.6 | -62.1 | -65.5 | -69.1 | -71.9 | -73.3 | -73.0 | -71.3 | -68.9 | -66.2 | 15 S |
| 20 S | -65.3 | -64.2 | -63.0 | -62.6 | -63.5 | -65.9 | -69.6 | -74.3 | -79.2 | -83.5 | -86.5 | -87.7 | -87.3 | -85.6 | -82.7 | 20 S |
| 25 S | -66.2 | -65.9 | -65.7 | -66.4 | -68.3 | -71.8 | -76.6 | -82.1 | -87.8 | -92.9 | -96.7 | -98.7 | -98.7 | -96.9 | -93.3 | 25 S |
| 30 S | -68.2 | -68.7 | -69.3 | -70.9 | -73.6 | -77.7 | -82.9 | -88.7 | -94.4 | -99.5 | -103.1 | -104.8 | -104.3 | -101.5 | -96.6 | 30 S |
| 35 S | -71.4 | -72.6 | -74.0 | -76.0 | -79.0 | -83.1 | -88.1 | -93.4 | -98.4 | -102.5 | -105.0 | -105.5 | -103.6 | -99.3 | -92.7 | 35 S |
| 40 S | -75.0 | -76.9 | -78.7 | -80.9 | -83.8 | -87.4 | -91.4 | -95.5 | -99.0 | -101.4 | -102.2 | -100.9 | -97.3 | -91.3 | -83.0 | 40 S |
| 45 S | -77.6 | -79.9 | -82.1 | -84.2 | -86.6 | -89.3 | -92.0 | -94.3 | -96.0 | -96.3 | -95.1 | -91.8 | -86.5 | -79.0 | -69.8 | 45 S |
| 50 S | -77.5 | -80.3 | -82.5 | -84.5 | -86.2 | -87.8 | -89.0 | -89.6 | -89.2 | -87.6 | -84.5 | -79.6 | -73.0 | -64.8 | -55.3 | 50 S |
| 55 S | -73.5 | -76.5 | -78.8 | -80.4 | -81.6 | -82.2 | -82.1 | -81.2 | -79.2 | -76.1 | -71.7 | -65.9 | -58.8 | -50.6 | -41.7 | 55 S |
| 60 S | -64.9 | -67.9 | -70.1 | -71.5 | -72.2 | -72.1 | -71.2 | -69.4 | -66.6 | -62.7 | -57.8 | -51.9 | -45.1 | -37.7 | -29.9 | 60 S |
| 65 S | -51.8 | -54.6 | -56.7 | -57.9 | -58.4 | -58.0 | -56.8 | -54.7 | -51.7 | -48.0 | -43.4 | -38.2 | -32.4 | -26.2 | -19.9 | 65 S |
| 70 S | -35.1 | -37.6 | -39.4 | -40.5 | -40.9 | -40.5 | -39.5 | -37.7 | -35.3 | -32.2 | -28.6 | -24.5 | -20.1 | -15.4 | -10.7 | 70 S |
| 75 S | -16.4 | -18.4 | -19.8 | -20.8 | -21.2 | -21.1 | -20.5 | -19.3 | -17.7 | -15.7 | -13.3 | -10.6 | -7.6 | -4.5 | -1.3 | 75 S |
| 80 S | 2.3 | 1.0 | -0.0 | -0.8 | -1.2 | -1.3 | -1.1 | -0.6 | 0.2 | 1.2 | 2.4 | 3.9 | 5.5 | 7.2 | 9.1 | 80 S |
| 85 S | 19.2 | 18.5 | 18.0 | 17.5 | 17.2 | 17.0 | 17.0 | 17.1 | 17.3 | 17.6 | 18.0 | 18.5 | 19.1 | 19.7 | 20.5 | 85 S |
| 90 S | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | 90 S |
| LAT. | 40.0 | 40.8 | 41.5 | 42.2 | 42.8 | 43.3 | 43.7 | 44.1 | 44.3 | 44.5 | 44.5 | 44.4 | 44.2 | 43.8 | 43.4 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 3 A IGRF INCLINATION (I)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (DOWNWARD POSITIVE)

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 88.29 | 88.31 | 88.35 | 88.39 | 88.45 | 88.52 | 88.60 | 88.68 | 88.75 | 88.82 | 88.86 | 88.87 | 88.84 | 88.77 | 88.66 | LAT. |
| 90 N | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 90 N |
| 85 N | 84.89 | 84.86 | 84.85 | 84.85 | 84.88 | 84.92 | 84.98 | 85.05 | 85.15 | 85.26 | 85.39 | 85.53 | 85.68 | 85.85 | 86.03 | 85 N |
| 80 N | 82.48 | 82.42 | 82.39 | 82.39 | 82.43 | 82.49 | 82.59 | 82.73 | 82.89 | 83.09 | 83.31 | 83.57 | 83.85 | 84.16 | 84.49 | 80 N |
| 75 N | 80.20 | 80.11 | 80.06 | 80.05 | 80.08 | 80.15 | 80.27 | 80.42 | 80.62 | 80.87 | 81.16 | 81.49 | 81.86 | 82.27 | 82.71 | 75 N |
| 70 N | 77.93 | 77.81 | 77.74 | 77.71 | 77.73 | 77.80 | 77.91 | 78.07 | 78.28 | 78.54 | 78.86 | 79.22 | 79.64 | 80.10 | 80.60 | 70 N |
| 65 N | 75.51 | 75.38 | 75.29 | 75.25 | 75.26 | 75.31 | 75.42 | 75.57 | 75.77 | 76.03 | 76.35 | 76.71 | 77.14 | 77.60 | 78.11 | 65 N |
| 60 N | 72.80 | 72.65 | 72.56 | 72.52 | 72.52 | 72.57 | 72.67 | 72.82 | 73.02 | 73.27 | 73.57 | 73.92 | 74.32 | 74.76 | 75.23 | 60 N |
| 55 N | 69.63 | 69.48 | 69.40 | 69.36 | 69.38 | 69.45 | 69.55 | 69.71 | 69.91 | 70.15 | 70.44 | 70.77 | 71.13 | 71.51 | 71.92 | 55 N |
| 50 N | 65.88 | 65.73 | 65.65 | 65.64 | 65.69 | 65.78 | 65.92 | 66.10 | 66.32 | 66.57 | 66.86 | 67.16 | 67.48 | 67.80 | 68.11 | 50 N |
| 45 N | 61.41 | 61.25 | 61.19 | 61.21 | 61.29 | 61.42 | 61.60 | 61.82 | 62.08 | 62.36 | 62.67 | 62.96 | 63.25 | 63.50 | 63.71 | 45 N |
| 40 N | 56.09 | 55.91 | 55.85 | 55.90 | 56.02 | 56.20 | 56.43 | 56.70 | 57.01 | 57.34 | 57.68 | 57.99 | 58.26 | 58.45 | 58.57 | 40 N |
| 35 N | 49.79 | 49.56 | 49.50 | 49.56 | 49.71 | 49.93 | 50.20 | 50.53 | 50.90 | 51.30 | 51.69 | 52.05 | 52.32 | 52.47 | 52.50 | 35 N |
| 30 N | 42.38 | 42.07 | 41.97 | 42.03 | 42.20 | 42.44 | 42.74 | 43.12 | 43.55 | 44.03 | 44.51 | 44.93 | 45.24 | 45.37 | 45.33 | 30 N |
| 25 N | 33.76 | 33.32 | 33.16 | 33.20 | 33.35 | 33.58 | 33.90 | 34.31 | 34.81 | 35.38 | 35.97 | 36.49 | 36.85 | 36.99 | 36.88 | 25 N |
| 20 N | 23.93 | 23.32 | 23.06 | 23.02 | 23.12 | 23.32 | 23.63 | 24.05 | 24.62 | 25.29 | 26.00 | 26.63 | 27.08 | 27.24 | 27.09 | 20 N |
| 15 N | 13.06 | 12.23 | 11.81 | 11.66 | 11.57 | 11.80 | 12.06 | 12.49 | 13.11 | 13.88 | 14.72 | 15.48 | 16.01 | 16.20 | 16.02 | 15 N |
| 10 N | 1.55 | 0.46 | -0.15 | -0.46 | -0.59 | -0.56 | -0.36 | 0.05 | 0.70 | 1.56 | 2.50 | 3.37 | 3.99 | 4.22 | 4.02 | 10 N |
| 5 N | -10.01 | -11.36 | -12.20 | -12.71 | -12.99 | -13.09 | -12.97 | -12.59 | -11.93 | -11.03 | -10.01 | -9.06 | -8.38 | -8.12 | -8.31 | 5 N |
| 0 | -20.95 | -22.56 | -23.64 | -24.35 | -24.81 | -25.04 | -25.01 | -24.68 | -24.03 | -23.11 | -22.06 | -21.08 | -20.37 | -20.07 | -20.23 | 0 |
| 5 S | -30.75 | -32.59 | -33.89 | -34.81 | -35.44 | -35.80 | -35.86 | -35.58 | -34.96 | -34.05 | -33.01 | -32.02 | -31.30 | -30.98 | -31.09 | 5 S |
| 10 S | -39.09 | -41.12 | -42.63 | -43.75 | -44.54 | -45.02 | -45.15 | -44.92 | -44.33 | -43.44 | -42.42 | -41.45 | -40.73 | -40.39 | -40.46 | 10 S |
| 15 S | -45.84 | -48.01 | -49.70 | -50.99 | -51.93 | -52.51 | -52.71 | -52.51 | -51.94 | -51.07 | -50.07 | -49.12 | -48.41 | -48.08 | -48.13 | 15 S |
| 20 S | -51.04 | -53.28 | -55.09 | -56.51 | -57.56 | -58.22 | -58.46 | -58.28 | -57.71 | -56.85 | -55.86 | -54.93 | -54.27 | -53.97 | -54.07 | 20 S |
| 25 S | -54.79 | -57.02 | -58.88 | -60.36 | -61.46 | -62.14 | -62.38 | -62.18 | -61.59 | -60.73 | -59.77 | -58.90 | -58.32 | -58.14 | -58.37 | 25 S |
| 30 S | -57.29 | -59.43 | -61.23 | -62.67 | -63.72 | -64.34 | -64.53 | -64.28 | -63.67 | -62.83 | -61.94 | -61.20 | -60.79 | -60.81 | -61.24 | 30 S |
| 35 S | -58.77 | -60.72 | -62.36 | -63.65 | -64.56 | -65.06 | -65.14 | -64.83 | -64.23 | -63.47 | -62.73 | -62.22 | -62.06 | -62.34 | -63.04 | 35 S |
| 40 S | -59.49 | -61.18 | -62.57 | -63.64 | -64.35 | -64.68 | -64.66 | -64.34 | -63.81 | -63.21 | -62.73 | -62.51 | -62.66 | -63.22 | -64.16 | 40 S |
| 45 S | -59.73 | -61.11 | -62.22 | -63.03 | -63.54 | -63.75 | -63.68 | -63.41 | -63.04 | -62.70 | -62.52 | -62.61 | -63.05 | -63.86 | -65.00 | 45 S |
| 50 S | -59.77 | -60.84 | -61.69 | -62.29 | -62.65 | -62.79 | -62.76 | -62.63 | -62.48 | -62.41 | -62.53 | -62.90 | -63.57 | -64.55 | -65.81 | 50 S |
| 55 S | -59.88 | -60.69 | -61.33 | -61.79 | -62.08 | -62.24 | -62.31 | -62.36 | -62.44 | -62.62 | -62.98 | -63.56 | -64.38 | -65.44 | -66.73 | 55 S |
| 60 S | -60.31 | -60.92 | -61.41 | -61.80 | -62.09 | -62.32 | -62.52 | -62.73 | -63.01 | -63.39 | -63.92 | -64.62 | -65.50 | -66.57 | -67.81 | 60 S |
| 65 S | -61.25 | -61.70 | -62.10 | -62.45 | -62.77 | -63.07 | -63.39 | -63.73 | -64.15 | -64.65 | -65.26 | -66.00 | -66.88 | -67.89 | -69.02 | 65 S |
| 70 S | -62.78 | -63.12 | -63.46 | -63.78 | -64.12 | -64.47 | -64.84 | -65.26 | -65.74 | -66.28 | -66.91 | -67.63 | -68.43 | -69.33 | -70.31 | 70 S |
| 75 S | -64.93 | -65.18 | -65.45 | -65.74 | -66.06 | -66.40 | -66.78 | -67.20 | -67.66 | -68.18 | -68.75 | -69.38 | -70.06 | -70.80 | -71.59 | 75 S |
| 80 S | -67.63 | -67.80 | -68.00 | -68.22 | -68.48 | -68.76 | -69.08 | -69.43 | -69.81 | -70.22 | -70.66 | -71.14 | -71.65 | -72.19 | -72.75 | 80 S |
| 85 S | -70.76 | -70.85 | -70.96 | -71.09 | -71.24 | -71.41 | -71.60 | -71.81 | -72.03 | -72.27 | -72.52 | -72.79 | -73.07 | -73.36 | -73.66 | 85 S |
| 90 S | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | 90 S |
| LAT. | -77.64 | -77.52 | -77.37 | -77.20 | -77.00 | -76.77 | -76.53 | -76.27 | -75.99 | -75.70 | -75.40 | -75.09 | -74.78 | -74.46 | -74.14 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 3 A IGRF INCLINATION (I)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (DOWNWARD POSITIVE)

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 88.84 | 88.77 | 88.66 | 88.52 | 88.34 | 88.14 | 87.93 | 87.71 | 87.48 | 87.25 | 87.02 | 86.80 | 86.58 | 86.36 | 86.16 | LAT. |
| 90 N | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 90 N |
| 85 N | 85.68 | 85.85 | 86.03 | 86.21 | 86.41 | 86.61 | 86.80 | 87.00 | 87.20 | 87.38 | 87.56 | 87.72 | 87.87 | 87.99 | 88.09 | 85 N |
| 80 N | 83.85 | 84.16 | 84.49 | 84.84 | 85.20 | 85.57 | 85.93 | 86.28 | 86.60 | 86.88 | 87.09 | 87.23 | 87.27 | 87.23 | 87.11 | 80 N |
| 75 N | 81.86 | 82.27 | 82.71 | 83.17 | 83.66 | 84.14 | 84.61 | 85.03 | 85.39 | 85.65 | 85.79 | 85.77 | 85.62 | 85.34 | 84.98 | 75 N |
| 70 N | 79.64 | 80.10 | 80.60 | 81.12 | 81.67 | 82.20 | 82.71 | 83.15 | 83.49 | 83.69 | 83.72 | 83.57 | 83.25 | 82.80 | 82.25 | 70 N |
| 65 N | 77.14 | 77.60 | 78.11 | 78.65 | 79.19 | 79.72 | 80.21 | 80.61 | 80.90 | 81.03 | 80.98 | 80.74 | 80.31 | 79.74 | 79.06 | 65 N |
| 60 N | 74.32 | 74.76 | 75.23 | 75.72 | 76.22 | 76.69 | 77.12 | 77.46 | 77.68 | 77.75 | 77.64 | 77.33 | 76.84 | 76.19 | 75.42 | 60 N |
| 55 N | 71.13 | 71.51 | 71.92 | 72.33 | 72.73 | 73.11 | 73.44 | 73.70 | 73.85 | 73.86 | 73.71 | 73.37 | 72.85 | 72.16 | 71.34 | 55 N |
| 50 N | 67.48 | 67.80 | 68.11 | 68.42 | 68.70 | 68.95 | 69.17 | 69.33 | 69.40 | 69.37 | 69.19 | 68.85 | 68.33 | 67.65 | 66.82 | 50 N |
| 45 N | 63.25 | 63.50 | 63.71 | 63.89 | 64.03 | 64.14 | 64.23 | 64.28 | 64.28 | 64.21 | 64.03 | 63.71 | 63.23 | 62.59 | 61.80 | 45 N |
| 40 N | 58.26 | 58.45 | 58.57 | 58.61 | 58.60 | 58.56 | 58.51 | 58.46 | 58.40 | 58.31 | 58.15 | 57.88 | 57.48 | 56.92 | 56.21 | 40 N |
| 35 N | 52.32 | 52.47 | 52.50 | 52.42 | 52.25 | 52.06 | 51.87 | 51.73 | 51.62 | 51.54 | 51.43 | 51.25 | 50.96 | 50.52 | 49.93 | 35 N |
| 30 N | 45.24 | 45.37 | 45.33 | 45.12 | 44.81 | 44.46 | 44.15 | 43.92 | 43.79 | 43.74 | 43.73 | 43.68 | 43.54 | 43.26 | 42.83 | 30 N |
| 25 N | 36.85 | 36.99 | 36.88 | 36.56 | 36.11 | 35.62 | 35.19 | 34.90 | 34.77 | 34.80 | 34.91 | 35.04 | 35.09 | 35.02 | 34.78 | 25 N |
| 20 N | 27.08 | 27.24 | 27.09 | 26.67 | 26.08 | 25.46 | 24.93 | 24.61 | 24.52 | 24.66 | 24.94 | 25.27 | 25.56 | 25.71 | 25.69 | 20 N |
| 15 N | 16.01 | 16.20 | 16.02 | 15.52 | 14.82 | 14.10 | 13.52 | 13.20 | 13.19 | 13.46 | 13.94 | 14.50 | 15.03 | 15.43 | 15.64 | 15 N |
| 10 N | 3.99 | 4.22 | 4.02 | 3.47 | 2.71 | 1.95 | 1.36 | 1.08 | 1.17 | 1.60 | 2.27 | 3.05 | 3.81 | 4.44 | 4.88 | 10 N |
| 5 N | -8.38 | -8.12 | -8.31 | -8.86 | -9.62 | -10.37 | -10.90 | -11.09 | -10.88 | -10.31 | -9.47 | -8.52 | -7.58 | -6.77 | -6.15 | 5 N |
| 0 | -20.37 | -20.07 | -20.23 | -20.75 | -21.45 | -22.11 | -22.55 | -22.64 | -22.32 | -21.63 | -20.69 | -19.63 | -18.59 | -17.66 | -16.92 | 0 |
| 5 S | -31.30 | -30.98 | -31.09 | -31.54 | -32.15 | -32.72 | -33.06 | -33.05 | -32.65 | -31.91 | -30.93 | -29.83 | -28.76 | -27.80 | -27.01 | 5 S |
| 10 S | -40.73 | -40.39 | -40.46 | -40.84 | -41.38 | -41.87 | -42.14 | -42.08 | -41.66 | -40.92 | -39.96 | -38.91 | -37.87 | -36.93 | -36.14 | 10 S |
| 15 S | -48.41 | -48.08 | -48.13 | -48.50 | -49.01 | -49.48 | -49.75 | -49.72 | -49.34 | -48.67 | -47.80 | -46.83 | -45.88 | -45.01 | -44.25 | 15 S |
| 20 S | -54.27 | -53.97 | -54.07 | -54.49 | -55.06 | -55.61 | -55.97 | -56.04 | -55.79 | -55.25 | -54.52 | -53.69 | -52.86 | -52.08 | -51.39 | 20 S |
| 25 S | -58.32 | -58.14 | -58.37 | -58.93 | -59.65 | -60.36 | -60.91 | -61.18 | -61.14 | -60.81 | -60.28 | -59.62 | -58.94 | -58.27 | -57.66 | 25 S |
| 30 S | -60.79 | -60.81 | -61.24 | -62.01 | -62.96 | -63.92 | -64.73 | -65.29 | -65.53 | -65.49 | -65.20 | -64.77 | -64.25 | -63.71 | -63.18 | 30 S |
| 35 S | -62.06 | -62.34 | -63.04 | -64.06 | -65.26 | -66.49 | -67.61 | -68.50 | -69.09 | -69.38 | -69.41 | -69.23 | -68.92 | -68.52 | -68.08 | 35 S |
| 40 S | -62.66 | -63.22 | -64.16 | -65.41 | -66.84 | -68.33 | -69.73 | -70.96 | -71.92 | -72.59 | -72.97 | -73.09 | -73.02 | -72.80 | -72.46 | 40 S |
| 45 S | -63.05 | -63.86 | -65.00 | -66.41 | -68.00 | -69.66 | -71.29 | -72.79 | -74.10 | -75.15 | -75.91 | -76.39 | -76.61 | -76.60 | -76.41 | 45 S |
| 50 S | -63.57 | -64.55 | -65.81 | -67.30 | -68.95 | -70.69 | -72.44 | -74.13 | -75.69 | -77.07 | -78.21 | -79.09 | -79.67 | -79.96 | -79.96 | 50 S |
| 55 S | -64.38 | -65.44 | -66.73 | -68.21 | -69.83 | -71.55 | -73.31 | -75.06 | -76.75 | -78.35 | -79.80 | -81.06 | -82.06 | -82.76 | -83.11 | 55 S |
| 60 S | -65.50 | -66.57 | -67.81 | -69.21 | -70.72 | -72.33 | -73.99 | -75.68 | -77.36 | -79.01 | -80.61 | -82.11 | -83.49 | -84.69 | -85.60 | 60 S |
| 65 S | -66.88 | -67.89 | -69.02 | -70.27 | -71.62 | -73.05 | -74.53 | -76.05 | -77.58 | -79.12 | -80.65 | -82.16 | -83.63 | -85.06 | -86.43 | 65 S |
| 70 S | -68.43 | -69.33 | -70.31 | -71.38 | -72.51 | -73.70 | -74.93 | -76.20 | -77.49 | -78.79 | -80.08 | -81.36 | -82.61 | -83.83 | -84.99 | 70 S |
| 75 S | -70.06 | -70.80 | -71.59 | -72.43 | -73.32 | -74.24 | -75.19 | -76.15 | -77.13 | -78.11 | -79.07 | -80.02 | -80.93 | -81.79 | -82.59 | 75 S |
| 80 S | -71.65 | -72.19 | -72.75 | -73.34 | -73.95 | -74.58 | -75.21 | -75.85 | -76.49 | -77.12 | -77.74 | -78.33 | -78.90 | -79.43 | -79.91 | 80 S |
| 85 S | -73.07 | -73.36 | -73.66 | -73.97 | -74.28 | -74.59 | -74.91 | -75.22 | -75.53 | -75.83 | -76.11 | -76.39 | -76.64 | -76.88 | -77.10 | 85 S |
| **90 S** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | **-74.17** | -74.17 | -74.17 | -74.17 | -74.17 | 90 S |
| LAT. | -74.78 | -74.46 | -74.14 | -73.82 | -73.51 | -73.21 | -72.91 | -72.63 | -72.36 | -72.10 | -71.86 | -71.64 | -71.44 | -71.26 | -71.10 | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 3 A IGRF INCLINATION (I)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (DOWNWARD POSITIVE)

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 86.58 | 86.36 | 86.16 | 85.97 | 85.79 | 85.62 | 85.46 | 85.33 | 85.21 | 85.10 | 85.01 | 84.95 | 84.89 | 84.86 | 84.85 | LAT. |
| 90 N | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 90 N |
| 85 N | 87.87 | 87.99 | 88.09 | 88.17 | 88.22 | 88.25 | 88.27 | 88.27 | 88.27 | 88.27 | 88.27 | 88.27 | 88.29 | 88.31 | 88.35 | 85 N |
| 80 N | 87.27 | 87.23 | 87.11 | 86.93 | 86.72 | 86.49 | 86.26 | 86.05 | 85.86 | 85.70 | 85.57 | 85.49 | 85.45 | 85.45 | 85.50 | 80 N |
| 75 N | 85.62 | 85.34 | 84.98 | 84.56 | 84.12 | 83.68 | 83.26 | 82.87 | 82.54 | 82.26 | 82.05 | 81.91 | 81.84 | 81.85 | 81.93 | 75 N |
| 70 N | 83.25 | 82.80 | 82.25 | 81.65 | 81.02 | 80.40 | 79.82 | 79.29 | 78.83 | 78.46 | 78.18 | 78.00 | 77.92 | 77.95 | 78.07 | 70 N |
| 65 N | 80.31 | 79.74 | 79.06 | 78.30 | 77.53 | 76.76 | 76.04 | 75.39 | 74.83 | 74.38 | 74.06 | 73.86 | 73.79 | 73.85 | 74.04 | 65 N |
| 60 N | 76.84 | 76.19 | 75.42 | 74.56 | 73.67 | 72.79 | 71.97 | 71.22 | 70.59 | 70.10 | 69.75 | 69.56 | 69.52 | 69.64 | 69.91 | 60 N |
| 55 N | 72.85 | 72.16 | 71.34 | 70.43 | 69.47 | 68.52 | 67.62 | 66.82 | 66.15 | 65.65 | 65.31 | 65.16 | 65.19 | 65.40 | 65.76 | 55 N |
| 50 N | 68.33 | 67.65 | 66.82 | 65.89 | 64.90 | 63.92 | 62.99 | 62.18 | 61.52 | 61.05 | 60.77 | 60.71 | 60.84 | 61.16 | 61.64 | 50 N |
| 45 N | 63.23 | 62.59 | 61.80 | 60.90 | 59.93 | 58.96 | 58.05 | 57.27 | 56.67 | 56.28 | 56.11 | 56.18 | 56.47 | 56.93 | 57.55 | 45 N |
| 40 N | 57.48 | 56.92 | 56.21 | 55.37 | 54.47 | 53.55 | 52.71 | 52.01 | 51.51 | 51.26 | 51.27 | 51.53 | 52.01 | 52.67 | 53.45 | 40 N |
| 35 N | 50.96 | 50.52 | 49.93 | 49.21 | 48.40 | 47.59 | 46.85 | 46.28 | 45.93 | 45.87 | 46.10 | 46.61 | 47.33 | 48.22 | 49.20 | 35 N |
| 30 N | 43.54 | 43.26 | 42.83 | 42.26 | 41.59 | 40.91 | 40.32 | 39.91 | 39.76 | 39.93 | 40.42 | 41.21 | 42.23 | 43.38 | 44.57 | 30 N |
| 25 N | 35.09 | 35.02 | 34.78 | 34.38 | 33.89 | 33.38 | 32.96 | 32.74 | 32.81 | 33.23 | 34.02 | 35.12 | 36.44 | 37.88 | 39.30 | 25 N |
| 20 N | 25.56 | 25.71 | 25.69 | 25.51 | 25.21 | 24.89 | 24.66 | 24.64 | 24.94 | 25.63 | 26.70 | 28.11 | 29.74 | 31.44 | 33.09 | 20 N |
| 15 N | 15.03 | 15.43 | 15.64 | 15.68 | 15.59 | 15.47 | 15.44 | 15.63 | 16.15 | 17.07 | 18.40 | 20.06 | 21.95 | 23.90 | 25.75 | 15 N |
| 10 N | 3.81 | 4.44 | 4.88 | 5.13 | 5.25 | 5.33 | 5.49 | 5.87 | 6.57 | 7.68 | 9.18 | 11.04 | 13.10 | 15.22 | 17.21 | 10 N |
| 5 N | -7.58 | -6.77 | -6.15 | -5.71 | -5.42 | -5.16 | -4.83 | -4.30 | -3.47 | -2.26 | -0.66 | 1.27 | 3.40 | 5.58 | 7.64 | 5 N |
| 0 | -18.59 | -17.66 | -16.92 | -16.36 | -15.93 | -15.53 | -15.08 | -14.44 | -13.54 | -12.30 | -10.71 | -8.83 | -6.75 | -4.62 | -2.60 | 0 |
| 5 S | -28.76 | -27.80 | -27.01 | -26.37 | -25.85 | -25.37 | -24.83 | -24.14 | -23.22 | -22.02 | -20.53 | -18.77 | -16.84 | -14.87 | -12.97 | 5 S |
| 10 S | -37.87 | -36.93 | -36.14 | -35.48 | -34.92 | -34.39 | -33.81 | -33.11 | -32.22 | -31.09 | -29.73 | -28.15 | -26.44 | -24.67 | -22.95 | 10 S |
| 15 S | -45.88 | -45.01 | -44.25 | -43.61 | -43.04 | -42.49 | -41.89 | -41.20 | -40.35 | -39.32 | -38.10 | -36.71 | -35.21 | -33.66 | -32.14 | 15 S |
| 20 S | -52.86 | -52.08 | -51.39 | -50.78 | -50.22 | -49.66 | -49.07 | -48.39 | -47.59 | -46.64 | -45.55 | -44.33 | -43.02 | -41.66 | -40.32 | 20 S |
| 25 S | -58.94 | -58.27 | -57.66 | -57.09 | -56.54 | -55.99 | -55.40 | -54.73 | -53.96 | -53.08 | -52.09 | -51.01 | -49.84 | -48.64 | -47.43 | 25 S |
| 30 S | -64.25 | -63.71 | -63.18 | -62.66 | -62.13 | -61.58 | -60.97 | -60.30 | -59.55 | -58.72 | -57.80 | -56.80 | -55.74 | -54.65 | -53.55 | 30 S |
| 35 S | -68.92 | -68.52 | -68.08 | -67.60 | -67.09 | -66.53 | -65.91 | -65.22 | -64.47 | -63.65 | -62.76 | -61.82 | -60.83 | -59.82 | -58.79 | 35 S |
| 40 S | -73.02 | -72.80 | -72.46 | -72.04 | -71.53 | -70.96 | -70.31 | -69.60 | -68.82 | -67.99 | -67.11 | -66.20 | -65.25 | -64.28 | -63.31 | 40 S |
| 45 S | -76.61 | -76.60 | -76.41 | -76.05 | -75.57 | -74.98 | -74.30 | -73.55 | -72.74 | -71.88 | -70.99 | -70.08 | -69.16 | -68.23 | -67.29 | 45 S |
| 50 S | -79.67 | -79.96 | -79.96 | -79.73 | -79.29 | -78.70 | -77.99 | -77.19 | -76.34 | -75.45 | -74.54 | -73.63 | -72.71 | -71.80 | -70.90 | 50 S |
| 55 S | -82.06 | -82.76 | -83.11 | -83.10 | -82.78 | -82.21 | -81.47 | -80.63 | -79.73 | -78.81 | -77.87 | -76.95 | -76.03 | -75.13 | -74.25 | 55 S |
| 60 S | -83.49 | -84.69 | -85.60 | -86.09 | -86.07 | -85.60 | -84.84 | -83.94 | -82.98 | -82.00 | -81.03 | -80.07 | -79.15 | -78.24 | -77.36 | 60 S |
| 65 S | -83.63 | -85.06 | -86.43 | -87.72 | -88.79 | -88.94 | -88.04 | -86.96 | -85.88 | -84.83 | -83.81 | -82.83 | -81.88 | -80.96 | -80.06 | 65 S |
| 70 S | -82.61 | -83.83 | -84.99 | -86.07 | -87.02 | -87.73 | -87.97 | -87.65 | -86.99 | -86.18 | -85.32 | -84.45 | -83.58 | -82.71 | -81.85 | 70 S |
| 75 S | -80.93 | -81.79 | -82.59 | -83.30 | -83.90 | -84.37 | -84.68 | -84.81 | -84.76 | -84.54 | -84.19 | -83.73 | -83.19 | -82.58 | -81.93 | 75 S |
| 80 S | -78.90 | -79.43 | -79.91 | -80.33 | -80.70 | -80.99 | -81.21 | -81.35 | -81.40 | -81.38 | -81.28 | -81.10 | -80.85 | -80.55 | -80.18 | 80 S |
| 85 S | -76.64 | -76.88 | -77.10 | -77.29 | -77.45 | -77.59 | -77.69 | -77.76 | -77.80 | -77.81 | -77.78 | -77.73 | -77.64 | -77.52 | -77.37 | 85 S |
| 90 S | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | 90 S |
| LAT. | -71.44 | -71.26 | -71.10 | -70.96 | -70.85 | -70.76 | -70.69 | -70.64 | -70.62 | -70.62 | -70.65 | -70.70 | -70.76 | -70.85 | -70.96 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 3 A IGRF INCLINATION (I)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (DOWNWARD POSITIVE)

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 84.89 | 84.86 | 84.85 | 84.85 | 84.88 | 84.92 | 84.98 | 85.05 | 85.15 | 85.26 | 85.39 | 85.53 | 85.68 | 85.85 | 86.03 | LAT. |
| 90 N | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 90 N |
| 85 N | 88.29 | 88.31 | 88.35 | 88.39 | 88.45 | 88.52 | 88.60 | 88.68 | 88.75 | 88.82 | 88.86 | 88.87 | 88.84 | 88.77 | 88.66 | 85 N |
| 80 N | 85.45 | 85.45 | 85.50 | 85.60 | 85.74 | 85.93 | 86.16 | 86.43 | 86.73 | 87.08 | 87.45 | 87.85 | 88.26 | 88.69 | 89.09 | 80 N |
| 75 N | 81.84 | 81.85 | 81.93 | 82.09 | 82.31 | 82.61 | 82.97 | 83.40 | 83.89 | 84.42 | 85.01 | 85.64 | 86.31 | 87.01 | 87.74 | 75 N |
| 70 N | 77.92 | 77.95 | 78.07 | 78.30 | 78.62 | 79.04 | 79.54 | 80.12 | 80.77 | 81.49 | 82.27 | 83.10 | 83.98 | 84.88 | 85.80 | 70 N |
| 65 N | 73.79 | 73.85 | 74.04 | 74.35 | 74.77 | 75.31 | 75.94 | 76.67 | 77.47 | 78.35 | 79.29 | 80.28 | 81.31 | 82.37 | 83.42 | 65 N |
| 60 N | 69.52 | 69.64 | 69.91 | 70.31 | 70.85 | 71.50 | 72.25 | 73.10 | 74.03 | 75.03 | 76.09 | 77.19 | 78.33 | 79.48 | 80.61 | 60 N |
| 55 N | 65.19 | 65.40 | 65.76 | 66.27 | 66.91 | 67.66 | 68.51 | 69.46 | 70.47 | 71.55 | 72.68 | 73.85 | 75.04 | 76.23 | 77.40 | 55 N |
| 50 N | 60.84 | 61.16 | 61.64 | 62.26 | 63.00 | 63.84 | 64.77 | 65.77 | 66.83 | 67.94 | 69.09 | 70.27 | 71.46 | 72.65 | 73.82 | 50 N |
| 45 N | 56.47 | 56.93 | 57.55 | 58.30 | 59.13 | 60.04 | 61.01 | 62.03 | 63.09 | 64.18 | 65.30 | 66.44 | 67.60 | 68.75 | 69.89 | 45 N |
| 40 N | 52.01 | 52.67 | 53.45 | 54.32 | 55.25 | 56.20 | 57.17 | 58.17 | 59.19 | 60.22 | 61.28 | 62.35 | 63.43 | 64.52 | 65.61 | 40 N |
| 35 N | 47.33 | 48.22 | 49.20 | 50.21 | 51.21 | 52.19 | 53.14 | 54.08 | 55.01 | 55.96 | 56.92 | 57.90 | 58.89 | 59.90 | 60.94 | 35 N |
| 30 N | 42.23 | 43.38 | 44.57 | 45.73 | 46.81 | 47.80 | 48.71 | 49.57 | 50.40 | 51.24 | 52.10 | 52.97 | 53.88 | 54.82 | 55.80 | 30 N |
| 25 N | 36.44 | 37.88 | 39.30 | 40.61 | 41.77 | 42.77 | 43.63 | 44.40 | 45.14 | 45.88 | 46.64 | 47.43 | 48.26 | 49.14 | 50.08 | 25 N |
| 20 N | 29.74 | 31.44 | 33.09 | 34.56 | 35.81 | 36.82 | 37.65 | 38.35 | 39.01 | 39.67 | 40.36 | 41.10 | 41.89 | 42.75 | 43.67 | 20 N |
| 15 N | 21.95 | 23.90 | 25.75 | 27.37 | 28.70 | 29.75 | 30.56 | 31.22 | 31.83 | 32.46 | 33.13 | 33.86 | 34.66 | 35.51 | 36.46 | 15 N |
| 10 N | 13.10 | 15.22 | 17.21 | 18.95 | 20.36 | 21.45 | 22.27 | 22.94 | 23.55 | 24.18 | 24.88 | 25.65 | 26.48 | 27.38 | 28.37 | 10 N |
| 5 N | 3.40 | 5.58 | 7.64 | 9.44 | 10.90 | 12.03 | 12.89 | 13.59 | 14.24 | 14.93 | 15.69 | 16.53 | 17.43 | 18.39 | 19.43 | 5 N |
| 0 | -6.75 | -4.62 | -2.60 | -0.81 | 0.66 | 1.82 | 2.73 | 3.49 | 4.21 | 4.98 | 5.82 | 6.74 | 7.71 | 8.73 | 9.82 | 0 |
| 5 S | -16.84 | -14.87 | -12.97 | -11.27 | -9.84 | -8.66 | -7.71 | -6.87 | -6.07 | -5.22 | -4.30 | -3.31 | -2.29 | -1.24 | -0.14 | 5 S |
| 10 S | -26.44 | -24.67 | -22.95 | -21.38 | -20.02 | -18.86 | -17.86 | -16.96 | -16.07 | -15.15 | -14.18 | -13.16 | -12.13 | -11.08 | -10.00 | 10 S |
| 15 S | -35.21 | -33.66 | -32.14 | -30.72 | -29.43 | -28.29 | -27.27 | -26.31 | -25.36 | -24.39 | -23.39 | -22.38 | -21.37 | -20.36 | -19.32 | 15 S |
| 20 S | -43.02 | -41.66 | -40.32 | -39.03 | -37.82 | -36.71 | -35.67 | -34.67 | -33.69 | -32.70 | -31.70 | -30.71 | -29.74 | -28.78 | -27.79 | 20 S |
| 25 S | -49.84 | -48.64 | -47.43 | -46.25 | -45.11 | -44.03 | -42.99 | -41.97 | -40.97 | -39.98 | -39.01 | -38.05 | -37.13 | -36.20 | -35.25 | 25 S |
| 30 S | -55.74 | -54.65 | -53.55 | -52.45 | -51.37 | -50.31 | -49.28 | -48.28 | -47.29 | -46.32 | -45.37 | -44.45 | -43.55 | -42.65 | -41.69 | 30 S |
| 35 S | -60.83 | -59.82 | -58.79 | -57.75 | -56.72 | -55.71 | -54.71 | -53.73 | -52.77 | -51.83 | -50.91 | -50.02 | -49.12 | -48.20 | -47.20 | 35 S |
| 40 S | -65.25 | -64.28 | -63.31 | -62.33 | -61.35 | -60.38 | -59.43 | -58.49 | -57.57 | -56.66 | -55.77 | -54.88 | -53.97 | -53.00 | -51.94 | 40 S |
| 45 S | -69.16 | -68.23 | -67.29 | -66.36 | -65.43 | -64.51 | -63.61 | -62.72 | -61.84 | -60.96 | -60.08 | -59.17 | -58.22 | -57.19 | -56.04 | 45 S |
| 50 S | -72.71 | -71.80 | -70.90 | -70.01 | -69.12 | -68.25 | -67.39 | -66.53 | -65.68 | -64.81 | -63.91 | -62.97 | -61.97 | -60.87 | -59.65 | 50 S |
| 55 S | -76.03 | -75.13 | -74.25 | -73.38 | -72.53 | -71.68 | -70.84 | -70.00 | -69.14 | -68.25 | -67.33 | -66.34 | -65.28 | -64.12 | -62.87 | 55 S |
| 60 S | -79.15 | -78.24 | -77.36 | -76.49 | -75.64 | -74.80 | -73.95 | -73.09 | -72.20 | -71.28 | -70.31 | -69.28 | -68.18 | -67.00 | -65.75 | 60 S |
| 65 S | -81.38 | -80.96 | -80.06 | -79.18 | -78.31 | -77.45 | -76.57 | -75.67 | -74.75 | -73.80 | -72.80 | -71.75 | -70.65 | -69.50 | -68.30 | 65 S |
| 70 S | -83.58 | -82.71 | -81.85 | -81.00 | -80.14 | -79.27 | -78.39 | -77.50 | -76.58 | -75.64 | -74.67 | -73.66 | -72.63 | -71.58 | -70.50 | 70 S |
| 75 S | -83.19 | -82.58 | -81.93 | -81.25 | -80.53 | -79.79 | -79.03 | -78.24 | -77.43 | -76.61 | -75.76 | -74.90 | -74.03 | -73.15 | -72.26 | 75 S |
| 80 S | -80.85 | -80.55 | -80.18 | -79.77 | -79.32 | -78.83 | -78.31 | -77.76 | -77.19 | -76.60 | -75.99 | -75.37 | -74.75 | -74.13 | -73.50 | 80 S |
| 85 S | -77.64 | -77.52 | -77.37 | -77.20 | -77.00 | -76.77 | -76.53 | -76.27 | -75.99 | -75.70 | -75.40 | -75.09 | -74.78 | -74.46 | -74.14 | 85 S |
| 90 S | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | 90 S |
| LAT. | -70.76 | -70.85 | -70.96 | -71.09 | -71.24 | -71.41 | -71.60 | -71.81 | -72.03 | -72.27 | -72.52 | -72.79 | -73.07 | -73.36 | -73.66 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 3 A IGRF INCLINATION (I)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (DOWNWARD POSITIVE)

| E.LONG. / LAT. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. / LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 85.68 | 85.85 | 86.03 | 86.21 | 86.41 | 86.61 | 86.80 | 87.00 | 87.20 | 87.38 | 87.56 | 87.72 | 87.87 | 87.99 | 88.09 | |
| 90 N | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 90 N |
| 85 N | 88.84 | 88.77 | 88.66 | 88.52 | 88.34 | 88.14 | 87.93 | 87.71 | 87.48 | 87.25 | 87.02 | 86.80 | 86.58 | 86.36 | 86.16 | 85 N |
| 80 N | 88.26 | 88.69 | 89.09 | 89.38 | 89.33 | 88.99 | 88.54 | 88.06 | 87.57 | 87.09 | 86.61 | 86.15 | 85.70 | 85.28 | 84.87 | 80 N |
| 75 N | 86.31 | 87.01 | 87.74 | 88.49 | 89.23 | 89.76 | 89.14 | 88.38 | 87.62 | 86.88 | 86.16 | 85.46 | 84.79 | 84.16 | 83.58 | 75 N |
| 70 N | 83.98 | 84.88 | 85.80 | 86.71 | 87.57 | 88.24 | 88.44 | 88.02 | 87.26 | 86.39 | 85.49 | 84.60 | 83.74 | 82.93 | 82.17 | 70 N |
| 65 N | 81.31 | 82.37 | 83.42 | 84.45 | 85.39 | 86.14 | 86.58 | 86.55 | 86.07 | 85.30 | 84.38 | 83.39 | 82.40 | 81.44 | 80.53 | 65 N |
| 60 N | 78.33 | 79.48 | 80.61 | 81.71 | 82.70 | 83.53 | 84.09 | 84.29 | 84.08 | 83.51 | 82.68 | 81.70 | 80.65 | 79.59 | 78.56 | 60 N |
| 55 N | 75.04 | 76.23 | 77.40 | 78.53 | 79.57 | 80.45 | 81.11 | 81.47 | 81.47 | 81.11 | 80.43 | 79.52 | 78.46 | 77.34 | 76.22 | 55 N |
| 50 N | 71.46 | 72.65 | 73.82 | 74.96 | 76.01 | 76.95 | 77.70 | 78.19 | 78.37 | 78.20 | 77.68 | 76.87 | 75.85 | 74.70 | 73.49 | 50 N |
| 45 N | 67.60 | 68.75 | 69.89 | 71.01 | 72.08 | 73.06 | 73.89 | 74.52 | 74.86 | 74.86 | 74.51 | 73.83 | 72.86 | 71.69 | 70.40 | 45 N |
| 40 N | 63.43 | 64.52 | 65.61 | 66.71 | 67.78 | 68.80 | 69.72 | 70.47 | 70.97 | 71.15 | 70.97 | 70.42 | 69.52 | 68.35 | 66.98 | 40 N |
| 35 N | 58.89 | 59.90 | 60.94 | 62.00 | 63.08 | 64.14 | 65.15 | 66.03 | 66.70 | 67.07 | 67.06 | 66.65 | 65.83 | 64.66 | 63.20 | 35 N |
| 30 N | 53.88 | 54.82 | 55.80 | 56.83 | 57.92 | 59.04 | 60.14 | 61.16 | 62.01 | 62.57 | 62.75 | 62.49 | 61.77 | 60.60 | 59.05 | 30 N |
| 25 N | 48.26 | 49.14 | 50.08 | 51.10 | 52.21 | 53.40 | 54.62 | 55.79 | 56.83 | 57.59 | 57.97 | 57.88 | 57.26 | 56.10 | 54.46 | 25 N |
| 20 N | 41.89 | 42.75 | 43.67 | 44.70 | 45.86 | 47.13 | 48.47 | 49.82 | 51.05 | 52.04 | 52.63 | 52.72 | 52.21 | 51.08 | 49.34 | 20 N |
| 15 N | 34.66 | 35.51 | 36.46 | 37.52 | 38.74 | 40.10 | 41.60 | 43.13 | 44.58 | 45.80 | 46.63 | 46.91 | 46.53 | 45.44 | 43.61 | 15 N |
| 10 N | 26.48 | 27.38 | 28.37 | 29.48 | 30.77 | 32.25 | 33.90 | 35.63 | 37.32 | 38.78 | 39.85 | 40.34 | 40.11 | 39.06 | 37.16 | 10 N |
| 5 N | 17.43 | 18.39 | 19.43 | 20.60 | 21.96 | 23.55 | 25.34 | 27.27 | 29.19 | 30.91 | 32.23 | 32.94 | 32.87 | 31.89 | 29.94 | 5 N |
| 0 | 7.71 | 8.73 | 9.82 | 11.03 | 12.44 | 14.11 | 16.02 | 18.12 | 20.25 | 22.22 | 23.78 | 24.72 | 24.82 | 23.93 | 21.96 | 0 |
| 5 S | -2.29 | -1.24 | -0.14 | 1.09 | 2.51 | 4.21 | 6.19 | 8.40 | 10.69 | 12.85 | 14.64 | 15.78 | 16.05 | 15.27 | 13.34 | 5 S |
| 10 S | -12.13 | -11.08 | -10.00 | -8.80 | -7.41 | -5.73 | -3.75 | -1.50 | 0.87 | 3.15 | 5.10 | 6.41 | 6.83 | 6.18 | 4.35 | 10 S |
| 15 S | -21.37 | -20.36 | -19.32 | -18.18 | -16.84 | -15.23 | -13.30 | -11.08 | -8.72 | -6.40 | -4.39 | -2.98 | -2.43 | -2.95 | -4.62 | 15 S |
| 20 S | -29.74 | -28.78 | -27.79 | -26.70 | -25.42 | -23.87 | -22.02 | -19.89 | -17.59 | -15.32 | -13.33 | -11.89 | -11.27 | -11.65 | -13.13 | 20 S |
| 25 S | -37.13 | -36.20 | -35.25 | -34.18 | -32.93 | -31.43 | -29.65 | -27.61 | -25.42 | -23.25 | -21.33 | -19.92 | -19.26 | -19.52 | -20.79 | 25 S |
| 30 S | -43.55 | -42.65 | -41.69 | -40.61 | -39.35 | -37.85 | -36.11 | -34.14 | -32.05 | -30.00 | -28.19 | -26.85 | -26.18 | -26.34 | -27.38 | 30 S |
| 35 S | -49.12 | -48.20 | -47.20 | -46.08 | -44.77 | -43.24 | -41.50 | -39.58 | -37.59 | -35.65 | -33.96 | -32.69 | -32.03 | -32.09 | -32.93 | 35 S |
| 40 S | -53.97 | -53.00 | -51.94 | -50.73 | -49.36 | -47.79 | -46.04 | -44.17 | -42.26 | -40.44 | -38.86 | -37.67 | -37.01 | -36.98 | -37.62 | 40 S |
| 45 S | -58.22 | -57.19 | -56.04 | -54.76 | -53.32 | -51.72 | -49.98 | -48.17 | -46.37 | -44.67 | -43.21 | -42.10 | -41.44 | -41.33 | -41.76 | 45 S |
| 50 S | -61.97 | -60.87 | -59.65 | -58.31 | -56.83 | -55.24 | -53.56 | -51.84 | -50.15 | -48.61 | -47.28 | -46.25 | -45.61 | -45.40 | -45.65 | 50 S |
| 55 S | -65.28 | -64.12 | -62.87 | -61.50 | -60.04 | -58.50 | -56.92 | -55.35 | -53.83 | -52.44 | -51.24 | -50.30 | -49.68 | -49.40 | -49.47 | 55 S |
| 60 S | -68.13 | -67.00 | -65.75 | -64.42 | -63.03 | -61.60 | -60.16 | -58.76 | -57.42 | -56.21 | -55.16 | -54.32 | -53.71 | -53.37 | -53.29 | 60 S |
| 65 S | -70.65 | -69.50 | -68.30 | -67.06 | -65.80 | -64.53 | -63.28 | -62.07 | -60.93 | -59.90 | -58.99 | -58.25 | -57.68 | -57.29 | -57.10 | 65 S |
| 70 S | -72.63 | -71.58 | -70.50 | -69.41 | -68.32 | -67.25 | -66.21 | -65.21 | -64.27 | -63.42 | -62.66 | -62.02 | -61.50 | -61.10 | -60.83 | 70 S |
| 75 S | -74.03 | -73.15 | -72.26 | -71.39 | -70.52 | -69.67 | -68.86 | -68.08 | -67.35 | -66.68 | -66.08 | -65.55 | -65.09 | -64.72 | -64.43 | 75 S |
| 80 S | -74.75 | -74.13 | -73.50 | -72.89 | -72.28 | -71.69 | -71.12 | -70.58 | -70.07 | -69.60 | -69.16 | -68.77 | -68.42 | -68.11 | -67.86 | 80 S |
| 85 S | -74.78 | -74.46 | -74.14 | -73.82 | -73.51 | -73.21 | -72.91 | -72.63 | -72.36 | -72.10 | -71.86 | -71.64 | -71.44 | -71.26 | -71.10 | 85 S |
| 90 S | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | 90 S |
| | -73.07 | -73.36 | -73.66 | -73.97 | -74.28 | -74.59 | -74.91 | -75.22 | -75.53 | -75.83 | -76.11 | -76.39 | -76.64 | -76.88 | -77.10 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 3 A IGRF INCLINATION (I)

GRID-POINT VALUES FOR EPOCH 1965.0 IN DEGREES (DOWNWARD POSITIVE)

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 87.87 | 87.99 | 88.09 | 88.17 | 88.22 | 88.25 | 88.27 | 88.27 | 88.27 | 88.27 | 88.27 | 88.27 | 88.29 | 88.31 | 88.35 | LAT. |
| 90 N | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 87.41 | 90 N |
| 85 N | 86.58 | 86.36 | 86.16 | 85.97 | 85.79 | 85.62 | 85.46 | 85.33 | 85.21 | 85.10 | 85.01 | 84.95 | 84.89 | 84.86 | 84.85 | 85 N |
| 80 N | 85.70 | 85.28 | 84.87 | 84.50 | 84.15 | 83.83 | 83.54 | 83.29 | 83.06 | 82.87 | 82.71 | 82.58 | 82.48 | 82.42 | 82.39 | 80 N |
| 75 N | 84.79 | 84.16 | 83.58 | 83.03 | 82.53 | 82.08 | 81.67 | 81.31 | 81.00 | 80.74 | 80.51 | 80.34 | 80.20 | 80.11 | 80.06 | 75 N |
| 70 N | 83.74 | 82.93 | 82.17 | 81.47 | 80.83 | 80.25 | 79.74 | 79.29 | 78.91 | 78.58 | 78.31 | 78.09 | 77.93 | 77.81 | 77.74 | 70 N |
| 65 N | 82.40 | 81.44 | 80.53 | 79.69 | 78.92 | 78.23 | 77.62 | 77.09 | 76.64 | 76.26 | 75.95 | 75.70 | 75.51 | 75.38 | 75.29 | 65 N |
| 60 N | 80.65 | 79.59 | 78.56 | 77.59 | 76.70 | 75.89 | 75.13 | 74.57 | 74.05 | 73.62 | 73.28 | 73.00 | 72.80 | 72.65 | 72.56 | 60 N |
| 55 N | 78.46 | 77.34 | 76.22 | 75.13 | 74.11 | 73.13 | 72.36 | 71.65 | 71.04 | 70.55 | 70.16 | 69.85 | 69.63 | 69.48 | 69.40 | 55 N |
| 50 N | 75.85 | 74.70 | 73.49 | 72.28 | 71.12 | 70.05 | 69.08 | 68.24 | 67.52 | 66.93 | 66.47 | 66.12 | 65.88 | 65.73 | 65.65 | 50 N |
| 45 N | 72.86 | 71.69 | 70.40 | 69.07 | 67.74 | 66.48 | 65.32 | 64.29 | 63.41 | 62.68 | 62.11 | 61.69 | 61.41 | 61.25 | 61.19 | 45 N |
| 40 N | 69.52 | 68.35 | 66.98 | 65.49 | 63.97 | 62.47 | 61.05 | 59.77 | 58.64 | 57.70 | 56.97 | 56.44 | 56.09 | 55.91 | 55.85 | 40 N |
| 35 N | 65.83 | 64.66 | 63.20 | 61.55 | 59.78 | 57.98 | 56.23 | 54.60 | 53.14 | 51.91 | 50.94 | 50.24 | 49.79 | 49.56 | 49.50 | 35 N |
| 30 N | 61.77 | 60.60 | 59.05 | 57.20 | 55.14 | 52.98 | 50.80 | 48.72 | 46.83 | 45.21 | 43.92 | 42.98 | 42.38 | 42.07 | 41.97 | 30 N |
| 25 N | 57.26 | 56.10 | 54.46 | 52.39 | 50.00 | 47.40 | 44.72 | 42.09 | 39.65 | 37.53 | 35.83 | 34.58 | 33.76 | 33.32 | 33.16 | 25 N |
| 20 N | 52.21 | 51.08 | 49.34 | 47.05 | 44.29 | 41.20 | 37.93 | 34.66 | 31.57 | 28.86 | 26.65 | 25.02 | 23.93 | 23.32 | 23.06 | 20 N |
| 15 N | 46.53 | 45.44 | 43.61 | 41.08 | 37.95 | 34.33 | 30.43 | 26.45 | 22.66 | 19.30 | 16.54 | 14.46 | 13.06 | 12.23 | 11.81 | 15 N |
| 10 N | 40.11 | 39.06 | 37.16 | 34.41 | 30.91 | 26.79 | 22.26 | 17.60 | 13.12 | 9.11 | 5.80 | 3.29 | 1.55 | 0.46 | -0.15 | 10 N |
| 5 N | 32.87 | 31.89 | 29.94 | 27.01 | 23.19 | 18.62 | 13.56 | 8.32 | 3.27 | -1.27 | -5.04 | -7.95 | -10.01 | -11.36 | -12.20 | 5 N |
| 0 | 24.82 | 23.93 | 21.96 | 18.91 | 14.86 | 9.98 | 4.56 | -1.05 | -6.47 | -11.35 | -15.43 | -18.62 | -20.95 | -22.56 | -23.64 | 0 |
| 5 S | 16.05 | 15.27 | 13.34 | 10.26 | 6.13 | 1.13 | -4.41 | -10.14 | -15.66 | -20.64 | -24.86 | -28.22 | -30.75 | -32.59 | -33.89 | 5 S |
| 10 S | 6.83 | 6.18 | 4.35 | 1.35 | -2.71 | -7.60 | -13.01 | -18.58 | -23.95 | -28.83 | -33.01 | -36.42 | -39.09 | -41.12 | -42.63 | 10 S |
| 15 S | -2.43 | -2.95 | -4.62 | -7.43 | -11.26 | -15.85 | -20.91 | -26.10 | -31.12 | -35.72 | -39.74 | -43.11 | -45.84 | -48.01 | -49.70 | 15 S |
| 20 S | -11.27 | -11.65 | -13.13 | -15.67 | -19.13 | -23.29 | -27.85 | -32.53 | -37.08 | -41.31 | -45.07 | -48.31 | -51.04 | -53.28 | -55.09 | 20 S |
| 25 S | -19.26 | -19.52 | -20.79 | -23.01 | -26.06 | -29.70 | -33.71 | -37.83 | -41.86 | -45.65 | -49.10 | -52.15 | -54.79 | -57.02 | -58.88 | 25 S |
| 30 S | -26.18 | -26.34 | -27.38 | -29.28 | -31.89 | -35.02 | -38.48 | -42.04 | -45.57 | -48.92 | -52.02 | -54.81 | -57.29 | -59.43 | -61.23 | 30 S |
| 35 S | -32.03 | -32.09 | -32.93 | -34.50 | -36.69 | -39.35 | -42.28 | -45.34 | -48.38 | -51.30 | -54.03 | -56.53 | -58.77 | -60.72 | -62.36 | 35 S |
| 40 S | -37.01 | -36.98 | -37.62 | -38.88 | -40.68 | -42.88 | -45.34 | -47.92 | -50.51 | -53.02 | -55.38 | -57.55 | -59.49 | -61.18 | -62.57 | 40 S |
| 45 S | -41.44 | -41.33 | -41.76 | -42.73 | -44.15 | -45.92 | -47.93 | -50.06 | -52.22 | -54.32 | -56.30 | -58.12 | -59.73 | -61.11 | -62.22 | 45 S |
| 50 S | -45.61 | -45.40 | -45.65 | -46.33 | -47.39 | -48.75 | -50.32 | -52.01 | -53.73 | -55.42 | -57.02 | -58.48 | -59.77 | -60.84 | -61.69 | 50 S |
| 55 S | -49.68 | -49.40 | -49.47 | -49.88 | -50.60 | -51.56 | -52.71 | -53.97 | -55.27 | -56.56 | -57.79 | -58.90 | -59.88 | -60.69 | -61.33 | 55 S |
| 60 S | -53.71 | -53.37 | -53.29 | -53.47 | -53.88 | -54.49 | -55.24 | -56.09 | -57.00 | -57.91 | -58.79 | -59.60 | -60.31 | -60.92 | -61.41 | 60 S |
| 65 S | -57.68 | -57.29 | -57.10 | -57.09 | -57.24 | -57.55 | -57.97 | -58.47 | -59.03 | -59.61 | -60.19 | -60.74 | -61.25 | -61.70 | -62.10 | 65 S |
| 70 S | -61.50 | -61.10 | -60.83 | -60.69 | -60.66 | -60.73 | -60.90 | -61.13 | -61.42 | -61.74 | -62.08 | -62.43 | -62.78 | -63.12 | -63.46 | 70 S |
| 75 S | -65.09 | -64.72 | -64.43 | -64.22 | -64.08 | -64.02 | -64.02 | -64.07 | -64.18 | -64.32 | -64.50 | -64.70 | -64.93 | -65.18 | -65.45 | 75 S |
| 80 S | -68.42 | -68.11 | -67.86 | -67.65 | -67.48 | -67.37 | -67.29 | -67.26 | -67.26 | -67.31 | -67.38 | -67.49 | -67.63 | -67.80 | -68.00 | 80 S |
| 85 S | -71.44 | -71.26 | -71.10 | -70.96 | -70.85 | -70.76 | -70.69 | -70.64 | -70.62 | -70.62 | -70.65 | -70.70 | -70.76 | -70.85 | -70.96 | 85 S |
| 90 S | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | -74.17 | 90 S |
| LAT. | -76.64 | -76.88 | -77.10 | -77.29 | -77.45 | -77.59 | -77.69 | -77.76 | -77.80 | -77.81 | -77.78 | -77.73 | -77.64 | -77.52 | -77.37 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 3 B IGRF INCLINATION (I)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | LAT. |
| 90 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 90 N |
| 85 N | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 85 N |
| 80 N | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 80 N |
| 75 N | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 75 N |
| 70 N | -0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 70 N |
| 65 N | -0.01 | -0.01 | -0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65 N |
| 60 N | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 60 N |
| 55 N | -0.02 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | 55 N |
| 50 N | -0.02 | -0.02 | -0.01 | -0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | -0.00 | 50 N |
| 45 N | -0.03 | -0.02 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | -0.01 | 45 N |
| 40 N | -0.04 | -0.03 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | 40 N |
| 35 N | -0.05 | -0.03 | -0.02 | -0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | -0.00 | -0.01 | -0.02 | 35 N |
| 30 N | -0.06 | -0.04 | -0.02 | -0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.03 | 30 N |
| 25 N | -0.07 | -0.04 | -0.02 | -0.01 | 0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.04 | 25 N |
| 20 N | -0.08 | -0.05 | -0.03 | -0.01 | -0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | -0.00 | -0.02 | -0.03 | -0.05 | 20 N |
| 15 N | -0.10 | -0.07 | -0.04 | -0.02 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 | -0.01 | -0.03 | -0.04 | -0.06 | 15 N |
| 10 N | -0.12 | -0.08 | -0.05 | -0.03 | -0.02 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | -0.00 | -0.01 | -0.03 | -0.05 | -0.07 | 10 N |
| 5 N | -0.14 | -0.10 | -0.07 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | -0.01 | -0.00 | -0.01 | -0.02 | -0.04 | -0.06 | -0.08 | 5 N |
| 0 | -0.16 | -0.12 | -0.09 | -0.07 | -0.06 | -0.04 | -0.03 | -0.02 | -0.02 | -0.01 | -0.02 | -0.03 | -0.05 | -0.06 | -0.08 | 0 |
| 5 S | -0.17 | -0.14 | -0.11 | -0.09 | -0.07 | -0.06 | -0.05 | -0.04 | -0.03 | -0.02 | -0.03 | -0.03 | -0.05 | -0.06 | -0.07 | 5 S |
| 10 S | -0.19 | -0.15 | -0.13 | -0.11 | -0.09 | -0.07 | -0.06 | -0.05 | -0.04 | -0.03 | -0.03 | -0.03 | -0.04 | -0.05 | -0.06 | 10 S |
| 15 S | -0.20 | -0.17 | -0.14 | -0.12 | -0.10 | -0.08 | -0.07 | -0.05 | -0.04 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.05 | 15 S |
| 20 S | -0.20 | -0.18 | -0.15 | -0.13 | -0.11 | -0.09 | -0.07 | -0.05 | -0.04 | -0.03 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | 20 S |
| 25 S | -0.20 | -0.17 | -0.15 | -0.13 | -0.10 | -0.08 | -0.06 | -0.04 | -0.03 | -0.02 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | 25 S |
| 30 S | -0.18 | -0.16 | -0.14 | -0.11 | -0.09 | -0.07 | -0.04 | -0.02 | -0.01 | 0.00 | 0.01 | 0.01 | 0.00 | -0.01 | -0.01 | 30 S |
| 35 S | -0.15 | -0.13 | -0.11 | -0.08 | -0.06 | -0.04 | -0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | 0.01 | -0.01 | 35 S |
| 40 S | -0.11 | -0.09 | -0.07 | -0.05 | -0.02 | 0.00 | 0.02 | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.03 | 0.01 | -0.00 | 40 S |
| 45 S | -0.07 | -0.05 | -0.03 | -0.01 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.07 | 0.06 | 0.05 | 0.03 | 0.02 | 0.00 | 45 S |
| 50 S | -0.03 | -0.01 | 0.01 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.02 | 0.00 | 50 S |
| 55 S | 0.00 | 0.02 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 | 0.07 | 0.05 | 0.04 | 0.03 | 0.01 | 55 S |
| 60 S | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 60 S |
| 65 S | 0.04 | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.07 | 0.07 | 0.06 | 0.06 | 0.05 | 0.04 | 0.03 | 65 S |
| 70 S | 0.05 | 0.06 | 0.06 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.06 | 0.06 | 0.05 | 0.05 | 0.04 | 70 S |
| 75 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 | 75 S |
| 80 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 80 S |
| 85 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 85 S |
| 90 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 90 S |
| LAT. | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 3 B IGRF INCLINATION (I)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | |
| 90 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 90 N |
| 85 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 85 N |
| 80 N | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | 80 N |
| 75 N | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | 75 N |
| 70 N | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | 70 N |
| 65 N | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | 65 N |
| 60 N | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | 60 N |
| 55 N | 0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | 55 N |
| 50 N | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | 50 N |
| 45 N | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | 45 N |
| 40 N | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 40 N |
| 35 N | -0.00 | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 35 N |
| 30 N | -0.01 | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 30 N |
| 25 N | -0.01 | -0.02 | -0.04 | -0.05 | -0.05 | -0.05 | -0.04 | -0.04 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | 25 N |
| 20 N | -0.02 | -0.03 | -0.05 | -0.06 | -0.06 | -0.06 | -0.05 | -0.04 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | 20 N |
| 15 N | -0.03 | -0.04 | -0.06 | -0.07 | -0.08 | -0.07 | -0.06 | -0.05 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.04 | 15 N |
| 10 N | -0.03 | -0.05 | -0.07 | -0.08 | -0.09 | -0.08 | -0.07 | -0.05 | -0.03 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | 10 N |
| 5 N | -0.04 | -0.06 | -0.08 | -0.09 | -0.09 | -0.08 | -0.06 | -0.05 | -0.03 | -0.02 | -0.02 | -0.02 | -0.03 | -0.04 | -0.05 | 5 N |
| 0 | -0.05 | -0.06 | -0.08 | -0.09 | -0.08 | -0.07 | -0.06 | -0.04 | -0.03 | -0.02 | -0.01 | -0.02 | -0.03 | -0.04 | -0.05 | 0 |
| 5 S | -0.05 | -0.06 | -0.07 | -0.08 | -0.07 | -0.06 | -0.05 | -0.03 | -0.02 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | 5 S |
| 10 S | -0.04 | -0.05 | -0.06 | -0.07 | -0.06 | -0.05 | -0.04 | -0.03 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.03 | -0.04 | 10 S |
| 15 S | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.03 | -0.03 | 15 S |
| 20 S | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | 20 S |
| 25 S | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | 25 S |
| 30 S | 0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 30 S |
| 35 S | 0.02 | 0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 35 S |
| 40 S | 0.03 | 0.01 | -0.00 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | 40 S |
| 45 S | 0.03 | 0.02 | 0.00 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.03 | 45 S |
| 50 S | 0.04 | 0.02 | 0.00 | -0.01 | -0.02 | -0.03 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.04 | -0.03 | 50 S |
| 55 S | 0.04 | 0.03 | 0.01 | -0.00 | -0.01 | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.04 | 55 S |
| 60 S | 0.04 | 0.03 | 0.02 | 0.01 | 0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | 60 S |
| 65 S | 0.05 | 0.04 | 0.03 | 0.02 | 0.02 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | 65 S |
| 70 S | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 70 S |
| 75 S | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 75 S |
| 80 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 80 S |
| 85 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 85 S |
| 90 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 90 S |
| | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 3 B IGRF INCLINATION (I)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (DOWNWARD POSITIVE)

| E.LONG. / LAT. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. / LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | |
| 90 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 90 N |
| 85 N | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 85 N |
| 80 N | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 80 N |
| 75 N | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 75 N |
| 70 N | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 70 N |
| 65 N | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 65 N |
| 60 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | 60 N |
| 55 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | 55 N |
| 50 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 50 N |
| 45 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 45 N |
| 40 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 40 N |
| 35 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.00 | 35 N |
| 30 N | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.00 | 30 N |
| 25 N | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.04 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | 25 N |
| 20 N | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.03 | -0.02 | -0.01 | -0.01 | -0.00 | 20 N |
| 15 N | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | -0.00 | 15 N |
| 10 N | -0.03 | -0.03 | -0.04 | -0.05 | -0.06 | -0.06 | -0.06 | -0.05 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | -0.00 | 0.00 | 10 N |
| 5 N | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.06 | -0.06 | -0.06 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | 0.00 | 0.01 | 5 N |
| 0 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.06 | -0.06 | -0.06 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | 0.01 | 0.02 | 0 |
| 5 S | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.06 | -0.06 | -0.05 | -0.05 | -0.04 | -0.03 | -0.02 | -0.00 | 0.01 | 0.02 | 5 S |
| 10 S | -0.02 | -0.03 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.03 | -0.03 | -0.01 | -0.00 | 0.01 | 0.02 | 10 S |
| 15 S | -0.02 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | -0.00 | 0.01 | 0.02 | 15 S |
| 20 S | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.03 | -0.03 | -0.03 | -0.02 | -0.01 | -0.00 | 0.01 | 0.01 | 20 S |
| 25 S | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.01 | -0.00 | 0.00 | 0.01 | 25 S |
| 30 S | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 30 S |
| 35 S | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.00 | 35 S |
| 40 S | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 40 S |
| 45 S | -0.04 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | -0.00 | 0.00 | 45 S |
| 50 S | -0.04 | -0.04 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 50 S |
| 55 S | -0.05 | -0.05 | -0.04 | -0.04 | -0.03 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 55 S |
| 60 S | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.02 | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 60 S |
| 65 S | -0.01 | -0.02 | -0.02 | -0.03 | -0.04 | -0.04 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 65 S |
| 70 S | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.04 | 0.04 | 70 S |
| 75 S | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 75 S |
| 80 S | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 80 S |
| 85 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 85 S |
| 90 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 90 S |
| LAT. | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 3 B IGRF INCLINATION (I)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 LAT. |
| 90 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 90 N |
| 85 N | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 85 N |
| 80 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 80 N |
| 75 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 75 N |
| 70 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 70 N |
| 65 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 65 N |
| 60 N | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 60 N |
| 55 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 55 N |
| 50 N | -0.01 | -0.01 | -0.01 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.03 50 N |
| 45 N | -0.01 | -0.01 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.03 45 N |
| 40 N | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 40 N |
| 35 N | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 35 N |
| 30 N | -0.01 | -0.01 | -0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 30 N |
| 25 N | -0.01 | -0.01 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 25 N |
| 20 N | -0.01 | -0.01 | -0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 20 N |
| 15 N | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.02 15 N |
| 10 N | -0.01 | -0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.04 10 N |
| 5 N | -0.01 | 0.00 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.07 | 0.07 | 0.06 | 0.06 5 N |
| 0 | -0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 | 0.07 0 |
| 5 S | -0.00 | 0.01 | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 | 0.08 | 0.07 5 S |
| 10 S | -0.00 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.08 | 0.08 | 0.07 10 S |
| 15 S | -0.00 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 0.06 | 0.07 | 0.07 | 0.06 15 S |
| 20 S | -0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 20 S |
| 25 S | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 25 S |
| 30 S | -0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 30 S |
| 35 S | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.01 35 S |
| 40 S | -0.00 | -0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | 0.00 40 S |
| 45 S | -0.00 | -0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | 0.00 45 S |
| 50 S | -0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 0.00 | 0.01 50 S |
| 55 S | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 55 S |
| 60 S | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 60 S |
| 65 S | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 65 S |
| 70 S | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 70 S |
| 75 S | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 75 S |
| 80 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 80 S |
| 85 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 85 S |
| 90 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 90 S |
| LAT. | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |

TABLE 3 B IGRF INCLINATION (I)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | LAT. |
| 90 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 90 N |
| 85 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 85 N |
| 80 N | -0.01 | -0.01 | -0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 80 N |
| 75 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 75 N |
| 70 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70 N |
| 65 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 65 N |
| 60 N | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | 60 N |
| 55 N | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | 55 N |
| 50 N | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | 50 N |
| 45 N | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.05 | -0.05 | -0.06 | -0.06 | -0.07 | -0.07 | -0.08 | 45 N |
| 40 N | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.03 | -0.04 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.08 | -0.09 | -0.10 | 40 N |
| 35 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.03 | -0.03 | -0.04 | -0.05 | -0.06 | -0.08 | -0.09 | -0.10 | -0.11 | -0.12 | 35 N |
| 30 N | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 | -0.03 | -0.04 | -0.05 | -0.06 | -0.08 | -0.10 | -0.11 | -0.12 | -0.14 | 30 N |
| 25 N | 0.00 | -0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.03 | -0.05 | -0.06 | -0.08 | -0.10 | -0.12 | -0.14 | -0.15 | 25 N |
| 20 N | 0.01 | 0.01 | 0.01 | 0.00 | -0.00 | -0.01 | -0.02 | -0.03 | -0.04 | -0.06 | -0.08 | -0.10 | -0.13 | -0.15 | -0.17 | 20 N |
| 15 N | 0.03 | 0.03 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.02 | -0.04 | -0.06 | -0.08 | -0.10 | -0.13 | -0.15 | -0.18 | 15 N |
| 10 N | 0.05 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | -0.00 | -0.02 | -0.03 | -0.05 | -0.07 | -0.10 | -0.13 | -0.15 | -0.18 | 10 N |
| 5 N | 0.07 | 0.06 | 0.06 | 0.04 | 0.03 | 0.02 | 0.01 | -0.01 | -0.02 | -0.04 | -0.07 | -0.09 | -0.12 | -0.15 | -0.18 | 5 N |
| 0 | 0.08 | 0.08 | 0.07 | 0.06 | 0.04 | 0.03 | 0.02 | 0.00 | -0.02 | -0.03 | -0.06 | -0.08 | -0.11 | -0.15 | -0.18 | 0 |
| 5 S | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.02 | 0.01 | -0.01 | -0.02 | -0.05 | -0.08 | -0.11 | -0.14 | -0.18 | 5 S |
| 10 S | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.00 | -0.02 | -0.04 | -0.07 | -0.10 | -0.13 | -0.17 | 10 S |
| 15 S | 0.07 | 0.07 | 0.06 | 0.06 | 0.05 | 0.04 | 0.03 | 0.02 | 0.01 | -0.01 | -0.03 | -0.06 | -0.09 | -0.12 | -0.16 | 15 S |
| 20 S | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.03 | 0.02 | 0.01 | -0.00 | -0.02 | -0.05 | -0.08 | -0.11 | -0.15 | 20 S |
| 25 S | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.00 | -0.02 | -0.04 | -0.07 | -0.11 | -0.14 | 25 S |
| 30 S | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.02 | 0.02 | 0.00 | -0.01 | -0.04 | -0.06 | -0.10 | -0.13 | 30 S |
| 35 S | -0.01 | -0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.00 | -0.01 | -0.03 | -0.06 | -0.08 | -0.11 | 35 S |
| 40 S | -0.01 | -0.01 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | -0.01 | -0.03 | -0.05 | -0.07 | -0.09 | 40 S |
| 45 S | -0.01 | -0.00 | 0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | -0.00 | -0.02 | -0.04 | -0.05 | -0.07 | 45 S |
| 50 S | -0.00 | 0.00 | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.01 | -0.01 | -0.02 | -0.04 | -0.05 | 50 S |
| 55 S | 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 0.01 | -0.00 | -0.02 | -0.03 | 55 S |
| 60 S | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 | 0.01 | 0.00 | -0.00 | 60 S |
| 65 S | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 | 65 S |
| 70 S | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.04 | 0.03 | 70 S |
| 75 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 75 S |
| 80 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.05 | 80 S |
| 85 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 85 S |
| 90 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 90 S |
| LAT. | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 3 B IGRF INCLINATION (I)

GRID-POINT VALUES OF SECULAR CHANGE IN DEGREES PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 90 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 90 N |
| 85 N | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 85 N |
| 80 N | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 80 N |
| 75 N | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 75 N |
| 70 N | 0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | 70 N |
| 65 N | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.00 | 65 N |
| 60 N | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | 60 N |
| 55 N | -0.03 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.03 | -0.03 | -0.02 | -0.01 | -0.01 | 55 N |
| 50 N | -0.05 | -0.05 | -0.05 | -0.06 | -0.06 | -0.06 | -0.06 | -0.05 | -0.05 | -0.05 | -0.04 | -0.03 | -0.02 | -0.02 | -0.01 | 50 N |
| 45 N | -0.07 | -0.07 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.08 | -0.07 | -0.06 | -0.05 | -0.04 | -0.03 | -0.02 | -0.01 | 45 N |
| 40 N | -0.08 | -0.09 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.09 | -0.08 | -0.07 | -0.05 | -0.04 | -0.03 | -0.01 | 40 N |
| 35 N | -0.10 | -0.11 | -0.12 | -0.12 | -0.13 | -0.13 | -0.13 | -0.12 | -0.12 | -0.10 | -0.09 | -0.07 | -0.05 | -0.03 | -0.02 | 35 N |
| 30 N | -0.11 | -0.12 | -0.14 | -0.15 | -0.15 | -0.16 | -0.16 | -0.15 | -0.14 | -0.13 | -0.11 | -0.08 | -0.06 | -0.04 | -0.02 | 30 N |
| 25 N | -0.12 | -0.14 | -0.15 | -0.17 | -0.18 | -0.18 | -0.19 | -0.18 | -0.17 | -0.15 | -0.13 | -0.10 | -0.07 | -0.04 | -0.02 | 25 N |
| 20 N | -0.13 | -0.15 | -0.17 | -0.18 | -0.20 | -0.21 | -0.22 | -0.21 | -0.20 | -0.18 | -0.15 | -0.12 | -0.08 | -0.05 | -0.03 | 20 N |
| 15 N | -0.13 | -0.15 | -0.18 | -0.20 | -0.22 | -0.24 | -0.25 | -0.25 | -0.23 | -0.21 | -0.18 | -0.14 | -0.10 | -0.07 | -0.04 | 15 N |
| 10 N | -0.13 | -0.15 | -0.18 | -0.21 | -0.24 | -0.26 | -0.27 | -0.28 | -0.27 | -0.24 | -0.20 | -0.16 | -0.12 | -0.08 | -0.05 | 10 N |
| 5 N | -0.12 | -0.15 | -0.18 | -0.22 | -0.25 | -0.28 | -0.29 | -0.30 | -0.29 | -0.26 | -0.23 | -0.18 | -0.14 | -0.10 | -0.07 | 5 N |
| 0 | -0.11 | -0.15 | -0.18 | -0.22 | -0.26 | -0.29 | -0.31 | -0.32 | -0.30 | -0.28 | -0.24 | -0.20 | -0.16 | -0.12 | -0.09 | 0 |
| 5 S | -0.11 | -0.14 | -0.18 | -0.22 | -0.26 | -0.29 | -0.31 | -0.32 | -0.31 | -0.29 | -0.25 | -0.21 | -0.17 | -0.14 | -0.11 | 5 S |
| 10 S | -0.10 | -0.13 | -0.17 | -0.21 | -0.25 | -0.28 | -0.30 | -0.31 | -0.31 | -0.29 | -0.26 | -0.22 | -0.19 | -0.15 | -0.13 | 10 S |
| 15 S | -0.09 | -0.12 | -0.16 | -0.20 | -0.24 | -0.27 | -0.29 | -0.30 | -0.29 | -0.28 | -0.26 | -0.23 | -0.20 | -0.17 | -0.14 | 15 S |
| 20 S | -0.08 | -0.11 | -0.15 | -0.19 | -0.22 | -0.25 | -0.27 | -0.28 | -0.28 | -0.27 | -0.25 | -0.23 | -0.20 | -0.18 | -0.15 | 20 S |
| 25 S | -0.07 | -0.11 | -0.14 | -0.17 | -0.20 | -0.23 | -0.24 | -0.25 | -0.26 | -0.25 | -0.24 | -0.22 | -0.20 | -0.17 | -0.15 | 25 S |
| 30 S | -0.06 | -0.10 | -0.13 | -0.16 | -0.18 | -0.20 | -0.22 | -0.23 | -0.23 | -0.22 | -0.21 | -0.20 | -0.18 | -0.16 | -0.14 | 30 S |
| 35 S | -0.06 | -0.08 | -0.11 | -0.14 | -0.16 | -0.18 | -0.19 | -0.20 | -0.20 | -0.19 | -0.18 | -0.17 | -0.15 | -0.13 | -0.11 | 35 S |
| 40 S | -0.05 | -0.07 | -0.09 | -0.12 | -0.13 | -0.15 | -0.16 | -0.16 | -0.16 | -0.16 | -0.15 | -0.13 | -0.11 | -0.09 | -0.07 | 40 S |
| 45 S | -0.04 | -0.05 | -0.07 | -0.09 | -0.10 | -0.12 | -0.12 | -0.12 | -0.12 | -0.12 | -0.10 | -0.09 | -0.07 | -0.05 | -0.03 | 45 S |
| 50 S | -0.02 | -0.04 | -0.05 | -0.06 | -0.07 | -0.08 | -0.08 | -0.08 | -0.08 | -0.07 | -0.06 | -0.05 | -0.03 | -0.01 | 0.01 | 50 S |
| 55 S | -0.00 | -0.02 | -0.03 | -0.03 | -0.04 | -0.05 | -0.05 | -0.05 | -0.04 | -0.04 | -0.02 | -0.01 | 0.00 | 0.02 | 0.04 | 55 S |
| 60 S | 0.01 | 0.00 | -0.00 | -0.01 | -0.01 | -0.02 | -0.02 | -0.01 | -0.01 | -0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 60 S |
| 65 S | 0.03 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.05 | 0.06 | 65 S |
| 70 S | 0.04 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 70 S |
| 75 S | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 75 S |
| 80 S | 0.06 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 80 S |
| 85 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 85 S |
| 90 S | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 90 S |
| | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 4 A IGRF NORTH COMPONENT (X)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -1052 | -946 | -817 | -665 | -491 | -300 | -96 | 115 | 330 | 541 | 741 | 924 | 1083 | 1212 | 1306 | LAT. |
| 90 N | 1943 | 2080 | 2201 | 2305 | 2392 | 2460 | 2510 | 2540 | 2552 | 2544 | 2516 | 2469 | 2404 | 2320 | 2219 | 90 N |
| 85 N | 4504 | 4681 | 4811 | 4893 | 4926 | 4913 | 4854 | 4753 | 4612 | 4437 | 4232 | 4004 | 3756 | 3497 | 3232 | 85 N |
| 80 N | 6689 | 6905 | 7055 | 7137 | 7153 | 7103 | 6991 | 6820 | 6595 | 6324 | 6012 | 5669 | 5303 | 4925 | 4545 | 80 N |
| 75 N | 8623 | 8868 | 9039 | 9136 | 9161 | 9114 | 8998 | 8817 | 8575 | 8279 | 7934 | 7551 | 7139 | 6709 | 6275 | 75 N |
| 70 N | 10457 | 10715 | 10901 | 11017 | 11064 | 11044 | 10959 | 10811 | 10602 | 10339 | 10025 | 9668 | 9278 | 8866 | 8444 | 70 N |
| 65 N | 12335 | 12590 | 12780 | 12908 | 12978 | 12991 | 12949 | 12854 | 12707 | 12512 | 12271 | 11992 | 11680 | 11346 | 11000 | 65 N |
| 60 N | 14365 | 14604 | 14786 | 14916 | 14999 | 15038 | 15035 | 14993 | 14913 | 14798 | 14651 | 14477 | 14280 | 14069 | 13850 | 60 N |
| 55 N | 16601 | 16821 | 16989 | 17112 | 17197 | 17249 | 17273 | 17272 | 17250 | 17209 | 17155 | 17093 | 17027 | 16963 | 16904 | 55 N |
| 50 N | 19041 | 19250 | 19407 | 19521 | 19604 | 19662 | 19702 | 19730 | 19751 | 19771 | 19798 | 19838 | 19899 | 19983 | 20092 | 50 N |
| 45 N | 21629 | 21845 | 22004 | 22120 | 22207 | 22274 | 22331 | 22384 | 22440 | 22508 | 22599 | 22723 | 22890 | 23106 | 23367 | 45 N |
| 40 N | 24257 | 24503 | 24687 | 24827 | 24937 | 25031 | 25118 | 25204 | 25296 | 25406 | 25548 | 25735 | 25983 | 26299 | 26679 | 40 N |
| 35 N | 26771 | 27074 | 27311 | 27502 | 27665 | 27812 | 27950 | 28087 | 28225 | 28381 | 28565 | 28799 | 29102 | 29483 | 29942 | 35 N |
| 30 N | 28988 | 29368 | 29683 | 29954 | 30197 | 30423 | 30639 | 30846 | 31047 | 31252 | 31479 | 31750 | 32088 | 32506 | 33005 | 30 N |
| 25 N | 30707 | 31174 | 31582 | 31951 | 32295 | 32620 | 32929 | 33220 | 33492 | 33755 | 34028 | 34334 | 34690 | 35130 | 35655 | 25 N |
| 20 N | 31742 | 32287 | 32789 | 33259 | 33707 | 34134 | 34537 | 34911 | 35256 | 35580 | 35903 | 36250 | 36646 | 37109 | 37635 | 20 N |
| 15 N | 31950 | 32549 | 33124 | 33679 | 34214 | 34725 | 35205 | 35648 | 36054 | 36436 | 36813 | 37211 | 37653 | 38152 | 38704 | 15 N |
| 10 N | 31268 | 31879 | 32489 | 33092 | 33678 | 34236 | 34760 | 35243 | 35693 | 36123 | 36557 | 37018 | 37526 | 38088 | 38691 | 10 N |
| 5 N | 29735 | 30304 | 30897 | 31496 | 32082 | 32641 | 33165 | 33657 | 34127 | 34596 | 35087 | 35624 | 36217 | 36865 | 37550 | 5 N |
| 0 | 27495 | 27967 | 28484 | 29020 | 29552 | 30062 | 30547 | 31015 | 31486 | 31984 | 32534 | 33153 | 33843 | 34594 | 35381 | 0 |
| 5 S | 24783 | 25108 | 25497 | 25917 | 26344 | 26764 | 27178 | 27603 | 28063 | 28585 | 29192 | 29892 | 30679 | 31534 | 32424 | 5 S |
| 10 S | 21889 | 22033 | 22254 | 22521 | 22810 | 23115 | 23443 | 23816 | 24262 | 24807 | 25464 | 26235 | 27103 | 28040 | 29013 | 10 S |
| 15 S | 19106 | 19059 | 19096 | 19193 | 19334 | 19519 | 19763 | 20090 | 20525 | 21089 | 21786 | 22605 | 23521 | 24500 | 25511 | 15 S |
| 20 S | 16689 | 16463 | 16326 | 16262 | 16267 | 16348 | 16524 | 16817 | 17248 | 17825 | 18541 | 19373 | 20288 | 21253 | 22238 | 20 S |
| 25 S | 14815 | 14444 | 14164 | 13972 | 13872 | 13879 | 14011 | 14287 | 14714 | 15290 | 15993 | 16793 | 17651 | 18535 | 19422 | 25 S |
| 30 S | 13572 | 13103 | 12728 | 12454 | 12293 | 12260 | 12372 | 12638 | 13055 | 13605 | 14257 | 14973 | 15713 | 16448 | 17167 | 30 S |
| 35 S | 12966 | 12449 | 12030 | 11723 | 11542 | 11501 | 11608 | 11863 | 12251 | 12742 | 13298 | 13876 | 14441 | 14969 | 15458 | 35 S |
| 40 S | 12940 | 12418 | 12000 | 11700 | 11528 | 11495 | 11598 | 11827 | 12156 | 12549 | 12962 | 13356 | 13698 | 13974 | 14189 | 40 S |
| 45 S | 13404 | 12906 | 12515 | 12241 | 12089 | 12060 | 12143 | 12317 | 12550 | 12802 | 13032 | 13203 | 13291 | 13283 | 13207 | 45 S |
| 50 S | 14247 | 13784 | 13426 | 13174 | 13029 | 12980 | 13010 | 13090 | 13187 | 13266 | 13274 | 13190 | 13015 | 12726 | 12347 | 50 S |
| 55 S | 15346 | 14913 | 14571 | 14319 | 14147 | 14039 | 13971 | 13915 | 13836 | 13700 | 13476 | 13143 | 12691 | 12127 | 11471 | 55 S |
| 60 S | 16556 | 16135 | 15783 | 15492 | 15249 | 15035 | 14825 | 14592 | 14306 | 13939 | 13471 | 12888 | 12183 | 11370 | 10470 | 60 S |
| 65 S | 17696 | 17268 | 16874 | 16506 | 16149 | 15787 | 15397 | 14958 | 14447 | 13845 | 13139 | 12321 | 11394 | 10370 | 9269 | 65 S |
| 70 S | 18551 | 18097 | 17637 | 17162 | 16664 | 16127 | 15539 | 14884 | 14148 | 13321 | 12397 | 11376 | 10263 | 9072 | 7820 | 70 S |
| 75 S | 18883 | 18392 | 17852 | 17261 | 16613 | 15902 | 15120 | 14263 | 13323 | 12300 | 11194 | 10010 | 8754 | 7441 | 6087 | 75 S |
| 80 S | 18465 | 17932 | 17317 | 16619 | 15839 | 14978 | 14036 | 13014 | 11914 | 10741 | 9501 | 8200 | 6850 | 5462 | 4050 | 80 S |
| 85 S | 17133 | 16560 | 15882 | 15104 | 14231 | 13267 | 12218 | 11091 | 9892 | 8629 | 7312 | 5951 | 4556 | 3138 | 1710 | 85 S |
| 90 S | 14827 | 14217 | 13497 | 12676 | 11757 | 10750 | 9660 | 8497 | 7269 | 5986 | 4658 | 3294 | 1904 | 501 | -906 | 90 S |
| LAT. | 11618 | 10974 | 10234 | 9404 | 8488 | 7495 | 6430 | 5301 | 4114 | 2878 | 1602 | 292 | -1040 | -2387 | -3739 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 4 A IGRF NORTH COMPONENT (X)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 1083 | 1212 | 1306 | 1360 | 1370 | 1332 | 1246 | 1112 | 929 | 700 | 428 | 117 | -226 | -598 | -991 | LAT. |
| 90 N | 2404 | 2320 | 2219 | 2100 | 1966 | 1817 | 1654 | 1478 | 1291 | 1094 | 889 | 677 | 460 | 240 | 17 | 90 N |
| 85 N | 3756 | 3497 | 3232 | 2967 | 2709 | 2461 | 2231 | 2021 | 1835 | 1675 | 1542 | 1436 | 1357 | 1302 | 1268 | 85 N |
| 80 N | 5303 | 4925 | 4545 | 4174 | 3822 | 3500 | 3218 | 2983 | 2801 | 2679 | 2617 | 2616 | 2673 | 2783 | 2938 | 80 N |
| 75 N | 7139 | 6709 | 6275 | 5850 | 5450 | 5088 | 4779 | 4535 | 4366 | 4282 | 4286 | 4380 | 4560 | 4810 | 5144 | 75 N |
| 70 N | 9278 | 8866 | 8444 | 8028 | 7634 | 7279 | 6979 | 6752 | 6612 | 6570 | 6633 | 6805 | 7082 | 7456 | 7913 | 70 N |
| 65 N | 11680 | 11346 | 11000 | 10656 | 10328 | 10034 | 9790 | 9614 | 9523 | 9529 | 9644 | 9872 | 10211 | 10652 | 11180 | 65 N |
| 60 N | 14280 | 14069 | 13850 | 13634 | 13430 | 13250 | 13108 | 13019 | 12999 | 13060 | 13215 | 13470 | 13826 | 14275 | 14804 | 60 N |
| 55 N | 17027 | 16963 | 16904 | 16854 | 16815 | 16791 | 16788 | 16814 | 16879 | 16995 | 17174 | 17423 | 17746 | 18140 | 18593 | 55 N |
| 50 N | 19899 | 19983 | 20092 | 20222 | 20366 | 20518 | 20670 | 20822 | 20975 | 21135 | 21313 | 21519 | 21760 | 22037 | 22344 | 50 N |
| 45 N | 22890 | 23106 | 23367 | 23665 | 23983 | 24301 | 24601 | 24866 | 25090 | 25272 | 25420 | 25545 | 25658 | 25768 | 25876 | 45 N |
| 40 N | 25983 | 26299 | 26679 | 27110 | 27568 | 28019 | 28432 | 28778 | 29040 | 29211 | 29297 | 29309 | 29263 | 29175 | 29055 | 40 N |
| 35 N | 29102 | 29483 | 29942 | 30460 | 31007 | 31540 | 32017 | 32398 | 32658 | 32784 | 32779 | 32659 | 32443 | 32152 | 31804 | 35 N |
| 30 N | 32088 | 32506 | 33005 | 33566 | 34151 | 34714 | 35203 | 35573 | 35793 | 35845 | 35741 | 35488 | 35113 | 34641 | 34098 | 30 N |
| 25 N | 34699 | 35139 | 35655 | 36225 | 36811 | 37363 | 37826 | 38154 | 38313 | 38290 | 38068 | 37725 | 37228 | 36625 | 35944 | 25 N |
| 20 N | 36646 | 37109 | 37635 | 38205 | 38777 | 39301 | 39725 | 40003 | 40105 | 40021 | 39757 | 39332 | 38772 | 38106 | 37363 | 20 N |
| 15 N | 37653 | 38152 | 38704 | 39284 | 39853 | 40350 | 40756 | 41008 | 41086 | 40964 | 40713 | 40290 | 39741 | 39092 | 38368 | 15 N |
| 10 N | 37526 | 38083 | 38691 | 39310 | 39904 | 40428 | 40839 | 41106 | 41212 | 41155 | 40944 | 40596 | 40138 | 39583 | 38955 | 10 N |
| 5 N | 36217 | 36865 | 37550 | 38241 | 38898 | 39481 | 39954 | 40296 | 40493 | 40548 | 40469 | 40270 | 39965 | 39571 | 39099 | 5 N |
| 0 | 33843 | 34594 | 35381 | 36169 | 36921 | 37602 | 38184 | 38652 | 38997 | 39222 | 39331 | 39332 | 39233 | 39041 | 38763 | 0 |
| 5 S | 30679 | 31534 | 32424 | 33316 | 34175 | 34973 | 35691 | 36317 | 36845 | 37274 | 37604 | 37833 | 37960 | 37986 | 37912 | 5 S |
| 10 S | 27103 | 28040 | 29013 | 29989 | 30940 | 31846 | 32696 | 33481 | 34195 | 34831 | 35381 | 35832 | 36178 | 36409 | 36527 | 10 S |
| 15 S | 23521 | 24500 | 25511 | 26525 | 27524 | 28499 | 29444 | 30353 | 31220 | 32030 | 32765 | 33405 | 33933 | 34336 | 34613 | 15 S |
| 20 S | 20288 | 21253 | 22238 | 23225 | 24207 | 25183 | 26157 | 27127 | 28081 | 29001 | 29859 | 30629 | 31285 | 31812 | 32205 | 20 S |
| 25 S | 17651 | 18535 | 19422 | 20306 | 21190 | 22087 | 23007 | 23950 | 24907 | 25852 | 26754 | 27580 | 28300 | 28896 | 29362 | 25 S |
| 30 S | 15713 | 16448 | 17167 | 17872 | 18561 | 19314 | 20091 | 20916 | 21782 | 22662 | 23523 | 24329 | 25050 | 25663 | 26163 | 30 S |
| 35 S | 14441 | 14969 | 15458 | 15921 | 16386 | 16883 | 17437 | 18061 | 18749 | 19480 | 20222 | 20939 | 21602 | 22190 | 22691 | 35 S |
| 40 S | 13698 | 13974 | 14189 | 14366 | 14539 | 14747 | 15021 | 15379 | 15823 | 16337 | 16896 | 17469 | 18029 | 18554 | 19033 | 40 S |
| 45 S | 13291 | 13288 | 13207 | 13076 | 12936 | 12828 | 12790 | 12845 | 13002 | 13256 | 13589 | 13977 | 14399 | 14833 | 15268 | 45 S |
| 50 S | 13015 | 12726 | 12347 | 11912 | 11462 | 11040 | 10686 | 10429 | 10287 | 10262 | 10347 | 10527 | 10785 | 11104 | 11472 | 50 S |
| 55 S | 12691 | 12127 | 11471 | 10755 | 10020 | 9309 | 8662 | 8112 | 7662 | 7383 | 7217 | 7173 | 7255 | 7437 | 7710 | 55 S |
| 60 S | 12183 | 11370 | 10470 | 9512 | 8535 | 7579 | 6682 | 5878 | 5192 | 4644 | 4240 | 3984 | 3871 | 3893 | 4039 | 60 S |
| 65 S | 11394 | 10370 | 9269 | 8120 | 6954 | 5808 | 4715 | 3709 | 2814 | 2053 | 1438 | 976 | 670 | 516 | 506 | 65 S |
| 70 S | 10263 | 9072 | 7820 | 6531 | 5233 | 3954 | 2725 | 1573 | 522 | -406 | -1138 | -1842 | -2334 | -2672 | -2860 | 70 S |
| 75 S | 8754 | 7441 | 6087 | 4709 | 3331 | 1976 | 665 | -577 | -1732 | -2780 | -3708 | -4504 | -5150 | -5673 | -6042 | 75 S |
| 80 S | 6850 | 5462 | 4050 | 2630 | 1217 | -170 | -1515 | -2801 | -4012 | -5133 | -6152 | -7059 | -7845 | -8505 | -9034 | 80 S |
| 85 S | 4556 | 3138 | 1710 | 284 | -1127 | -2511 | -3855 | -5146 | -6373 | -7524 | -8590 | -9560 | -10427 | -11185 | -11828 | 85 S |
| 90 S | 1904 | 501 | -906 | -2306 | -3689 | -5044 | -6361 | -7629 | -8839 | -9982 | -11049 | -12031 | -12923 | -13715 | -14404 | 90 S |
| LAT. | -1040 | -2387 | -3739 | -5086 | -6417 | -7722 | -8991 | -10213 | -11380 | -12481 | -13507 | -14451 | -15305 | -16063 | -16720 | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 4 A IGRF NORTH COMPONENT (X)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -226 | -598 | -991 | -1397 | -1810 | -2221 | -2624 | -3012 | -3377 | -3714 | -4017 | -4282 | -4504 | -4681 | -4811 | |
| 90 N | 460 | 240 | 17 | -204 | -425 | -643 | -856 | -1062 | -1260 | -1449 | -1626 | -1791 | -1943 | -2080 | -2201 | 90 N |
| 85 N | 1357 | 1302 | 1268 | 1250 | 1246 | 1249 | 1253 | 1255 | 1248 | 1228 | 1190 | 1132 | 1052 | 946 | 817 | 85 N |
| 80 N | 2673 | 2783 | 2938 | 3129 | 3344 | 3571 | 3797 | 4008 | 4192 | 4337 | 4433 | 4472 | 4448 | 4358 | 4201 | 80 N |
| 75 N | 4560 | 4818 | 5144 | 5522 | 5934 | 6360 | 6781 | 7173 | 7519 | 7799 | 7999 | 8107 | 8114 | 8017 | 7815 | 75 N |
| 70 N | 7082 | 7456 | 7913 | 8432 | 8991 | 9563 | 10121 | 10637 | 11087 | 11448 | 11702 | 11836 | 11841 | 11715 | 11457 | 70 N |
| 65 N | 10211 | 10652 | 11180 | 11774 | 12405 | 13044 | 13658 | 14217 | 14694 | 15064 | 15310 | 15419 | 15386 | 15210 | 14895 | 65 N |
| 60 N | 13826 | 14275 | 14804 | 15390 | 16005 | 16617 | 17193 | 17703 | 18120 | 18422 | 18594 | 18628 | 18524 | 18285 | 17918 | 60 N |
| 55 N | 17746 | 18140 | 18593 | 19086 | 19593 | 20085 | 20531 | 20904 | 21180 | 21343 | 21385 | 21303 | 21102 | 20793 | 20385 | 55 N |
| 50 N | 21760 | 22037 | 22344 | 22668 | 22989 | 23282 | 23522 | 23688 | 23763 | 23735 | 23607 | 23382 | 23071 | 22691 | 22256 | 50 N |
| 45 N | 25658 | 25768 | 25876 | 25976 | 26055 | 26098 | 26087 | 26006 | 25847 | 25606 | 25291 | 24914 | 24493 | 24048 | 23597 | 45 N |
| 40 N | 29263 | 29175 | 29055 | 28905 | 28721 | 28497 | 28223 | 27891 | 27499 | 27050 | 26558 | 26039 | 25519 | 25020 | 24563 | 40 N |
| 35 N | 32443 | 32152 | 31804 | 31411 | 30978 | 30506 | 29993 | 29438 | 28844 | 28220 | 27581 | 26950 | 26352 | 25814 | 25359 | 35 N |
| 30 N | 35113 | 34641 | 34098 | 33501 | 32863 | 32192 | 31492 | 30769 | 30027 | 29279 | 28541 | 27836 | 27191 | 26633 | 26186 | 30 N |
| 25 N | 37228 | 36625 | 35944 | 35207 | 34431 | 33631 | 32815 | 31992 | 31169 | 30359 | 29577 | 28844 | 28186 | 27628 | 27194 | 25 N |
| 20 N | 38772 | 38106 | 37363 | 36564 | 35732 | 34881 | 34024 | 33173 | 32336 | 31525 | 30753 | 30038 | 29401 | 28865 | 28449 | 20 N |
| 15 N | 39741 | 39092 | 38368 | 37590 | 36780 | 35953 | 35126 | 34310 | 33518 | 32759 | 32045 | 31387 | 30802 | 30306 | 29915 | 15 N |
| 10 N | 40138 | 39583 | 38955 | 38272 | 37551 | 36811 | 36069 | 35340 | 34636 | 33969 | 33346 | 32775 | 32266 | 31826 | 31465 | 10 N |
| 5 N | 39965 | 39571 | 39099 | 38565 | 37984 | 37375 | 36755 | 36144 | 35556 | 35002 | 34491 | 34025 | 33605 | 33232 | 32906 | 5 N |
| 0 | 39233 | 39041 | 38763 | 38410 | 37996 | 37539 | 37061 | 36581 | 36119 | 35688 | 35294 | 34938 | 34612 | 34310 | 34024 | 0 |
| 5 S | 37960 | 37986 | 37912 | 37747 | 37505 | 37204 | 36867 | 36519 | 36181 | 35867 | 35586 | 35333 | 35099 | 34869 | 34627 | 5 S |
| 10 S | 36178 | 36409 | 36527 | 36536 | 36452 | 36294 | 36088 | 35861 | 35635 | 35428 | 35247 | 35088 | 34938 | 34776 | 34584 | 10 S |
| 15 S | 33933 | 34336 | 34613 | 34768 | 34817 | 34782 | 34690 | 34568 | 34441 | 34327 | 34233 | 34156 | 34081 | 33989 | 33855 | 15 S |
| 20 S | 31285 | 31812 | 32205 | 32470 | 32624 | 32690 | 32694 | 32664 | 32625 | 32594 | 32578 | 32575 | 32572 | 32550 | 32488 | 20 S |
| 25 S | 28300 | 28896 | 29362 | 29704 | 29938 | 30086 | 30175 | 30230 | 30273 | 30321 | 30381 | 30451 | 30522 | 30578 | 30600 | 25 S |
| 30 S | 25050 | 25663 | 26153 | 26553 | 26848 | 27068 | 27237 | 27377 | 27505 | 27637 | 27778 | 27929 | 28082 | 28226 | 28346 | 30 S |
| 35 S | 21602 | 22190 | 22691 | 23109 | 23455 | 23744 | 23995 | 24225 | 24447 | 24673 | 24907 | 25149 | 25396 | 25638 | 25866 | 35 S |
| 40 S | 18029 | 18554 | 19033 | 19464 | 19853 | 20210 | 20547 | 20874 | 21199 | 21530 | 21869 | 22215 | 22564 | 22912 | 23250 | 40 S |
| 45 S | 14399 | 14833 | 15268 | 15698 | 16121 | 16540 | 16961 | 17386 | 17818 | 18259 | 18708 | 19162 | 19618 | 20070 | 20512 | 45 S |
| 50 S | 10785 | 11104 | 11472 | 11878 | 12316 | 12781 | 13271 | 13783 | 14312 | 14855 | 15406 | 15962 | 16515 | 17062 | 17595 | 50 S |
| 55 S | 7255 | 7437 | 7710 | 8062 | 8482 | 8961 | 9488 | 10056 | 10653 | 11272 | 11903 | 12538 | 13170 | 13793 | 14399 | 55 S |
| 60 S | 3871 | 3893 | 4039 | 4298 | 4656 | 5100 | 5616 | 6190 | 6810 | 7461 | 8133 | 8815 | 9497 | 10171 | 10831 | 60 S |
| 65 S | 670 | 516 | 506 | 630 | 875 | 1228 | 1673 | 2195 | 2779 | 3410 | 4075 | 4762 | 5460 | 6161 | 6858 | 65 S |
| 70 S | -2334 | -2672 | -2860 | -2904 | -2816 | -2606 | -2288 | -1875 | -1383 | -825 | -214 | 437 | 1120 | 1825 | 2547 | 70 S |
| 75 S | -5160 | -5673 | -6042 | -6270 | -6363 | -6328 | -6174 | -5912 | -5552 | -5106 | -4585 | -3997 | -3353 | -2659 | -1921 | 75 S |
| 80 S | -7845 | -8505 | -9034 | -9432 | -9700 | -9839 | -9856 | -9754 | -9540 | -9221 | -8803 | -8294 | -7700 | -7028 | -6283 | 80 S |
| 85 S | -10427 | -11185 | -11828 | -12351 | -12753 | -13031 | -13186 | -13217 | -13127 | -12919 | -12595 | -12160 | -11618 | -10974 | -10234 | 85 S |
| 90 S | -12923 | -13715 | -14404 | -14983 | -15447 | -15795 | -16022 | -16127 | -16109 | -15969 | -15707 | -15325 | -14827 | -14217 | -13498 | 90 S |
| LAT. | -15305 | -16063 | -16720 | -17270 | -17710 | -18038 | -18252 | -18350 | -18333 | -18202 | -17957 | -17600 | -17133 | -16560 | -15882 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 4 A IGRF NORTH COMPONENT (X)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -4504 | -4681 | -4811 | -4893 | -4926 | -4913 | -4854 | -4753 | -4612 | -4437 | -4232 | -4004 | -3756 | -3497 | -3232 LAT. |
| 90 N | -1943 | -2080 | -2201 | -2305 | -2392 | -2460 | -2510 | -2540 | -2552 | -2544 | -2516 | -2469 | -2404 | -2320 | -2219 90 N |
| 85 N | 1052 | 946 | 817 | 665 | 491 | 300 | 96 | -115 | -330 | -541 | -741 | -924 | -1083 | -1212 | -1306 85 N |
| 80 N | 4448 | 4358 | 4201 | 3978 | 3695 | 3359 | 2976 | 2560 | 2120 | 1670 | 1225 | 796 | 398 | 44 | -255 80 N |
| 75 N | 8114 | 8017 | 7815 | 7512 | 7114 | 6633 | 6080 | 5472 | 4824 | 4156 | 3485 | 2832 | 2214 | 1650 | 1156 75 N |
| 70 N | 11841 | 11715 | 11457 | 11076 | 10579 | 9981 | 9296 | 8543 | 7740 | 6910 | 6073 | 5250 | 4463 | 3733 | 3079 70 N |
| 65 N | 15366 | 15210 | 14895 | 14451 | 13886 | 13221 | 12466 | 11640 | 10764 | 9856 | 8936 | 8025 | 7144 | 6314 | 5555 65 N |
| 60 N | 18524 | 18365 | 17918 | 17436 | 16849 | 16173 | 15421 | 14607 | 13748 | 12857 | 11951 | 11046 | 10160 | 9310 | 8514 60 N |
| 55 N | 21102 | 20793 | 20305 | 19693 | 19326 | 18700 | 18020 | 17298 | 16540 | 15757 | 14957 | 14149 | 13345 | 12556 | 11796 55 N |
| 50 N | 23071 | 22691 | 22256 | 21779 | 21271 | 20739 | 20187 | 19617 | 19028 | 18422 | 17799 | 17161 | 16511 | 15854 | 15195 50 N |
| 45 N | 24493 | 24048 | 23597 | 23154 | 22727 | 22319 | 21926 | 21542 | 21160 | 20770 | 20367 | 19943 | 19494 | 19017 | 18510 45 N |
| 40 N | 25519 | 25020 | 24563 | 24163 | 23825 | 23548 | 23320 | 23129 | 22958 | 22792 | 22615 | 22416 | 22183 | 21905 | 21573 40 N |
| 35 N | 26352 | 25814 | 25359 | 25002 | 24746 | 24586 | 24506 | 24485 | 24502 | 24532 | 24557 | 24560 | 24525 | 24435 | 24277 35 N |
| 30 N | 27191 | 26633 | 26186 | 25865 | 25672 | 25601 | 25631 | 25737 | 25892 | 26069 | 26244 | 26400 | 26517 | 26578 | 26566 30 N |
| 25 N | 28166 | 27628 | 27194 | 26898 | 26745 | 26723 | 26814 | 26969 | 27218 | 27473 | 27731 | 27973 | 28181 | 28338 | 28427 25 N |
| 20 N | 29401 | 28865 | 28449 | 28168 | 28025 | 28012 | 28103 | 28286 | 28522 | 28763 | 29050 | 29307 | 29539 | 29731 | 29869 20 N |
| 15 N | 30602 | 30306 | 29915 | 29640 | 29483 | 29438 | 29439 | 29613 | 29787 | 29987 | 30198 | 30405 | 30600 | 30772 | 30907 15 N |
| 10 N | 32266 | 31826 | 31465 | 31189 | 31000 | 30893 | 30858 | 30860 | 30943 | 31031 | 31135 | 31246 | 31358 | 31466 | 31557 10 N |
| 5 N | 33605 | 33232 | 32906 | 32628 | 32395 | 32213 | 32069 | 31963 | 31887 | 31836 | 31806 | 31795 | 31800 | 31817 | 31837 5 N |
| 0 | 34612 | 34310 | 34024 | 33747 | 33478 | 33215 | 32964 | 32728 | 32513 | 32322 | 32158 | 32024 | 31917 | 31835 | 31769 0 |
| 5 S | 35099 | 34869 | 34627 | 34361 | 34067 | 33747 | 33410 | 33071 | 32742 | 32437 | 32163 | 31924 | 31719 | 31543 | 31389 5 S |
| 10 S | 34936 | 34776 | 34584 | 34345 | 34053 | 33711 | 33332 | 32935 | 32542 | 32168 | 31824 | 31515 | 31237 | 30984 | 30749 10 S |
| 15 S | 34081 | 33969 | 33855 | 33664 | 33457 | 33066 | 32720 | 32326 | 31927 | 31540 | 31177 | 30837 | 30517 | 30210 | 29908 15 S |
| 20 S | 32572 | 32550 | 32456 | 32368 | 32182 | 31932 | 31632 | 31299 | 30953 | 30609 | 30272 | 29942 | 29613 | 29277 | 28929 20 S |
| 25 S | 30522 | 30576 | 30600 | 30574 | 30491 | 30351 | 30162 | 29939 | 29693 | 29433 | 29163 | 28877 | 28568 | 28232 | 27866 25 S |
| 30 S | 28082 | 28226 | 28346 | 28430 | 28471 | 28465 | 28416 | 28329 | 28210 | 28062 | 27882 | 27665 | 27405 | 27099 | 26751 30 S |
| 35 S | 25396 | 25638 | 25866 | 26070 | 26241 | 26376 | 26471 | 26527 | 26542 | 26513 | 26436 | 26305 | 26118 | 25876 | 25588 35 S |
| 40 S | 22564 | 22912 | 23250 | 23571 | 23867 | 24131 | 24358 | 24544 | 24682 | 24768 | 24797 | 24767 | 24677 | 24535 | 24353 40 S |
| 45 S | 19613 | 20070 | 20512 | 20939 | 21342 | 21715 | 22052 | 22346 | 22591 | 22783 | 22920 | 23002 | 23035 | 23028 | 22995 45 S |
| 50 S | 16515 | 17062 | 17595 | 18110 | 18600 | 19060 | 19484 | 19867 | 20206 | 20499 | 20749 | 20959 | 21139 | 21298 | 21451 50 S |
| 55 S | 13170 | 13793 | 14399 | 14984 | 15544 | 16074 | 16572 | 17035 | 17457 | 17837 | 18242 | 18599 | 18947 | 19298 | 19660 55 S |
| 60 S | 9497 | 10171 | 10831 | 11472 | 12092 | 12689 | 13262 | 13814 | 14348 | 14870 | 15388 | 15910 | 16444 | 16998 | 17578 60 S |
| 65 S | 5460 | 6161 | 6855 | 7547 | 8227 | 8897 | 9559 | 10216 | 10873 | 11538 | 12217 | 12918 | 13645 | 14403 | 15193 65 S |
| 70 S | 1120 | 1825 | 2547 | 3282 | 4026 | 4781 | 5548 | 6330 | 7130 | 7954 | 8806 | 9689 | 10606 | 11555 | 12533 70 S |
| 75 S | -3353 | -2659 | -1921 | -1144 | -331 | 515 | 1397 | 2312 | 3263 | 4249 | 5270 | 6326 | 7414 | 8530 | 9668 75 S |
| 80 S | -7700 | -7028 | -6263 | -5471 | -4596 | -3663 | -2674 | -1635 | -548 | 582 | 1751 | 2954 | 4185 | 5435 | 6697 80 S |
| 85 S | -11618 | -10974 | -10234 | -9404 | -8486 | -7495 | -6430 | -5301 | -4114 | -2878 | -1602 | -292 | 1040 | 2387 | 3739 85 S |
| 90 S | -14827 | -14217 | -13496 | -12676 | -11758 | -10750 | -9660 | -8497 | -7269 | -5986 | -4658 | -3294 | -1904 | -501 | 906 90 S |
| LAT. | -17133 | -16560 | -15882 | -15104 | -14231 | -13267 | -12218 | -11091 | -9892 | -8629 | -7312 | -5951 | -4556 | -3138 | -1710 LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |

TABLE 4 A IGRF NORTH COMPONENT (X)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -3756 | -3497 | -3232 | -2967 | -2709 | -2461 | -2231 | -2021 | -1835 | -1675 | -1542 | -1436 | -1357 | -1302 | -1268 | LAT. |
| 90 N | -2404 | -2320 | -2219 | -2100 | -1966 | -1817 | -1654 | -1478 | -1291 | -1094 | -889 | -677 | -460 | -240 | -17 | 90 N |
| 85 N | -1083 | -1212 | -1306 | -1360 | -1370 | -1332 | -1246 | -1112 | -929 | -700 | -428 | -117 | 226 | 598 | 991 | 85 N |
| 80 N | 398 | 44 | -255 | -490 | -652 | -735 | -734 | -649 | -480 | -230 | 93 | 485 | 935 | 1433 | 1965 | 80 N |
| 75 N | 2214 | 1650 | 1156 | 747 | 434 | 229 | 136 | 160 | 299 | 549 | 903 | 1349 | 1874 | 2463 | 3098 | 75 N |
| 70 N | 4463 | 3733 | 3079 | 2520 | 2072 | 1747 | 1555 | 1502 | 1589 | 1813 | 2164 | 2629 | 3193 | 3834 | 4531 | 70 N |
| 65 N | 7144 | 6314 | 5555 | 4888 | 4330 | 3898 | 3606 | 3464 | 3476 | 3642 | 3955 | 4401 | 4963 | 5615 | 6333 | 65 N |
| 60 N | 10160 | 9310 | 8514 | 7792 | 7164 | 6648 | 6263 | 6025 | 5943 | 6024 | 6263 | 6651 | 7170 | 7794 | 8496 | 60 N |
| 55 N | 13345 | 12556 | 11796 | 11081 | 10430 | 9863 | 9403 | 9071 | 8885 | 8858 | 8995 | 9290 | 9729 | 10290 | 10942 | 55 N |
| 50 N | 16511 | 15854 | 15195 | 14547 | 13924 | 13345 | 12837 | 12424 | 12135 | 11989 | 12003 | 12178 | 12508 | 12975 | 13551 | 50 N |
| 45 N | 19494 | 19017 | 18510 | 17976 | 17426 | 16876 | 16350 | 15880 | 15498 | 15235 | 15117 | 15157 | 15358 | 15709 | 16188 | 45 N |
| 40 N | 22183 | 21905 | 21573 | 21184 | 20740 | 20252 | 19742 | 19241 | 18788 | 18421 | 18176 | 18077 | 18139 | 18361 | 18730 | 40 N |
| 35 N | 24525 | 24435 | 24277 | 24039 | 23716 | 23313 | 22846 | 22344 | 21848 | 21399 | 21043 | 20814 | 20737 | 20826 | 21077 | 35 N |
| 30 N | 26517 | 26578 | 26566 | 26464 | 26260 | 25950 | 25546 | 25070 | 24559 | 24059 | 23616 | 23276 | 23073 | 23031 | 23162 | 30 N |
| 25 N | 28181 | 28338 | 28427 | 28428 | 28324 | 28105 | 27772 | 27343 | 26846 | 26325 | 25827 | 25401 | 25090 | 24928 | 24938 | 25 N |
| 20 N | 29539 | 29731 | 29869 | 29931 | 29898 | 29754 | 29493 | 29122 | 28662 | 28149 | 27626 | 27143 | 26748 | 26481 | 26373 | 20 N |
| 15 N | 30600 | 30772 | 30907 | 30987 | 30991 | 30900 | 30700 | 30390 | 29980 | 29497 | 28977 | 28466 | 28009 | 27652 | 27430 | 15 N |
| 10 N | 31358 | 31466 | 31557 | 31617 | 31624 | 31559 | 31402 | 31145 | 30788 | 30347 | 29848 | 29330 | 28835 | 28404 | 28075 | 10 N |
| 5 N | 31800 | 31817 | 31837 | 31846 | 31827 | 31759 | 31621 | 31398 | 31085 | 30686 | 30218 | 29708 | 29190 | 28700 | 28273 | 5 N |
| 0 | 31917 | 31835 | 31769 | 31708 | 31638 | 31538 | 31391 | 31179 | 30890 | 30523 | 30083 | 29588 | 29059 | 28524 | 28011 | 0 |
| 5 S | 31719 | 31543 | 31389 | 31248 | 31107 | 30952 | 30768 | 30540 | 30253 | 29901 | 29480 | 28996 | 28462 | 27895 | 27313 | 5 S |
| 10 S | 31237 | 30984 | 30749 | 30524 | 30302 | 30076 | 29834 | 29566 | 29259 | 28903 | 28488 | 28012 | 27476 | 26886 | 26253 | 10 S |
| 15 S | 30517 | 30210 | 29908 | 29607 | 29305 | 29001 | 28692 | 28372 | 28032 | 27659 | 27241 | 26766 | 26229 | 25626 | 24960 | 15 S |
| 20 S | 29613 | 29277 | 28929 | 28569 | 28201 | 27830 | 27461 | 27094 | 26721 | 26330 | 25906 | 25433 | 24897 | 24290 | 23609 | 20 S |
| 25 S | 28568 | 28232 | 27866 | 27476 | 27070 | 26662 | 26260 | 25867 | 25479 | 25084 | 24663 | 24198 | 23670 | 23068 | 22385 | 25 S |
| 30 S | 27405 | 27099 | 26751 | 26371 | 25972 | 25571 | 25180 | 24803 | 24435 | 24063 | 23667 | 23224 | 22716 | 22128 | 21455 | 30 S |
| 35 S | 26118 | 25876 | 25588 | 25267 | 24931 | 24595 | 24271 | 23962 | 23660 | 23350 | 23007 | 22610 | 22138 | 21578 | 20925 | 35 S |
| 40 S | 24677 | 24535 | 24353 | 24145 | 23929 | 23718 | 23521 | 23335 | 23149 | 22941 | 22688 | 22365 | 21951 | 21436 | 20816 | 40 S |
| 45 S | 23035 | 23028 | 22995 | 22950 | 22907 | 22876 | 22857 | 22842 | 22814 | 22748 | 22619 | 22399 | 22070 | 21623 | 21056 | 45 S |
| 50 S | 21139 | 21298 | 21451 | 21608 | 21778 | 21963 | 22157 | 22346 | 22506 | 22611 | 22632 | 22544 | 22329 | 21978 | 21494 | 50 S |
| 55 S | 18947 | 19298 | 19660 | 20041 | 20442 | 20859 | 21279 | 21683 | 22044 | 22334 | 22525 | 22592 | 22518 | 22296 | 21930 | 55 S |
| 60 S | 16444 | 16998 | 17578 | 18185 | 18815 | 19457 | 20095 | 20705 | 21263 | 21738 | 22105 | 22342 | 22433 | 22372 | 22161 | 60 S |
| 65 S | 13645 | 14403 | 15193 | 16011 | 16848 | 17691 | 18521 | 19315 | 20049 | 20698 | 21237 | 21649 | 21920 | 22044 | 22023 | 65 S |
| 70 S | 10606 | 11555 | 12533 | 13534 | 14546 | 15554 | 16542 | 17488 | 18372 | 19173 | 19873 | 20454 | 20908 | 21227 | 21411 | 70 S |
| 75 S | 7414 | 8530 | 9668 | 10817 | 11967 | 13105 | 14215 | 15281 | 16286 | 17214 | 18052 | 18786 | 19408 | 19913 | 20297 | 75 S |
| 80 S | 4185 | 5435 | 6697 | 7961 | 9216 | 10450 | 11652 | 12808 | 13906 | 14935 | 15884 | 16742 | 17503 | 18161 | 18710 | 80 S |
| 85 S | 1040 | 2387 | 3739 | 5086 | 6417 | 7722 | 8991 | 10213 | 11380 | 12481 | 13507 | 14451 | 15305 | 16063 | 16720 | 85 S |
| 90 S | -1904 | -501 | 906 | 2306 | 3689 | 5044 | 6361 | 7629 | 8839 | 9982 | 11049 | 12031 | 12922 | 13715 | 14404 | 90 S |
| LAT. | -4556 | -3138 | -1710 | -284 | 1127 | 2511 | 3855 | 5146 | 6373 | 7524 | 8590 | 9560 | 10427 | 11185 | 11828 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 4 A IGRF NORTH COMPONENT (X)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -1357 | -1302 | -1268 | -1250 | -1246 | -1249 | -1253 | -1255 | -1248 | -1228 | -1190 | -1132 | -1052 | -946 | -817 | LAT. |
| 90 N | -460 | -240 | -17 | 204 | 425 | 643 | 856 | 1062 | 1260 | 1449 | 1626 | 1791 | 1943 | 2080 | 2201 | 90 N |
| 85 N | 226 | 598 | 991 | 1397 | 1810 | 2221 | 2624 | 3012 | 3377 | 3714 | 4017 | 4282 | 4504 | 4681 | 4811 | 85 N |
| 80 N | 935 | 1433 | 1965 | 2521 | 3087 | 3652 | 4202 | 4729 | 5220 | 5669 | 6067 | 6409 | 6689 | 6905 | 7055 | 80 N |
| 75 N | 1874 | 2463 | 3098 | 3762 | 4437 | 5108 | 5758 | 6374 | 6945 | 7462 | 7917 | 8305 | 8623 | 8868 | 9039 | 75 N |
| 70 N | 3193 | 3834 | 4531 | 5261 | 6001 | 6733 | 7436 | 8097 | 8704 | 9248 | 9723 | 10126 | 10457 | 10715 | 10901 | 70 N |
| 65 N | 4963 | 5615 | 6333 | 7089 | 7857 | 8611 | 9332 | 10003 | 10611 | 11151 | 11618 | 12012 | 12335 | 12590 | 12780 | 65 N |
| 60 N | 7170 | 7794 | 8496 | 9243 | 10006 | 10756 | 11471 | 12131 | 12725 | 13245 | 13690 | 14062 | 14365 | 14604 | 14786 | 60 N |
| 55 N | 9729 | 10290 | 10942 | 11652 | 12388 | 13118 | 13816 | 14461 | 15039 | 15542 | 15968 | 16319 | 16601 | 16821 | 16989 | 55 N |
| 50 N | 12508 | 12975 | 13551 | 14203 | 14898 | 15601 | 16284 | 16923 | 17499 | 18001 | 18424 | 18769 | 19041 | 19250 | 19407 | 50 N |
| 45 N | 15358 | 15709 | 16188 | 16767 | 17412 | 18089 | 18766 | 19414 | 20009 | 20535 | 20981 | 21345 | 21629 | 21845 | 22004 | 45 N |
| 40 N | 18139 | 18361 | 18730 | 19224 | 19813 | 20465 | 21144 | 21817 | 22454 | 23029 | 23525 | 23934 | 24257 | 24503 | 24687 | 40 N |
| 35 N | 20737 | 20826 | 21077 | 21478 | 22005 | 22629 | 23312 | 24017 | 24706 | 25346 | 25911 | 26386 | 26771 | 27074 | 27311 | 35 N |
| 30 N | 23073 | 23031 | 23162 | 23462 | 23916 | 24498 | 25173 | 25900 | 26635 | 27337 | 27974 | 28526 | 28988 | 29368 | 29683 | 30 N |
| 25 N | 25090 | 24928 | 24938 | 25128 | 25491 | 26008 | 26646 | 27364 | 28115 | 28855 | 29547 | 30167 | 30707 | 31174 | 31582 | 25 N |
| 20 N | 26748 | 26481 | 26373 | 26442 | 26690 | 27107 | 27664 | 28324 | 29041 | 29773 | 30480 | 31140 | 31742 | 32287 | 32789 | 20 N |
| 15 N | 28009 | 27652 | 27430 | 27369 | 27478 | 27754 | 28177 | 28717 | 29337 | 29998 | 30667 | 31321 | 31950 | 32549 | 33124 | 15 N |
| 10 N | 28835 | 28404 | 28075 | 27876 | 27824 | 27921 | 28160 | 28519 | 28975 | 29499 | 30067 | 30661 | 31268 | 31879 | 32489 | 10 N |
| 5 N | 29190 | 28700 | 28273 | 27937 | 27710 | 27605 | 27620 | 27752 | 27988 | 28318 | 28728 | 29204 | 29735 | 30304 | 30897 | 5 N |
| 0 | 29059 | 28524 | 28011 | 27546 | 27147 | 26832 | 26610 | 26490 | 26478 | 26575 | 26783 | 27093 | 27495 | 27967 | 28484 | 0 |
| 5 S | 28462 | 27895 | 27313 | 26736 | 26183 | 25674 | 25227 | 24862 | 24599 | 24455 | 24439 | 24552 | 24783 | 25108 | 25497 | 5 S |
| 10 S | 27476 | 26886 | 26253 | 25589 | 24913 | 24245 | 23609 | 23033 | 22548 | 22179 | 21945 | 21852 | 21889 | 22033 | 22254 | 10 S |
| 15 S | 26229 | 25626 | 24960 | 24240 | 23479 | 22697 | 21924 | 21190 | 20531 | 19977 | 19552 | 19264 | 19106 | 19059 | 19096 | 15 S |
| 20 S | 24897 | 24290 | 23609 | 22858 | 22049 | 21202 | 20345 | 19511 | 18735 | 18048 | 17473 | 17021 | 16689 | 16463 | 16326 | 20 S |
| 25 S | 23670 | 23068 | 22385 | 21625 | 20798 | 19924 | 19030 | 18147 | 17306 | 16536 | 15859 | 15285 | 14815 | 14444 | 14164 | 25 S |
| 30 S | 22716 | 22128 | 21455 | 20700 | 19874 | 18999 | 18098 | 17200 | 16333 | 15522 | 14785 | 14134 | 13572 | 13103 | 12728 | 30 S |
| 35 S | 22138 | 21578 | 20925 | 20185 | 19371 | 18505 | 17613 | 16719 | 15849 | 15024 | 14262 | 13573 | 12966 | 12449 | 12030 | 35 S |
| 40 S | 21951 | 21436 | 20816 | 20101 | 19307 | 18457 | 17578 | 16696 | 15834 | 15013 | 14248 | 13554 | 12940 | 12418 | 12000 | 40 S |
| 45 S | 22070 | 21623 | 21056 | 20383 | 19621 | 18798 | 17940 | 17076 | 16230 | 15424 | 14675 | 13997 | 13404 | 12906 | 12515 | 45 S |
| 50 S | 22329 | 21978 | 21494 | 20889 | 20185 | 19409 | 18592 | 17762 | 16947 | 16171 | 15452 | 14806 | 14247 | 13784 | 13426 | 50 S |
| 55 S | 22518 | 22296 | 21930 | 21431 | 20824 | 20133 | 19391 | 18627 | 17870 | 17144 | 16472 | 15868 | 15346 | 14913 | 14571 | 55 S |
| 60 S | 22433 | 22372 | 22161 | 21814 | 21349 | 20792 | 20171 | 19515 | 18852 | 18206 | 17599 | 17045 | 16556 | 16135 | 15783 | 60 S |
| 65 S | 21920 | 22044 | 22023 | 21866 | 21588 | 21211 | 20758 | 20254 | 19722 | 19185 | 18660 | 18161 | 17696 | 17268 | 16874 | 65 S |
| 70 S | 20908 | 21227 | 21411 | 21467 | 21405 | 21239 | 20985 | 20662 | 20287 | 19877 | 19444 | 19001 | 18551 | 18097 | 17637 | 70 S |
| 75 S | 19408 | 19913 | 20297 | 20562 | 20714 | 20759 | 20706 | 20566 | 20349 | 20065 | 19722 | 19327 | 18883 | 18392 | 17852 | 75 S |
| 80 S | 17503 | 18161 | 18710 | 19150 | 19479 | 19700 | 19814 | 19825 | 19736 | 19553 | 19278 | 18914 | 18465 | 17932 | 17317 | 80 S |
| 85 S | 15305 | 16063 | 16720 | 17270 | 17710 | 18038 | 18252 | 18350 | 18333 | 18202 | 17957 | 17600 | 17133 | 16560 | 15882 | 85 S |
| 90 S | 12922 | 13715 | 14404 | 14983 | 15447 | 15794 | 16021 | 16127 | 16109 | 15969 | 15707 | 15325 | 14827 | 14217 | 13497 | 90 S |
| LAT. | 10427 | 11185 | 11828 | 12351 | 12753 | 13031 | 13186 | 13217 | 13127 | 12919 | 12595 | 12160 | 11618 | 10974 | 10234 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 4 B IGRF NORTH COMPONENT (X)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | -17.9 | -19.0 | -20.0 | -20.8 | -21.4 | -21.9 | -22.2 | -22.4 | -22.4 | -22.3 | -22.0 | -21.6 | -21.1 | -20.5 | -19.7 | |
| 90 N | -11.9 | -13.1 | -14.2 | -15.2 | -16.1 | -16.8 | -17.5 | -18.0 | -18.4 | -18.6 | -18.7 | -18.6 | -18.4 | -18.1 | -17.6 | 90 N |
| 85 N | -4.9 | -6.1 | -7.2 | -8.3 | -9.4 | -10.4 | -11.4 | -12.2 | -13.0 | -13.6 | -14.1 | -14.5 | -14.7 | -14.7 | -14.6 | 85 N |
| 80 N | 2.1 | 1.0 | -0.2 | -1.3 | -2.6 | -3.8 | -5.0 | -6.1 | -7.1 | -8.1 | -8.9 | -9.5 | -10.0 | -10.3 | -10.3 | 80 N |
| 75 N | 8.6 | 7.4 | 6.2 | 4.8 | 3.5 | 2.1 | 0.8 | -0.5 | -1.6 | -2.6 | -3.4 | -4.1 | -4.6 | -4.9 | -4.9 | 75 N |
| 70 N | 14.6 | 13.1 | 11.4 | 9.7 | 8.1 | 6.6 | 5.2 | 4.0 | 3.0 | 2.2 | 1.6 | 1.2 | 0.9 | 0.9 | 1.0 | 70 N |
| 65 N | 20.3 | 18.0 | 15.6 | 13.4 | 11.3 | 9.5 | 8.1 | 7.0 | 6.3 | 5.8 | 5.6 | 5.7 | 6.0 | 6.3 | 6.8 | 65 N |
| 60 N | 26.0 | 22.4 | 19.0 | 15.9 | 13.2 | 11.1 | 9.6 | 8.6 | 8.1 | 8.1 | 8.5 | 9.1 | 10.0 | 10.9 | 11.9 | 60 N |
| 55 N | 31.5 | 26.5 | 21.8 | 17.7 | 14.3 | 11.8 | 10.0 | 9.1 | 8.8 | 9.2 | 10.1 | 11.4 | 12.9 | 14.5 | 16.0 | 55 N |
| 50 N | 36.4 | 30.0 | 24.1 | 19.1 | 15.0 | 12.1 | 10.1 | 9.1 | 9.0 | 9.6 | 10.9 | 12.7 | 14.9 | 17.1 | 19.3 | 50 N |
| 45 N | 40.2 | 32.7 | 25.9 | 20.3 | 15.8 | 12.6 | 10.5 | 9.4 | 9.3 | 10.1 | 11.6 | 13.9 | 16.6 | 19.5 | 22.3 | 45 N |
| 40 N | 42.4 | 34.3 | 27.2 | 21.5 | 17.0 | 13.9 | 11.8 | 10.6 | 10.4 | 11.1 | 12.8 | 15.3 | 18.6 | 22.1 | 25.4 | 40 N |
| 35 N | 42.7 | 34.8 | 28.2 | 22.9 | 18.9 | 16.1 | 14.1 | 13.0 | 12.6 | 13.2 | 14.9 | 17.6 | 21.1 | 25.0 | 28.6 | 35 N |
| 30 N | 41.1 | 34.3 | 28.7 | 24.5 | 21.3 | 19.1 | 17.4 | 16.3 | 15.8 | 16.2 | 17.6 | 20.3 | 23.8 | 27.8 | 31.5 | 30 N |
| 25 N | 37.9 | 32.9 | 28.9 | 25.9 | 23.8 | 22.2 | 20.9 | 19.8 | 19.1 | 19.2 | 20.3 | 22.7 | 25.9 | 29.6 | 32.8 | 25 N |
| 20 N | 33.4 | 30.5 | 28.2 | 26.6 | 25.4 | 24.3 | 23.2 | 22.1 | 21.2 | 21.0 | 21.7 | 23.5 | 26.2 | 29.0 | 31.4 | 20 N |
| 15 N | 27.5 | 26.6 | 25.9 | 25.4 | 24.8 | 24.0 | 22.9 | 21.7 | 20.6 | 20.2 | 20.5 | 21.7 | 23.4 | 25.2 | 26.4 | 15 N |
| 10 N | 19.7 | 20.5 | 21.0 | 21.1 | 20.7 | 19.8 | 18.7 | 17.4 | 16.3 | 15.7 | 15.8 | 16.4 | 17.3 | 18.0 | 18.1 | 10 N |
| 5 N | 9.5 | 11.4 | 12.5 | 12.7 | 12.1 | 11.1 | 9.8 | 8.6 | 7.8 | 7.4 | 7.5 | 7.9 | 8.2 | 8.1 | 7.4 | 5 N |
| 0 | -3.7 | -1.3 | -0.2 | -0.2 | -1.0 | -2.2 | -3.4 | -4.1 | -4.3 | -4.0 | -3.3 | -2.7 | -2.5 | -2.8 | -3.7 | 0 |
| 5 S | -19.7 | -17.4 | -16.5 | -16.8 | -17.7 | -18.8 | -19.4 | -19.3 | -18.3 | -16.8 | -15.1 | -13.7 | -12.9 | -12.7 | -13.0 | 5 S |
| 10 S | -37.7 | -35.8 | -35.1 | -35.3 | -35.9 | -36.3 | -35.9 | -34.4 | -31.9 | -28.8 | -25.7 | -23.0 | -21.1 | -19.8 | -18.9 | 10 S |
| 15 S | -55.9 | -54.3 | -53.5 | -53.3 | -53.0 | -52.2 | -50.2 | -47.0 | -42.8 | -38.1 | -33.4 | -29.3 | -26.0 | -23.3 | -20.9 | 15 S |
| 20 S | -72.2 | -70.5 | -69.2 | -67.9 | -66.2 | -63.7 | -60.0 | -55.1 | -49.3 | -43.2 | -37.3 | -32.1 | -27.6 | -23.7 | -20.1 | 20 S |
| 25 S | -84.1 | -82.0 | -79.6 | -76.8 | -73.4 | -69.1 | -63.8 | -57.5 | -50.8 | -44.0 | -37.6 | -31.9 | -27.0 | -22.6 | -18.3 | 25 S |
| 30 S | -90.3 | -87.1 | -83.3 | -78.9 | -73.8 | -68.0 | -61.6 | -54.8 | -47.9 | -41.3 | -35.4 | -30.4 | -26.0 | -22.0 | -18.0 | 30 S |
| 35 S | -90.1 | -85.7 | -80.4 | -74.5 | -68.2 | -61.5 | -54.7 | -48.2 | -42.2 | -37.0 | -32.7 | -29.2 | -26.4 | -23.8 | -21.1 | 35 S |
| 40 S | -84.4 | -78.6 | -72.1 | -65.2 | -58.2 | -51.5 | -45.3 | -40.0 | -35.8 | -32.7 | -30.8 | -29.8 | -29.3 | -28.9 | -28.2 | 40 S |
| 45 S | -74.8 | -67.9 | -60.6 | -53.4 | -46.6 | -40.6 | -35.7 | -32.3 | -30.4 | -30.0 | -30.8 | -32.6 | -34.8 | -36.9 | -38.5 | 45 S |
| 50 S | -63.3 | -55.9 | -48.5 | -41.5 | -35.5 | -30.8 | -27.7 | -26.4 | -26.9 | -29.0 | -32.5 | -36.8 | -41.4 | -45.8 | -49.5 | 50 S |
| 55 S | -51.7 | -44.4 | -37.5 | -31.5 | -26.7 | -23.5 | -22.2 | -22.8 | -25.3 | -29.5 | -34.9 | -41.0 | -47.4 | -53.4 | -58.7 | 55 S |
| 60 S | -40.9 | -34.4 | -28.6 | -23.9 | -20.5 | -18.8 | -19.0 | -21.0 | -24.8 | -30.1 | -36.5 | -43.5 | -50.7 | -57.5 | -63.5 | 60 S |
| 65 S | -31.0 | -25.9 | -21.6 | -18.4 | -16.4 | -16.0 | -17.2 | -20.0 | -24.2 | -29.8 | -36.2 | -43.2 | -50.2 | -57.0 | -63.1 | 65 S |
| 70 S | -21.4 | -18.2 | -15.5 | -13.8 | -13.1 | -13.6 | -15.4 | -18.5 | -22.6 | -27.7 | -33.6 | -39.8 | -46.1 | -52.2 | -57.9 | 70 S |
| 75 S | -11.5 | -10.1 | -9.2 | -9.0 | -9.5 | -10.8 | -12.9 | -15.9 | -19.7 | -24.1 | -29.0 | -34.2 | -39.5 | -44.7 | -49.6 | 75 S |
| 80 S | -0.9 | -1.3 | -2.0 | -3.2 | -4.7 | -6.7 | -9.3 | -12.2 | -15.6 | -19.4 | -23.5 | -27.7 | -32.0 | -36.3 | -40.5 | 80 S |
| 85 S | 10.1 | 8.2 | 6.1 | 3.7 | 1.2 | -1.6 | -4.5 | -7.7 | -11.0 | -14.4 | -17.9 | -21.5 | -25.1 | -28.7 | -32.1 | 85 S |
| 90 S | 20.6 | 17.5 | 14.3 | 11.0 | 7.7 | 4.2 | 0.8 | -2.7 | -6.2 | -9.6 | -12.9 | -16.1 | -19.2 | -22.2 | -25.0 | 90 S |
| LAT. | 29.2 | 25.5 | 21.8 | 17.9 | 14.0 | 10.1 | 6.3 | 2.5 | -1.1 | -4.6 | -7.9 | -10.9 | -13.7 | -16.2 | -18.4 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 4 B IGRF NORTH COMPONENT (X)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -21.1 | -20.5 | -19.7 | -18.9 | -18.0 | -17.0 | -15.9 | -14.9 | -13.7 | -12.6 | -11.4 | -10.2 | -9.1 | -7.9 | -6.7 | LAT. |
| 90 N | -18.4 | -18.1 | -17.6 | -17.0 | -16.3 | -15.4 | -14.4 | -13.3 | -12.1 | -10.9 | -9.5 | -8.1 | -6.6 | -5.0 | -3.4 | 90 N |
| 85 N | -14.7 | -14.7 | -14.6 | -14.2 | -13.7 | -12.9 | -12.0 | -10.9 | -9.6 | -8.2 | -6.6 | -4.9 | -3.1 | -1.2 | 0.7 | 85 N |
| 80 N | -10.0 | -10.3 | -10.3 | -10.1 | -9.7 | -9.0 | -8.1 | -7.0 | -5.6 | -4.1 | -2.3 | -0.4 | 1.5 | 3.6 | 5.7 | 80 N |
| 75 N | -4.6 | -4.9 | -4.9 | -4.8 | -4.4 | -3.7 | -2.8 | -1.6 | -0.3 | 1.3 | 3.1 | 5.0 | 6.9 | 9.0 | 11.0 | 75 N |
| 70 N | 0.9 | 0.9 | 1.0 | 1.3 | 1.8 | 2.5 | 3.4 | 4.5 | 5.8 | 7.3 | 8.9 | 10.5 | 12.3 | 14.0 | 15.7 | 70 N |
| 65 N | 6.0 | 6.3 | 6.8 | 7.4 | 8.1 | 8.8 | 9.7 | 10.6 | 11.7 | 12.9 | 14.1 | 15.4 | 16.7 | 17.9 | 19.0 | 65 N |
| 60 N | 10.0 | 10.9 | 11.9 | 12.9 | 13.7 | 14.5 | 15.2 | 15.9 | 16.6 | 17.3 | 18.0 | 18.8 | 19.4 | 20.0 | 20.5 | 60 N |
| 55 N | 12.9 | 14.5 | 16.0 | 17.3 | 18.4 | 19.2 | 19.7 | 19.9 | 20.1 | 20.2 | 20.3 | 20.4 | 20.4 | 20.4 | 20.2 | 55 N |
| 50 N | 14.9 | 17.1 | 19.3 | 21.1 | 22.3 | 23.0 | 23.1 | 22.8 | 22.3 | 21.6 | 21.0 | 20.4 | 19.9 | 19.4 | 18.7 | 50 N |
| 45 N | 16.6 | 19.5 | 22.3 | 24.5 | 25.9 | 26.4 | 26.0 | 24.9 | 23.5 | 22.0 | 20.6 | 19.4 | 18.5 | 17.6 | 16.7 | 45 N |
| 40 N | 18.6 | 22.1 | 25.4 | 27.9 | 29.4 | 29.5 | 28.5 | 26.5 | 24.1 | 21.7 | 19.6 | 18.0 | 16.7 | 15.8 | 14.9 | 40 N |
| 35 N | 21.1 | 25.0 | 28.6 | 31.3 | 32.6 | 32.3 | 30.4 | 27.5 | 24.2 | 20.9 | 18.3 | 16.4 | 15.1 | 14.4 | 13.8 | 35 N |
| 30 N | 23.8 | 27.8 | 31.5 | 34.0 | 34.9 | 33.8 | 31.2 | 27.4 | 23.3 | 19.5 | 16.6 | 14.7 | 13.7 | 13.3 | 13.1 | 30 N |
| 25 N | 25.9 | 29.6 | 32.8 | 34.8 | **34.9** | **33.2** | **29.8** | **25.5** | **21.**0 | 17.2 | 14.4 | 12.8 | 12.3 | 12.4 | 12.7 | 25 N |
| 20 N | 26.2 | 29.0 | 31.4 | 32.4 | 31.8 | 29.4 | 25.7 | 21.3 | 17.0 | 13.6 | 11.4 | 10.5 | 10.5 | 11.1 | 11.7 | 20 N |
| 15 N | 23.4 | 25.2 | 26.4 | 26.5 | 25.1 | 22.3 | 18.7 | 14.8 | 11.4 | 8.9 | 7.7 | 7.5 | 8.1 | 9.0 | 9.9 | 15 N |
| 10 N | 17.3 | 18.0 | 18.1 | 17.2 | 15.3 | 12.7 | 9.7 | 6.9 | 4.8 | 3.7 | 3.5 | 4.1 | 5.1 | 6.1 | 6.8 | 10 N |
| 5 N | 8.2 | 8.1 | 7.4 | 6.0 | 4.2 | 2.2 | 0.4 | -0.8 | -1.3 | -1.0 | -0.1 | 0.9 | 1.9 | 2.5 | 2.7 | 5 N |
| 0 | -2.5 | -2.8 | -3.7 | -4.9 | -6.0 | -6.8 | -7.0 | -6.5 | -5.4 | -3.9 | -2.5 | -1.5 | -1.1 | -1.3 | -2.0 | 0 |
| 5 S | -12.9 | -12.7 | -13.0 | -13.3 | -13.2 | -12.5 | -11.0 | -8.8 | -6.5 | -4.5 | -3.1 | -2.7 | -3.3 | -4.7 | -6.6 | 5 S |
| 10 S | -21.1 | -19.8 | -18.9 | -17.8 | -16.2 | -13.8 | -10.7 | -7.5 | -4.5 | -2.5 | -1.8 | -2.6 | -4.6 | -7.4 | -10.5 | 10 S |
| 15 S | -26.0 | -23.3 | -20.9 | -18.3 | -15.1 | -11.3 | -7.2 | -3.4 | -0.4 | 1.0 | 0.6 | -1.5 | -4.9 | -9.1 | -13.3 | 15 S |
| 20 S | -27.6 | -23.7 | -20.1 | -16.2 | -11.8 | -7.1 | -2.5 | 1.3 | 3.7 | 4.2 | 2.7 | -0.6 | -5.1 | -10.2 | -15.1 | 20 S |
| 25 S | -27.0 | -22.6 | -18.3 | -13.8 | -9.0 | -4.1 | 0.4 | 3.8 | 5.5 | 5.2 | 2.9 | -1.1 | -6.1 | -11.3 | -16.3 | 25 S |
| 30 S | -26.0 | -22.0 | -18.0 | -13.8 | -9.3 | -4.9 | -1.0 | 1.7 | 2.9 | 2.2 | -0.3 | -4.1 | -8.6 | -13.3 | -17.6 | 30 S |
| 35 S | -26.4 | -23.8 | -21.1 | -18.0 | -14.7 | -11.3 | -8.2 | -6.1 | -5.2 | -5.7 | -7.5 | -10.3 | -13.5 | -16.8 | -19.7 | 35 S |
| 40 S | -29.3 | -28.9 | -28.2 | -27.0 | -25.2 | -23.1 | -20.9 | -19.2 | -18.1 | -17.9 | -18.4 | -19.5 | -20.8 | -22.1 | -23.3 | 40 S |
| 45 S | -34.8 | -36.9 | -38.5 | -39.3 | -39.2 | -38.4 | -37.1 | -35.6 | -34.1 | -32.8 | -31.7 | -30.9 | -30.1 | -29.4 | -28.7 | 45 S |
| 50 S | -41.4 | -45.8 | -49.5 | -52.2 | -53.7 | -54.1 | -53.5 | -52.1 | -50.2 | -48.0 | -45.5 | -43.0 | -40.4 | -37.9 | -35.6 | 50 S |
| 55 S | -47.4 | -53.4 | -58.7 | -62.7 | -65.5 | -66.9 | -66.9 | -65.8 | -63.7 | -60.9 | -57.7 | -54.1 | -50.4 | -46.9 | -43.6 | 55 S |
| 60 S | -50.7 | -57.5 | -63.5 | -68.4 | -72.0 | -74.1 | -74.8 | -74.2 | -72.5 | -69.8 | -66.5 | -62.8 | -59.0 | -55.1 | -51.5 | 60 S |
| 65 S | -50.2 | -57.0 | -63.1 | -68.2 | -72.2 | -74.9 | -76.3 | -76.5 | -75.5 | -73.7 | -71.2 | -68.2 | -64.9 | -61.5 | -58.2 | 65 S |
| 70 S | -46.1 | -52.2 | -57.9 | -62.8 | -66.9 | -70.0 | -72.1 | -73.2 | -73.4 | -72.7 | -71.4 | -69.6 | -67.4 | -65.0 | -62.5 | 70 S |
| 75 S | -39.5 | -44.7 | -49.6 | -54.1 | -58.1 | -61.4 | -64.0 | -66.0 | -67.2 | -67.7 | -67.7 | -67.2 | -66.3 | -65.0 | -63.4 | 75 S |
| 80 S | -32.0 | -36.3 | -40.5 | -44.4 | -48.1 | -51.3 | -54.2 | -56.5 | -58.4 | -59.8 | -60.7 | -61.2 | -61.2 | -60.8 | -60.0 | 80 S |
| 85 S | -25.1 | -28.7 | -32.1 | -35.4 | -38.5 | -41.4 | -44.0 | -46.3 | -48.2 | -49.8 | -51.0 | -51.9 | -52.3 | -52.3 | -51.9 | 85 S |
| 90 S | -19.2 | -22.2 | -25.0 | -27.6 | -30.0 | -32.1 | -34.1 | -35.7 | -37.1 | -38.2 | -39.0 | -39.6 | -39.8 | -39.7 | -39.3 | 90 S |
| LAT. | -13.7 | -16.2 | -18.4 | -20.3 | -21.9 | -23.1 | -24.0 | -24.7 | -25.0 | -25.2 | -25.0 | -24.7 | -24.2 | -23.6 | -22.8 | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 4 B IGRF NORTH COMPONENT (X)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -9.1 | -7.9 | -6.7 | -5.6 | -4.4 | -3.2 | -2.1 | -0.9 | 0.2 | 1.4 | 2.6 | 3.7 | 4.9 | 6.1 | 7.2 | LAT. |
| 90 N | -6.6 | -5.0 | -3.4 | -1.8 | -0.2 | 1.4 | 3.1 | 4.7 | 6.2 | 7.7 | 9.2 | 10.6 | 11.9 | 13.1 | 14.2 | 90 N |
| 85 N | -3.1 | -1.2 | 0.7 | 2.7 | 4.6 | 6.6 | 8.5 | 10.3 | 12.1 | 13.7 | 15.2 | 16.6 | 17.9 | 19.0 | 20.0 | 85 N |
| 80 N | 1.5 | 3.6 | 5.7 | 7.8 | 9.9 | 11.9 | 13.8 | 15.5 | 17.2 | 18.6 | 19.9 | 21.0 | 22.0 | 22.8 | 23.4 | 80 N |
| 75 N | 6.9 | 9.0 | 11.0 | 13.0 | 14.8 | 16.6 | 18.1 | 19.5 | 20.7 | 21.6 | 22.4 | 23.0 | 23.4 | 23.7 | 23.9 | 75 N |
| 70 N | 12.3 | 14.0 | 15.7 | 17.2 | 18.6 | 19.8 | 20.8 | 21.5 | 21.9 | 22.2 | 22.2 | 22.1 | 21.9 | 21.6 | 21.3 | 70 N |
| 65 N | 16.7 | 17.9 | 19.0 | 19.9 | 20.6 | 21.1 | 21.3 | 21.2 | 20.9 | 20.4 | 19.7 | 18.9 | 18.0 | 17.2 | 16.5 | 65 N |
| 60 N | 19.4 | 20.0 | 20.5 | 20.7 | 20.7 | 20.4 | 19.9 | 19.1 | 18.1 | 16.9 | 15.6 | 14.3 | 12.9 | 11.7 | 10.8 | 60 N |
| 55 N | 20.4 | 20.4 | 20.2 | 19.8 | 19.1 | 18.2 | 17.1 | 15.8 | 14.3 | 12.8 | 11.1 | 9.5 | 8.0 | 6.6 | 5.5 | 55 N |
| 50 N | 19.9 | 19.4 | 18.7 | 17.9 | 16.8 | 15.5 | 14.0 | 12.4 | 10.7 | 9.0 | 7.3 | 5.7 | 4.1 | 2.8 | 1.8 | 50 N |
| 45 N | 18.5 | 17.6 | 16.7 | 15.7 | 14.4 | 13.0 | 11.4 | 9.7 | 8.0 | 6.3 | 4.7 | 3.2 | 1.9 | 0.7 | -0.2 | 45 N |
| 40 N | 16.7 | 15.8 | 14.9 | 14.0 | 12.8 | 11.5 | 9.9 | 8.3 | 6.6 | 5.0 | 3.5 | 2.1 | 0.9 | -0.2 | -1.0 | 40 N |
| 35 N | 15.1 | 14.4 | 13.8 | 13.1 | 12.2 | 11.0 | 9.6 | 8.0 | 6.4 | 4.8 | 3.2 | 1.7 | 0.5 | -0.6 | -1.5 | 35 N |
| 30 N | 13.7 | 13.3 | 13.1 | 12.9 | 12.3 | 11.4 | 10.1 | 8.5 | 6.8 | 4.9 | 3.1 | 1.3 | -0.3 | -1.6 | -2.8 | 30 N |
| 25 N | 12.3 | 12.4 | 12.7 | 12.8 | 12.5 | 11.8 | 10.6 | 9.0 | 7.0 | 4.8 | 2.5 | 0.2 | -1.9 | -3.8 | -5.4 | 25 N |
| 20 N | 10.5 | 11.1 | 11.7 | 12.2 | 12.1 | 11.5 | 10.3 | 8.6 | 6.4 | 3.8 | 1.0 | -1.9 | -4.6 | -7.1 | -9.2 | 20 N |
| 15 N | 8.1 | 9.0 | 9.9 | 10.4 | 10.3 | 9.7 | 8.6 | 6.8 | 4.5 | 1.7 | -1.4 | -4.8 | -8.0 | -11.0 | -13.6 | 15 N |
| 10 N | 5.1 | 6.1 | 6.8 | 7.1 | 6.9 | 6.3 | 5.1 | 3.5 | 1.3 | -1.4 | -4.6 | -8.0 | -11.5 | -14.7 | -17.6 | 10 N |
| 5 N | 1.9 | 2.5 | 2.7 | 2.5 | 1.9 | 1.2 | 0.1 | -1.2 | -3.0 | -5.3 | -8.1 | -11.2 | -14.4 | -17.5 | -20.2 | 5 N |
| 0 | -1.1 | -1.3 | -2.0 | -3.0 | -4.0 | -5.0 | -6.0 | -6.9 | -8.1 | -9.6 | -11.6 | -13.9 | -16.4 | -18.9 | -21.1 | 0 |
| 5 S | -3.3 | -4.7 | -6.6 | -8.5 | -10.2 | -11.5 | -12.3 | -12.9 | -13.4 | -14.0 | -14.9 | -16.2 | -17.7 | -19.2 | -20.5 | 5 S |
| 10 S | -4.6 | -7.4 | -10.5 | -13.4 | -15.8 | -17.4 | -18.2 | -18.5 | -18.4 | -18.2 | -18.0 | -18.1 | -18.4 | -18.8 | -19.0 | 10 S |
| 15 S | -4.9 | -9.1 | -13.3 | -17.1 | -20.0 | -21.9 | -22.9 | -23.0 | -22.6 | -21.8 | -20.8 | -19.9 | -19.1 | -18.4 | -17.7 | 15 S |
| 20 S | -5.1 | -10.2 | -15.1 | -19.4 | -22.7 | -24.8 | -26.0 | -26.2 | -25.7 | -24.6 | -23.2 | -21.6 | -20.0 | -18.6 | -17.2 | 20 S |
| 25 S | -6.1 | -11.3 | -16.3 | -20.6 | -23.8 | -26.1 | -27.3 | -27.8 | -27.4 | -26.4 | -25.0 | -23.2 | -21.3 | -19.5 | -18.0 | 25 S |
| 30 S | -8.6 | -13.3 | -17.6 | -21.2 | -24.1 | -26.1 | -27.4 | -28.0 | -28.0 | -27.3 | -26.1 | -24.5 | -22.7 | -21.1 | -19.8 | 30 S |
| 35 S | -13.5 | -16.8 | -19.7 | -22.2 | -24.2 | -25.8 | -26.9 | -27.6 | -27.7 | -27.4 | -26.6 | -25.4 | -24.1 | -22.9 | -22.2 | 35 S |
| 40 S | -20.8 | -22.1 | -23.3 | -24.3 | -25.2 | -25.9 | -26.6 | -27.1 | -27.4 | -27.3 | -26.8 | -26.0 | -25.2 | -24.7 | -24.7 | 40 S |
| 45 S | -30.1 | -29.4 | -28.7 | -28.1 | -27.7 | -27.5 | -27.5 | -27.6 | -27.6 | -27.5 | -27.2 | -26.8 | -26.4 | -26.3 | -26.9 | 45 S |
| 50 S | -40.4 | -37.9 | -35.6 | -33.7 | -32.1 | -30.9 | -30.2 | -29.7 | -29.3 | -28.9 | -28.5 | -28.1 | -27.8 | -27.9 | -28.6 | 50 S |
| 55 S | -50.4 | -46.9 | -43.6 | -40.6 | -38.2 | -36.3 | -34.8 | -33.6 | -32.7 | -31.8 | -31.0 | -30.3 | -29.8 | -29.7 | -30.1 | 55 S |
| 60 S | -59.0 | -55.1 | -51.5 | -48.2 | -45.3 | -42.9 | -40.8 | -39.1 | -37.5 | -36.1 | -34.8 | -33.6 | -32.5 | -31.7 | -31.3 | 60 S |
| 65 S | -64.9 | -61.5 | -58.2 | -55.1 | -52.2 | -49.6 | -47.2 | -45.1 | -43.0 | -41.0 | -39.1 | -37.2 | -35.3 | -33.7 | -32.2 | 65 S |
| 70 S | -67.4 | -65.0 | -62.5 | -60.0 | -57.5 | -55.0 | -52.5 | -50.1 | -47.6 | -45.2 | -42.6 | -40.0 | -37.4 | -34.8 | -32.3 | 70 S |
| 75 S | -66.3 | -65.0 | -63.4 | -61.6 | -59.6 | -57.4 | -55.0 | -52.5 | -49.8 | -47.0 | -44.0 | -40.9 | -37.6 | -34.3 | -30.9 | 75 S |
| 80 S | -61.2 | -60.8 | -60.0 | -58.8 | -57.3 | -55.5 | -53.3 | -50.9 | -48.2 | -45.2 | -42.0 | -38.6 | -35.0 | -31.3 | -27.4 | 80 S |
| 85 S | -52.3 | -52.3 | -51.9 | -51.1 | -50.0 | -48.5 | -46.6 | -44.4 | -41.9 | -39.0 | -36.0 | -32.7 | -29.2 | -25.5 | -21.8 | 85 S |
| 90 S | -39.8 | -39.7 | -39.3 | -38.6 | -37.6 | -36.4 | -34.8 | -33.0 | -31.0 | -28.7 | -26.2 | -23.4 | -20.6 | -17.5 | -14.3 | 90 S |
| LAT. | -24.2 | -23.6 | -22.8 | -21.9 | -21.0 | -19.9 | -18.8 | -17.6 | -16.4 | -15.0 | -13.5 | -11.9 | -10.1 | -8.2 | -6.1 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 4 B IGRF NORTH COMPONENT (X)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 4.9 | 6.1 | 7.2 | 8.3 | 9.4 | 10.4 | 11.4 | 12.2 | 13.0 | 13.6 | 14.1 | 14.5 | 14.7 | 14.7 | 14.6 | LAT. |
| 90 N | 11.9 | 13.1 | 14.2 | 15.2 | 16.1 | 16.8 | 17.5 | 18.0 | 18.4 | 18.6 | 18.7 | 18.6 | 18.4 | 18.1 | 17.6 | 90 N |
| 85 N | 17.9 | 19.0 | 20.0 | 20.8 | 21.4 | 21.9 | 22.2 | 22.4 | 22.4 | 22.3 | 22.0 | 21.6 | 21.1 | 20.5 | 19.7 | 85 N |
| 80 N | 22.0 | 22.8 | 23.4 | 23.9 | 24.3 | 24.5 | 24.6 | 24.6 | 24.5 | 24.3 | 23.9 | 23.5 | 22.9 | 22.2 | 21.4 | 80 N |
| 75 N | 23.4 | 23.7 | 23.9 | 24.0 | 24.1 | 24.2 | 24.3 | 24.4 | 24.4 | 24.4 | 24.4 | 24.3 | 24.0 | 23.7 | 23.2 | 75 N |
| 70 N | 21.9 | 21.6 | 21.3 | 21.1 | 21.0 | 21.1 | 21.3 | 21.8 | 22.3 | 22.9 | 23.6 | 24.2 | 24.6 | 24.9 | 25.1 | 70 N |
| 65 N | 18.0 | 17.2 | 16.5 | 16.0 | 15.9 | 16.0 | 16.6 | 17.5 | 18.8 | 20.2 | 21.7 | 23.3 | 24.7 | 25.9 | 26.9 | 65 N |
| 60 N | 12.9 | 11.7 | 10.8 | 10.1 | 10.0 | 10.3 | 11.3 | 12.7 | 14.6 | 16.9 | 19.3 | 21.7 | 24.1 | 26.2 | 28.0 | 60 N |
| 55 N | 8.0 | 6.6 | 5.5 | 4.9 | 4.8 | 5.3 | 6.4 | 8.2 | 10.6 | 13.3 | 16.3 | 19.4 | 22.3 | 25.1 | 27.5 | 55 N |
| 50 N | 4.1 | 2.8 | 1.8 | 1.2 | 1.1 | 1.6 | 2.8 | 4.6 | 7.0 | 9.8 | 12.9 | 16.0 | 19.1 | 22.1 | 24.9 | 50 N |
| 45 N | 1.9 | 0.7 | -0.2 | -0.8 | -0.9 | -0.6 | 0.3 | 1.7 | 3.6 | 5.9 | 8.5 | 11.2 | 14.0 | 16.7 | 19.5 | 45 N |
| 40 N | 0.9 | -0.2 | -1.0 | -1.6 | -1.9 | -1.9 | -1.6 | -1.0 | -0.0 | 1.2 | 2.8 | 4.6 | 6.6 | 8.9 | 11.4 | 40 N |
| 35 N | 0.5 | -0.6 | -1.5 | -2.3 | -2.9 | -3.5 | -4.0 | -4.4 | -4.8 | -4.9 | -4.6 | -4.0 | -2.9 | -1.2 | 1.1 | 35 N |
| 30 N | -0.3 | -1.6 | -2.8 | -3.9 | -4.9 | -6.1 | -7.6 | -9.2 | -10.9 | -12.5 | -13.7 | -14.2 | -14.0 | -12.8 | -10.7 | 30 N |
| 25 N | -1.9 | -3.8 | -5.4 | -6.9 | -8.4 | -10.3 | -12.6 | -15.3 | -18.2 | -21.1 | -23.5 | -25.1 | -25.5 | -24.7 | -22.7 | 25 N |
| 20 N | -4.6 | -7.1 | -9.2 | -11.2 | -13.2 | -15.6 | -18.5 | -21.9 | -25.7 | -29.5 | -32.7 | -35.0 | -35.8 | -35.3 | -33.4 | 20 N |
| 15 N | -8.0 | -11.0 | -13.6 | -16.0 | -18.3 | -20.9 | -24.0 | -27.6 | -31.7 | -35.9 | -39.5 | -42.0 | -43.2 | -42.9 | -41.3 | 15 N |
| 10 N | -11.5 | -14.7 | -17.6 | -20.1 | -22.4 | -24.8 | -27.7 | -31.0 | -34.7 | -38.6 | -42.0 | -44.7 | -46.2 | -46.3 | -45.3 | 10 N |
| 5 N | -14.4 | -17.5 | -20.2 | -22.5 | -24.5 | -26.4 | -28.5 | -30.9 | -33.7 | -36.7 | -39.6 | -42.1 | -43.8 | -44.8 | -44.9 | 5 N |
| 0 | -16.4 | -18.9 | -21.1 | -22.9 | -24.2 | -25.2 | -26.1 | -27.2 | -28.6 | -30.3 | -32.4 | -34.6 | -36.8 | -38.7 | -40.3 | 0 |
| 5 S | -17.7 | -19.2 | -20.5 | -21.4 | -21.8 | -21.7 | -21.3 | -20.9 | -20.7 | -21.1 | -22.2 | -24.1 | -26.6 | -29.6 | -32.9 | 5 S |
| 10 S | -18.4 | -18.8 | -19.0 | -19.0 | -18.4 | -17.3 | -15.7 | -14.0 | -12.5 | -11.6 | -11.8 | -13.2 | -16.0 | -19.9 | -24.7 | 10 S |
| 15 S | -19.1 | -18.4 | -17.7 | -16.8 | -15.5 | -13.7 | -11.3 | -8.7 | -6.3 | -4.6 | -4.1 | -5.2 | -8.0 | -12.5 | -18.1 | 15 S |
| 20 S | -20.0 | -18.6 | -17.2 | -15.8 | -14.2 | -12.2 | -9.8 | -7.0 | -4.4 | -2.4 | -1.6 | -2.5 | -5.2 | -9.6 | -15.3 | 20 S |
| 25 S | -21.3 | -19.5 | -18.0 | -16.6 | -15.2 | -13.6 | -11.8 | -9.7 | -7.7 | -6.1 | -5.5 | -6.2 | -8.5 | -12.3 | -17.4 | 25 S |
| 30 S | -22.7 | -21.1 | -19.8 | -18.8 | -18.2 | -17.6 | -17.0 | -16.3 | -15.5 | -14.9 | -14.9 | -15.6 | -17.4 | -20.3 | -24.1 | 30 S |
| 35 S | -24.1 | -22.9 | -22.2 | -22.1 | -22.5 | -23.2 | -24.2 | -25.1 | -25.9 | -26.6 | -27.4 | -28.3 | -29.7 | -31.5 | -33.7 | 35 S |
| 40 S | -25.2 | -24.7 | -24.7 | -25.4 | -26.9 | -28.9 | -31.3 | -33.8 | -36.1 | -38.1 | -39.6 | -40.8 | -41.8 | -42.6 | -43.5 | 40 S |
| 45 S | -26.4 | -26.3 | -26.9 | -28.2 | -30.4 | -33.3 | -36.6 | -40.1 | -43.4 | -46.2 | -48.4 | -49.7 | -50.4 | -50.6 | -50.3 | 45 S |
| 50 S | -27.8 | -27.9 | -28.6 | -30.1 | -32.4 | -35.4 | -39.0 | -42.6 | -46.1 | -49.1 | -51.3 | -52.6 | -53.1 | -52.8 | -52.0 | 50 S |
| 55 S | -29.8 | -29.7 | -30.1 | -31.1 | -32.9 | -35.2 | -38.0 | -41.0 | -43.8 | -46.2 | -48.0 | -48.9 | -49.0 | -48.5 | -47.6 | 55 S |
| 60 S | -32.5 | -31.7 | -31.3 | -31.4 | -32.0 | -33.0 | -34.4 | -36.0 | -37.4 | -38.6 | -39.4 | -39.6 | -39.4 | -38.7 | -37.8 | 60 S |
| 65 S | -35.3 | -33.7 | -32.2 | -31.0 | -30.1 | -29.6 | -29.2 | -28.9 | -28.7 | -28.4 | -27.9 | -27.3 | -26.5 | -25.6 | -24.7 | 65 S |
| 70 S | -37.4 | -34.8 | -32.3 | -29.8 | -27.5 | -25.3 | -23.3 | -21.4 | -19.6 | -17.8 | -16.1 | -14.6 | -13.1 | -11.9 | -11.0 | 70 S |
| 75 S | -37.6 | -34.3 | -30.9 | -27.4 | -24.0 | -20.7 | -17.4 | -14.3 | -11.3 | -8.5 | -5.9 | -3.6 | -1.6 | 0.0 | 1.2 | 75 S |
| 80 S | -35.0 | -31.3 | -27.4 | -23.5 | -19.6 | -15.6 | -11.8 | -8.0 | -4.5 | -1.1 | 2.0 | 4.8 | 7.2 | 9.3 | 10.9 | 80 S |
| 85 S | -29.2 | -25.5 | -21.8 | -17.9 | -14.0 | -10.1 | -6.3 | -2.5 | 1.1 | 4.6 | 7.9 | 10.9 | 13.7 | 16.2 | 18.4 | 85 S |
| 90 S | -20.6 | -17.5 | -14.3 | -11.0 | -7.7 | -4.2 | -0.8 | 2.7 | 6.2 | 9.6 | 12.9 | 16.1 | 19.2 | 22.2 | 25.0 | 90 S |
| LAT. | -10.1 | -8.2 | -6.1 | -3.7 | -1.2 | 1.6 | 4.5 | 7.7 | 11.0 | 14.4 | 17.9 | 21.5 | 25.1 | 28.7 | 32.1 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 4 B IGRF NORTH COMPONENT (X)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 14.7 | 14.7 | 14.6 | 14.2 | 13.7 | 12.9 | 12.0 | 10.9 | 9.6 | 8.2 | 6.6 | 4.9 | 3.1 | 1.2 | -0.7 | |
| 90 N | 18.4 | 18.1 | 17.6 | 17.0 | 16.3 | 15.4 | 14.4 | 13.3 | 12.1 | 10.9 | 9.5 | 8.1 | 6.6 | 5.0 | 3.4 | 90 N |
| 85 N | 21.1 | 20.5 | 19.7 | 18.9 | 18.0 | 17.0 | 15.9 | 14.9 | 13.7 | 12.6 | 11.4 | 10.2 | 9.1 | 7.9 | 6.7 | 85 N |
| 80 N | 22.9 | 22.2 | 21.4 | 20.5 | 19.6 | 18.6 | 17.5 | 16.4 | 15.3 | 14.3 | 13.3 | 12.3 | 11.4 | 10.6 | 9.8 | 80 N |
| 75 N | 24.0 | 23.7 | 23.2 | 22.5 | 21.7 | 20.9 | 19.9 | 19.0 | 18.0 | 17.0 | 16.2 | 15.4 | 14.8 | 14.2 | 13.8 | 75 N |
| 70 N | 24.6 | 24.9 | 25.1 | 25.0 | 24.7 | 24.2 | 23.6 | 22.9 | 22.2 | 21.6 | 21.0 | 20.5 | 20.2 | 19.9 | 19.8 | 70 N |
| 65 N | 24.7 | 25.9 | 26.9 | 27.6 | 28.0 | 28.2 | 28.2 | 28.2 | 28.1 | 28.0 | 28.0 | 28.0 | 28.2 | 28.4 | 28.6 | 65 N |
| 60 N | 24.1 | 26.2 | 28.0 | 29.5 | 30.7 | 31.8 | 32.8 | 33.7 | 34.6 | 35.5 | 36.5 | 37.5 | 38.5 | 39.4 | 40.1 | 60 N |
| 55 N | 22.3 | 25.1 | 27.5 | 29.8 | 31.9 | 33.9 | 36.0 | 38.2 | 40.5 | 43.0 | 45.4 | 47.8 | 49.9 | 51.8 | 53.2 | 55 N |
| 50 N | 19.1 | 22.1 | 24.9 | 27.6 | 30.4 | 33.3 | 36.6 | 40.3 | 44.4 | 48.6 | 52.9 | 57.0 | 60.6 | 63.7 | 66.0 | 50 N |
| 45 N | 14.0 | 16.7 | 19.5 | 22.5 | 25.7 | 29.5 | 34.0 | 39.1 | 44.9 | 51.0 | 57.2 | 63.0 | 68.3 | 72.7 | 76.0 | 45 N |
| 40 N | 6.6 | 8.9 | 11.4 | 14.4 | 18.0 | 22.5 | 27.9 | 34.2 | 41.4 | 49.1 | 56.9 | 64.3 | 71.0 | 76.6 | 81.0 | 40 N |
| 35 N | -2.9 | -1.2 | 1.1 | 4.1 | 7.9 | 12.8 | 18.8 | 25.8 | 33.9 | 42.5 | 51.3 | 59.7 | 67.4 | 73.9 | 79.0 | 35 N |
| 30 N | -14.0 | -12.8 | -10.7 | -7.7 | -3.7 | 1.4 | 7.5 | 14.7 | 22.8 | 31.5 | 40.5 | 49.1 | 57.1 | 64.0 | 69.7 | 30 N |
| 25 N | -25.5 | -24.7 | -22.7 | -19.6 | -15.5 | -10.5 | -4.7 | 2.0 | 9.4 | 17.3 | 25.4 | 33.4 | 41.0 | 47.8 | 53.7 | 25 N |
| 20 N | -35.8 | -35.3 | -33.4 | -30.3 | -26.4 | -21.8 | -16.8 | -11.2 | -5.3 | 1.0 | 7.6 | 14.3 | 20.8 | 27.0 | 32.7 | 20 N |
| 15 N | -43.2 | -42.9 | -41.3 | -38.6 | -35.3 | -31.5 | -27.7 | -23.8 | -19.7 | -15.4 | -10.9 | -6.1 | -1.0 | 4.2 | 9.4 | 15 N |
| 10 N | -46.2 | -46.3 | -45.3 | -43.5 | -41.2 | -38.8 | -36.6 | -34.5 | -32.6 | -30.5 | -28.2 | -25.3 | -21.9 | -17.9 | -13.5 | 10 N |
| 5 N | -43.8 | -44.8 | -44.9 | -44.5 | -43.8 | -43.2 | -42.9 | -42.8 | -42.9 | -43.0 | -42.6 | -41.6 | -39.7 | -37.0 | -33.5 | 5 N |
| 0 | -36.8 | -38.7 | -40.3 | -41.8 | -43.2 | -44.6 | -46.3 | -48.2 | -50.1 | -51.8 | -53.0 | -53.5 | -53.0 | -51.5 | -49.1 | 0 |
| 5 S | -26.6 | -29.6 | -32.9 | -36.4 | -39.9 | -43.5 | -47.0 | -50.5 | -53.8 | -56.8 | -59.1 | -60.7 | -61.3 | -61.0 | -59.8 | 5 S |
| 10 S | -16.0 | -19.9 | -24.7 | -30.0 | -35.4 | -40.7 | -45.7 | -50.4 | -54.7 | -58.4 | -61.5 | -63.8 | -65.3 | -66.0 | -66.0 | 10 S |
| 15 S | -8.0 | -12.5 | -18.1 | -24.5 | -31.1 | -37.5 | -43.5 | -48.9 | -53.6 | -57.7 | -61.1 | -63.9 | -66.1 | -67.8 | -69.1 | 15 S |
| 20 S | -5.2 | -9.6 | -15.3 | -21.9 | -28.7 | -35.4 | -41.5 | -47.0 | -51.7 | -55.9 | -59.5 | -62.7 | -65.5 | -68.1 | -70.5 | 20 S |
| 25 S | -8.5 | -12.3 | -17.4 | -23.2 | -29.4 | -35.3 | -40.9 | -45.9 | -50.4 | -54.4 | -58.1 | -61.6 | -65.0 | -68.4 | -71.8 | 25 S |
| 30 S | -17.4 | -20.3 | -24.1 | -28.5 | -33.1 | -37.7 | -42.2 | -46.3 | -50.3 | -54.1 | -57.9 | -61.7 | -65.6 | -69.7 | -73.9 | 30 S |
| 35 S | -29.7 | -31.5 | -33.7 | -36.3 | -39.1 | -42.0 | -45.1 | -48.3 | -51.6 | -55.2 | -59.0 | -63.2 | -67.5 | -72.1 | -76.7 | 35 S |
| 40 S | -41.8 | -42.6 | -43.5 | -44.4 | -45.4 | -46.8 | -48.5 | -50.8 | -53.6 | -57.0 | -61.0 | -65.4 | -70.1 | -74.9 | -79.7 | 40 S |
| 45 S | -50.4 | -50.6 | -50.3 | -50.0 | -49.8 | -50.0 | -50.8 | -52.5 | -55.0 | -58.3 | -62.4 | -67.0 | -72.0 | -76.9 | -81.6 | 45 S |
| 50 S | -53.1 | -52.8 | -52.0 | -51.1 | -50.3 | -49.9 | -50.4 | -51.8 | -54.2 | -57.6 | -61.8 | -66.6 | -71.6 | -76.5 | -81.0 | 50 S |
| 55 S | -49.0 | -48.5 | -47.6 | -46.6 | -45.7 | -45.4 | -46.0 | -47.5 | -50.1 | -53.6 | -57.9 | -62.7 | -67.7 | -72.4 | -76.5 | 55 S |
| 60 S | -39.4 | -38.7 | -37.8 | -37.0 | -36.5 | -36.6 | -37.5 | -39.3 | -42.1 | -45.7 | -50.0 | -54.7 | -59.4 | -63.8 | -67.5 | 60 S |
| 65 S | -26.5 | -25.6 | -24.7 | -24.2 | -24.1 | -24.6 | -25.8 | -27.9 | -30.7 | -34.3 | -38.3 | -42.5 | -46.8 | -50.7 | -54.0 | 65 S |
| 70 S | -13.1 | -11.9 | -11.0 | -10.5 | -10.6 | -11.2 | -12.5 | -14.5 | -17.0 | -20.1 | -23.5 | -27.1 | -30.7 | -33.9 | -36.6 | 70 S |
| 75 S | -1.6 | 0.0 | 1.2 | 1.9 | 2.1 | 1.8 | 0.9 | -0.6 | -2.4 | -4.7 | -7.2 | -9.8 | -12.4 | -14.8 | -16.9 | 75 S |
| 80 S | 7.2 | 9.3 | 10.9 | 12.1 | 12.9 | 13.2 | 13.1 | 12.6 | 11.8 | 10.7 | 9.4 | 7.9 | 6.4 | 4.9 | 3.5 | 80 S |
| 85 S | 13.7 | 16.2 | 18.4 | 20.3 | 21.9 | 23.1 | 24.0 | 24.7 | 25.0 | 25.2 | 25.0 | 24.7 | 24.2 | 23.6 | 22.8 | 85 S |
| 90 S | 19.2 | 22.2 | 25.0 | 27.6 | 30.0 | 32.1 | 34.1 | 35.7 | 37.1 | 38.2 | 39.0 | 39.6 | 39.8 | 39.7 | 39.3 | 90 S |
| LAT. | 25.1 | 28.7 | 32.1 | 35.4 | 38.5 | 41.4 | 44.0 | 46.3 | 48.2 | 49.8 | 51.0 | 51.9 | 52.3 | 52.3 | 51.9 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 4 B IGRF NORTH COMPONENT (X)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3.1 | 1.2 | -0.7 | -2.7 | -4.6 | -6.6 | -8.5 | -10.3 | -12.1 | -13.7 | -15.2 | -16.6 | -17.9 | -19.0 | -20.0 | |
| 90 N | 6.6 | 5.0 | 3.4 | 1.8 | 0.2 | -1.4 | -3.1 | -4.7 | -6.2 | -7.7 | -9.2 | -10.6 | -11.9 | -13.1 | -14.2 | 90 N |
| 85 N | 9.1 | 7.9 | 6.7 | 5.6 | 4.4 | 3.2 | 2.1 | 0.9 | -0.2 | -1.4 | -2.6 | -3.7 | -4.9 | -6.1 | -7.2 | 85 N |
| 80 N | 11.4 | 10.6 | 9.8 | 9.1 | 8.4 | 7.8 | 7.1 | 6.4 | 5.7 | 4.9 | 4.0 | 3.1 | 2.1 | 1.0 | -0.2 | 80 N |
| 75 N | 14.8 | 14.2 | 13.8 | 13.5 | 13.2 | 12.9 | 12.6 | 12.3 | 11.8 | 11.2 | 10.5 | 9.6 | 8.6 | 7.4 | 6.2 | 75 N |
| 70 N | 20.2 | 19.9 | 19.8 | 19.8 | 19.8 | 19.8 | 19.6 | 19.4 | 18.9 | 18.2 | 17.2 | 16.0 | 14.6 | 13.1 | 11.4 | 70 N |
| 65 N | 28.2 | 28.4 | 28.6 | 28.9 | 29.0 | 29.1 | 28.8 | 28.3 | 27.5 | 26.2 | 24.6 | 22.6 | 20.3 | 18.0 | 15.6 | 65 N |
| 60 N | 38.5 | 39.4 | 40.1 | 40.7 | 41.0 | 40.9 | 40.4 | 39.3 | 37.7 | 35.5 | 32.7 | 29.5 | 26.0 | 22.4 | 19.0 | 60 N |
| 55 N | 49.9 | 51.8 | 53.2 | 54.2 | 54.6 | 54.4 | 53.5 | 51.7 | 49.0 | 45.5 | 41.3 | 36.5 | 31.5 | 26.5 | 21.8 | 55 N |
| 50 N | 60.6 | 63.7 | 66.0 | 67.5 | 68.2 | 67.8 | 66.4 | 63.8 | 60.1 | 55.2 | 49.4 | 43.0 | 36.4 | 30.0 | 24.1 | 50 N |
| 45 N | 68.3 | 72.7 | 76.0 | 78.2 | 79.2 | 78.8 | 77.1 | 73.8 | 69.1 | 63.1 | 55.9 | 48.2 | 40.2 | 32.7 | 25.9 | 45 N |
| 40 N | 71.0 | 76.6 | 81.0 | 83.9 | 85.3 | 85.1 | 83.3 | 79.7 | 74.5 | 67.6 | 59.7 | 51.1 | 42.4 | 34.3 | 27.2 | 40 N |
| 35 N | 67.4 | 73.9 | 79.0 | 82.7 | 84.7 | 85.0 | 83.5 | 80.1 | 74.8 | 67.9 | 59.9 | 51.2 | 42.7 | 34.8 | 28.2 | 35 N |
| 30 N | 57.1 | 64.0 | 69.7 | 74.0 | 76.7 | 77.7 | 76.9 | 74.3 | 69.8 | 63.7 | 56.4 | 48.7 | 41.1 | 34.3 | 28.7 | 30 N |
| 25 N | 41.0 | 47.8 | 53.7 | 58.4 | 61.8 | 63.8 | 64.2 | 62.9 | 59.8 | 55.3 | 49.8 | 43.7 | 37.9 | 32.9 | 28.9 | 25 N |
| 20 N | 20.8 | 27.0 | 32.7 | 37.7 | 41.8 | 44.9 | 46.7 | 47.1 | 46.0 | 43.7 | 40.5 | 36.9 | 33.4 | 30.5 | 28.2 | 20 N |
| 15 N | -1.0 | 4.2 | 9.4 | 14.4 | 19.1 | 23.1 | 26.4 | 28.6 | 29.8 | 30.0 | 29.5 | 28.5 | 27.5 | 26.6 | 25.9 | 15 N |
| 10 N | -21.9 | -17.9 | -13.5 | -8.7 | -3.8 | 0.9 | 5.3 | 9.2 | 12.4 | 15.0 | 17.1 | 18.6 | 19.7 | 20.5 | 21.0 | 10 N |
| 5 N | -39.7 | -37.0 | -33.5 | -29.3 | -24.7 | -19.7 | -14.7 | -9.8 | -5.1 | -0.6 | 3.3 | 6.8 | 9.5 | 11.4 | 12.5 | 5 N |
| 0 | -53.0 | -51.5 | -49.1 | -45.8 | -41.9 | -37.4 | -32.6 | -27.4 | -22.1 | -16.7 | -11.7 | -7.2 | -3.7 | -1.3 | -0.2 | 0 |
| 5 S | -61.3 | -61.0 | -59.8 | -57.7 | -55.0 | -51.6 | -47.7 | -43.2 | -38.2 | -33.0 | -27.9 | -23.3 | -19.7 | -17.4 | -16.5 | 5 S |
| 10 S | -65.3 | -66.0 | -66.0 | -65.4 | -64.2 | -62.5 | -60.1 | -57.1 | -53.3 | -49.1 | -44.8 | -40.8 | -37.7 | -35.8 | -35.1 | 10 S |
| 15 S | -66.1 | -67.8 | -69.1 | -70.0 | -70.5 | -70.7 | -70.2 | -69.0 | -67.0 | -64.4 | -61.3 | -58.4 | -55.9 | -54.3 | -53.5 | 15 S |
| 20 S | -65.5 | -68.1 | -70.5 | -72.9 | -75.1 | -77.0 | -78.4 | -79.0 | -78.8 | -77.8 | -76.1 | -74.1 | -72.2 | -70.5 | -69.2 | 20 S |
| 25 S | -65.0 | -68.4 | -71.8 | -75.3 | -78.8 | -82.1 | -84.9 | -87.0 | -88.1 | -88.3 | -87.5 | -86.1 | -84.1 | -82.0 | -79.6 | 25 S |
| 30 S | -65.6 | -69.7 | -73.9 | -78.1 | -82.3 | -86.4 | -89.9 | -92.6 | -94.3 | -94.9 | -94.4 | -92.8 | -90.3 | -87.1 | -83.3 | 30 S |
| 35 S | -67.5 | -72.1 | -76.7 | -81.3 | -85.7 | -89.8 | -93.2 | -95.7 | -97.1 | -97.3 | -96.1 | -93.7 | -90.1 | -85.7 | -80.4 | 35 S |
| 40 S | -70.1 | -74.9 | -79.7 | -84.3 | -88.4 | -91.9 | -94.5 | -96.1 | -96.4 | -95.4 | -93.0 | -89.3 | -84.4 | -78.6 | -72.1 | 40 S |
| 45 S | -72.0 | -76.9 | -81.6 | -85.8 | -89.3 | -91.9 | -93.4 | -93.6 | -92.5 | -90.0 | -86.1 | -81.0 | -74.8 | -67.9 | -60.6 | 45 S |
| 50 S | -71.6 | -76.5 | -81.0 | -84.7 | -87.5 | -89.1 | -89.4 | -88.3 | -85.7 | -81.8 | -76.6 | -70.3 | -63.3 | -55.9 | -48.5 | 50 S |
| 55 S | -67.7 | -72.4 | -76.5 | -79.8 | -81.9 | -82.7 | -82.0 | -79.9 | -76.4 | -71.6 | -65.6 | -58.9 | -51.7 | -44.4 | -37.5 | 55 S |
| 60 S | -59.4 | -63.8 | -67.5 | -70.4 | -72.0 | -72.3 | -71.2 | -68.6 | -64.8 | -59.8 | -53.9 | -47.5 | -40.9 | -34.4 | -28.6 | 60 S |
| 65 S | -46.8 | -50.7 | -54.0 | -56.4 | -57.7 | -57.9 | -56.8 | -54.5 | -51.1 | -46.7 | -41.7 | -36.4 | -31.0 | -25.9 | -21.6 | 65 S |
| 70 S | -30.7 | -33.9 | -36.6 | -38.7 | -39.9 | -40.1 | -39.4 | -37.8 | -35.4 | -32.3 | -28.8 | -25.1 | -21.4 | -18.2 | -15.5 | 70 S |
| 75 S | -12.4 | -14.8 | -16.9 | -18.5 | -19.6 | -20.1 | -20.0 | -19.4 | -18.3 | -16.7 | -15.0 | -13.2 | -11.5 | -10.1 | -9.2 | 75 S |
| 80 S | 6.4 | 4.9 | 3.5 | 2.3 | 1.3 | 0.5 | -0.0 | -0.4 | -0.6 | -0.6 | -0.6 | -0.7 | -0.9 | -1.3 | -2.0 | 80 S |
| 85 S | 24.2 | 23.6 | 22.8 | 21.9 | 21.0 | 19.9 | 18.8 | 17.6 | 16.4 | 15.0 | 13.5 | 11.9 | 10.1 | 8.2 | 6.1 | 85 S |
| 90 S | 39.8 | 39.7 | 39.3 | 38.6 | 37.6 | 36.4 | 34.8 | 33.0 | 31.0 | 28.7 | 26.2 | 23.4 | 20.6 | 17.5 | 14.3 | 90 S |
| LAT. | 52.3 | 52.3 | 51.9 | 51.1 | 50.0 | 48.5 | 46.6 | 44.4 | 41.9 | 39.0 | 36.0 | 32.7 | 29.2 | 25.5 | 21.8 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 5 A **IGRF EAST COMPONENT (Y)**

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -1351 | -1397 | -1435 | -1459 | -1463 | -1443 | -1395 | -1314 | -1198 | -1047 | -858 | -634 | -377 | -90 | 222 | LAT. |
| 90 N | -1654 | -1478 | -1291 | -1094 | -889 | -677 | -460 | -240 | -17 | 204 | 425 | 643 | 856 | 1062 | 1260 | 90 N |
| 85 N | -1977 | -1613 | -1234 | -848 | -462 | -81 | 286 | 635 | 961 | 1257 | 1521 | 1748 | 1936 | 2084 | 2192 | 85 N |
| 80 N | -2290 | -1779 | -1252 | -719 | -191 | 323 | 814 | 1273 | 1690 | 2059 | 2373 | 2625 | 2811 | 2929 | 2977 | 80 N |
| 75 N | -2567 | -1952 | -1322 | -689 | -63 | 544 | 1124 | 1666 | 2158 | 2591 | 2956 | 3244 | 3448 | 3561 | 3580 | 75 N |
| 70 N | -2789 | -2109 | -1418 | -728 | -47 | 614 | 1247 | 1841 | 2385 | 2867 | 3277 | 3603 | 3833 | 3958 | 3972 | 70 N |
| 65 N | -2949 | -2234 | -1516 | -803 | -103 | 577 | 1230 | 1847 | 2417 | 2927 | 3366 | 3719 | 3973 | 4115 | 4136 | 65 N |
| 60 N | -3052 | -2321 | -1597 | -885 | -190 | 483 | 1130 | 1743 | 2312 | 2825 | 3270 | 3630 | 3893 | 4044 | 4070 | 60 N |
| 55 N | -3113 | -2374 | -1653 | -954 | -279 | 371 | 993 | 1582 | 2127 | 2618 | 3042 | 3384 | 3631 | 3771 | 3791 | 55 N |
| 50 N | -3156 | -2407 | -1690 | -1006 | -355 | 264 | 851 | 1402 | 1907 | 2355 | 2734 | 3031 | 3235 | 3338 | 3333 | 50 N |
| 45 N | -3211 | -2444 | -1724 | -1052 | -423 | 164 | 713 | 1220 | 1676 | 2070 | 2386 | 2616 | 2753 | 2795 | 2745 | 45 N |
| 40 N | -3306 | -2512 | -1781 | -1113 | -503 | 56 | 570 | 1036 | 1444 | 1780 | 2028 | 2179 | 2231 | 2194 | 2080 | 40 N |
| 35 N | -3470 | -2639 | -1888 | -1219 | -621 | -84 | 401 | 834 | 1203 | 1489 | 1672 | 1743 | 1706 | 1580 | 1393 | 35 N |
| 30 N | -3719 | -2846 | -2072 | -1397 | -808 | -286 | 182 | 596 | 941 | 1192 | 1323 | 1323 | 1200 | 985 | 724 | 30 N |
| 25 N | -4059 | -3147 | -2350 | -1668 | -1082 | -568 | -105 | 305 | 644 | 878 | 974 | 917 | 719 | 425 | 96 | 25 N |
| 20 N | -4486 | -3543 | -2727 | -2039 | -1453 | -937 | -467 | -44 | 305 | 538 | 615 | 515 | 256 | -105 | -488 | 20 N |
| 15 N | -4978 | -4020 | -3195 | -2502 | -1911 | -1383 | -894 | -447 | -76 | 166 | 232 | 98 | -210 | -627 | -1052 | 15 N |
| 10 N | -5505 | -4552 | -3730 | -3034 | -2432 | -1885 | -1367 | -889 | -493 | -241 | -188 | -355 | -711 | -1175 | -1629 | 10 N |
| 5 N | -6027 | -5101 | -4293 | -3598 | -2982 | -2408 | -1859 | -1352 | -939 | -690 | -662 | -871 | -1278 | -1786 | -2262 | 5 N |
| 0 | -6501 | -5625 | -4843 | -4151 | -3520 | -2919 | -2341 | -1817 | -1406 | -1183 | -1202 | -1473 | -1941 | -2496 | -2991 | 0 |
| 5 S | -6890 | -6080 | -5335 | -4652 | -4008 | -3387 | -2796 | -2275 | -1894 | -1727 | -1823 | -2177 | -2722 | -3330 | -3846 | 5 S |
| 10 S | -7161 | -6429 | -5731 | -5065 | -4420 | -3795 | -3212 | -2726 | -2409 | -2333 | -2535 | -2996 | -3629 | -4298 | -4840 | 10 S |
| 15 S | -7298 | -6651 | -6006 | -5369 | -4742 | -4137 | -3596 | -3180 | -2965 | -3012 | -3346 | -3929 | -4661 | -5395 | -5965 | 15 S |
| 20 S | -7300 | -6739 | -6156 | -5564 | -4978 | -4428 | -3965 | -3657 | -3577 | -3774 | -4256 | -4968 | -5800 | -6597 | -7197 | 20 S |
| 25 S | -7182 | -6706 | -6194 | -5667 | -5152 | -4692 | -4345 | -4180 | -4262 | -4624 | -5258 | -6096 | -7017 | -7870 | -8495 | 25 S |
| 30 S | -6973 | -6582 | -6153 | -5714 | -5302 | -4966 | -4768 | -4773 | -5030 | -5560 | -6337 | -7284 | -8277 | -9168 | -9811 | 30 S |
| 35 S | -6710 | -6410 | -6079 | -5751 | -5471 | -5289 | -5265 | -5452 | -5886 | -6572 | -7471 | -8499 | -9537 | -10446 | -11093 | 35 S |
| 40 S | -6433 | -6236 | -6022 | -5831 | -5706 | -5699 | -5859 | -6228 | -6825 | -7642 | -8631 | -9707 | -10758 | -11659 | -12293 | 40 S |
| 45 S | -6178 | -6105 | -6031 | -5996 | -6045 | -6220 | -6562 | -7097 | -7832 | -8745 | -9785 | -10871 | -11901 | -12768 | -13371 | 45 S |
| 50 S | -5972 | -6049 | -6138 | -6278 | -6508 | -6864 | -7372 | -8047 | -8883 | -9852 | -10903 | -11960 | -12937 | -13743 | -14296 | 50 S |
| 55 S | -5830 | -6085 | -6358 | -6685 | -7096 | -7619 | -8269 | -9049 | -9947 | -10931 | -11952 | -12947 | -13842 | -14565 | -15051 | 55 S |
| 60 S | -5756 | -6211 | -6683 | -7200 | -7785 | -8455 | -9217 | -10067 | -10988 | -11949 | -12907 | -13811 | -14602 | -15225 | -15630 | 60 S |
| 65 S | -5746 | -6412 | -7086 | -7787 | -8530 | -9323 | -10167 | -11053 | -11963 | -12872 | -13743 | -14537 | -15211 | -15723 | -16038 | 65 S |
| 70 S | -5791 | -6661 | -7525 | -8392 | -9270 | -10159 | -11057 | -11952 | -12829 | -13666 | -14437 | -15114 | -15666 | -16066 | -16289 | 70 S |
| 75 S | -5880 | -6928 | -7953 | -8958 | -9941 | -10899 | -11825 | -12709 | -13539 | -14298 | -14969 | -15533 | -15971 | -16266 | -16402 | 75 S |
| 80 S | -6006 | -7188 | -8332 | -9432 | -10485 | -11481 | -12415 | -13276 | -14055 | -14741 | -15323 | -15789 | -16130 | -16335 | -16397 | 80 S |
| 85 S | -6167 | -7424 | -8631 | -9779 | -10860 | -11865 | -12787 | -13617 | -14348 | -14973 | -15484 | -15877 | -16145 | -16286 | -16295 | 85 S |
| 90 S | -6361 | -7629 | -8839 | -9982 | -11049 | -12031 | -12923 | -13715 | -14404 | -14983 | -15447 | -15795 | -16022 | -16127 | -16109 | 90 S |
| LAT. | -6587 | -7805 | -8961 | -10048 | -11060 | -11989 | -12830 | -13579 | -14229 | -14776 | -15216 | -15546 | -15762 | -15862 | -15844 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 5 A IGRF EAST COMPONENT (Y)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -377 | -90 | 222 | 556 | 903 | 1258 | 1613 | 1960 | 2292 | 2603 | 2884 | 3129 | 3334 | 3492 | 3602 | LAT. |
| 90 N | 856 | 1062 | 1260 | 1449 | 1626 | 1791 | 1943 | 2080 | 2201 | 2305 | 2392 | 2460 | 2510 | 2540 | 2552 | 90 N |
| 85 N | 1936 | 2084 | 2192 | 2260 | 2290 | 2285 | 2248 | 2185 | 2099 | 1996 | 1882 | 1763 | 1645 | 1533 | 1432 | 85 N |
| 80 N | 2811 | 2929 | 2977 | 2957 | 2870 | 2723 | 2521 | 2274 | 1993 | 1689 | 1375 | 1065 | 771 | 507 | 283 | 80 N |
| 75 N | 3448 | 3561 | 3580 | 3504 | 3335 | 3078 | 2741 | 2336 | 1880 | 1389 | 884 | 388 | -78 | -495 | -842 | 75 N |
| 70 N | 3833 | 3958 | 3972 | 3869 | 3650 | 3317 | 2879 | 2349 | 1747 | 1096 | 422 | -242 | -869 | -1426 | -1886 | 70 N |
| 65 N | 3973 | 4115 | 4136 | 4026 | 3783 | 3407 | 2904 | 2288 | 1580 | 805 | -2 | -805 | -1564 | -2238 | -2790 | 65 N |
| 60 N | 3893 | 4044 | 4070 | 3962 | 3714 | 3322 | 2792 | 2132 | 1364 | 514 | -380 | -1276 | -2127 | -2883 | -3497 | 60 N |
| 55 N | 3631 | 3771 | 3791 | 3684 | 3440 | 3056 | 2532 | 1873 | 1097 | 227 | -698 | -1635 | -2528 | -3323 | -3964 | 55 N |
| 50 N | 3235 | 3338 | 3333 | 3216 | 2980 | 2621 | 2134 | 1520 | 788 | -42 | -940 | -1859 | -2744 | -3532 | -4164 | 50 N |
| 45 N | 2753 | 2795 | 2745 | 2605 | 2375 | 2053 | 1630 | 1100 | 462 | -275 | -1088 | -1935 | -2761 | -3501 | -4090 | 45 N |
| 40 N | 2231 | 2194 | 2080 | 1906 | 1680 | 1403 | 1066 | 653 | 150 | -446 | -1125 | -1853 | -2579 | -3237 | -3758 | 40 N |
| 35 N | 1706 | 1580 | 1393 | 1177 | 954 | 730 | 495 | 223 | -112 | -533 | -1042 | -1618 | -2214 | -2767 | -3205 | 35 N |
| 30 N | 1200 | 985 | 724 | 466 | 248 | 85 | -36 | -149 | -299 | -524 | -843 | -1247 | -1698 | -2135 | -2485 | 30 N |
| 25 N | 719 | 425 | 96 | -196 | -402 | -497 | -496 | -444 | -400 | -421 | -545 | -774 | -1079 | -1399 | -1663 | 25 N |
| 20 N | 256 | -105 | -488 | -806 | -989 | -1008 | -880 | -660 | -425 | -249 | -185 | -248 | -414 | -626 | -810 | 20 N |
| 15 N | -210 | -627 | -1052 | -1379 | -1528 | -1464 | -1207 | -824 | -408 | -50 | 184 | 272 | 231 | 117 | 5 | 15 N |
| 10 N | -711 | -1175 | -1629 | -1953 | -2057 | -1903 | -1519 | -982 | -400 | 120 | 506 | 725 | 795 | 770 | 724 | 10 N |
| 5 N | -1278 | -1786 | -2262 | -2574 | -2625 | -2380 | -1873 | -1194 | -465 | 199 | 717 | 1052 | 1221 | 1279 | 1300 | 5 N |
| 0 | -1941 | -2496 | -2991 | -3286 | -3282 | -2948 | -2328 | -1522 | -662 | 127 | 761 | 1202 | 1467 | 1610 | 1705 | 0 |
| 5 S | -2722 | -3330 | -3846 | -4125 | -4070 | -3655 | -2933 | -2017 | -1044 | -142 | 599 | 1144 | 1508 | 1746 | 1930 | 5 S |
| 10 S | -3629 | -4298 | -4840 | -5107 | -5008 | -4526 | -3721 | -2711 | -1640 | -636 | 210 | 863 | 1339 | 1689 | 1980 | 10 S |
| 15 S | -4661 | -5395 | -5965 | -6228 | -6097 | -5565 | -4696 | -3612 | -2456 | -1357 | -403 | 369 | 972 | 1454 | 1874 | 15 S |
| 20 S | -5800 | -6597 | -7197 | -7461 | -7313 | -6749 | -5838 | -4700 | -3473 | -2284 | -1218 | -315 | 434 | 1067 | 1636 | 20 S |
| 25 S | -7017 | -7870 | -8495 | -8766 | -8613 | -8037 | -7105 | -5932 | -4649 | -3376 | -2196 | -1152 | -242 | 558 | 1292 | 25 S |
| 30 S | -8277 | -9168 | -9811 | -10089 | -9941 | -9370 | -8438 | -7250 | -5926 | -4578 | -3287 | -2099 | -1022 | -43 | 864 | 30 S |
| 35 S | -9537 | -10446 | -11093 | -11375 | -11238 | -10685 | -9770 | -8585 | -7238 | -5829 | -4438 | -3112 | -1873 | -718 | 363 | 35 S |
| 40 S | -10758 | -11659 | -12293 | -12572 | -12447 | -11920 | -11037 | -9873 | -8521 | -7072 | -5599 | -4155 | -2769 | -1452 | -206 | 40 S |
| 45 S | -11901 | -12768 | -13371 | -13635 | -13520 | -13023 | -12181 | -11053 | -9718 | -8253 | -6727 | -5193 | -3689 | -2237 | -851 | 45 S |
| 50 S | -12937 | -13743 | -14296 | -14534 | -14421 | -13955 | -13159 | -12082 | -10784 | -9332 | -7787 | -6203 | -4620 | -3070 | -1575 | 50 S |
| 55 S | -13842 | -14565 | -15051 | -15249 | -15131 | -14691 | -13945 | -12929 | -11689 | -10279 | -8754 | -7162 | -5546 | -3943 | -2380 | 55 S |
| 60 S | -14602 | -15225 | -15630 | -15778 | -15645 | -15226 | -14530 | -13581 | -12417 | -11077 | -9607 | -8052 | -6451 | -4841 | -3254 | 60 S |
| 65 S | -15211 | -15723 | -16038 | -16127 | -15972 | -15567 | -14918 | -14042 | -12964 | -11716 | -10333 | -8852 | -7308 | -5737 | -4167 | 65 S |
| 70 S | -15666 | -16066 | -16289 | -16315 | -16132 | -15737 | -15131 | -14326 | -13341 | -12196 | -10920 | -9541 | -8087 | -6588 | -5071 | 70 S |
| 75 S | -15971 | -16266 | -16402 | -16367 | -16156 | -15765 | -15196 | -14458 | -13561 | -12522 | -11360 | -10095 | -8749 | -7344 | -5902 | 75 S |
| 80 S | -16130 | -16335 | -16397 | -16311 | -16074 | -15685 | -15147 | -14465 | -13647 | -12703 | -11647 | -10492 | -9253 | -7946 | -6588 | 80 S |
| 85 S | -16145 | -16286 | -16295 | -16172 | -15917 | -15530 | -15016 | -14377 | -13619 | -12751 | -11779 | -10714 | -9565 | -8344 | -7062 | 85 S |
| 90 S | -16022 | -16127 | -16109 | -15969 | -15707 | -15325 | -14827 | -14217 | -13498 | -12676 | -11757 | -10750 | -9660 | -8497 | -7269 | 90 S |
| LAT. | -15762 | -15862 | -15844 | -15708 | -15454 | -15083 | -14598 | -14000 | -13296 | -12490 | -11588 | -10599 | -9529 | -8387 | -7182 | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 5 A IGRF EAST COMPONENT (Y)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | 3334 | 3492 | 3602 | 3659 | 3664 | 3615 | 3513 | 3361 | 3161 | 2918 | 2636 | 2320 | 1977 | 1613 | 1234 | |
| 90 N | 2510 | 2540 | 2552 | 2544 | 2515 | 2469 | 2404 | 2320 | 2219 | 2100 | 1966 | 1817 | 1654 | 1478 | 1291 | 90 N |
| 85 N | 1645 | 1533 | 1432 | 1345 | 1275 | 1225 | 1196 | 1186 | 1195 | 1220 | 1257 | 1302 | 1351 | 1397 | 1435 | 85 N |
| 80 N | 771 | 507 | 283 | 109 | -6 | -61 | -52 | 19 | 150 | 333 | 560 | 819 | 1099 | 1385 | 1665 | 80 N |
| 75 N | -78 | -495 | -842 | -1102 | -1264 | -1320 | -1266 | -1105 | -844 | -493 | -69 | 409 | 924 | 1452 | 1971 | 75 N |
| 70 N | -869 | -1426 | -1886 | -2224 | -2423 | -2472 | -2366 | -2109 | -1713 | -1196 | -578 | 111 | 846 | 1595 | 2331 | 70 N |
| 65 N | -1564 | -2238 | -2790 | -3188 | -3409 | -3438 | -3272 | -2918 | -2391 | -1716 | -923 | -47 | 875 | 1809 | 2719 | 65 N |
| 60 N | -2127 | -2883 | -3497 | -3931 | -4155 | -4153 | -3921 | -3470 | -2823 | -2010 | -1072 | -50 | 1013 | 2079 | 3108 | 60 N |
| 55 N | -2528 | -3323 | -3964 | -4406 | -4613 | -4568 | -4268 | -3729 | -2979 | -2059 | -1014 | 106 | 1256 | 2392 | 3478 | 55 N |
| 50 N | -2744 | -3532 | -4164 | -4586 | -4759 | -4664 | -4299 | -3684 | -2856 | -1861 | -753 | 413 | 1590 | 2734 | 3813 | 50 N |
| 45 N | -2761 | -3501 | -4090 | -4470 | -4597 | -4449 | -4027 | -3354 | -2474 | -1441 | -313 | 850 | 1999 | 3094 | 4108 | 45 N |
| 40 N | -2579 | -3237 | -3758 | -4080 | -4155 | -3958 | -3492 | -2783 | -1878 | -838 | 270 | 1388 | 2465 | 3464 | 4365 | 40 N |
| 35 N | -2214 | -2767 | -3205 | -3462 | -3486 | -3249 | -2754 | -2028 | -1124 | -106 | 955 | 1996 | 2968 | 3838 | 4593 | 35 N |
| 30 N | -1698 | -2135 | -2485 | -2677 | -2656 | -2391 | -1883 | -1161 | -277 | 698 | 1692 | 2639 | 3487 | 4210 | 4802 | 30 N |
| 25 N | -1079 | -1399 | -1663 | -1795 | -1738 | -1458 | -952 | -248 | 600 | 1521 | 2438 | 3283 | 4004 | 4576 | 5002 | 25 N |
| 20 N | -414 | -626 | -810 | -890 | -805 | -519 | -25 | 650 | 1454 | 2315 | 3154 | 3900 | 4501 | 4933 | 5204 | 20 N |
| 15 N | 231 | 117 | 5 | -28 | 79 | 367 | 844 | 1487 | 2244 | 3045 | 3811 | 4469 | 4965 | 5277 | 5415 | 15 N |
| 10 N | 795 | 770 | 724 | 735 | 866 | 1158 | 1620 | 2230 | 2943 | 3688 | 4389 | 4973 | 5386 | 5605 | 5642 | 10 N |
| 5 N | 1221 | 1279 | 1300 | 1361 | 1523 | 1826 | 2280 | 2865 | 3538 | 4236 | 4882 | 5409 | 5761 | 5916 | 5888 | 5 N |
| 0 | 1467 | 1610 | 1705 | 1827 | 2033 | 2361 | 2818 | 3389 | 4032 | 4689 | 5293 | 5777 | 6091 | 6213 | 6155 | 0 |
| 5 S | 1508 | 1746 | 1930 | 2129 | 2397 | 2765 | 3242 | 3810 | 4433 | 5061 | 5632 | 6088 | 6384 | 6499 | 6445 | 5 S |
| 10 S | 1339 | 1689 | 1980 | 2276 | 2625 | 3053 | 3564 | 4143 | 4758 | 5366 | 5914 | 6355 | 6649 | 6780 | 6756 | 10 S |
| 15 S | 972 | 1454 | 1874 | 2287 | 2736 | 3241 | 3803 | 4407 | 5025 | 5623 | 6158 | 6593 | 6897 | 7057 | 7080 | 15 S |
| 20 S | 434 | 1067 | 1636 | 2187 | 2753 | 3350 | 3975 | 4616 | 5249 | 5846 | 6377 | 6814 | 7136 | 7332 | 7410 | 20 S |
| 25 S | -242 | 558 | 1292 | 1995 | 2692 | 3392 | 4092 | 4780 | 5438 | 6044 | 6579 | 7024 | 7366 | 7600 | 7732 | 25 S |
| 30 S | -1022 | -43 | 864 | 1728 | 2562 | 3373 | 4156 | 4900 | 5591 | 6216 | 6762 | 7220 | 7583 | 7852 | 8031 | 30 S |
| 35 S | -1873 | -718 | 363 | 1388 | 2362 | 3288 | 4158 | 4965 | 5698 | 6350 | 6914 | 7389 | 7775 | 8074 | 8293 | 35 S |
| 40 S | -2769 | -1452 | -206 | 970 | 2079 | 3117 | 4077 | 4951 | 5734 | 6423 | 7015 | 7514 | 7925 | 8254 | 8509 | 40 S |
| 45 S | -3689 | -2237 | -851 | 461 | 1693 | 2837 | 3885 | 4831 | 5672 | 6407 | 7038 | 7572 | 8016 | 8380 | 8675 | 45 S |
| 50 S | -4620 | -3070 | -1575 | -153 | 1182 | 2420 | 3553 | 4574 | 5481 | 6274 | 6958 | 7541 | 8034 | 8447 | 8793 | 50 S |
| 55 S | -5546 | -3943 | -2380 | -882 | 533 | 1851 | 3062 | 4159 | 5138 | 6003 | 6757 | 7410 | 7972 | 8455 | 8873 | 55 S |
| 60 S | -6451 | -4841 | -3254 | -1716 | -249 | 1129 | 2408 | 3580 | 4640 | 5589 | 6432 | 7177 | 7833 | 8413 | 8928 | 60 S |
| 65 S | -7308 | -5737 | -4167 | -2627 | -1138 | 280 | 1616 | 2858 | 4003 | 5049 | 5997 | 6855 | 7630 | 8331 | 8969 | 65 S |
| 70 S | -8087 | -6588 | -5071 | -3560 | -2077 | -639 | 737 | 2043 | 3272 | 4420 | 5485 | 6471 | 7382 | 8223 | 9001 | 70 S |
| 75 S | -8749 | -7344 | -5902 | -4444 | -2989 | -1552 | -148 | 1210 | 2515 | 3761 | 4944 | 6060 | 7111 | 8097 | 9021 | 75 S |
| 80 S | -9253 | -7946 | -6588 | -5195 | -3780 | -2360 | -946 | 448 | 1815 | 3144 | 4429 | 5663 | 6841 | 7959 | 9014 | 80 S |
| 85 S | -9565 | -8344 | -7062 | -5731 | -4362 | -2967 | -1559 | -147 | 1255 | 2639 | 3996 | 5314 | 6587 | 7805 | 8961 | 85 S |
| 90 S | -9660 | -8497 | -7269 | -5986 | -4658 | -3294 | -1904 | -501 | 906 | 2306 | 3689 | 5044 | 6361 | 7629 | 8839 | 90 S |
| | -9529 | -8387 | -7182 | -5925 | -4625 | -3291 | -1933 | -562 | 812 | 2182 | 3537 | 4868 | 6167 | 7424 | 8631 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 5 A IGRF EAST COMPONENT (Y)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1977 | 1613 | 1234 | 848 | 462 | 81 | -286 | -635 | -961 | -1257 | -1521 | -1748 | -1936 | -2084 | -2192 | |
| 90 N | 1654 | 1478 | 1291 | 1094 | 889 | 677 | 460 | 240 | 17 | -204 | -425 | -643 | -856 | -1062 | -1260 | 90 N |
| 85 N | 1351 | 1397 | 1435 | 1459 | 1463 | 1443 | 1395 | 1314 | 1198 | 1047 | 858 | 634 | 377 | 90 | -222 | 85 N |
| 80 N | 1099 | 1385 | 1665 | 1924 | 2150 | 2330 | 2455 | 2514 | 2502 | 2415 | 2251 | 2011 | 1697 | 1316 | 876 | 80 N |
| 75 N | 924 | 1452 | 1971 | 2460 | 2900 | 3271 | 3558 | 3748 | 3831 | 3802 | 3657 | 3397 | 3027 | 2554 | 1990 | 75 N |
| 70 N | 846 | 1595 | 2331 | 3025 | 3651 | 4187 | 4614 | 4916 | 5081 | 5102 | 4975 | 4702 | 4286 | 3738 | 3069 | 70 N |
| 65 N | 875 | 1809 | 2719 | 3574 | 4345 | 5007 | 5541 | 5928 | 6158 | 6223 | 6117 | 5842 | 5401 | 4804 | 4062 | 65 N |
| 60 N | 1013 | 2079 | 3108 | 4069 | 4932 | 5673 | 6274 | 6718 | 6993 | 7093 | 7012 | 6749 | 6309 | 5696 | 4922 | 60 N |
| 55 N | 1256 | 2392 | 3478 | 4482 | 5379 | 6149 | 6775 | 7244 | 7545 | 7671 | 7617 | 7382 | 6966 | 6372 | 5609 | 55 N |
| 50 N | 1590 | 2734 | 3813 | 4799 | 5674 | 6423 | 7034 | 7497 | 7804 | 7947 | 7921 | 7724 | 7353 | 6810 | 6097 | 50 N |
| 45 N | 1999 | 3094 | 4108 | 5021 | 5823 | 6507 | 7067 | 7498 | 7791 | 7941 | 7941 | 7788 | 7478 | 7009 | 6378 | 45 N |
| 40 N | 2465 | 3464 | 4365 | 5160 | 5847 | 6430 | 6911 | 7286 | 7551 | 7698 | 7721 | 7613 | 7371 | 6990 | 6464 | 40 N |
| 35 N | 2968 | 3838 | 4593 | 5236 | 5780 | 6236 | 6615 | 6919 | 7144 | 7281 | 7321 | 7257 | 7083 | 6795 | 6383 | 35 N |
| 30 N | 3487 | 4210 | 4802 | 5276 | 5658 | 5973 | 6239 | 6463 | 6641 | 6762 | 6814 | 6788 | 6678 | 6479 | 6181 | 30 N |
| 25 N | 4004 | 4576 | 5002 | 5305 | 5523 | 5692 | 5842 | 5983 | 6112 | 6215 | 6275 | 6281 | 6225 | 6103 | 5907 | 25 N |
| 20 N | 4501 | 4933 | 5204 | 5347 | 5410 | 5443 | 5482 | 5544 | 5626 | 5710 | 5774 | 5802 | 5787 | 5726 | 5614 | 20 N |
| 15 N | 4965 | 5277 | 5415 | 5421 | 5351 | 5265 | 5209 | 5202 | 5242 | 5306 | 5368 | 5410 | 5421 | 5401 | 5349 | 15 N |
| 10 N | 5386 | 5605 | 5642 | 5543 | 5371 | 5194 | 5062 | 5000 | 5003 | 5047 | 5102 | 5144 | 5165 | 5165 | 5148 | 10 N |
| 5 N | 5761 | 5916 | 5888 | 5722 | 5486 | 5250 | 5068 | 4965 | 4937 | 4960 | 4999 | 5030 | 5043 | 5044 | 5040 | 5 N |
| 0 | 6091 | 6213 | 6155 | 5963 | 5702 | 5440 | 5232 | 5104 | 5052 | 5050 | 5065 | 5073 | 5065 | 5051 | 5042 | 0 |
| 5 S | 6384 | 6499 | 6445 | 6263 | 6012 | 5756 | 5547 | 5408 | 5335 | 5305 | 5289 | 5264 | 5227 | 5188 | 5164 | 5 S |
| 10 S | 6649 | 6780 | 6756 | 6612 | 6400 | 6176 | 5984 | 5845 | 5756 | 5698 | 5647 | 5587 | 5518 | 5454 | 5413 | 10 S |
| 15 S | 6897 | 7057 | 7080 | 6994 | 6841 | 6666 | 6504 | 6374 | 6275 | 6192 | 6110 | 6019 | 5924 | 5843 | 5791 | 15 S |
| 20 S | 7136 | 7332 | 7410 | 7390 | 7304 | 7185 | 7062 | 6949 | 6846 | 6748 | 6644 | 6536 | 6432 | 6349 | 6301 | 20 S |
| 25 S | 7366 | 7600 | 7732 | 7776 | 7756 | 7695 | 7614 | 7524 | 7430 | 7330 | 7225 | 7120 | 7028 | 6964 | 6937 | 25 S |
| 30 S | 7583 | 7852 | 8031 | 8132 | 8171 | 8164 | 8127 | 8069 | 7998 | 7917 | 7834 | 7758 | 7703 | 7680 | 7690 | 30 S |
| 35 S | 7775 | 8074 | 8293 | 8442 | 8532 | 8576 | 8585 | 8569 | 8538 | 8499 | 8464 | 8443 | 8447 | 8482 | 8542 | 35 S |
| 40 S | 7925 | 8254 | 8509 | 8700 | 8837 | 8931 | 8992 | 9030 | 9056 | 9081 | 9116 | 9170 | 9249 | 9352 | 9466 | 40 S |
| 45 S | 8016 | 8380 | 8675 | 8910 | 9096 | 9245 | 9367 | 9472 | 9573 | 9678 | 9797 | 9937 | 10096 | 10265 | 10426 | 45 S |
| 50 S | 8034 | 8447 | 8793 | 9083 | 9330 | 9546 | 9740 | 9926 | 10112 | 10306 | 10514 | 10737 | 10968 | 11191 | 11383 | 50 S |
| 55 S | 7972 | 8455 | 8873 | 9238 | 9563 | 9861 | 10143 | 10418 | 10694 | 10977 | 11267 | 11559 | 11843 | 12099 | 12300 | 55 S |
| 60 S | 7833 | 8413 | 8928 | 9392 | 9816 | 10213 | 10593 | 10963 | 11327 | 11689 | 12044 | 12384 | 12694 | 12956 | 13143 | 60 S |
| 65 S | 7630 | 8331 | 8969 | 9554 | 10097 | 10607 | 11091 | 11555 | 12000 | 12424 | 12823 | 13185 | 13497 | 13739 | 13891 | 65 S |
| 70 S | 7382 | 8223 | 9001 | 9723 | 10396 | 11026 | 11615 | 12166 | 12679 | 13149 | 13570 | 13932 | 14223 | 14428 | 14531 | 70 S |
| 75 S | 7111 | 8097 | 9021 | 9883 | 10686 | 11431 | 12119 | 12748 | 13315 | 13816 | 14245 | 14594 | 14853 | 15014 | 15064 | 75 S |
| 80 S | 6841 | 7959 | 9014 | 10004 | 10924 | 11772 | 12545 | 13239 | 13851 | 14375 | 14806 | 15140 | 15370 | 15491 | 15499 | 80 S |
| 85 S | 6587 | 7805 | 8961 | 10048 | 11060 | 11989 | 12830 | 13579 | 14229 | 14776 | 15216 | 15546 | 15762 | 15862 | 15844 | 85 S |
| 90 S | 6361 | 7629 | 8839 | 9982 | 11049 | 12031 | 12923 | 13715 | 14404 | 14983 | 15447 | 15795 | 16022 | 16127 | 16109 | 90 S |
| LAT. | 6167 | 7424 | 8631 | 9779 | 10860 | 11865 | 12787 | 13617 | 14348 | 14973 | 15484 | 15877 | 16145 | 16286 | 16295 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 5 A IGRF EAST COMPONENT (Y)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -1936 | -2084 | -2192 | -2260 | -2290 | -2285 | -2248 | -2185 | -2099 | -1996 | -1882 | -1763 | -1645 | -1533 | -1432 | LAT. |
| 90 N | -856 | -1062 | -1260 | -1449 | -1626 | -1791 | -1943 | -2080 | -2201 | -2305 | -2392 | -2460 | -2510 | -2540 | -2552 | 90 N |
| 85 N | 377 | 90 | -222 | -556 | -903 | -1258 | -1613 | -1960 | -2292 | -2603 | -2884 | -3129 | -3334 | -3492 | -3602 | 85 N |
| 80 N | 1697 | 1316 | 876 | 387 | -139 | -691 | -1255 | -1815 | -2357 | -2868 | -3334 | -3745 | -4089 | -4360 | -4552 | 80 N |
| 75 N | 3027 | 2554 | 1990 | 1349 | 647 | -96 | -861 | -1627 | -2372 | -3075 | -3718 | -4282 | -4755 | -5124 | -5383 | 75 N |
| 70 N | 4286 | 3738 | 3069 | 2297 | 1441 | 525 | -424 | -1380 | -2315 | -3201 | -4010 | -4720 | -5311 | -5769 | -6085 | 70 N |
| 65 N | 5401 | 4804 | 4062 | 3193 | 2219 | 1164 | 58 | -1064 | -2170 | -3224 | -4191 | -5040 | -5745 | -6288 | -6657 | 65 N |
| 60 N | 6309 | 5696 | 4922 | 4001 | 2953 | 1803 | 582 | -675 | -1927 | -3132 | -4247 | -5230 | -6049 | -6679 | -7103 | 60 N |
| 55 N | 6966 | 6372 | 5609 | 4684 | 3615 | 2420 | 1130 | -220 | -1588 | -2922 | -4171 | -5285 | -6220 | -6941 | -7430 | 55 N |
| 50 N | 7353 | 6810 | 6097 | 5216 | 4177 | 2991 | 1682 | 283 | -1162 | -2599 | -3968 | -5206 | -6258 | -7082 | -7649 | 50 N |
| 45 N | 7478 | 7009 | 6378 | 5582 | 4619 | 3493 | 2216 | 814 | -669 | -2179 | -3647 | -5001 | -6173 | -7108 | -7771 | 45 N |
| 40 N | 7371 | 6990 | 6464 | 5782 | 4933 | 3909 | 2709 | 1350 | -132 | -1682 | -3226 | -4684 | -5974 | -7031 | -7807 | 40 N |
| 35 N | 7083 | 6795 | 6383 | 5833 | 5123 | 4231 | 3146 | 1868 | 424 | -1133 | -2728 | -4274 | -5678 | -6863 | -7769 | 35 N |
| 30 N | 6678 | 6479 | 6181 | 5765 | 5203 | 4463 | 3516 | 2348 | 975 | -558 | -2179 | -3793 | -5302 | -6616 | -7664 | 30 N |
| 25 N | 6225 | 6103 | 5907 | 5617 | 5201 | 4615 | 3817 | 2778 | 1500 | 16 | -1603 | -3265 | -4866 | -6304 | -7499 | 25 N |
| 20 N | 5787 | 5726 | 5614 | 5432 | 5146 | 4704 | 4054 | 3152 | 1983 | 571 | -1025 | -2713 | -4386 | -5938 | -7276 | 20 N |
| 15 N | 5421 | 5401 | 5349 | 5250 | 5070 | 4754 | 4239 | 3470 | 2417 | 1089 | -463 | -2154 | -3879 | -5526 | -6994 | 15 N |
| 10 N | 5165 | 5165 | 5148 | 5105 | 5004 | 4788 | 4390 | 3742 | 2802 | 1566 | 71 | -1604 | -3358 | -5077 | -6653 | 10 N |
| 5 N | 5043 | 5044 | 5040 | 5027 | 4977 | 4836 | 4530 | 3986 | 3149 | 2003 | 573 | -1069 | -2830 | -4594 | -6251 | 5 N |
| 0 | 5065 | 5051 | 5042 | 5038 | 5017 | 4925 | 4687 | 4225 | 3476 | 2413 | 1051 | -550 | -2299 | -4083 | -5789 | 0 |
| 5 S | 5227 | 5138 | 5164 | 5157 | 5148 | 5084 | 4893 | 4491 | 3810 | 2816 | 1515 | -40 | -1763 | -3546 | -5273 | 5 S |
| 10 S | 5518 | 5454 | 5413 | 5398 | 5392 | 5343 | 5178 | 4813 | 4180 | 3236 | 1985 | 472 | -1219 | -2985 | -4710 | 10 S |
| 15 S | 5924 | 5843 | 5791 | 5773 | 5767 | 5723 | 5569 | 5222 | 4612 | 3698 | 2481 | 1002 | -659 | -2399 | -4107 | 15 S |
| 20 S | 6432 | 6349 | 6301 | 6287 | 6285 | 6241 | 6085 | 5736 | 5129 | 4224 | 3021 | 1562 | -73 | -1788 | -3473 | 20 S |
| 25 S | 7028 | 6964 | 6937 | 6941 | 6946 | 6899 | 6730 | 6365 | 5740 | 4824 | 3618 | 2167 | 546 | -1147 | -2809 | 25 S |
| 30 S | 7703 | 7680 | 7690 | 7721 | 7738 | 7685 | 7495 | 7099 | 6444 | 5501 | 4279 | 2824 | 1209 | -468 | -2112 | 30 S |
| 35 S | 8447 | 8482 | 8542 | 8606 | 8634 | 8571 | 8353 | 7919 | 7222 | 6245 | 5001 | 3536 | 1925 | 257 | -1372 | 35 S |
| 40 S | 9249 | 9352 | 9466 | 9562 | 9597 | 9517 | 9265 | 8787 | 8048 | 7037 | 5772 | 4301 | 2696 | 1040 | -576 | 40 S |
| 45 S | 10096 | 10265 | 10426 | 10544 | 10577 | 10474 | 10184 | 9663 | 8887 | 7850 | 6576 | 5111 | 3522 | 1887 | 288 | 45 S |
| 50 S | 10968 | 11191 | 11383 | 11509 | 11527 | 11393 | 11063 | 10505 | 9702 | 8656 | 7390 | 5950 | 4397 | 2799 | 1228 | 50 S |
| 55 S | 11843 | 12099 | 12300 | 12414 | 12404 | 12232 | 11864 | 11278 | 10464 | 9427 | 8192 | 6801 | 5304 | 3762 | 2237 | 55 S |
| 60 S | 12694 | 12956 | 13143 | 13227 | 13176 | 12962 | 12562 | 11958 | 11149 | 10142 | 8960 | 7638 | 6219 | 4752 | 3287 | 60 S |
| 65 S | 13497 | 13739 | 13891 | 13929 | 13830 | 13574 | 13146 | 12536 | 11746 | 10785 | 9672 | 8435 | 7107 | 5728 | 4335 | 65 S |
| 70 S | 14223 | 14428 | 14531 | 14516 | 14367 | 14072 | 13623 | 13016 | 12254 | 11346 | 10308 | 9160 | 7927 | 6636 | 5317 | 70 S |
| 75 S | 14853 | 15014 | 15064 | 14997 | 14802 | 14474 | 14010 | 13409 | 12677 | 11820 | 10850 | 9781 | 8631 | 7419 | 6163 | 75 S |
| 80 S | 15370 | 15491 | 15499 | 15388 | 15157 | 14804 | 14328 | 13733 | 13023 | 12203 | 11282 | 10270 | 9178 | 8018 | 6803 | 80 S |
| 85 S | 15762 | 15862 | 15844 | 15708 | 15454 | 15083 | 14598 | 14000 | 13296 | 12490 | 11588 | 10599 | 9529 | 8387 | 7182 | 85 S |
| 90 S | 16022 | 16127 | 16109 | 15969 | 15707 | 15325 | 14827 | 14217 | 13497 | 12676 | 11757 | 10750 | 9660 | 8497 | 7269 | 90 S |
| LAT. | 16145 | 16286 | 16295 | 16172 | 15917 | 15530 | 15016 | 14377 | 13619 | 12751 | 11779 | 10714 | 9565 | 8344 | 7062 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 5 A IGRF EAST COMPONENT (Y)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -1645 | -1533 | -1432 | -1345 | -1275 | -1225 | -1196 | -1186 | -1195 | -1220 | -1257 | -1302 | -1351 | -1397 | -1435 | LAT. |
| 90 N | -2510 | -2540 | -2552 | -2544 | -2516 | -2469 | -2404 | -2320 | -2219 | -2100 | -1966 | -1817 | -1654 | -1478 | -1291 | 90 N |
| 85 N | -3334 | -3492 | -3602 | -3659 | -3664 | -3615 | -3513 | -3361 | -3161 | -2918 | -2636 | -2320 | -1977 | -1613 | -1234 | 85 N |
| 80 N | -4089 | -4360 | -4552 | -4660 | -4684 | -4624 | -4483 | -4266 | -3979 | -3629 | -3225 | -2775 | -2290 | -1779 | -1252 | 80 N |
| 75 N | -4755 | -5124 | -5383 | -5527 | -5558 | -5478 | -5294 | -5014 | -4648 | -4209 | -3707 | -3156 | -2567 | -1952 | -1322 | 75 N |
| 70 N | -5311 | -5769 | -6085 | -6256 | -6284 | -6177 | -5945 | -5603 | -5166 | -4651 | -4073 | -3448 | -2789 | -2109 | -1418 | 70 N |
| 65 N | -5745 | -6288 | -6657 | -6850 | -6871 | -6733 | -6452 | -6050 | -5548 | -4967 | -4330 | -3652 | -2949 | -2234 | -1516 | 65 N |
| 60 N | -6049 | -6679 | -7103 | -7320 | -7337 | -7170 | -6844 | -6385 | -5823 | -5186 | -4499 | -3782 | -3052 | -2321 | -1597 | 60 N |
| 55 N | -6220 | -6941 | -7430 | -7681 | -7704 | -7518 | -7154 | -6647 | -6032 | -5345 | -4613 | -3864 | -3113 | -2374 | -1653 | 55 N |
| 50 N | -6258 | -7082 | -7649 | -7951 | -7996 | -7809 | -7423 | -6880 | -6221 | -5487 | -4713 | -3929 | -3156 | -2407 | -1690 | 50 N |
| 45 N | -6173 | -7108 | -7771 | -8145 | -8238 | -8073 | -7687 | -7124 | -6431 | -5656 | -4838 | -4014 | -3211 | -2444 | -1724 | 45 N |
| 40 N | -5974 | -7031 | -7807 | -8279 | -8448 | -8334 | -7973 | -7412 | -6699 | -5886 | -5022 | -4151 | -3306 | -2512 | -1781 | 40 N |
| 35 N | -5678 | -6863 | -7769 | -8363 | -8637 | -8605 | -8299 | -7761 | -7043 | -6200 | -5289 | -4364 | -3470 | -2639 | -1888 | 35 N |
| 30 N | -5302 | -6616 | -7664 | -8401 | -8808 | -8888 | -8663 | -8173 | -7466 | -6602 | -5647 | -4666 | -3719 | -2846 | -2072 | 30 N |
| 25 N | -4866 | -6304 | -7499 | -8393 | -8952 | -9167 | -9049 | -8628 | -7950 | -7079 | -6088 | -5058 | -4059 | -3147 | -2350 | 25 N |
| 20 N | -4386 | -5938 | -7276 | -8330 | -9051 | -9416 | -9423 | -9090 | -8460 | -7599 | -6589 | -5523 | -4486 | -3543 | -2727 | 20 N |
| 15 N | -3879 | -5526 | -6994 | -8200 | -9082 | -9601 | -9741 | -9510 | -8946 | -8117 | -7111 | -6033 | -4978 | -4020 | -3195 | 15 N |
| 10 N | -3358 | -5077 | -6653 | -7993 | -9022 | -9686 | -9958 | -9837 | -9357 | -8583 | -7611 | -6550 | -5505 | -4552 | -3730 | 10 N |
| 5 N | -2830 | -4594 | -6251 | -7697 | -8848 | -9641 | -10036 | -10027 | -9643 | -8949 | -8042 | -7033 | -6027 | -5101 | -4293 | 5 N |
| 0 | -2299 | -4083 | -5789 | -7310 | -8553 | -9448 | -9951 | -10050 | -9771 | -9178 | -8365 | -7439 | -6501 | -5625 | -4843 | 0 |
| 5 S | -1763 | -3546 | -5273 | -6836 | -8138 | -9107 | -9697 | -9895 | -9726 | -9249 | -8553 | -7736 | -6890 | -6080 | -5335 | 5 S |
| 10 S | -1219 | -2985 | -4710 | -6286 | -7618 | -8634 | -9290 | -9575 | -9513 | -9160 | -8593 | -7901 | -7161 | -6429 | -5731 | 10 S |
| 15 S | -659 | -2399 | -4107 | -5676 | -7015 | -8056 | -8760 | -9120 | -9158 | -8925 | -8490 | -7926 | -7298 | -6651 | -6006 | 15 S |
| 20 S | -73 | -1788 | -3473 | -5024 | -6357 | -7409 | -8147 | -8568 | -8694 | -8573 | -8261 | -7820 | -7300 | -6739 | -6156 | 20 S |
| 25 S | 546 | -1147 | -2809 | -4340 | -5662 | -6719 | -7484 | -7957 | -8161 | -8137 | -7934 | -7602 | -7182 | -6706 | -6194 | 25 S |
| 30 S | 1209 | -468 | -2112 | -3627 | -4942 | -6005 | -6795 | -7315 | -7587 | -7647 | -7538 | -7301 | -6973 | -6582 | -6153 | 30 S |
| 35 S | 1925 | 257 | -1372 | -2878 | -4191 | -5267 | -6087 | -6654 | -6989 | -7125 | -7099 | -6950 | -6710 | -6410 | -6079 | 35 S |
| 40 S | 2696 | 1040 | -576 | -2076 | -3395 | -4492 | -5348 | -5967 | -6368 | -6581 | -6639 | -6578 | -6433 | -6236 | -6022 | 40 S |
| 45 S | 3522 | 1887 | 288 | -1204 | -2532 | -3656 | -4558 | -5240 | -5717 | -6016 | -6169 | -6211 | -6178 | -6105 | -6031 | 45 S |
| 50 S | 4397 | 2799 | 1228 | -250 | -1585 | -2740 | -3696 | -4453 | -5022 | -5427 | -5697 | -5867 | -5972 | -6049 | -6138 | 50 S |
| 55 S | 5304 | 3762 | 2237 | 782 | -553 | -1739 | -2756 | -3600 | -4280 | -4814 | -5229 | -5556 | -5830 | -6085 | -6358 | 55 S |
| 60 S | 6219 | 4752 | 3287 | 1870 | 540 | -673 | -1754 | -2695 | -3502 | -4188 | -4775 | -5287 | -5756 | -6211 | -6683 | 60 S |
| 65 S | 7107 | 5728 | 4335 | 2964 | 1647 | 408 | -736 | -1780 | -2724 | -3576 | -4350 | -5067 | -5746 | -6412 | -7086 | 65 S |
| 70 S | 7927 | 6636 | 5317 | 3994 | 2693 | 1432 | 224 | -920 | -2000 | -3018 | -3982 | -4902 | -5791 | -6661 | -7525 | 70 S |
| 75 S | 8631 | 7419 | 6163 | 4881 | 3591 | 2308 | 1044 | -193 | -1398 | -2568 | -3703 | -4806 | -5880 | -6928 | -7953 | 75 S |
| 80 S | 9178 | 8018 | 6803 | 5545 | 4258 | 2951 | 1635 | 321 | -984 | -2276 | -3546 | -4791 | -6006 | -7188 | -8332 | 80 S |
| 85 S | 9529 | 8387 | 7182 | 5925 | 4625 | 3291 | 1933 | 562 | -812 | -2182 | -3537 | -4868 | -6167 | -7424 | -8631 | 85 S |
| 90 S | 9660 | 8497 | 7269 | 5986 | 4658 | 3294 | 1904 | 501 | -906 | -2306 | -3689 | -5044 | -6361 | -7629 | -8839 | 90 S |
| LAT. | 9565 | 8344 | 7062 | 5731 | 4362 | 2967 | 1559 | 147 | -1255 | -2639 | -3996 | -5314 | -6587 | -7805 | -8961 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 5 B IGRF EAST COMPONENT (Y)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | 14.2 | 12.8 | 11.2 | 9.6 | 8.0 | 6.3 | 4.6 | 2.9 | 1.3 | -0.4 | -2.0 | -3.5 | -5.0 | -6.4 | -7.7 | |
| 90 N | 14.4 | 13.3 | 12.1 | 10.9 | 9.5 | 8.1 | 6.6 | 5.0 | 3.4 | 1.8 | 0.2 | -1.4 | -3.1 | -4.7 | -6.2 | 90 N |
| 85 N | 14.0 | 13.4 | 12.6 | 11.8 | 10.8 | 9.8 | 8.6 | 7.2 | 5.8 | 4.3 | 2.6 | 0.9 | -0.9 | -2.7 | -4.5 | 85 N |
| 80 N | 13.4 | 13.2 | 13.0 | 12.6 | 12.0 | 11.2 | 10.3 | 9.2 | 7.9 | 6.4 | 4.8 | 3.0 | 1.0 | -1.0 | -3.1 | 80 N |
| 75 N | 13.1 | 13.3 | 13.4 | 13.3 | 13.0 | 12.5 | 11.7 | 10.7 | 9.4 | 7.9 | 6.2 | 4.3 | 2.2 | 0.0 | -2.3 | 75 N |
| 70 N | 13.6 | 14.1 | 14.4 | 14.5 | 14.2 | 13.5 | 12.6 | 11.5 | 10.1 | 8.4 | 6.6 | 4.6 | 2.5 | 0.3 | -2.1 | 70 N |
| 65 N | 15.4 | 16.1 | 16.4 | 16.2 | 15.6 | 14.6 | 13.3 | 11.7 | 9.9 | 8.0 | 6.0 | 4.0 | 1.9 | -0.3 | -2.6 | 65 N |
| 60 N | 18.8 | 19.5 | 19.4 | 18.7 | 17.5 | 15.8 | 13.7 | 11.5 | 9.2 | 6.9 | 4.6 | 2.4 | 0.3 | -1.7 | -3.7 | 60 N |
| 55 N | 23.9 | 24.3 | 23.6 | 22.1 | 19.9 | 17.2 | 14.2 | 11.1 | 8.1 | 5.3 | 2.6 | 0.2 | -1.9 | -3.7 | -5.3 | 55 N |
| 50 N | 30.4 | 30.3 | 28.8 | 26.2 | 22.8 | 18.9 | 14.8 | 10.8 | 6.9 | 3.4 | 0.2 | -2.4 | -4.6 | -6.3 | -7.4 | 50 N |
| 45 N | 37.8 | 37.1 | 34.5 | 30.7 | 26.0 | 20.8 | 15.6 | 10.6 | 5.9 | 1.6 | -2.3 | -5.4 | -7.8 | -9.3 | -9.9 | 45 N |
| 40 N | 45.6 | 44.0 | 40.2 | 35.0 | 28.9 | 22.7 | 16.5 | 10.6 | 5.1 | -0.1 | -4.7 | -8.6 | -11.4 | -12.8 | -12.8 | 40 N |
| 35 N | 52.9 | 50.3 | 45.2 | 38.7 | 31.5 | 24.2 | 17.3 | 10.8 | 4.5 | -1.5 | -7.1 | -11.8 | -15.1 | -16.4 | -15.8 | 35 N |
| 30 N | 59.1 | 55.4 | 49.1 | 41.4 | 33.2 | 25.4 | 18.1 | 11.2 | 4.3 | -2.6 | -9.2 | -14.8 | -18.7 | -20.1 | -18.7 | 30 N |
| 25 N | 63.5 | 58.9 | 51.6 | 42.9 | 34.2 | 26.1 | 18.7 | 11.6 | 4.4 | -3.3 | -10.9 | -17.5 | -22.0 | -23.4 | -21.1 | 25 N |
| 20 N | 66.0 | 60.6 | 52.6 | 43.4 | 34.5 | 26.5 | 19.3 | 12.3 | 4.7 | -3.6 | -12.1 | -19.7 | -24.7 | -25.9 | -22.8 | 20 N |
| 15 N | 66.4 | 60.7 | 52.4 | 43.2 | 34.5 | 26.8 | 20.0 | 13.1 | 5.4 | -3.5 | -12.9 | -21.1 | -26.5 | -27.5 | -23.5 | 15 N |
| 10 N | 65.1 | 59.6 | 51.5 | 42.7 | 34.4 | 27.3 | 20.9 | 14.1 | 6.1 | -3.2 | -13.2 | -21.9 | -27.4 | -28.0 | -23.2 | 10 N |
| 5 N | 62.7 | 57.8 | 50.4 | 42.3 | 34.8 | 28.1 | 21.9 | 15.1 | 6.8 | -3.0 | -13.3 | -22.2 | -27.6 | -27.7 | -22.2 | 5 N |
| 0 | 59.7 | 55.9 | 49.7 | 42.5 | 35.6 | 29.3 | 23.0 | 15.8 | 7.1 | -3.1 | -13.7 | -22.5 | -27.5 | -27.0 | -21.0 | 0 |
| 5 S | 56.9 | 54.5 | 49.5 | 43.3 | 36.9 | 30.5 | 23.8 | 15.9 | 6.4 | -4.2 | -14.8 | -23.3 | -27.7 | -26.7 | -20.3 | 5 S |
| 10 S | 54.8 | 53.6 | 49.8 | 44.4 | 38.2 | 31.4 | 23.8 | 14.8 | 4.4 | -6.7 | -17.3 | -25.3 | -29.1 | -27.5 | -20.8 | 10 S |
| 15 S | 53.5 | 53.4 | 50.5 | 45.5 | 39.1 | 31.4 | 22.4 | 12.1 | 0.7 | -11.0 | -21.4 | -28.9 | -31.9 | -29.8 | -22.9 | 15 S |
| 20 S | 52.9 | 53.6 | 51.1 | 46.0 | 38.9 | 29.9 | 19.4 | 7.6 | -4.9 | -17.1 | -27.4 | -34.3 | -36.6 | -33.9 | -26.9 | 20 S |
| 25 S | 52.8 | 53.5 | 50.9 | 45.3 | 37.1 | 26.7 | 14.5 | 1.2 | -12.3 | -24.8 | -34.9 | -41.2 | -42.8 | -39.6 | -32.4 | 25 S |
| 30 S | 52.5 | 52.7 | 49.5 | 42.9 | 33.4 | 21.6 | 7.9 | -6.6 | -20.8 | -33.5 | -43.2 | -48.9 | -49.9 | -46.2 | -38.8 | 30 S |
| 35 S | 51.3 | 50.6 | 46.4 | 38.7 | 28.0 | 14.9 | 0.2 | -15.1 | -29.6 | -42.2 | -51.5 | -56.5 | -57.0 | -52.9 | -45.3 | 35 S |
| 40 S | 48.7 | 46.9 | 41.5 | 32.8 | 21.1 | 7.2 | -8.0 | -23.4 | -37.8 | -49.9 | -58.5 | -63.0 | -62.9 | -58.7 | -50.9 | 40 S |
| 45 S | 44.3 | 41.3 | 35.0 | 25.5 | 13.4 | -0.7 | -15.8 | -30.7 | -44.4 | -55.6 | -63.4 | -67.2 | -66.9 | -62.5 | -55.0 | 45 S |
| 50 S | 37.8 | 34.0 | 27.1 | 17.4 | 5.4 | -8.1 | -22.3 | -36.1 | -48.6 | -58.6 | -65.5 | -68.7 | -68.2 | -64.1 | -56.9 | 50 S |
| 55 S | 29.6 | 25.2 | 18.3 | 9.0 | -2.2 | -14.5 | -27.2 | -39.4 | -50.2 | -58.8 | -64.7 | -67.4 | -66.8 | -63.1 | -56.8 | 55 S |
| 60 S | 19.9 | 15.6 | 9.0 | 0.7 | -9.1 | -19.6 | -30.4 | -40.5 | -49.5 | -56.6 | -61.4 | -63.6 | -63.1 | -60.1 | -54.8 | 60 S |
| 65 S | 9.4 | 5.4 | -0.2 | -7.2 | -15.1 | -23.6 | -32.1 | -40.1 | -47.1 | -52.7 | -56.4 | -58.2 | -57.9 | -55.6 | -51.5 | 65 S |
| 70 S | -1.2 | -4.6 | -9.1 | -14.5 | -20.5 | -26.9 | -33.1 | -39.0 | -44.1 | -48.1 | -50.9 | -52.2 | -52.1 | -50.4 | -47.5 | 70 S |
| 75 S | -11.4 | -14.1 | -17.5 | -21.4 | -25.5 | -29.8 | -34.0 | -37.9 | -41.3 | -43.9 | -45.7 | -46.6 | -46.4 | -45.3 | -43.2 | 75 S |
| 80 S | -20.5 | -22.7 | -25.1 | -27.7 | -30.3 | -32.9 | -35.4 | -37.6 | -39.4 | -40.8 | -41.7 | -41.9 | -41.6 | -40.6 | -39.0 | 80 S |
| 85 S | -28.2 | -30.0 | -31.7 | -33.4 | -34.9 | -36.2 | -37.4 | -38.3 | -38.8 | -39.1 | -39.0 | -38.6 | -37.7 | -36.5 | -34.9 | 85 S |
| 90 S | -34.1 | -35.7 | -37.1 | -38.2 | -39.0 | -39.6 | -39.8 | -39.7 | -39.3 | -38.6 | -37.6 | -36.4 | -34.8 | -33.0 | -31.0 | 90 S |
| LAT. | -38.1 | -39.7 | -41.0 | -41.8 | -42.3 | -42.3 | -42.0 | -41.3 | -40.2 | -38.7 | -36.9 | -34.9 | -32.5 | -29.9 | -27.2 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 5 B IGRF EAST COMPONENT (Y)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -5.0 | -6.4 | -7.7 | -9.0 | -10.1 | -11.1 | -12.1 | -12.9 | -13.6 | -14.2 | -14.7 | -15.1 | -15.5 | -15.7 | -15.9 LAT. |
| 90 N | -3.1 | -4.7 | -6.2 | -7.7 | -9.2 | -10.6 | -11.9 | -13.1 | -14.2 | -15.2 | -16.1 | -16.8 | -17.5 | -18.0 | -18.4 90 N |
| 85 N | -0.9 | -2.7 | -4.5 | -6.4 | -8.2 | -10.0 | -11.8 | -13.4 | -14.9 | -16.3 | -17.5 | -18.6 | -19.4 | -20.1 | -20.5 85 N |
| 80 N | 1.0 | -1.0 | -3.1 | -5.3 | -7.5 | -9.7 | -11.8 | -13.8 | -15.6 | -17.3 | -18.8 | -20.0 | -21.0 | -21.7 | -22.1 80 N |
| 75 N | 2.2 | 0.0 | -2.3 | -4.7 | -7.1 | -9.5 | -11.9 | -14.1 | -16.2 | -18.1 | -19.7 | -21.0 | -22.0 | -22.6 | -22.9 75 N |
| 70 N | 2.5 | 0.3 | -2.1 | -4.5 | -7.0 | -9.5 | -12.0 | -14.3 | -16.5 | -18.4 | -20.0 | -21.3 | -22.2 | -22.6 | -22.7 70 N |
| 65 N | 1.9 | -0.3 | -2.6 | -4.9 | -7.2 | -9.6 | -11.9 | -14.2 | -16.3 | -18.2 | -19.7 | -20.9 | -21.6 | -21.8 | -21.5 65 N |
| 60 N | 0.3 | -1.7 | -3.7 | -5.6 | -7.6 | -9.7 | -11.7 | -13.7 | -15.6 | -17.3 | -18.7 | -19.7 | -20.1 | -20.1 | -19.5 60 N |
| 55 N | -1.9 | -3.7 | -5.3 | -6.8 | -8.2 | -9.6 | -11.1 | -12.7 | -14.3 | -15.8 | -17.0 | -17.9 | -18.2 | -17.9 | -17.1 55 N |
| 50 N | -4.6 | -6.3 | -7.4 | -8.2 | -8.8 | -9.4 | -10.2 | -11.2 | -12.4 | -13.7 | -14.8 | -15.6 | -15.8 | -15.4 | -14.4 50 N |
| 45 N | -7.8 | -9.3 | -9.9 | -9.8 | -9.4 | -8.8 | -8.7 | -9.0 | -9.8 | -11.0 | -12.2 | -13.0 | -13.4 | -12.9 | -11.8 45 N |
| 40 N | -11.4 | -12.8 | -12.8 | -11.6 | -9.8 | -7.9 | -6.5 | -6.0 | -6.5 | -7.7 | -9.1 | -10.4 | -11.0 | -10.8 | -9.7 40 N |
| 35 N | -15.1 | -16.4 | -15.8 | -13.4 | -9.9 | -6.4 | -3.6 | -2.3 | -2.5 | -3.9 | -6.0 | -7.9 | -9.1 | -9.2 | -8.2 35 N |
| 30 N | -18.7 | -20.1 | -18.7 | -14.9 | -9.6 | -4.3 | -0.1 | 2.1 | 1.9 | -0.0 | -2.9 | -5.8 | -7.7 | -8.2 | -7.3 30 N |
| 25 N | -22.0 | -23.4 | -21.1 | -15.8 | -8.7 | -1.6 | 4.0 | 6.7 | 6.5 | 3.7 | -0.2 | -4.1 | -6.9 | -7.8 | -7.0 25 N |
| 20 N | -24.7 | -25.9 | -22.8 | -16.0 | -7.2 | 1.6 | 8.2 | 11.3 | 10.6 | 6.9 | 1.8 | -3.2 | -6.7 | -8.1 | -7.2 20 N |
| 15 N | -26.5 | -27.5 | -23.5 | -15.4 | -5.1 | 4.9 | 12.2 | 15.3 | 13.9 | 9.2 | 2.9 | -3.1 | -7.2 | -8.7 | -7.7 15 N |
| 10 N | -27.4 | -28.0 | -23.2 | -14.0 | -2.7 | 8.0 | 15.5 | 18.2 | 16.0 | 10.3 | 3.0 | -3.6 | -8.0 | -9.5 | -8.2 10 N |
| 5 N | -27.6 | -27.7 | -22.2 | -12.3 | -0.4 | 10.4 | 17.6 | 19.6 | 16.7 | 10.2 | 2.3 | -4.6 | -8.9 | -10.1 | -8.4 5 N |
| 0 | -27.5 | -27.0 | -21.0 | -10.8 | 1.1 | 11.6 | 18.2 | 19.5 | 16.0 | 9.1 | 1.2 | -5.5 | -9.4 | -10.1 | -8.0 0 |
| 5 S | -27.7 | -26.7 | -20.3 | -10.1 | 1.5 | 11.4 | 17.2 | 18.0 | 14.2 | 7.4 | 0.0 | -5.9 | -9.0 | -9.0 | -6.6 5 S |
| 10 S | -29.1 | -27.5 | -20.8 | -10.7 | 0.3 | 9.5 | 14.8 | 15.4 | 11.8 | 5.9 | -0.4 | -5.2 | -7.3 | -6.7 | -4.1 10 S |
| 15 S | -31.9 | -29.8 | -22.9 | -13.1 | -2.5 | 6.1 | 11.3 | 12.2 | 9.6 | 4.9 | 0.2 | -3.1 | -4.1 | -3.1 | -0.5 15 S |
| 20 S | -36.6 | -33.9 | -26.9 | -17.1 | -6.9 | 1.6 | 7.1 | 8.9 | 7.8 | 5.1 | 2.3 | 0.5 | 0.5 | 1.9 | 4.2 20 S |
| 25 S | -42.8 | -39.6 | -32.4 | -22.7 | -12.5 | -3.6 | 2.7 | 6.0 | 6.9 | 6.3 | 5.5 | 5.4 | 6.2 | 7.7 | 9.5 25 S |
| 30 S | -49.9 | -46.2 | -38.8 | -29.0 | -18.5 | -9.0 | -1.5 | 3.6 | 6.7 | 8.4 | 9.6 | 10.8 | 12.2 | 13.7 | 15.0 30 S |
| 35 S | -57.0 | -52.9 | -45.3 | -35.3 | -24.5 | -14.1 | -5.3 | 1.7 | 6.8 | 10.7 | 13.6 | 16.0 | 17.9 | 19.3 | 20.0 35 S |
| 40 S | -62.9 | -58.7 | -50.9 | -40.9 | -29.7 | -18.7 | -8.7 | -0.1 | 6.8 | 12.3 | 16.6 | 19.9 | 22.2 | 23.5 | 23.9 40 S |
| 45 S | -66.9 | -62.5 | -55.0 | -45.1 | -33.9 | -22.6 | -11.8 | -2.2 | 6.0 | 12.7 | 18.0 | 21.9 | 24.5 | 25.9 | 26.2 45 S |
| 50 S | -68.2 | -64.1 | -56.9 | -47.6 | -36.9 | -25.8 | -15.0 | -5.0 | 3.8 | 11.1 | 17.0 | 21.4 | 24.3 | 26.0 | 26.5 50 S |
| 55 S | -66.8 | -63.1 | -56.8 | -48.4 | -38.7 | -28.4 | -18.2 | -8.5 | 0.2 | 7.7 | 13.7 | 18.4 | 21.8 | 23.9 | 25.1 55 S |
| 60 S | -63.1 | -60.1 | -54.8 | -47.8 | -39.5 | -30.5 | -21.4 | -12.6 | -4.5 | 2.6 | 8.6 | 13.5 | 17.3 | 20.1 | 22.0 60 S |
| 65 S | -57.9 | -55.6 | -51.5 | -46.0 | -39.4 | -32.0 | -24.4 | -16.9 | -9.7 | -3.2 | 2.6 | 7.6 | 11.7 | 15.2 | 18.1 65 S |
| 70 S | -52.1 | -50.4 | -47.5 | -43.4 | -38.4 | -32.8 | -26.7 | -20.6 | -14.5 | -8.7 | -3.3 | 1.7 | 6.1 | 10.2 | 13.8 70 S |
| 75 S | -46.4 | -45.3 | -43.2 | -40.3 | -36.7 | -32.5 | -27.8 | -22.9 | -17.9 | -12.9 | -7.9 | -3.1 | 1.5 | 5.9 | 10.1 75 S |
| 80 S | -41.6 | -40.6 | -39.0 | -36.8 | -34.1 | -30.9 | -27.3 | -23.3 | -19.2 | -14.8 | -10.4 | -5.9 | -1.4 | 3.0 | 7.4 80 S |
| 85 S | -37.7 | -36.5 | -34.9 | -32.9 | -30.5 | -27.8 | -24.8 | -21.5 | -17.9 | -14.2 | -10.3 | -6.3 | -2.2 | 1.9 | 6.0 85 S |
| 90 S | -34.8 | -33.0 | -31.0 | -28.7 | -26.2 | -23.4 | -20.6 | -17.5 | -14.3 | -11.0 | -7.7 | -4.2 | -0.8 | 2.7 | 6.2 90 S |
| LAT. | -32.5 | -29.9 | -27.2 | -24.3 | -21.2 | -18.1 | -15.0 | -11.9 | -8.8 | -5.9 | -2.9 | -0.1 | 2.5 | 5.1 | 7.5 LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 E.LONG. |

TABLE 5 B IGRF EAST COMPONENT (Y)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -15.5 | -15.7 | -15.9 | -16.0 | -16.1 | -16.0 | -16.0 | -15.8 | -15.6 | -15.3 | -15.0 | -14.5 | -14.0 | -13.4 | -12.6 LAT. |
| 90 N | -17.5 | -18.0 | -18.4 | -18.6 | -18.7 | -18.6 | -18.4 | -18.1 | -17.6 | -17.0 | -16.3 | -15.4 | -14.4 | -13.3 | -12.1 90 N |
| 85 N | -19.4 | -20.1 | -20.5 | -20.8 | -20.8 | -20.6 | -20.2 | -19.6 | -18.8 | -17.9 | -16.8 | -15.6 | -14.2 | -12.8 | -11.2 85 N |
| 80 N | -21.0 | -21.7 | -22.1 | -22.2 | -22.1 | -21.6 | -21.0 | -20.1 | -19.0 | -17.7 | -16.3 | -14.8 | -13.2 | -11.5 | -9.9 80 N |
| 75 N | -22.0 | -22.6 | -22.9 | -22.8 | -22.3 | -21.6 | -20.5 | -19.3 | -17.8 | -16.3 | -14.6 | -13.0 | -11.3 | -9.6 | -8.1 75 N |
| 70 N | -22.2 | -22.6 | -22.7 | -22.3 | -21.5 | -20.4 | -19.0 | -17.4 | -15.6 | -13.8 | -12.0 | -10.3 | -8.7 | -7.2 | -6.0 70 N |
| 65 N | -21.6 | -21.8 | -21.5 | -20.8 | -19.6 | -18.2 | -16.4 | -14.5 | -12.5 | -10.6 | -8.7 | -7.1 | -5.7 | -4.6 | -3.8 65 N |
| 60 N | -20.1 | -20.1 | -19.5 | -18.5 | -17.0 | -15.3 | -13.3 | -11.2 | -9.1 | -7.0 | -5.2 | -3.7 | -2.6 | -2.0 | -1.8 60 N |
| 55 N | -18.2 | -17.9 | -17.1 | -15.7 | -14.0 | -12.0 | -9.9 | -7.7 | -5.6 | -3.6 | -1.9 | -0.6 | 0.2 | 0.4 | -0.1 55 N |
| 50 N | -15.8 | -15.4 | -14.4 | -12.8 | -10.9 | -8.8 | -6.6 | -4.5 | -2.4 | -0.6 | 0.9 | 1.9 | 2.4 | 2.2 | 1.3 50 N |
| 45 N | -13.4 | -12.9 | -11.8 | -10.2 | -8.1 | -5.9 | -3.8 | -1.7 | 0.2 | 1.8 | 3.1 | 3.9 | 4.1 | 3.6 | 2.3 45 N |
| 40 N | -11.0 | -10.8 | -9.7 | -7.9 | -5.8 | -3.5 | -1.3 | 0.6 | 2.3 | 3.7 | 4.8 | 5.4 | 5.4 | 4.6 | 3.1 40 N |
| 35 N | -9.1 | -9.2 | -8.2 | -6.3 | -4.0 | -1.6 | 0.6 | 2.6 | 4.2 | 5.4 | 6.3 | 6.7 | 6.4 | 5.5 | 3.8 35 N |
| 30 N | -7.7 | -8.2 | -7.3 | -5.3 | -2.8 | -0.1 | 2.3 | 4.3 | 5.9 | 7.1 | 7.8 | 8.0 | 7.6 | 6.5 | 4.7 30 N |
| 25 N | -6.9 | -7.8 | -7.0 | -4.9 | -2.0 | 1.0 | 3.8 | 6.1 | 7.8 | 9.1 | 9.7 | 9.8 | 9.2 | 7.8 | 5.9 25 N |
| 20 N | -6.7 | -8.1 | -7.2 | -4.8 | -1.5 | 2.0 | 5.2 | 7.8 | 9.9 | 11.4 | 12.1 | 12.1 | 11.3 | 9.7 | 7.5 20 N |
| 15 N | -7.2 | -8.7 | -7.7 | -4.9 | -1.1 | 2.9 | 6.5 | 9.7 | 12.2 | 14.0 | 15.0 | 15.0 | 13.9 | 12.0 | 9.7 15 N |
| 10 N | -8.0 | -9.5 | -8.2 | -5.0 | -0.8 | 3.7 | 7.9 | 11.5 | 14.6 | 16.8 | 18.1 | 18.2 | 17.0 | 14.8 | 12.1 10 N |
| 5 N | -8.9 | -10.1 | -8.4 | -4.8 | -0.2 | 4.6 | 9.1 | 13.1 | 16.6 | 19.4 | 21.1 | 21.4 | 20.1 | 17.6 | 14.6 5 N |
| 0 | -9.4 | -10.1 | -8.0 | -4.1 | 0.6 | 5.5 | 10.1 | 14.4 | 18.3 | 21.5 | 23.6 | 24.1 | 22.9 | 20.2 | 16.8 0 |
| 5 S | -9.0 | -9.0 | -6.6 | -2.6 | 1.9 | 6.5 | 10.9 | 15.2 | 19.3 | 22.8 | 25.3 | 26.2 | 25.1 | 22.2 | 18.4 5 S |
| 10 S | -7.3 | -6.7 | -4.1 | -0.4 | 3.7 | 7.7 | 11.6 | 15.6 | 19.6 | 23.4 | 26.1 | 27.3 | 26.3 | 23.4 | 19.3 10 S |
| 15 S | -4.1 | -3.1 | -0.5 | 2.7 | 6.0 | 9.2 | 12.3 | 15.8 | 19.5 | 23.2 | 26.1 | 27.4 | 26.6 | 23.7 | 19.3 15 S |
| 20 S | 0.5 | 1.9 | 4.2 | 6.6 | 8.9 | 11.1 | 13.3 | 16.0 | 19.3 | 22.7 | 25.5 | 26.8 | 26.1 | 23.2 | 18.7 20 S |
| 25 S | 6.2 | 7.7 | 9.5 | 11.1 | 12.3 | 13.3 | 14.6 | 16.5 | 19.1 | 22.1 | 24.6 | 25.9 | 25.2 | 22.3 | 17.8 25 S |
| 30 S | 12.2 | 13.7 | 15.0 | 15.7 | 15.9 | 15.9 | 16.3 | 17.4 | 19.4 | 21.8 | 23.9 | 25.0 | 24.3 | 21.5 | 17.1 30 S |
| 35 S | 17.9 | 19.3 | 20.0 | 19.9 | 19.4 | 18.7 | 18.4 | 18.9 | 20.2 | 22.1 | 23.8 | 24.6 | 23.8 | 21.2 | 17.1 35 S |
| 40 S | 22.2 | 23.5 | 23.9 | 23.4 | 22.4 | 21.3 | 20.7 | 20.8 | 21.7 | 23.0 | 24.3 | 24.9 | 24.2 | 21.9 | 18.2 40 S |
| 45 S | 24.5 | 25.9 | 26.2 | 25.6 | 24.6 | 23.6 | 22.9 | 22.9 | 23.5 | 24.6 | 25.6 | 26.1 | 25.5 | 23.6 | 20.6 45 S |
| 50 S | 24.3 | 26.0 | 26.5 | 26.3 | 25.7 | 25.1 | 24.8 | 24.9 | 25.6 | 26.6 | 27.6 | 28.1 | 27.8 | 26.5 | 24.3 50 S |
| 55 S | 21.8 | 23.9 | 25.1 | 25.6 | 25.7 | 25.8 | 26.1 | 26.7 | 27.6 | 28.8 | 29.9 | 30.6 | 30.8 | 30.2 | 28.8 55 S |
| 60 S | 17.3 | 20.1 | 22.0 | 23.5 | 24.6 | 25.6 | 26.7 | 27.9 | 29.4 | 30.9 | 32.3 | 33.4 | 34.0 | 34.1 | 33.6 60 S |
| 65 S | 11.7 | 15.2 | 18.1 | 20.5 | 22.6 | 24.6 | 26.6 | 28.6 | 30.6 | 32.6 | 34.4 | 35.9 | 37.1 | 37.8 | 38.1 65 S |
| 70 S | 6.1 | 10.2 | 13.8 | 17.1 | 20.2 | 23.1 | 25.9 | 28.6 | 31.2 | 33.7 | 35.9 | 37.8 | 39.4 | 40.6 | 41.4 70 S |
| 75 S | 1.5 | 5.9 | 10.1 | 14.0 | 17.8 | 21.4 | 24.8 | 28.1 | 31.1 | 33.9 | 36.5 | 38.7 | 40.6 | 42.1 | 43.2 75 S |
| 80 S | -1.4 | 3.0 | 7.4 | 11.6 | 15.7 | 19.6 | 23.4 | 26.9 | 30.2 | 33.2 | 35.9 | 38.2 | 40.2 | 41.8 | 43.0 80 S |
| 85 S | -2.2 | 1.9 | 6.0 | 10.1 | 14.0 | 17.9 | 21.5 | 25.0 | 28.2 | 31.1 | 33.8 | 36.1 | 38.1 | 39.7 | 41.0 85 S |
| 90 S | -0.8 | 2.7 | 6.2 | 9.6 | 12.9 | 16.1 | 19.2 | 22.2 | 25.0 | 27.6 | 30.0 | 32.1 | 34.1 | 35.7 | 37.1 90 S |
| LAT. | 2.5 | 5.1 | 7.5 | 9.9 | 12.1 | 14.3 | 16.4 | 18.4 | 20.4 | 22.4 | 24.3 | 26.3 | 28.2 | 30.0 | 31.7 LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 E.LONG. |

TABLE 5 B IGRF EAST COMPONENT (Y)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | -14.0 | -13.4 | -12.6 | -11.8 | -10.8 | -9.8 | -8.6 | -7.2 | -5.8 | -4.3 | -2.6 | -0.9 | 0.9 | 2.7 | 4.5 | LAT. |
| 90 N | -14.4 | -13.3 | -12.1 | -10.9 | -9.5 | -8.1 | -6.6 | -5.0 | -3.4 | -1.8 | -0.2 | 1.4 | 3.1 | 4.7 | 6.2 | 90 N |
| 85 N | -14.2 | -12.8 | -11.2 | -9.6 | -8.0 | -6.3 | -4.6 | -2.9 | -1.3 | 0.4 | 2.0 | 3.5 | 5.0 | 6.4 | 7.7 | 85 N |
| 80 N | -13.2 | -11.5 | -9.9 | -8.2 | -6.5 | -4.8 | -3.1 | -1.4 | 0.2 | 1.8 | 3.3 | 4.8 | 6.2 | 7.5 | 8.7 | 80 N |
| 75 N | -11.3 | -9.6 | -8.1 | -6.5 | -5.1 | -3.6 | -2.3 | -0.9 | 0.5 | 1.9 | 3.3 | 4.7 | 6.1 | 7.4 | 8.7 | 75 N |
| 70 N | -8.7 | -7.2 | -6.0 | -4.9 | -3.9 | -3.1 | -2.2 | -1.4 | -0.5 | 0.6 | 1.8 | 3.1 | 4.5 | 6.0 | 7.5 | 70 N |
| 65 N | -5.7 | -4.6 | -3.8 | -3.4 | -3.2 | -3.1 | -3.1 | -3.0 | -2.7 | -2.1 | -1.1 | 0.1 | 1.6 | 3.3 | 5.1 | 65 N |
| 60 N | -2.6 | -2.0 | -1.8 | -2.1 | -2.8 | -3.6 | -4.5 | -5.3 | -5.7 | -5.6 | -5.0 | -3.8 | -2.2 | -0.3 | 1.8 | 60 N |
| 55 N | 0.2 | 0.4 | -0.1 | -1.1 | -2.6 | -4.5 | -6.3 | -8.0 | -9.1 | -9.6 | -9.2 | -8.1 | -6.4 | -4.2 | -1.9 | 55 N |
| 50 N | 2.4 | 2.2 | 1.3 | -0.4 | -2.7 | -5.3 | -8.0 | -10.4 | -12.2 | -13.2 | -13.1 | -12.1 | -10.3 | -8.1 | -5.7 | 50 N |
| 45 N | 4.1 | 3.6 | 2.3 | 0.2 | -2.7 | -5.9 | -9.2 | -12.2 | -14.6 | -15.9 | -16.1 | -15.2 | -13.5 | -11.4 | -9.2 | 45 N |
| 40 N | 5.4 | 4.6 | 3.1 | 0.7 | -2.4 | -6.0 | -9.6 | -12.9 | -15.6 | -17.2 | -17.7 | -17.1 | -15.7 | -13.8 | -12.1 | 40 N |
| 35 N | 6.4 | 5.5 | 3.8 | 1.3 | -1.8 | -5.4 | -9.0 | -12.4 | -15.1 | -17.0 | -17.9 | -17.7 | -16.8 | -15.6 | -14.6 | 35 N |
| 30 N | 7.6 | 6.5 | 4.7 | 2.2 | -0.8 | -4.0 | -7.3 | -10.5 | -13.2 | -15.3 | -16.6 | -17.2 | -17.1 | -16.8 | -16.8 | 30 N |
| 25 N | 9.2 | 7.8 | 5.9 | 3.5 | 0.8 | -2.0 | -4.8 | -7.5 | -10.0 | -12.3 | -14.3 | -15.7 | -16.8 | -17.7 | -18.8 | 25 N |
| 20 N | 11.3 | 9.7 | 7.5 | 5.2 | 2.8 | 0.6 | -1.6 | -3.7 | -6.0 | -8.5 | -11.2 | -13.8 | -16.2 | -18.5 | -20.9 | 20 N |
| 15 N | 13.9 | 12.0 | 9.7 | 7.2 | 5.1 | 3.4 | 1.9 | 0.4 | -1.7 | -4.4 | -7.8 | -11.6 | -15.5 | -19.2 | -22.8 | 15 N |
| 10 N | 17.0 | 14.8 | 12.1 | 9.5 | 7.4 | 6.1 | 5.2 | 4.2 | 2.5 | -0.4 | -4.4 | -9.3 | -14.5 | -19.6 | -24.3 | 10 N |
| 5 N | 20.1 | 17.6 | 14.6 | 11.6 | 9.5 | 8.3 | 7.8 | 7.3 | 5.9 | 3.0 | -1.4 | -7.1 | -13.3 | -19.4 | -24.9 | 5 N |
| 0 | 22.9 | 20.2 | 16.8 | 13.4 | 11.0 | 9.7 | 9.4 | 9.2 | 8.1 | 5.5 | 1.1 | -4.9 | -11.6 | -18.2 | -24.1 | 0 |
| 5 S | 25.1 | 22.2 | 18.4 | 14.6 | 11.6 | 10.1 | 9.7 | 9.7 | 9.0 | 6.9 | 2.9 | -2.7 | -9.2 | -15.8 | -21.8 | 5 S |
| 10 S | 26.3 | 23.4 | 19.3 | 14.9 | 11.4 | 9.3 | 8.7 | 8.7 | 8.5 | 7.1 | 4.1 | -0.5 | -6.2 | -12.1 | -17.7 | 10 S |
| 15 S | 26.6 | 23.7 | 19.3 | 14.5 | 10.4 | 7.7 | 6.6 | 6.6 | 6.8 | 6.4 | 4.7 | 1.6 | -2.6 | -7.4 | -12.2 | 15 S |
| 20 S | 26.1 | 23.2 | 18.7 | 13.5 | 8.9 | 5.6 | 4.0 | 3.9 | 4.5 | 5.1 | 4.9 | 3.6 | 1.2 | -2.1 | -5.9 | 20 S |
| 25 S | 25.2 | 22.3 | 17.8 | 12.4 | 7.3 | 3.5 | 1.5 | 1.3 | 2.3 | 3.8 | 5.0 | 5.5 | 4.9 | 3.2 | 0.4 | 25 S |
| 30 S | 24.3 | 21.5 | 17.1 | 11.7 | 6.5 | 2.4 | 0.1 | -0.4 | 0.8 | 3.0 | 5.4 | 7.3 | 8.3 | 7.9 | 6.0 | 30 S |
| 35 S | 23.8 | 21.2 | 17.1 | 12.0 | 6.9 | 2.7 | 0.2 | -0.3 | 0.9 | 3.3 | 6.4 | 9.2 | 11.1 | 11.6 | 10.3 | 35 S |
| 40 S | 24.2 | 21.9 | 18.2 | 13.6 | 8.9 | 5.0 | 2.5 | 1.8 | 2.8 | 5.2 | 8.2 | 11.3 | 13.5 | 14.3 | 13.1 | 40 S |
| 45 S | 25.5 | 23.6 | 20.6 | 16.8 | 12.8 | 9.4 | 7.1 | 6.2 | 6.8 | 8.7 | 11.2 | 13.7 | 15.5 | 15.9 | 14.5 | 45 S |
| 50 S | 27.8 | 26.5 | 24.3 | 21.4 | 18.3 | 15.5 | 13.4 | 12.4 | 12.5 | 13.6 | 15.1 | 16.5 | 17.3 | 16.9 | 14.9 | 50 S |
| 55 S | 30.8 | 30.2 | 28.8 | 26.9 | 24.7 | 22.6 | 20.9 | 19.8 | 19.3 | 19.4 | 19.7 | 19.8 | 19.3 | 17.8 | 15.0 | 55 S |
| 60 S | 34.0 | 34.1 | 33.6 | 32.7 | 31.3 | 29.9 | 28.5 | 27.3 | 26.3 | 25.4 | 24.5 | 23.2 | 21.4 | 18.8 | 15.2 | 60 S |
| 65 S | 37.1 | 37.8 | 38.1 | 37.8 | 37.2 | 36.3 | 35.2 | 33.9 | 32.4 | 30.8 | 28.9 | 26.6 | 23.7 | 20.2 | 16.1 | 65 S |
| 70 S | 39.4 | 40.6 | 41.4 | 41.7 | 41.6 | 41.0 | 40.1 | 38.7 | 37.0 | 34.9 | 32.4 | 29.5 | 26.1 | 22.2 | 17.8 | 70 S |
| 75 S | 40.6 | 42.1 | 43.2 | 43.8 | 43.9 | 43.6 | 42.8 | 41.5 | 39.7 | 37.5 | 34.9 | 31.8 | 28.3 | 24.5 | 20.4 | 75 S |
| 80 S | 40.2 | 41.8 | 43.0 | 43.8 | 44.1 | 43.9 | 43.2 | 42.1 | 40.6 | 38.6 | 36.2 | 33.5 | 30.4 | 27.1 | 23.6 | 80 S |
| 85 S | 38.1 | 39.7 | 41.0 | 41.8 | 42.3 | 42.3 | 42.0 | 41.3 | 40.2 | 38.7 | 36.9 | 34.9 | 32.5 | 29.9 | 27.2 | 85 S |
| 90 S | 34.1 | 35.7 | 37.1 | 38.2 | 39.0 | 39.6 | 39.8 | 39.7 | 39.3 | 38.6 | 37.6 | 36.4 | 34.8 | 33.0 | 31.0 | 90 S |
| LAT. | 28.2 | 30.0 | 31.7 | 33.4 | 34.9 | 36.2 | 37.4 | 38.3 | 38.8 | 39.1 | 39.0 | 38.6 | 37.7 | 36.5 | 34.9 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | E.LONG. |

TABLE 5 B IGRF EAST COMPONENT (Y)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 0.9 | 2.7 | 4.5 | 6.4 | 8.2 | 10.0 | 11.8 | 13.4 | 14.9 | 16.3 | 17.5 | 18.6 | 19.4 | 20.1 | 20.5 | LAT. |
| 90 N | 3.1 | 4.7 | 6.2 | 7.7 | 9.2 | 10.6 | 11.9 | 13.1 | 14.2 | 15.2 | 16.1 | 16.8 | 17.5 | 18.0 | 18.4 | 90 N |
| 85 N | 5.0 | 6.4 | 7.7 | 9.0 | 10.1 | 11.1 | 12.1 | 12.9 | 13.6 | 14.2 | 14.7 | 15.1 | 15.5 | 15.7 | 15.9 | 85 N |
| 80 N | 6.2 | 7.5 | 8.7 | 9.8 | 10.8 | 11.6 | 12.3 | 12.8 | 13.2 | 13.4 | 13.6 | 13.6 | 13.6 | 13.5 | 13.5 | 80 N |
| 75 N | 6.1 | 7.4 | 8.7 | 9.8 | 10.8 | 11.6 | 12.2 | 12.6 | 12.8 | 12.8 | 12.6 | 12.3 | 11.9 | 11.5 | 11.2 | 75 N |
| 70 N | 4.5 | 6.0 | 7.5 | 8.8 | 10.0 | 11.0 | 11.7 | 12.1 | 12.1 | 12.0 | 11.6 | 11.0 | 10.3 | 9.7 | 9.1 | 70 N |
| 65 N | 1.6 | 3.3 | 5.1 | 6.8 | 8.3 | 9.5 | 10.3 | 10.7 | 10.8 | 10.6 | 10.0 | 9.3 | 8.5 | 7.8 | 7.2 | 65 N |
| 60 N | -2.2 | -0.3 | 1.8 | 3.8 | 5.6 | 6.9 | 7.9 | 8.3 | 8.4 | 8.1 | 7.6 | 6.9 | 6.2 | 5.6 | 5.1 | 60 N |
| 55 N | -6.4 | -4.2 | -1.9 | 0.2 | 2.1 | 3.4 | 4.2 | 4.5 | 4.5 | 4.1 | 3.7 | 3.2 | 2.9 | 2.7 | 2.9 | 55 N |
| 50 N | -10.3 | -8.1 | -5.7 | -3.6 | -2.0 | -1.0 | -0.6 | -0.7 | -1.1 | -1.5 | -1.8 | -1.9 | -1.6 | -1.0 | 0.1 | 50 N |
| 45 N | -13.5 | -11.4 | -9.2 | -7.4 | -6.3 | -6.0 | -6.4 | -7.3 | -8.2 | -8.8 | -8.9 | -8.4 | -7.3 | -5.5 | -3.2 | 45 N |
| 40 N | -15.7 | -13.8 | -12.1 | -11.0 | -10.7 | -11.4 | -12.9 | -14.7 | -16.3 | -17.3 | -17.2 | -16.1 | -13.9 | -10.9 | -7.2 | 40 N |
| 35 N | -16.8 | -15.6 | -14.6 | -14.3 | -15.1 | -17.0 | -19.7 | -22.6 | -25.0 | -26.3 | -26.2 | -24.4 | -21.2 | -16.8 | -11.6 | 35 N |
| 30 N | -17.1 | -16.8 | -16.8 | -17.5 | -19.4 | -22.4 | -26.3 | -30.2 | -33.4 | -35.2 | -34.9 | -32.6 | -28.5 | -23.0 | -16.4 | 30 N |
| 25 N | -16.8 | -17.7 | -18.8 | -20.7 | -23.5 | -27.5 | -32.3 | -37.0 | -40.9 | -43.0 | -42.8 | -40.2 | -35.4 | -29.0 | -21.4 | 25 N |
| 20 N | -16.2 | -18.5 | -20.9 | -23.7 | -27.4 | -32.0 | -37.3 | -42.5 | -46.8 | -49.2 | -49.2 | -46.5 | -41.4 | -34.5 | -26.3 | 20 N |
| 15 N | -15.5 | -19.2 | -22.8 | -26.5 | -30.7 | -35.6 | -41.1 | -46.4 | -50.9 | -53.5 | -53.7 | -51.2 | -46.3 | -39.4 | -31.0 | 15 N |
| 10 N | -14.5 | -19.6 | -24.3 | -28.7 | -33.2 | -38.1 | -43.3 | -48.6 | -53.0 | -55.8 | -56.3 | -54.3 | -49.9 | -43.4 | -35.4 | 10 N |
| 5 N | -13.3 | -19.4 | -24.9 | -29.8 | -34.4 | -39.1 | -44.0 | -49.0 | -53.3 | -56.3 | -57.3 | -56.0 | -52.3 | -46.6 | -39.3 | 5 N |
| 0 | -11.6 | -18.2 | -24.1 | -29.3 | -33.9 | -38.4 | -43.0 | -47.8 | -52.1 | -55.4 | -56.9 | -56.4 | -53.7 | -49.0 | -42.5 | 0 |
| 5 S | -9.2 | -15.8 | -21.8 | -27.0 | -31.6 | -36.0 | -40.5 | -45.2 | -49.7 | -53.4 | -55.7 | -56.0 | -54.3 | -50.6 | -44.9 | 5 S |
| 10 S | -6.2 | -12.1 | -17.7 | -22.7 | -27.4 | -31.9 | -36.7 | -41.7 | -46.7 | -51.0 | -54.0 | -55.2 | -54.3 | -51.4 | -46.4 | 10 S |
| 15 S | -2.6 | -7.4 | -12.2 | -17.0 | -21.7 | -26.6 | -31.9 | -37.6 | -43.2 | -48.2 | -52.0 | -54.0 | -53.8 | -51.4 | -46.9 | 15 S |
| 20 S | 1.2 | -2.1 | -5.9 | -10.3 | -15.1 | -20.6 | -26.7 | -33.2 | -39.7 | -45.5 | -50.0 | -52.6 | -52.8 | -50.7 | -46.4 | 20 S |
| 25 S | 4.9 | 3.2 | 0.4 | -3.5 | -8.5 | -14.6 | -21.5 | -29.0 | -36.4 | -43.0 | -48.0 | -51.0 | -51.4 | -49.3 | -44.8 | 25 S |
| 30 S | 8.3 | 7.9 | 6.0 | 2.5 | -2.7 | -9.3 | -17.0 | -25.3 | -33.4 | -40.6 | -46.0 | -49.1 | -49.6 | -47.3 | -42.4 | 30 S |
| 35 S | 11.1 | 11.6 | 10.3 | 7.1 | 1.8 | -5.2 | -13.4 | -22.3 | -30.9 | -38.3 | -43.9 | -47.0 | -47.2 | -44.7 | -39.4 | 35 S |
| 40 S | 13.5 | 14.3 | 13.1 | 9.9 | 4.5 | -2.6 | -11.1 | -20.1 | -28.7 | -36.2 | -41.6 | -44.5 | -44.5 | -41.6 | -36.1 | 40 S |
| 45 S | 15.5 | 15.9 | 14.5 | 11.1 | 5.7 | -1.5 | -9.8 | -18.6 | -26.9 | -33.9 | -39.0 | -41.5 | -41.2 | -38.2 | -32.6 | 45 S |
| 50 S | 17.3 | 16.9 | 14.9 | 11.2 | 5.6 | -1.3 | -9.2 | -17.4 | -25.0 | -31.4 | -35.9 | -38.0 | -37.6 | -34.5 | -29.1 | 50 S |
| 55 S | 19.3 | 17.8 | 15.0 | 10.7 | 5.2 | -1.5 | -8.8 | -16.1 | -22.8 | -28.4 | -32.3 | -34.0 | -33.4 | -30.6 | -25.7 | 55 S |
| 60 S | 21.4 | 18.8 | 15.2 | 10.6 | 5.1 | -1.2 | -7.7 | -14.1 | -19.9 | -24.6 | -27.8 | -29.3 | -28.8 | -26.5 | -22.4 | 60 S |
| 65 S | 23.7 | 20.2 | 16.1 | 11.3 | 5.9 | 0.2 | -5.5 | -11.0 | -15.9 | -19.8 | -22.6 | -23.9 | -23.7 | -22.1 | -19.2 | 65 S |
| 70 S | 26.1 | 22.2 | 17.8 | 13.1 | 8.1 | 3.1 | -1.9 | -6.6 | -10.7 | -14.0 | -16.5 | -17.9 | -18.3 | -17.6 | -15.9 | 70 S |
| 75 S | 28.3 | 24.5 | 20.4 | 16.1 | 11.7 | 7.3 | 3.0 | -0.9 | -4.5 | -7.5 | -9.9 | -11.6 | -12.6 | -13.0 | -12.8 | 75 S |
| 80 S | 30.4 | 27.1 | 23.6 | 19.9 | 16.2 | 12.5 | 8.9 | 5.5 | 2.3 | -0.6 | -3.2 | -5.4 | -7.2 | -8.7 | -9.9 | 80 S |
| 85 S | 32.5 | 29.9 | 27.2 | 24.3 | 21.2 | 18.1 | 15.0 | 11.9 | 8.8 | 5.9 | 2.9 | 0.1 | -2.5 | -5.1 | -7.5 | 85 S |
| 90 S | 34.8 | 33.0 | 31.0 | 28.7 | 26.2 | 23.4 | 20.6 | 17.5 | 14.3 | 11.0 | 7.7 | 4.2 | 0.8 | -2.7 | -6.2 | 90 S |
| LAT. | 37.7 | 36.5 | 34.9 | 32.9 | 30.5 | 27.8 | 24.8 | 21.5 | 17.9 | 14.2 | 10.3 | 6.3 | 2.2 | -1.9 | -6.0 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 5 B IGRF EAST COMPONENT (Y)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 19.4 | 20.1 | 20.5 | 20.8 | 20.8 | 20.6 | 20.2 | 19.6 | 18.8 | 17.9 | 16.8 | 15.6 | 14.2 | 12.8 | 11.2 | |
| 90 N | 17.5 | 18.0 | 18.4 | 18.6 | 18.7 | 18.6 | 18.4 | 18.1 | 17.6 | 17.0 | 16.3 | 15.4 | 14.4 | 13.3 | 12.1 | 90 N |
| 85 N | 15.5 | 15.7 | 15.9 | 16.0 | 16.1 | 16.0 | 16.0 | 15.8 | 15.6 | 15.3 | 15.0 | 14.5 | 14.0 | 13.4 | 12.6 | 85 N |
| 80 N | 13.6 | 13.5 | 13.5 | 13.4 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.4 | 13.4 | 13.4 | 13.4 | 13.2 | 13.0 | 80 N |
| 75 N | 11.9 | 11.5 | 11.2 | 10.9 | 10.7 | 10.6 | 10.7 | 11.0 | 11.3 | 11.7 | 12.2 | 12.7 | 13.1 | 13.3 | 13.4 | 75 N |
| 70 N | 10.3 | 9.7 | 9.1 | 8.7 | 8.5 | 8.5 | 8.8 | 9.3 | 10.1 | 11.0 | 11.9 | 12.8 | 13.6 | 14.1 | 14.4 | 70 N |
| 65 N | 8.5 | 7.8 | 7.2 | 6.8 | 6.7 | 7.0 | 7.7 | 8.7 | 10.0 | 11.5 | 13.0 | 14.3 | 15.4 | 16.1 | 16.4 | 65 N |
| 60 N | 6.2 | 5.6 | 5.1 | 5.1 | 5.4 | 6.2 | 7.6 | 9.3 | 11.4 | 13.6 | 15.7 | 17.5 | 18.8 | 19.5 | 19.4 | 60 N |
| 55 N | 2.9 | 2.7 | 2.9 | 3.4 | 4.5 | 6.2 | 8.4 | 11.2 | 14.3 | 17.4 | 20.3 | 22.5 | 23.9 | 24.3 | 23.6 | 55 N |
| 50 N | -1.6 | -1.0 | 0.1 | 1.7 | 3.8 | 6.6 | 10.1 | 14.2 | 18.5 | 22.7 | 26.4 | 29.0 | 30.4 | 30.3 | 28.8 | 50 N |
| 45 N | -7.3 | -5.5 | -3.2 | -0.4 | 3.1 | 7.4 | 12.4 | 18.0 | 23.8 | 29.2 | 33.7 | 36.7 | 37.8 | 37.1 | 34.5 | 45 N |
| 40 N | -13.9 | -10.9 | -7.2 | -2.8 | 2.3 | 8.2 | 14.9 | 22.1 | 29.5 | 36.2 | 41.5 | 44.8 | 45.6 | 44.0 | 40.2 | 40 N |
| 35 N | -21.2 | -16.8 | -11.6 | -5.7 | 1.1 | 8.7 | 17.1 | 26.1 | 35.1 | 43.1 | 49.2 | 52.6 | 52.9 | 50.3 | 45.2 | 35 N |
| 30 N | -28.5 | -23.0 | -16.4 | -9.0 | -0.7 | 8.5 | 18.6 | 29.3 | 39.8 | 49.1 | 55.9 | 59.4 | 59.1 | 55.4 | 49.1 | 30 N |
| 25 N | -35.4 | -29.0 | -21.4 | -12.8 | -3.2 | 7.4 | 19.0 | 31.3 | 43.2 | 53.5 | 60.9 | 64.4 | 63.5 | 58.9 | 51.6 | 25 N |
| 20 N | -41.4 | -34.5 | -26.3 | -16.9 | -6.5 | 5.2 | 18.0 | 31.5 | 44.6 | 55.9 | 63.8 | 67.2 | 66.0 | 60.6 | 52.6 | 20 N |
| 15 N | -46.3 | -39.4 | -31.0 | -21.4 | -10.5 | 1.9 | 15.5 | 30.0 | 44.0 | 55.9 | 64.3 | 67.8 | 66.4 | 60.7 | 52.4 | 15 N |
| 10 N | -49.9 | -43.4 | -35.4 | -25.9 | -14.9 | -2.4 | 11.7 | 26.7 | 41.3 | 53.8 | 62.5 | 66.4 | 65.1 | 59.6 | 51.5 | 10 N |
| 5 N | -52.3 | -46.6 | -39.3 | -30.3 | -19.6 | -7.2 | 7.0 | 22.1 | 37.0 | 49.9 | 59.0 | 63.4 | 62.7 | 57.8 | 50.4 | 5 N |
| 0 | -53.7 | -49.0 | -42.5 | -34.2 | -24.1 | -12.0 | 1.9 | 16.9 | 31.8 | 44.9 | 54.5 | 59.5 | 59.7 | 55.9 | 49.7 | 0 |
| 5 S | -54.3 | -50.6 | -44.9 | -37.4 | -27.8 | -16.3 | -2.8 | 11.9 | 26.6 | 39.7 | 49.8 | 55.6 | 56.9 | 54.5 | 49.5 | 5 S |
| 10 S | -54.3 | -51.4 | -46.4 | -39.5 | -30.4 | -19.3 | -6.4 | 7.9 | 22.2 | 35.3 | 45.7 | 52.3 | 54.8 | 53.6 | 49.8 | 10 S |
| 15 S | -53.8 | -51.4 | -46.9 | -40.3 | -31.6 | -20.8 | -8.3 | 5.4 | 19.3 | 32.2 | 42.8 | 50.0 | 53.5 | 53.4 | 50.5 | 15 S |
| 20 S | -52.8 | -50.7 | -46.4 | -39.8 | -31.1 | -20.6 | -8.4 | 4.9 | 18.3 | 30.8 | 41.3 | 48.9 | 52.9 | 53.6 | 51.1 | 20 S |
| 25 S | -51.4 | -49.3 | -44.8 | -38.0 | -29.2 | -18.6 | -6.7 | 6.2 | 19.1 | 31.1 | 41.2 | 48.6 | 52.8 | 53.5 | 50.9 | 25 S |
| 30 S | -49.6 | -47.3 | -42.4 | -35.3 | -26.2 | -15.5 | -3.6 | 8.8 | 21.1 | 32.4 | 41.9 | 48.8 | 52.5 | 52.7 | 49.5 | 30 S |
| 35 S | -47.2 | -44.7 | -39.4 | -31.9 | -22.5 | -11.7 | -0.0 | 12.0 | 23.6 | 34.0 | 42.6 | 48.5 | 51.3 | 50.6 | 46.4 | 35 S |
| 40 S | -44.5 | -41.6 | -36.1 | -28.3 | -18.7 | -8.0 | 3.4 | 14.8 | 25.6 | 35.0 | 42.4 | 47.1 | 48.7 | 46.9 | 41.5 | 40 S |
| 45 S | -41.2 | -38.2 | -32.6 | -24.8 | -15.4 | -5.0 | 5.9 | 16.5 | 26.2 | 34.4 | 40.5 | 43.9 | 44.3 | 41.3 | 35.0 | 45 S |
| 50 S | -37.6 | -34.5 | -29.1 | -21.7 | -12.8 | -3.1 | 6.8 | 16.3 | 24.8 | 31.7 | 36.5 | 38.6 | 37.8 | 34.0 | 27.1 | 50 S |
| 55 S | -33.4 | -30.6 | -25.7 | -19.1 | -11.2 | -2.7 | 6.0 | 14.1 | 21.2 | 26.7 | 30.2 | 31.2 | 29.6 | 25.2 | 18.3 | 55 S |
| 60 S | -28.8 | -26.5 | -22.4 | -16.9 | -10.5 | -3.5 | 3.6 | 10.1 | 15.6 | 19.6 | 21.9 | 22.0 | 19.9 | 15.6 | 9.0 | 60 S |
| 65 S | -23.7 | -22.1 | -19.2 | -15.1 | -10.4 | -5.2 | -0.1 | 4.6 | 8.4 | 11.1 | 12.2 | 11.7 | 9.4 | 5.4 | -0.2 | 65 S |
| 70 S | -18.3 | -17.6 | -15.9 | -13.5 | -10.6 | -7.5 | -4.4 | -1.6 | 0.5 | 1.8 | 2.0 | 1.0 | -1.2 | -4.6 | -9.1 | 70 S |
| 75 S | -12.6 | -13.0 | -12.8 | -12.1 | -11.1 | -9.9 | -8.8 | -7.9 | -7.4 | -7.3 | -8.0 | -9.3 | -11.4 | -14.1 | -17.5 | 75 S |
| 80 S | -7.2 | -8.7 | -9.9 | -10.8 | -11.6 | -12.2 | -12.9 | -13.6 | -14.5 | -15.6 | -16.9 | -18.6 | -20.5 | -22.7 | -25.1 | 80 S |
| 85 S | -2.5 | -5.1 | -7.5 | -9.9 | -12.1 | -14.3 | -16.4 | -18.4 | -20.4 | -22.4 | -24.3 | -26.3 | -28.2 | -30.0 | -31.7 | 85 S |
| 90 S | 0.8 | -2.7 | -6.2 | -9.6 | -12.9 | -16.1 | -19.2 | -22.2 | -25.0 | -27.6 | -30.0 | -32.1 | -34.1 | -35.7 | -37.1 | 90 S |
| LAT. | 2.2 | -1.9 | -6.0 | -10.1 | -14.0 | -17.9 | -21.5 | -25.0 | -28.2 | -31.1 | -33.8 | -36.1 | -38.1 | -39.7 | -41.0 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 6 A IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS (DOWNWARD POSITIVE)

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 57253 | 57228 | 57202 | 57176 | 57150 | 57123 | 57095 | 57066 | 57034 | 57000 | 56962 | 56919 | 56872 | 56819 | 56761 | LAT. |
| 90 N | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 90 N |
| 85 N | 55060 | 55070 | 55094 | 55132 | 55185 | 55251 | 55329 | 55420 | 55520 | 55630 | 55747 | 55870 | 55997 | 56126 | 56256 | 85 N |
| 80 N | 53596 | 53598 | 53636 | 53711 | 53823 | 53969 | 54148 | 54357 | 54594 | 54855 | 55136 | 55432 | 55739 | 56051 | 56363 | 80 N |
| 75 N | 52096 | 52075 | 52114 | 52214 | 52373 | 52590 | 52863 | 53188 | 53562 | 53980 | 54435 | 54920 | 55428 | 55947 | 56469 | 75 N |
| 70 N | 50607 | 50555 | 50584 | 50693 | 50880 | 51146 | 51488 | 51903 | 52388 | 52938 | 53546 | 54204 | 54900 | 55622 | 56352 | 70 N |
| 65 N | 49090 | 49009 | 49023 | 49129 | 49327 | 49616 | 49996 | 50465 | 51023 | 51665 | 52386 | 53176 | 54024 | 54913 | 55822 | 65 N |
| 60 N | 47435 | 47336 | 47340 | 47442 | 47641 | 47937 | 48331 | 48825 | 49418 | 50111 | 50897 | 51770 | 52715 | 53715 | 54748 | 60 N |
| 55 N | 45495 | 45395 | 45402 | 45509 | 45712 | 46012 | 46411 | 46912 | 47518 | 48229 | 49040 | 49944 | 50928 | 51973 | 53055 | 55 N |
| 50 N | 43107 | 43023 | 43051 | 43178 | 43399 | 43714 | 44123 | 44631 | 45241 | 45952 | 46760 | 47655 | 48624 | 49647 | 50700 | 50 N |
| 45 N | 40122 | 40065 | 40128 | 40293 | 40549 | 40892 | 41324 | 41848 | 42464 | 43172 | 43963 | 44824 | 45737 | 46681 | 47635 | 45 N |
| 40 N | 36421 | 36391 | 36494 | 36705 | 37007 | 37390 | 37853 | 38399 | 39028 | 39735 | 40507 | 41322 | 42157 | 42986 | 43787 | 40 N |
| 35 N | 31936 | 31917 | 32051 | 32302 | 32644 | 33062 | 33554 | 34120 | 34761 | 35469 | 36224 | 36994 | 37744 | 38442 | 39065 | 35 N |
| 30 N | 26669 | 26628 | 26766 | 27032 | 27390 | 27820 | 28317 | 28886 | 29528 | 30233 | 30973 | 31703 | 32376 | 32946 | 33391 | 30 N |
| 25 N | 20706 | 20599 | 20696 | 20933 | 21264 | 21663 | 22129 | 22670 | 23291 | 23981 | 24703 | 25401 | 26008 | 26469 | 26753 | 25 N |
| 20 N | 14228 | 14003 | 14004 | 14157 | 14405 | 14722 | 15109 | 15583 | 16155 | 16813 | 17513 | 18180 | 18733 | 19101 | 19250 | 20 N |
| 15 N | 7502 | 7109 | 6959 | 6969 | 7078 | 7261 | 7526 | 7899 | 8397 | 9005 | 9670 | 10303 | 10803 | 11088 | 11119 | 15 N |
| 10 N | 859 | 259 | -87 | -269 | -345 | -334 | -219 | 31 | 437 | 981 | 1597 | 2181 | 2616 | 2811 | 2724 | 10 N |
| 5 N | -5352 | -6174 | -6746 | -7148 | -7432 | -7608 | -7651 | -7526 | -7214 | -6743 | -6193 | -5683 | -5340 | -5265 | -5492 | 5 N |
| 0 | -10817 | -11852 | -12646 | -13268 | -13755 | -14106 | -14291 | -14276 | -14051 | -13659 | -13194 | -12791 | -12585 | -12674 | -13085 | 0 |
| 5 S | -15305 | -16514 | -17500 | -18311 | -18967 | -19457 | -19748 | -19815 | -19663 | -19353 | -18999 | -18744 | -18727 | -19038 | -19689 | 5 S |
| 10 S | -18710 | -20033 | -21153 | -22095 | -22863 | -23437 | -23789 | -23906 | -23815 | -23597 | -23381 | -23319 | -23544 | -24135 | -25086 | 10 S |
| 15 S | -21065 | -22426 | -23603 | -24602 | -25413 | -26012 | -26380 | -26522 | -26487 | -26377 | -26333 | -26505 | -27020 | -27937 | -29232 | 15 S |
| 20 S | -22524 | -23846 | -25001 | -25980 | -26765 | -27336 | -27686 | -27841 | -27871 | -27893 | -28051 | -28493 | -29328 | -30598 | -32259 | 20 S |
| 25 S | -23327 | -24544 | -25608 | -26502 | -27208 | -27714 | -28032 | -28204 | -28318 | -28499 | -28888 | -29619 | -30783 | -32404 | -34421 | 25 S |
| 30 S | -23755 | -24820 | -25744 | -26511 | -27109 | -27541 | -27831 | -28041 | -28266 | -28630 | -29265 | -30287 | -31764 | -33702 | -36032 | 30 S |
| 35 S | -24077 | -24971 | -25736 | -26364 | -26854 | -27223 | -27511 | -27788 | -28151 | -28715 | -29596 | -30886 | -32635 | -34831 | -37401 | 35 S |
| 40 S | -24526 | -25253 | -25869 | -26375 | -26784 | -27123 | -27444 | -27819 | -28339 | -29106 | -30212 | -31728 | -33683 | -36055 | -38773 | 40 S |
| 45 S | -25289 | -25872 | -26370 | -26792 | -27160 | -27513 | -27903 | -28400 | -29084 | -30037 | -31329 | -33009 | -35089 | -37542 | -40301 | 45 S |
| 50 S | -26508 | -26981 | -27401 | -27784 | -28158 | -28563 | -29049 | -29678 | -30514 | -31617 | -33039 | -34807 | -36923 | -39357 | -42050 | 50 S |
| 55 S | -28297 | -28693 | -29073 | -29456 | -29870 | -30351 | -30942 | -31691 | -32646 | -33848 | -35329 | -37103 | -39163 | -41483 | -44011 | 55 S |
| 60 S | -30745 | -31089 | -31454 | -31859 | -32325 | -32881 | -33560 | -34395 | -35416 | -36651 | -38114 | -39811 | -41731 | -43850 | -46128 | 60 S |
| 65 S | -33910 | -34213 | -34570 | -34992 | -35495 | -36099 | -36823 | -37687 | -38709 | -39900 | -41268 | -42809 | -44513 | -46360 | -48321 | 65 S |
| 70 S | -37785 | -38049 | -38385 | -38800 | -39302 | -39901 | -40608 | -41429 | -42374 | -43444 | -44640 | -45956 | -47382 | -48904 | -50500 | 70 S |
| 75 S | -42277 | -42493 | -42784 | -43152 | -43600 | -44130 | -44745 | -45447 | -46236 | -47111 | -48068 | -49101 | -50202 | -51361 | -52564 | 75 S |
| 80 S | -47181 | -47338 | -47554 | -47831 | -48168 | -48565 | -49019 | -49530 | -50096 | -50713 | -51378 | -52085 | -52830 | -53605 | -54403 | 80 S |
| 85 S | -52183 | -52267 | -52385 | -52535 | -52716 | -52928 | -53168 | -53436 | -53730 | -54047 | -54385 | -54741 | -55114 | -55498 | -55892 | 85 S |
| 90 S | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | 90 S |
| LAT. | -60938 | -60841 | -60714 | -60557 | -60371 | -60159 | -59920 | -59657 | -59372 | -59066 | -58742 | -58401 | -58046 | -57679 | -57303 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 6 A IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS (DOWNWARD POSITIVE)

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56872 | 56819 | 56761 | 56695 | 56624 | 56545 | 56461 | 56370 | 56275 | 56175 | 56071 | 55966 | 55860 | 55754 | 55651 LAT. |
| 90 N | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 90 N |
| 85 N | 55997 | 56126 | 56256 | 56384 | 56509 | 56630 | 56744 | 56850 | 56947 | 57035 | 57112 | 57178 | 57234 | 57278 | 57312 85 N |
| 80 N | 55739 | 56051 | 56363 | 56669 | 56963 | 57240 | 57495 | 57723 | 57921 | 58085 | 58214 | 58307 | 58364 | 58387 | 58378 80 N |
| 75 N | 55428 | 55947 | 56469 | 56982 | 57473 | 57933 | 58349 | 58712 | 59012 | 59244 | 59402 | 59484 | 59491 | 59428 | 59301 75 N |
| 70 N | 54900 | 55622 | 56352 | 57075 | 57771 | 58421 | 59006 | 59506 | 59907 | 60195 | 60360 | 60399 | 60312 | 60108 | 59796 70 N |
| 65 N | 54024 | 54913 | 55822 | 56730 | 57609 | 58432 | 59170 | 59796 | 60283 | 60610 | 60762 | 60731 | 60518 | 60131 | 59590 65 N |
| 60 N | 52715 | 53715 | 54748 | 55786 | 56797 | 57747 | 58598 | 59313 | 59857 | 60200 | 60318 | 60198 | 59840 | 59255 | 58468 60 N |
| 55 N | 50928 | 51973 | 53055 | 54147 | 55213 | 56216 | 57115 | 57864 | 58422 | 58748 | 58813 | 58596 | 58094 | 57320 | 56305 55 N |
| 50 N | 48624 | 49647 | 50700 | 51758 | 52788 | 53755 | 54619 | 55333 | 55851 | 56128 | 56126 | 55818 | 55196 | 54271 | 53078 50 N |
| 45 N | 45737 | 46681 | 47635 | 48576 | 49480 | 50320 | 51065 | 51674 | 52103 | 52304 | 52233 | 51856 | 51158 | 50147 | 48856 45 N |
| 40 N | 42157 | 42986 | 43787 | 44546 | 45251 | 45891 | 46449 | 46899 | 47204 | 47318 | 47193 | 46787 | 46077 | 45063 | 43775 40 N |
| 35 N | 37744 | 38442 | 39065 | 39607 | 40070 | 40465 | 40798 | 41062 | 41234 | 41272 | 41127 | 40748 | 40103 | 39179 | 38000 35 N |
| 30 N | 32376 | 32946 | 33391 | 33710 | 33923 | 34066 | 34171 | 34256 | 34314 | 34311 | 34196 | 33911 | 33409 | 32666 | 31692 30 N |
| 25 N | 26008 | 26469 | 26753 | 26867 | 26852 | 26767 | 26674 | 26616 | 26604 | 26612 | 26586 | 26458 | 26169 | 25679 | 24986 25 N |
| 20 N | 18733 | 19101 | 19250 | 19191 | 18984 | 18715 | 18473 | 18326 | 18298 | 18372 | 18489 | 18570 | 18542 | 18351 | 17981 20 N |
| 15 N | 10803 | 11088 | 11119 | 10915 | 10554 | 10146 | 9806 | 9620 | 9627 | 9809 | 10102 | 10419 | 10669 | 10787 | 10744 15 N |
| 10 N | 2616 | 2811 | 2724 | 2386 | 1892 | 1375 | 969 | 777 | 844 | 1150 | 1624 | 2166 | 2675 | 3074 | 3327 10 N |
| 5 N | -5340 | -5265 | -5492 | -5977 | -6609 | -7236 | -7704 | -7902 | -7784 | -7375 | -6754 | -6033 | -5320 | -4699 | -4213 5 N |
| 0 | -12585 | -12674 | -13085 | -13757 | -14560 | -15325 | -15887 | -16130 | -16009 | -15555 | -14858 | -14035 | -13201 | -12443 | -11805 0 |
| 5 S | -18727 | -19038 | -19689 | -20603 | -21631 | -22589 | -23305 | -23662 | -23618 | -23209 | -22531 | -21706 | -20850 | -20049 | -19347 5 S |
| 10 S | -23544 | -24135 | -25086 | -26299 | -27612 | -28829 | -29775 | -30332 | -30461 | -30201 | -29651 | -28930 | -28152 | -27400 | -26715 10 S |
| 15 S | -27020 | -27937 | -29232 | -30792 | -32440 | -33976 | -35223 | -36065 | -36462 | -36454 | -36133 | -35613 | -35001 | -34375 | -33771 15 S |
| 20 S | -29328 | -30598 | -32259 | -34185 | -36195 | -38086 | -39685 | -40876 | -41617 | -41941 | -41929 | -41684 | -41304 | -40856 | -40378 20 S |
| 25 S | -30783 | -32404 | -34421 | -36701 | -39064 | -41313 | -43280 | -44849 | -45974 | -46677 | -47021 | -47096 | -46982 | -46743 | -46412 25 S |
| 30 S | -31764 | -33702 | -36032 | -38621 | -41292 | -43863 | -46171 | -48105 | -49613 | -50699 | -51410 | -51813 | -51977 | -51953 | -51776 30 S |
| 35 S | -32635 | -34831 | -37401 | -40219 | -43121 | -45940 | -48527 | -50772 | -52617 | -54051 | -55101 | -55813 | -56239 | -56423 | -56396 35 S |
| 40 S | -33683 | -36055 | -38773 | -41719 | -44750 | -47717 | -50486 | -52953 | -55056 | -56770 | -58102 | -59079 | -59737 | -60109 | -60226 40 S |
| 45 S | -35089 | -37542 | -40301 | -43264 | -46309 | -49307 | -52144 | -54723 | -56981 | -58883 | -60419 | -61600 | -62448 | -62986 | -63241 45 S |
| 50 S | -36923 | -39357 | -42050 | -44918 | -47860 | -50772 | -53556 | -56128 | -58427 | -60413 | -62065 | -63381 | -64370 | -65048 | -65435 50 S |
| 55 S | -39163 | -41483 | -44011 | -46681 | -49415 | -52130 | -54747 | -57198 | -59426 | -61391 | -63068 | -64446 | -65524 | -66309 | -66818 55 S |
| 60 S | -41731 | -43850 | -46128 | -48514 | -50951 | -53377 | -55732 | -57961 | -60018 | -61867 | -63481 | -64845 | -65953 | -66808 | -67417 60 S |
| 65 S | -44513 | -46360 | -48321 | -50359 | -52434 | -54502 | -56520 | -58449 | -60253 | -61901 | -63373 | -64651 | -65727 | -66598 | -67269 65 S |
| 70 S | -47382 | -48904 | -50500 | -52146 | -53817 | -55483 | -57117 | -58691 | -60180 | -61563 | -62823 | -63945 | -64922 | -65747 | -66421 70 S |
| 75 S | -50202 | -51361 | -52564 | -53797 | -55044 | -56288 | -57511 | -58698 | -59834 | -60903 | -61895 | -62799 | -63608 | -64317 | -64924 75 S |
| 80 S | -52830 | -53605 | -54403 | -55217 | -56037 | -56855 | -57662 | -58450 | -59210 | -59935 | -60618 | -61252 | -61832 | -62355 | -62817 80 S |
| 85 S | -55114 | -55498 | -55892 | -56292 | -56695 | -57096 | -57494 | -57883 | -58262 | -58626 | -58972 | -59299 | -59603 | -59882 | -60134 85 S |
| 90 S | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 90 S |
| LAT. | -58046 | -57679 | -57303 | -56922 | -56536 | -56151 | -55768 | -55391 | -55022 | -54665 | -54322 | -53996 | -53689 | -53405 | -53144 LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 E.LONG. |

TABLE 6 A IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS (DOWNWARD POSITIVE)

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 55860 | 55754 | 55651 | 55551 | 55457 | 55370 | 55291 | 55222 | 55164 | 55118 | 55085 | 55065 | 55060 | 55070 | 55094 | LAT. |
| 90 N | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 90 N |
| 85 N | 57234 | 57278 | 57312 | 57336 | 57350 | 57356 | 57355 | 57348 | 57335 | 57318 | 57298 | 57276 | 57253 | 57228 | 57202 | 85 N |
| 80 N | 58364 | 58387 | 58378 | 58340 | 58279 | 58198 | 58104 | 58001 | 57896 | 57792 | 57695 | 57608 | 57534 | 57476 | 57435 | 80 N |
| 75 N | 59491 | 59428 | 59301 | 59117 | 58890 | 58630 | 58351 | 58067 | 57791 | 57535 | 57310 | 57124 | 56984 | 56894 | 56856 | 75 N |
| 70 N | 60312 | 60108 | 59796 | 59394 | 58923 | 58406 | 57869 | 57335 | 56830 | 56375 | 55988 | 55685 | 55475 | 55365 | 55355 | 70 N |
| 65 N | 60518 | 60131 | 59590 | 58921 | 58157 | 57335 | 56494 | 55674 | 54912 | 54240 | 53685 | 53267 | 53000 | 52889 | 52935 | 65 N |
| 60 N | 59840 | 59255 | 58468 | 57517 | 56447 | 55311 | 54165 | 53064 | 52056 | 51184 | 50483 | 49977 | 49679 | 49595 | 49719 | 60 N |
| 55 N | 58094 | 57320 | 56305 | 55095 | 53750 | 52337 | 50929 | 49592 | 48389 | 47371 | 46575 | 46027 | 45737 | 45707 | 45927 | 55 N |
| 50 N | 55196 | 54271 | 53078 | 51671 | 50121 | 48510 | 46920 | 45434 | 44120 | 43034 | 42215 | 41685 | 41449 | 41502 | 41827 | 50 N |
| 45 N | 51158 | 50147 | 48856 | 47346 | 45693 | 43989 | 42329 | 40800 | 39479 | 38420 | 37661 | 37215 | 37080 | 37242 | 37675 | 45 N |
| 40 N | 46077 | 45063 | 43775 | 42272 | 40635 | 38960 | 37348 | 35892 | 34669 | 33733 | 33114 | 32816 | 32826 | 33118 | 33659 | 40 N |
| 35 N | 40103 | 39179 | 38000 | 36618 | 35114 | 33585 | 32134 | 30855 | 29824 | 29092 | 28680 | 28582 | 28772 | 29212 | 29857 | 35 N |
| 30 N | 33409 | 32666 | 31692 | 30532 | 29262 | 27975 | 26774 | 25752 | 24982 | 24512 | 24353 | 24490 | 24884 | 25482 | 26229 | 30 N |
| 25 N | 26169 | 25679 | 24986 | 24123 | 23158 | 22179 | 21285 | 20567 | 20096 | 19915 | 20031 | 20418 | 21023 | 21782 | 22628 | 25 N |
| 20 N | 18542 | 18351 | 17981 | 17454 | 16828 | 16185 | 15620 | 15221 | 15055 | 15164 | 15550 | 16179 | 16990 | 17905 | 18846 | 20 N |
| 15 N | 10669 | 10787 | 10744 | 10553 | 10264 | 9952 | 9705 | 9608 | 9728 | 10103 | 10732 | 11580 | 12575 | 13631 | 14662 | 15 N |
| 10 N | 2675 | 3074 | 3327 | 3439 | 3452 | 3435 | 3470 | 3639 | 4005 | 4604 | 5437 | 6465 | 7613 | 8790 | 9903 | 10 N |
| 5 N | -5320 | -4699 | -4213 | -3860 | -3604 | -3380 | -3112 | -2727 | -2164 | -1388 | -400 | 761 | 2025 | 3298 | 4483 | 5 N |
| 0 | -13201 | -12443 | -11805 | -11288 | -10857 | -10455 | -10012 | -9462 | -8751 | -7847 | -6751 | -5498 | -4157 | -2817 | -1569 | 0 |
| 5 S | -20850 | -20049 | -19347 | -18744 | -18209 | -17689 | -17124 | -16457 | -15641 | -14651 | -13488 | -12134 | -10800 | -9415 | -8113 | 5 S |
| 10 S | -28152 | -27400 | -26715 | -26097 | -25517 | -24931 | -24287 | -23540 | -22653 | -21509 | -20410 | -19084 | -17681 | -16271 | -14923 | 10 S |
| 15 S | -35001 | -34375 | -33771 | -33192 | -32613 | -31997 | -31305 | -30504 | -29570 | -28491 | -27274 | -25943 | -24539 | -23115 | -21729 | 15 S |
| 20 S | -41304 | -40856 | -40378 | -39872 | -39321 | -38699 | -37979 | -37141 | -36171 | -35069 | -33843 | -32515 | -31117 | -29690 | -28276 | 20 S |
| 25 S | -46982 | -46743 | -46412 | -45997 | -45490 | -44874 | -44137 | -43270 | -42273 | -41152 | -39922 | -38601 | -37214 | -35792 | -34363 | 25 S |
| 30 S | -51977 | -51953 | -51776 | -51458 | -50999 | -50398 | -49653 | -48768 | -47752 | -46621 | -45391 | -44081 | -42712 | -41307 | -39885 | 30 S |
| 35 S | -56239 | -56423 | -56396 | -56176 | -55774 | -55199 | -54460 | -53572 | -52554 | -51426 | -50209 | -48922 | -47586 | -46215 | -44826 | 35 S |
| 40 S | -59737 | -60109 | -60226 | -60108 | -59776 | -59246 | -58539 | -57675 | -56682 | -55583 | -54402 | -53152 | -51879 | -50569 | -49243 | 40 S |
| 45 S | -62448 | -62986 | -63241 | -63235 | -62994 | -62539 | -61899 | -61099 | -60169 | -59137 | -58029 | -56867 | -55669 | -54449 | -53218 | 45 S |
| 50 S | -64370 | -65048 | -65435 | -65553 | -65428 | -65086 | -64556 | -63866 | -63047 | -62128 | -61134 | -60089 | -59009 | -57910 | -56799 | 50 S |
| 55 S | -65524 | -66309 | -66818 | -67068 | -67083 | -66887 | -66507 | -65972 | -65310 | -64548 | -63711 | -62818 | -61888 | -60933 | -59960 | 55 S |
| 60 S | -65953 | -66808 | -67417 | -67793 | -67955 | -67924 | -67722 | -67372 | -66900 | -66327 | -65675 | -64961 | -64201 | -63405 | -62580 | 60 S |
| 65 S | -65727 | -66598 | -67269 | -67745 | -68039 | -68165 | -68140 | -67981 | -67706 | -67332 | -66875 | -66349 | -65766 | -65132 | -64455 | 65 S |
| 70 S | -64922 | -65747 | -66421 | -66946 | -67328 | -67574 | -67693 | -67698 | -67597 | -67404 | -67128 | -66777 | -66361 | -65884 | -65350 | 70 S |
| 75 S | -63608 | -64317 | -64924 | -65426 | -65825 | -66124 | -66326 | -66437 | -66461 | -66403 | -66270 | -66065 | -65794 | -65460 | -65066 | 75 S |
| 80 S | -61832 | -62355 | -62817 | -63216 | -63551 | -63821 | -64026 | -64168 | -64247 | -64265 | -64223 | -64125 | -63971 | -63763 | -63504 | 80 S |
| 85 S | -59603 | -59882 | -60134 | -60358 | -60551 | -60713 | -60844 | -60941 | -61006 | -61038 | -61037 | -61004 | -60938 | -60841 | -60714 | 85 S |
| 90 S | -56900 | -56900 | -56900 | -56900 | -56900 | -56899 | -56899 | -56899 | -56899 | -56899 | -56899 | -56899 | -56899 | -56899 | -56899 | 90 S |
| LAT. | -53689 | -53405 | -53144 | -52910 | -52703 | -52525 | -52379 | -52263 | -52181 | -52131 | -52115 | -52132 | -52183 | -52267 | -52385 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 6 A IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS (DOWNWARD POSITIVE)

| E.LONG. LAT. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 55060 | 55070 | 55094 | 55132 | 55185 | 55251 | 55329 | 55420 | 55520 | 55630 | 55747 | 55870 | 55997 | 56126 | 56256 | |
| 90 N | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 90 N |
| 85 N | 57253 | 57228 | 57202 | 57176 | 57150 | 57123 | 57095 | 57066 | 57034 | 57000 | 56962 | 56919 | 56872 | 56819 | 56761 | 85 N |
| 80 N | 57534 | 57476 | 57435 | 57410 | 57401 | 57405 | 57421 | 57445 | 57473 | 57501 | 57524 | 57538 | 57540 | 57524 | 57488 | 80 N |
| 75 N | 56984 | 56894 | 56856 | 56868 | 56929 | 57031 | 57169 | 57334 | 57517 | 57706 | 57892 | 58064 | 58210 | 58322 | 58392 | 75 N |
| 70 N | 55475 | 55365 | 55355 | 55443 | 55622 | 55882 | 56210 | 56590 | 57006 | 57439 | 57871 | 58283 | 58657 | 58976 | 59225 | 70 N |
| 65 N | 53000 | 52889 | 52935 | 53131 | 53465 | 53922 | 54481 | 55121 | 55815 | 56540 | 57267 | 57971 | 58625 | 59205 | 59688 | 65 N |
| 60 N | 49679 | 49595 | 49719 | 50043 | 50547 | 51211 | 52009 | 52912 | 53890 | 54910 | 55939 | 56944 | 57893 | 58755 | 59499 | 60 N |
| 55 N | 45737 | 45707 | 45927 | 46382 | 47049 | 47901 | 48910 | 50043 | 51265 | 52541 | 53834 | 55107 | 56325 | 57450 | 58450 | 55 N |
| 50 N | 41449 | 41502 | 41827 | 42403 | 43205 | 44202 | 45365 | 46661 | 48055 | 49512 | 50995 | 52466 | 53889 | 55226 | 56441 | 50 N |
| 45 N | 37080 | 37242 | 37675 | 38354 | 39248 | 40331 | 41573 | 42947 | 44420 | 45962 | 47537 | 49112 | 50650 | 52120 | 53484 | 45 N |
| 40 N | 32826 | 33118 | 33659 | 34415 | 35358 | 36462 | 37705 | 39065 | 40520 | 42043 | 43607 | 45182 | 46737 | 48246 | 49678 | 40 N |
| 35 N | 28772 | 29212 | 29857 | 30670 | 31620 | 32687 | 33858 | 35123 | 36469 | 37882 | 39339 | 40819 | 42298 | 43756 | 45172 | 35 N |
| 30 N | 24884 | 25482 | 26229 | 27080 | 28006 | 28992 | 30037 | 31144 | 32315 | 33545 | 34825 | 36138 | 37468 | 38802 | 40130 | 30 N |
| 25 N | 21023 | 21782 | 22628 | 23509 | 24393 | 25274 | 26161 | 27075 | 28032 | 29042 | 30103 | 31208 | 32347 | 33512 | 34703 | 25 N |
| 20 N | 16990 | 17905 | 18846 | 19753 | 20594 | 21366 | 22093 | 22808 | 23547 | 24333 | 25173 | 26065 | 27002 | 27984 | 29017 | 20 N |
| 15 N | 12575 | 13631 | 14662 | 15599 | 16408 | 17091 | 17680 | 18225 | 18776 | 19367 | 20016 | 20723 | 21483 | 22296 | 23175 | 15 N |
| 10 N | 7613 | 8790 | 9903 | 10878 | 11678 | 12307 | 12807 | 13237 | 13658 | 14115 | 14630 | 15204 | 15832 | 16515 | 17266 | 10 N |
| 5 N | 2025 | 3298 | 4483 | 5506 | 6328 | 6954 | 7430 | 7819 | 8189 | 8589 | 9042 | 9551 | 10107 | 10709 | 11371 | 5 N |
| 0 | -4157 | -2817 | -1569 | -486 | 390 | 1069 | 1591 | 2020 | 2424 | 2849 | 3319 | 3831 | 4376 | 4949 | 5566 | 0 |
| 5 S | -10800 | -9415 | -8113 | -6962 | -5997 | -5217 | -4583 | -4038 | -3524 | -3000 | -2448 | -1873 | -1287 | -693 | -76 | 5 S |
| 10 S | -17681 | -16271 | -14923 | -13696 | -12623 | -11705 | -10911 | -10198 | -9520 | -8845 | -8164 | -7483 | -6815 | -6161 | -5503 | 10 S |
| 15 S | -24539 | -23115 | -21729 | -20428 | -19240 | -18169 | -17196 | -16291 | -15424 | -14576 | -13744 | -12937 | -12163 | -11418 | -10680 | 15 S |
| 20 S | -31117 | -29690 | -28276 | -26911 | -25618 | -24405 | -23264 | -22177 | -21132 | -20119 | -19140 | -18203 | -17311 | -16454 | -15603 | 20 S |
| 25 S | -37214 | -35792 | -34363 | -32956 | -31587 | -30267 | -28996 | -27769 | -26582 | -25437 | -24335 | -23281 | -22271 | -21285 | -20292 | 25 S |
| 30 S | -42712 | -41307 | -39885 | -38465 | -37063 | -35687 | -34343 | -33034 | -31762 | -30530 | -29340 | -28189 | -27064 | -25943 | -24789 | 30 S |
| 35 S | -47586 | -46215 | -44826 | -43431 | -42043 | -40668 | -39314 | -37986 | -36687 | -35416 | -34173 | -32946 | -31717 | -30459 | -29136 | 35 S |
| 40 S | -51879 | -50569 | -49243 | -47912 | -46582 | -45261 | -43951 | -42657 | -41377 | -40107 | -38838 | -37555 | -36235 | -34849 | -33368 | 40 S |
| 45 S | -55669 | -54449 | -53218 | -51982 | -50747 | -49515 | -48286 | -47059 | -45827 | -44582 | -43308 | -41985 | -40591 | -39101 | -37491 | 45 S |
| 50 S | -59009 | -57910 | -56799 | -55682 | -54562 | -53438 | -52306 | -51159 | -49987 | -48776 | -47509 | -46165 | -44724 | -43165 | -41476 | 50 S |
| 55 S | -61888 | -60933 | -59960 | -58975 | -57977 | -56964 | -55928 | -54860 | -53748 | -52576 | -51327 | -49984 | -48532 | -46956 | -45253 | 55 S |
| 60 S | -64201 | -63405 | -62580 | -61729 | -60851 | -59943 | -58997 | -58004 | -56951 | -55826 | -54616 | -53307 | -51890 | -50359 | -48716 | 60 S |
| 65 S | -65766 | -65132 | -64455 | -63737 | -62976 | -62170 | -61313 | -60398 | -59417 | -58360 | -57220 | -55989 | -54664 | -53246 | -51738 | 65 S |
| 70 S | -66361 | -65884 | -65350 | -64763 | -64122 | -63425 | -62671 | -61855 | -60973 | -60022 | -58999 | -57903 | -56733 | -55493 | -54191 | 70 S |
| 75 S | -65794 | -65460 | -65066 | -64613 | -64103 | -63537 | -62914 | -62235 | -61499 | -60706 | -59858 | -58957 | -58004 | -57006 | -55969 | 75 S |
| 80 S | -63971 | -63763 | -63504 | -63194 | -62836 | -62431 | -61980 | -61486 | -60950 | -60374 | -59761 | -59114 | -58437 | -57734 | -57009 | 80 S |
| 85 S | -60938 | -60841 | -60714 | -60557 | -60371 | -60159 | -59920 | -59657 | -59372 | -59066 | -58742 | -58401 | -58046 | -57679 | -57303 | 85 S |
| 90 S | -56899 | -56899 | -56899 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | 90 S |
| LAT. | -52183 | -52267 | -52385 | -52535 | -52716 | -52928 | -53168 | -53436 | -53730 | -54047 | -54385 | -54741 | -55114 | -55498 | -55892 | LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |

TABLE 6 A IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS (DOWNWARD POSITIVE)

| E.LONG. LAT. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 55997 | 56126 | 56256 | 56384 | 56509 | 56630 | 56744 | 56850 | 56947 | 57035 | 57112 | 57178 | 57234 | 57278 | 57312 | |
| 90 N | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 90 N |
| 85 N | 56872 | 56819 | 56761 | 56695 | 56624 | 56545 | 56461 | 56370 | 56275 | 56175 | 56071 | 55966 | 55860 | 55754 | 55651 | 85 N |
| 80 N | 57540 | 57524 | 57488 | 57429 | 57344 | 57233 | 57095 | 56931 | 56743 | 56532 | 56301 | 56056 | 55800 | 55537 | 55273 | 80 N |
| 75 N | 58210 | 58322 | 58392 | 58411 | 58375 | 58280 | 58124 | 57907 | 57634 | 57307 | 56935 | 56524 | 56084 | 55627 | 55162 | 75 N |
| 70 N | 58657 | 58976 | 59225 | 59390 | 59462 | 59433 | 59299 | 59060 | 58719 | 58283 | 57765 | 57177 | 56536 | 55861 | 55169 | 70 N |
| 65 N | 58625 | 59205 | 59688 | 60054 | 60287 | 60374 | 60306 | 60081 | 59702 | 59179 | 58527 | 57767 | 56923 | 56023 | 55098 | 65 N |
| 60 N | 57893 | 58755 | 59499 | 60100 | 60532 | 60777 | 60821 | 60655 | 60280 | 59705 | 58948 | 58036 | 57004 | 55891 | 54738 | 60 N |
| 55 N | 56325 | 57450 | 58450 | 59291 | 59942 | 60376 | 60570 | 60509 | 60185 | 59606 | 58788 | 57763 | 56574 | 55272 | 53912 | 55 N |
| 50 N | 53889 | 55226 | 56441 | 57499 | 58363 | 58997 | 59370 | 59454 | 59232 | 58702 | 57877 | 56790 | 55488 | 54034 | 52498 | 50 N |
| 45 N | 50650 | 52120 | 53484 | 54709 | 55756 | 56581 | 57144 | 57403 | 57328 | 56902 | 56129 | 55036 | 53676 | 52117 | 50441 | 45 N |
| 40 N | 46737 | 48246 | 49678 | 51003 | 52182 | 53171 | 53917 | 54367 | 54472 | 54198 | 53533 | 52496 | 51136 | 49523 | 47750 | 40 N |
| 35 N | 42298 | 43756 | 45172 | 46522 | 47775 | 48884 | 49792 | 50432 | 50737 | 50651 | 50144 | 49219 | 47914 | 46302 | 44474 | 35 N |
| 30 N | 37468 | 38802 | 40130 | 41438 | 42703 | 43884 | 44921 | 45735 | 46242 | 46365 | 46052 | 45285 | 44088 | 42524 | 40682 | 30 N |
| 25 N | 32347 | 33512 | 34703 | 35917 | 37143 | 38348 | 39473 | 40433 | 41129 | 41466 | 41366 | 40790 | 39742 | 38269 | 36451 | 25 N |
| 20 N | 27002 | 27984 | 29017 | 30108 | 31258 | 32445 | 33617 | 34688 | 35548 | 36086 | 36201 | 35832 | 34960 | 33612 | 31854 | 20 N |
| 15 N | 21483 | 22296 | 23175 | 24136 | 25191 | 26331 | 27512 | 28655 | 29645 | 30357 | 30675 | 30514 | 29831 | 28631 | 26963 | 15 N |
| 10 N | 15832 | 16515 | 17266 | 18108 | 19065 | 20141 | 21305 | 22483 | 23564 | 24417 | 24913 | 24947 | 24454 | 23418 | 21867 | 10 N |
| 5 N | 10107 | 10709 | 11371 | 12121 | 12992 | 14001 | 15129 | 16315 | 17455 | 18414 | 19057 | 19264 | 18953 | 18087 | 16676 | 5 N |
| 0 | 4376 | 4949 | 5566 | 6259 | 7069 | 8022 | 9114 | 10295 | 11468 | 12505 | 13265 | 13622 | 13479 | 12784 | 11538 | 0 |
| 5 S | -1287 | -693 | -76 | 600 | 1382 | 2306 | 3377 | 4556 | 5756 | 6853 | 7709 | 8193 | 8203 | 7676 | 6598 | 5 S |
| 10 S | -6815 | -6161 | -5503 | -4799 | -4001 | -3066 | -1983 | -785 | 449 | 1605 | 2547 | 3145 | 3294 | 2929 | 2030 | 10 S |
| 15 S | -12163 | -11418 | -10680 | -9905 | -9041 | -8046 | -6906 | -5652 | -4355 | -3128 | -2099 | -1394 | -1114 | -1324 | -2043 | 15 S |
| 20 S | -17311 | -16454 | -15603 | -14712 | -13731 | -12622 | -11375 | -10019 | -8628 | -7307 | -6180 | -5366 | -4959 | -5020 | -5564 | 20 S |
| 25 S | -22271 | -21285 | -20292 | -19247 | -18103 | -16831 | -15428 | -13930 | -12410 | -10973 | -9734 | -8804 | -8272 | -8188 | -8563 | 25 S |
| 30 S | -27064 | -25943 | -24789 | -23561 | -22222 | -20752 | -19162 | -17493 | -15823 | -14252 | -12891 | -11842 | -11132 | -10955 | -11166 | 30 S |
| 35 S | -31717 | -30459 | -29136 | -27715 | -26170 | -24494 | -22709 | -20866 | -19043 | -17339 | -15856 | -14686 | -13899 | -13531 | -13580 | 35 S |
| 40 S | -36235 | -34849 | -33368 | -31767 | -30032 | -28172 | -26216 | -24222 | -22271 | -20453 | -18863 | -17583 | -16673 | -16162 | -16047 | 40 S |
| 45 S | -40591 | -39101 | -37491 | -35748 | -33870 | -31876 | -29803 | -27713 | -25680 | -23790 | -22125 | -20756 | -19735 | -19085 | -18803 | 45 S |
| 50 S | -44724 | -43155 | -41476 | -39652 | -37701 | -35649 | -33538 | -31425 | -29379 | -27473 | -25779 | -24356 | -23246 | -22469 | -22022 | 50 S |
| 55 S | -48532 | -46956 | -45253 | -43425 | -41487 | -39468 | -37407 | -35357 | -33375 | -31523 | -29856 | -28423 | -27258 | -26377 | -25781 | 55 S |
| 60 S | -51890 | -50359 | -48716 | -46968 | -45133 | -43238 | -41318 | -39415 | -37575 | -35844 | -34267 | -32878 | -31704 | -30760 | -30047 | 60 S |
| 65 S | -54664 | -53246 | -51738 | -50151 | -48501 | -46812 | -45111 | -43429 | -41799 | -40255 | -38828 | -37542 | -36418 | -35467 | -34693 | 65 S |
| 70 S | -56733 | -55493 | -54191 | -52835 | -51439 | -50021 | -48599 | -47195 | -45831 | -44529 | -43308 | -42186 | -41176 | -40287 | -39526 | 70 S |
| 75 S | -58004 | -57006 | -55969 | -54900 | -53809 | -52708 | -51608 | -50522 | -49465 | -48447 | -47482 | -46580 | -45751 | -45000 | -44334 | 75 S |
| 80 S | -58437 | -57734 | -57009 | -56269 | -55518 | -54764 | -54014 | -53273 | -52550 | -51851 | -51182 | -50550 | -49959 | -49416 | -48923 | 80 S |
| 85 S | -58046 | -57679 | -57303 | -56922 | -56536 | -56151 | -55768 | -55391 | -55022 | -54665 | -54322 | -53996 | -53689 | -53405 | -53144 | 85 S |
| 90 S | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | 90 S |
| LAT. | -55114 | -55498 | -55892 | -56292 | -56695 | -57096 | -57494 | -57883 | -58262 | -58626 | -58972 | -59299 | -59603 | -59882 | -60134 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 6 A IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS (DOWNWARD POSITIVE)

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 57234 | 57278 | 57312 | 57336 | 57350 | 57356 | 57355 | 57348 | 57335 | 57318 | 57298 | 57276 | 57253 | 57228 | 57202 | LAT. |
| 90 N | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 56349 | 90 N |
| 85 N | 55860 | 55754 | 55651 | 55551 | 55457 | 55370 | 55291 | 55222 | 55164 | 55118 | 55085 | 55065 | 55060 | 55070 | 55094 | 85 N |
| 80 N | 55800 | 55537 | 55273 | 55014 | 54764 | 54527 | 54310 | 54115 | 53947 | 53809 | 53703 | 53632 | 53596 | 53598 | 53636 | 80 N |
| 75 N | 56084 | 55627 | 55162 | 54700 | 54252 | 53827 | 53435 | 53082 | 52776 | 52521 | 52321 | 52179 | 52096 | 52075 | 52114 | 75 N |
| 70 N | 56536 | 55861 | 55169 | 54481 | 53813 | 53182 | 52601 | 52080 | 51629 | 51254 | 50957 | 50741 | 50607 | 50555 | 50584 | 70 N |
| 65 N | 56923 | 56023 | 55098 | 54176 | 53283 | 52443 | 51676 | 50995 | 50411 | 49927 | 49546 | 49268 | 49090 | 49009 | 49023 | 65 N |
| 60 N | 57004 | 55891 | 54738 | 53588 | 52478 | 51440 | 50501 | 49676 | 48977 | 48407 | 47964 | 47642 | 47435 | 47336 | 47340 | 60 N |
| 55 N | 56574 | 55272 | 53912 | 52550 | 51238 | 50018 | 48922 | 47972 | 47178 | 46541 | 46056 | 45711 | 45495 | 45395 | 45402 | 55 N |
| 50 N | 55488 | 54034 | 52498 | 50949 | 49453 | 48064 | 46824 | 45758 | 44879 | 44186 | 43671 | 43317 | 43107 | 43023 | 43051 | 50 N |
| 45 N | 53676 | 52117 | 50441 | 48733 | 47072 | 45524 | 44141 | 42956 | 41986 | 41231 | 40681 | 40319 | 40122 | 40065 | 40128 | 45 N |
| 40 N | 51136 | 49523 | 47750 | 45912 | 44100 | 42395 | 40859 | 39536 | 38448 | 37605 | 37000 | 36614 | 36421 | 36391 | 36494 | 40 N |
| 35 N | 47914 | 46302 | 44474 | 42534 | 40584 | 38717 | 37007 | 35511 | 34267 | 33293 | 32591 | 32148 | 31936 | 31917 | 32051 | 35 N |
| 30 N | 44088 | 42524 | 40682 | 38669 | 36593 | 34556 | 32647 | 30939 | 29489 | 28332 | 27484 | 26939 | 26669 | 26628 | 26766 | 30 N |
| 25 N | 39742 | 38269 | 36451 | 34393 | 32203 | 29993 | 27866 | 25913 | 24213 | 22824 | 21779 | 21082 | 20706 | 20599 | 20696 | 25 N |
| 20 N | 34960 | 33612 | 31854 | 29779 | 27498 | 25125 | 22776 | 20563 | 18588 | 16933 | 15651 | 14758 | 14228 | 14003 | 14004 | 20 N |
| 15 N | 29831 | 28631 | 26963 | 24907 | 22566 | 20058 | 17510 | 15052 | 12807 | 10881 | 9346 | 8227 | 7502 | 7109 | 6959 | 15 N |
| 10 N | 24454 | 23418 | 21867 | 19866 | 17511 | 14919 | 12224 | 9569 | 7097 | 4928 | 3151 | 1801 | 859 | 259 | -87 | 10 N |
| 5 N | 18953 | 18087 | 16676 | 14772 | 12458 | 9851 | 7086 | 4315 | 1689 | -658 | -2633 | -4193 | -5352 | -6174 | -6746 | 5 N |
| 0 | 13479 | 12784 | 11533 | 9763 | 7551 | 5007 | 2266 | -520 | -3201 | -5641 | -7745 | -9466 | -10817 | -11852 | -12646 | 0 |
| 5 S | 8203 | 7676 | 6598 | 4996 | 2942 | 538 | -2085 | -4785 | -7416 | -9850 | -11997 | -13813 | -15305 | -16514 | -17500 | 5 S |
| 10 S | 3294 | 2929 | 2030 | 621 | -1232 | -3434 | -5862 | -8385 | -10870 | -13206 | -15311 | -17146 | -18710 | -20033 | -21153 | 10 S |
| 15 S | -1114 | -1324 | -2043 | -3248 | -4877 | -6837 | -9018 | -11301 | -13572 | -15735 | -17724 | -19502 | -21065 | -22426 | -23603 | 15 S |
| 20 S | -4959 | -5020 | -5564 | -6565 | -7961 | -9666 | -11578 | -13592 | -15611 | -17557 | -19374 | -21033 | -22524 | -23846 | -25001 | 20 S |
| 25 S | -8272 | -8188 | -8563 | -9367 | -10538 | -11994 | -13640 | -15385 | -17145 | -18856 | -20472 | -21967 | -23327 | -24544 | -25608 | 25 S |
| 30 S | -11182 | -10955 | -11166 | -11782 | -12742 | -13965 | -15364 | -16856 | -18370 | -19849 | -21255 | -22562 | -23755 | -24820 | -25744 | 30 S |
| 35 S | -13899 | -13531 | -13580 | -14012 | -14769 | -15774 | -16945 | -18206 | -19493 | -20754 | -21953 | -23067 | -24077 | -24971 | -25736 | 35 S |
| 40 S | -16673 | -16162 | -16047 | -16295 | -16850 | -17641 | -18594 | -19637 | -20711 | -21767 | -22770 | -23695 | -24526 | -25253 | -25869 | 40 S |
| 45 S | -19735 | -19085 | -18803 | -18860 | -19205 | -19776 | -20507 | -21332 | -22196 | -23053 | -23868 | -24619 | -25289 | -25872 | -26370 | 45 S |
| 50 S | -23246 | -22469 | -22022 | -21882 | -22008 | -22348 | -22845 | -23443 | -24091 | -24749 | -25384 | -25974 | -26508 | -26981 | -27401 | 50 S |
| 55 S | -27258 | -26377 | -25781 | -25451 | -25358 | -25462 | -25718 | -26081 | -26509 | -26968 | -27430 | -27875 | -28297 | -28693 | -29073 | 55 S |
| 60 S | -31704 | -30760 | -30047 | -29555 | -29265 | -29149 | -29175 | -29312 | -29528 | -29796 | -30097 | -30415 | -30745 | -31089 | -31454 | 60 S |
| 65 S | -36418 | -35467 | -34693 | -34092 | -33653 | -33362 | -33198 | -33143 | -33176 | -33280 | -33442 | -33653 | -33910 | -34213 | -34570 | 65 S |
| 70 S | -41176 | -40287 | -39526 | -38891 | -38380 | -37987 | -37702 | -37517 | -37420 | -37405 | -37463 | -37590 | -37785 | -38049 | -38385 | 70 S |
| 75 S | -45751 | -45000 | -44334 | -43754 | -43262 | -42858 | -42539 | -42303 | -42147 | -42069 | -42065 | -42135 | -42277 | -42493 | -42784 | 75 S |
| 80 S | -49959 | -49416 | -48923 | -48484 | -48101 | -47776 | -47510 | -47304 | -47158 | -47073 | -47049 | -47085 | -47181 | -47338 | -47554 | 80 S |
| 85 S | -53689 | -53405 | -53144 | -52910 | -52703 | -52525 | -52379 | -52263 | -52181 | -52131 | -52115 | -52132 | -52183 | -52267 | -52385 | 85 S |
| 90 S | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | -56900 | 90 S |
| LAT. | -59603 | -59882 | -60134 | -60358 | -60551 | -60713 | -60844 | -60941 | -61006 | -61038 | -61037 | -61004 | -60938 | -60841 | -60714 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 6 B IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 31.9 | 31.5 | 31.2 | 30.9 | 30.8 | 30.6 | 30.6 | 30.6 | 30.7 | 30.8 | 31.0 | 31.3 | 31.6 | 32.0 | 32.3 | LAT. |
| 90 N | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 90 N |
| 85 N | 41.6 | 41.9 | 42.2 | 42.4 | 42.7 | 42.9 | 43.1 | 43.3 | 43.5 | 43.6 | 43.7 | 43.7 | 43.7 | 43.6 | 43.5 | 85 N |
| 80 N | 42.6 | 43.1 | 43.5 | 44.0 | 44.5 | 45.0 | 45.5 | 46.0 | 46.5 | 47.0 | 47.4 | 47.7 | 47.9 | 48.0 | 48.0 | 80 N |
| 75 N | 41.8 | 42.2 | 42.7 | 43.3 | 44.0 | 44.7 | 45.6 | 46.4 | 47.3 | 48.1 | 48.9 | 49.6 | 50.1 | 50.5 | 50.6 | 75 N |
| 70 N | 39.7 | 40.0 | 40.5 | 41.2 | 42.0 | 43.0 | 44.0 | 45.1 | 46.3 | 47.3 | 48.4 | 49.3 | 50.1 | 50.6 | 50.9 | 70 N |
| 65 N | 36.5 | 36.9 | 37.5 | 38.4 | 39.4 | 40.6 | 41.7 | 42.9 | 44.1 | 45.2 | 46.2 | 47.1 | 47.9 | 48.5 | 48.8 | 65 N |
| 60 N | 32.2 | 33.1 | 34.2 | 35.6 | 36.9 | 38.2 | 39.5 | 40.6 | 41.6 | 42.4 | 43.2 | 43.8 | 44.2 | 44.5 | 44.5 | 60 N |
| 55 N | 26.3 | 28.4 | 30.6 | 32.8 | 34.8 | 36.5 | 37.8 | 38.7 | 39.4 | 39.8 | 39.9 | 40.0 | 39.8 | 39.5 | 39.0 | 55 N |
| 50 N | 18.8 | 22.8 | 26.7 | 30.3 | 33.2 | 35.4 | 36.9 | 37.7 | 38.0 | 37.8 | 37.3 | 36.4 | 35.4 | 34.2 | 32.9 | 50 N |
| 45 N | 9.5 | 16.1 | 22.4 | 27.7 | 31.9 | 34.8 | 36.6 | 37.5 | 37.5 | 36.7 | 35.4 | 33.6 | 31.3 | 28.9 | 26.5 | 45 N |
| 40 N | -1.2 | 8.7 | 17.6 | 24.9 | 30.4 | 34.2 | 36.4 | 37.4 | 37.3 | 36.1 | 34.1 | 31.1 | 27.4 | 23.4 | 19.4 | 40 N |
| 35 N | -12.4 | 0.7 | 12.2 | 21.4 | 28.2 | 32.7 | 35.4 | 36.7 | 36.6 | 35.2 | 32.5 | 28.3 | 22.9 | 16.9 | 11.0 | 35 N |
| 30 N | -23.8 | -7.6 | 6.2 | 16.8 | 24.5 | 29.5 | 32.6 | 34.2 | 34.4 | 33.0 | 29.6 | 24.2 | 17.0 | 8.8 | 0.8 | 30 N |
| 25 N | -34.8 | -16.3 | -1.0 | 10.5 | 18.5 | 23.8 | 27.1 | 29.1 | 29.7 | 28.5 | 24.7 | 18.2 | 9.2 | -1.2 | -11.3 | 25 N |
| 20 N | -45.4 | -25.6 | -9.6 | 2.1 | 10.0 | 15.2 | 18.7 | 21.2 | 22.4 | 21.5 | 17.5 | 10.1 | -0.5 | -12.8 | -24.7 | 20 N |
| 15 N | -55.8 | -35.7 | -19.8 | -8.5 | -0.9 | 4.2 | 8.0 | 11.0 | 13.0 | 12.6 | 8.7 | 0.6 | -11.1 | -24.6 | -37.5 | 15 N |
| 10 N | -65.8 | -46.3 | -31.0 | -20.3 | -13.0 | -7.9 | -3.6 | 0.3 | 3.1 | 3.4 | -0.3 | -8.5 | -20.7 | -34.8 | -47.8 | 10 N |
| 5 N | -74.8 | -56.4 | -42.0 | -31.7 | -24.4 | -18.7 | -13.6 | -8.8 | -5.1 | -4.1 | -7.3 | -15.4 | -27.5 | -41.3 | -53.7 | 5 N |
| 0 | -81.6 | -64.5 | -50.7 | -40.3 | -32.4 | -25.7 | -19.5 | -13.6 | -9.2 | -7.7 | -10.6 | -18.4 | -30.1 | -43.1 | -54.3 | 0 |
| 5 S | -84.4 | -68.3 | -54.7 | -43.6 | -34.4 | -26.4 | -18.9 | -12.2 | -7.4 | -5.9 | -9.0 | -16.7 | -27.9 | -40.1 | -50.2 | 5 S |
| 10 S | -81.4 | -65.8 | -51.8 | -39.5 | -28.8 | -19.3 | -10.7 | -3.7 | 0.8 | 1.5 | -2.4 | -10.7 | -21.9 | -33.6 | -43.0 | 10 S |
| 15 S | -71.2 | -55.6 | -40.7 | -27.1 | -14.9 | -4.2 | 4.8 | 11.4 | 14.6 | 13.6 | 8.0 | -1.7 | -13.8 | -25.9 | -35.3 | 15 S |
| 20 S | -53.7 | -37.7 | -21.9 | -7.1 | 6.2 | 17.4 | 25.9 | 31.0 | 32.0 | 28.3 | 20.0 | 8.1 | -5.7 | -19.0 | -29.6 | 20 S |
| 25 S | -30.0 | -13.5 | 3.0 | 18.4 | 31.8 | 42.5 | 49.5 | 52.3 | 50.2 | 43.1 | 31.5 | 16.7 | 0.5 | -14.8 | -27.2 | 25 S |
| 30 S | -2.4 | 14.4 | 30.9 | 46.0 | 58.5 | 67.6 | 72.3 | 72.0 | 66.4 | 55.8 | 40.8 | 23.0 | 4.3 | -13.3 | -27.9 | 30 S |
| 35 S | 26.2 | 42.5 | 58.2 | 72.1 | 82.8 | 89.6 | 91.4 | 87.9 | 79.0 | 65.1 | 47.3 | 27.1 | 6.3 | -13.2 | -29.7 | 35 S |
| 40 S | 52.7 | 67.9 | 81.9 | 93.7 | 102.1 | 106.1 | 105.1 | 98.8 | 87.3 | 71.2 | 51.6 | 30.1 | 8.2 | -12.2 | -29.8 | 40 S |
| 45 S | 75.1 | 88.3 | 100.1 | 109.3 | 115.0 | 116.4 | 113.1 | 104.9 | 92.0 | 75.1 | 55.2 | 33.8 | 12.4 | -7.8 | -25.3 | 45 S |
| 50 S | 92.5 | 103.2 | 112.2 | 118.7 | 121.9 | 121.3 | 116.5 | 107.5 | 94.6 | 78.4 | 59.8 | 40.1 | 20.4 | 1.8 | -14.5 | 50 S |
| 55 S | 105.2 | 113.0 | 119.2 | 123.2 | 124.4 | 122.5 | 117.1 | 108.4 | 96.7 | 82.4 | 66.4 | 49.6 | 32.7 | 16.8 | 2.7 | 55 S |
| 60 S | 114.1 | 119.1 | 122.8 | 124.7 | 124.5 | 121.9 | 116.8 | 109.2 | 99.5 | 88.0 | 75.2 | 61.9 | 48.5 | 35.8 | 24.3 | 60 S |
| 65 S | 120.5 | 123.0 | 124.6 | 125.0 | 123.8 | 121.1 | 116.7 | 110.8 | 103.3 | 94.8 | 85.3 | 75.5 | 65.6 | 56.1 | 47.3 | 65 S |
| 70 S | 125.0 | 125.6 | 125.7 | 125.0 | 123.4 | 120.9 | 117.4 | 113.0 | 107.7 | 101.7 | 95.3 | 88.5 | 81.7 | 75.0 | 68.7 | 70 S |
| 75 S | 127.4 | 126.9 | 126.1 | 124.8 | 123.2 | 121.0 | 118.3 | 115.2 | 111.7 | 107.8 | 103.6 | 99.3 | 94.9 | 90.5 | 86.2 | 75 S |
| 80 S | 127.3 | 126.3 | 125.2 | 123.9 | 122.4 | 120.7 | 118.8 | 116.8 | 114.6 | 112.2 | 109.7 | 107.1 | 104.5 | 101.9 | 99.3 | 80 S |
| 85 S | 123.7 | 122.9 | 122.1 | 121.2 | 120.3 | 119.3 | 118.3 | 117.2 | 116.0 | 114.8 | 113.7 | 112.4 | 111.2 | 110.0 | 108.8 | 85 S |
| 90 S | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 90 S |
| LAT. | 105.6 | 106.7 | 107.9 | 109.2 | 110.5 | 111.8 | 113.2 | 114.6 | 115.9 | 117.2 | 118.5 | 119.8 | 121.0 | 122.1 | 123.1 | LAT. |
| E.LONG. | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | E.LONG. |

TABLE 6 B IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 31.6 | 32.0 | 32.3 | 32.8 | 33.2 | 33.7 | 34.2 | 34.6 | 35.1 | 35.6 | 36.1 | 36.6 | 37.1 | 37.5 | 38.0 | LAT. |
| 90 N | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 90 N |
| 85 N | 43.7 | 43.6 | 43.5 | 43.4 | 43.1 | 42.8 | 42.5 | 42.1 | 41.6 | 41.1 | 40.5 | 39.9 | 39.3 | 38.6 | 38.0 | 85 N |
| 80 N | 47.9 | 48.0 | 48.0 | 47.8 | 47.5 | 47.1 | 46.4 | 45.7 | 44.7 | 43.6 | 42.4 | 41.1 | 39.7 | 38.2 | 36.6 | 80 N |
| 75 N | 50.1 | 50.5 | 50.6 | 50.6 | 50.3 | 49.7 | 48.8 | 47.7 | 46.3 | 44.6 | 42.7 | 40.5 | 38.2 | 35.8 | 33.3 | 75 N |
| 70 N | 50.1 | 50.6 | 50.9 | 50.9 | 50.6 | 49.9 | 48.8 | 47.3 | 45.4 | 43.2 | 40.5 | 37.6 | 34.5 | 31.2 | 27.9 | 70 N |
| 65 N | 47.9 | 48.5 | 48.8 | 48.7 | 48.3 | 47.5 | 46.2 | 44.3 | 42.0 | 39.3 | 36.1 | 32.5 | 28.7 | 24.8 | 20.8 | 65 N |
| 60 N | 44.2 | 44.5 | 44.5 | 44.3 | 43.7 | 42.7 | 41.2 | 39.1 | 36.5 | 33.4 | 29.8 | 25.8 | 21.6 | 17.3 | 13.1 | 60 N |
| 55 N | 39.8 | 39.5 | 39.0 | 38.4 | 37.5 | 36.2 | 34.6 | 32.4 | 29.7 | 26.5 | 22.7 | 18.6 | 14.3 | 9.9 | 5.7 | 55 N |
| 50 N | 35.4 | 34.2 | 32.9 | 31.6 | 30.3 | 28.8 | 27.1 | 25.0 | 22.5 | 19.4 | 15.8 | 11.8 | 7.6 | 3.4 | -0.5 | 50 N |
| 45 N | 31.3 | 28.9 | 26.5 | 24.2 | 22.2 | 20.5 | 19.0 | 17.3 | 15.3 | 12.7 | 9.6 | 6.0 | 2.2 | -1.7 | -5.2 | 45 N |
| 40 N | 27.4 | 23.4 | 19.4 | 15.9 | 13.1 | 11.3 | 10.1 | 9.3 | 8.3 | 6.7 | 4.4 | 1.5 | -2.0 | -5.5 | -8.6 | 40 N |
| 35 N | 22.9 | 16.9 | 11.0 | 6.0 | 2.5 | 0.7 | 0.3 | 0.8 | 1.3 | 1.2 | 0.1 | -2.1 | -5.1 | -8.4 | -11.3 | 35 N |
| 30 N | 17.0 | 8.8 | 0.8 | -5.8 | -10.0 | -11.6 | -10.7 | -8.3 | -5.8 | -4.0 | -3.7 | -5.1 | -7.8 | -11.0 | -14.1 | 30 N |
| 25 N | 9.2 | -1.2 | -11.3 | -19.4 | -24.1 | -24.9 | -22.3 | -17.6 | -12.6 | -8.8 | -7.1 | -7.8 | -10.4 | -13.9 | -17.4 | 25 N |
| 20 N | -0.5 | -12.8 | -24.7 | -33.7 | -38.4 | -38.0 | -33.3 | -26.1 | -18.6 | -12.8 | -10.0 | -10.3 | -13.1 | -17.2 | -21.4 | 20 N |
| 15 N | -11.1 | -24.6 | -37.5 | -46.9 | -50.9 | -48.9 | -42.0 | -32.3 | -22.7 | -15.3 | -11.8 | -12.2 | -15.7 | -20.7 | -25.7 | 15 N |
| 10 N | -20.7 | -34.8 | -47.8 | -56.7 | -59.5 | -55.8 | -46.8 | -35.1 | -24.0 | -15.9 | -12.3 | -13.3 | -17.7 | -23.8 | -29.6 | 10 N |
| 5 N | -27.5 | -41.3 | -53.7 | -61.5 | -62.9 | -57.4 | -46.8 | -34.0 | -22.3 | -14.3 | -11.5 | -13.5 | -19.0 | -25.9 | -32.5 | 5 N |
| 0 | -30.1 | -43.1 | -54.3 | -60.8 | -60.6 | -53.9 | -42.5 | -29.6 | -18.3 | -11.4 | -9.7 | -12.9 | -19.3 | -26.9 | -33.7 | 0 |
| 5 S | -27.9 | -40.1 | -50.2 | -55.3 | -54.2 | -47.0 | -35.8 | -23.7 | -13.8 | -8.4 | -8.0 | -12.2 | -19.0 | -26.5 | -33.0 | 5 S |
| 10 S | -21.9 | -33.6 | -43.0 | -47.5 | -46.1 | -39.4 | -29.5 | -19.1 | -11.0 | -7.1 | -7.8 | -12.2 | -18.7 | -25.3 | -30.6 | 10 S |
| 15 S | -13.8 | -25.9 | -35.3 | -40.1 | -39.6 | -34.3 | -26.2 | -18.0 | -11.8 | -9.1 | -10.1 | -13.9 | -19.0 | -23.8 | -27.3 | 15 S |
| 20 S | -5.7 | -19.0 | -29.6 | -35.7 | -36.8 | -33.7 | -28.0 | -21.9 | -17.2 | -15.1 | -15.5 | -17.6 | -20.3 | -22.5 | -23.6 | 20 S |
| 25 S | 0.5 | -14.8 | -27.2 | -35.3 | -38.8 | -38.2 | -34.9 | -30.6 | -26.9 | -24.4 | -23.4 | -23.1 | -22.9 | -22.0 | -20.3 | 25 S |
| 30 S | 4.3 | -13.3 | -27.9 | -38.3 | -44.2 | -46.0 | -44.9 | -42.1 | -38.6 | -35.3 | -32.3 | -29.3 | -25.9 | -22.1 | -17.8 | 30 S |
| 35 S | 6.3 | -13.2 | -29.7 | -42.2 | -50.2 | -54.1 | -54.7 | -52.8 | -49.3 | -45.0 | -40.0 | -34.5 | -28.5 | -22.2 | -15.8 | 35 S |
| 40 S | 8.2 | -12.2 | -29.8 | -43.6 | -53.1 | -58.5 | -60.2 | -59.0 | -55.5 | -50.4 | -44.1 | -37.0 | -29.3 | -21.4 | -13.9 | 40 S |
| 45 S | 12.4 | -7.8 | -25.3 | -39.4 | -49.5 | -55.7 | -58.3 | -57.7 | -54.5 | -49.3 | -42.7 | -35.1 | -27.0 | -18.8 | -11.1 | 45 S |
| 50 S | 20.4 | 1.8 | -14.5 | -27.8 | -37.8 | -44.2 | -47.4 | -47.5 | -45.1 | -40.7 | -34.8 | -28.0 | -20.7 | -13.4 | -6.6 | 50 S |
| 55 S | 32.7 | 16.8 | 2.7 | -9.2 | -18.3 | -24.6 | -28.2 | -29.2 | -28.0 | -25.1 | -20.8 | -15.7 | -10.2 | -4.6 | 0.8 | 55 S |
| 60 S | 48.5 | 35.8 | 24.3 | 14.4 | 6.5 | 0.6 | -3.3 | -5.2 | -5.4 | -4.3 | -2.0 | 0.9 | 4.3 | 7.9 | 11.4 | 60 S |
| 65 S | 65.6 | 56.1 | 47.3 | 39.5 | 33.0 | 27.7 | 23.8 | 21.2 | 19.7 | 19.2 | 19.6 | 20.5 | 21.9 | 23.6 | 25.4 | 65 S |
| 70 S | 81.7 | 75.0 | 68.7 | 62.9 | 57.7 | 53.3 | 49.6 | 46.7 | 44.6 | 43.0 | 42.1 | 41.6 | 41.6 | 41.8 | 42.4 | 70 S |
| 75 S | 94.9 | 90.5 | 86.2 | 82.2 | 78.4 | 75.0 | 72.0 | 69.4 | 67.2 | 65.3 | 63.9 | 62.8 | 62.0 | 61.6 | 61.5 | 75 S |
| 80 S | 104.5 | 101.9 | 99.3 | 96.8 | 94.5 | 92.2 | 90.1 | 88.2 | 86.6 | 85.1 | 83.9 | 82.9 | 82.1 | 81.6 | 81.3 | 80 S |
| 85 S | 111.2 | 110.0 | 108.8 | 107.7 | 106.6 | 105.5 | 104.5 | 103.6 | 102.8 | 102.1 | 101.5 | 101.0 | 100.6 | 100.3 | 100.2 | 85 S |
| 90 S | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 90 S |
| LAT. | 121.0 | 122.1 | 123.1 | 124.0 | 124.9 | 125.6 | 126.3 | 126.8 | 127.2 | 127.6 | 127.8 | 128.0 | 128.1 | 128.1 | 128.0 | LAT. |
| E.LONG. | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 | 125 | E.LONG. |

TABLE 6 B IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 37.1 | 37.5 | 38.0 | 38.4 | 38.8 | 39.2 | 39.6 | 40.0 | 40.3 | 40.7 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 | LAT. |
| 90 N | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 90 N |
| 85 N | 39.3 | 38.6 | 38.0 | 37.3 | 36.6 | 35.9 | 35.2 | 34.5 | 33.9 | 33.3 | 32.8 | 32.3 | 31.9 | 31.5 | 31.2 | 85 N |
| 80 N | 39.7 | 38.2 | 36.6 | 35.0 | 33.4 | 31.9 | 30.3 | 28.9 | 27.6 | 26.3 | 25.2 | 24.2 | 23.4 | 22.7 | 22.1 | 80 N |
| 75 N | 38.2 | 35.8 | 33.3 | 30.8 | 28.2 | 25.8 | 23.5 | 21.3 | 19.4 | 17.6 | 16.0 | 14.8 | 13.7 | 12.9 | 12.3 | 75 N |
| 70 N | 34.5 | 31.2 | 27.9 | 24.5 | 21.2 | 18.1 | 15.2 | 12.6 | 10.3 | 8.3 | 6.6 | 5.3 | 4.4 | 3.7 | 3.3 | 70 N |
| 65 N | 28.7 | 24.8 | 20.8 | 16.9 | 13.2 | 9.7 | 6.6 | 3.8 | 1.5 | -0.3 | -1.7 | -2.6 | -3.2 | -3.4 | -3.3 | 65 N |
| 60 N | 21.6 | 17.3 | 13.1 | 9.0 | 5.2 | 1.7 | -1.2 | -3.7 | -5.6 | -6.9 | -7.8 | -8.1 | -8.0 | -7.6 | -7.0 | 60 N |
| 55 N | 14.3 | 9.9 | 5.7 | 1.7 | -1.8 | -4.8 | -7.3 | -9.2 | -10.4 | -11.1 | -11.2 | -10.8 | -10.0 | -8.9 | -7.8 | 55 N |
| 50 N | 7.6 | 3.4 | -0.5 | -4.0 | -7.0 | -9.4 | -11.2 | -12.4 | -13.0 | -13.0 | -12.4 | -11.4 | -10.0 | -8.4 | -6.8 | 50 N |
| 45 N | 2.2 | -1.7 | -5.2 | -8.2 | -10.6 | -12.3 | -13.4 | -13.9 | -13.8 | -13.3 | -12.3 | -10.8 | -9.0 | -7.1 | -5.3 | 45 N |
| 40 N | -2.0 | -5.5 | -8.6 | -11.2 | -13.0 | -14.1 | -14.5 | -14.5 | -14.0 | -13.1 | -11.8 | -10.1 | -8.2 | -6.3 | -4.5 | 40 N |
| 35 N | -5.1 | -8.4 | -11.3 | -13.7 | -15.1 | -15.8 | -15.8 | -15.2 | -14.4 | -13.3 | -11.8 | -10.2 | -8.3 | -6.5 | -4.9 | 35 N |
| 30 N | -7.8 | -11.0 | -14.1 | -16.4 | -17.8 | -18.2 | -17.8 | -17.0 | -15.8 | -14.4 | -12.8 | -11.1 | -9.3 | -7.5 | -6.2 | 30 N |
| 25 N | -10.4 | -13.9 | -17.4 | -20.1 | -21.5 | -21.9 | -21.3 | -20.0 | -18.4 | -16.6 | -14.6 | -12.5 | -10.5 | -8.7 | -7.4 | 25 N |
| 20 N | -13.1 | -17.2 | -21.4 | -24.6 | -26.3 | -26.7 | -25.9 | -24.2 | -22.0 | -19.5 | -16.7 | -13.9 | -11.3 | -9.1 | -7.6 | 20 N |
| 15 N | -15.7 | -20.7 | -25.7 | -29.5 | -31.6 | -32.0 | -31.0 | -28.9 | -25.9 | -22.4 | -18.5 | -14.5 | -10.8 | -7.8 | -5.7 | 15 N |
| 10 N | -17.7 | -23.8 | -29.6 | -34.1 | -36.5 | -37.0 | -35.7 | -33.1 | -29.4 | -24.8 | -19.5 | -14.1 | -9.0 | -4.8 | -1.7 | 10 N |
| 5 N | -19.0 | -25.9 | -32.5 | -37.3 | -40.0 | -40.4 | -39.0 | -36.0 | -31.7 | -26.1 | -19.5 | -12.6 | -5.9 | -0.3 | 3.9 | 5 N |
| 0 | -19.3 | -26.9 | -33.7 | -38.6 | -41.1 | -41.5 | -40.1 | -36.9 | -32.2 | -26.0 | -18.4 | -10.2 | -2.2 | 4.8 | 10.0 | 0 |
| 5 S | -19.0 | -26.5 | -33.0 | -37.4 | -39.6 | -39.9 | -38.4 | -35.4 | -30.7 | -24.3 | -16.3 | -7.3 | 1.7 | 9.6 | 15.7 | 5 S |
| 10 S | -18.7 | -25.3 | -30.6 | -34.1 | -35.6 | -35.5 | -34.1 | -31.4 | -27.2 | -21.1 | -13.3 | -4.1 | 5.2 | 13.6 | 20.1 | 10 S |
| 15 S | -19.0 | -23.8 | -27.3 | -29.1 | -29.6 | -29.0 | -27.7 | -25.4 | -21.9 | -16.5 | -9.3 | -0.7 | 8.4 | 16.7 | 23.0 | 15 S |
| 20 S | -20.3 | -22.5 | -23.6 | -23.5 | -22.6 | -21.3 | -19.9 | -18.1 | -15.2 | -10.8 | -4.5 | 3.3 | 11.6 | 19.2 | 24.9 | 20 S |
| 25 S | -22.9 | -22.0 | -20.3 | -18.0 | -15.6 | -13.6 | -11.9 | -10.2 | -7.9 | -4.3 | 1.0 | 7.7 | 15.0 | 21.7 | 26.6 | 25 S |
| 30 S | -25.9 | -22.1 | -17.8 | -13.4 | -9.6 | -6.7 | -4.5 | -2.7 | -0.7 | 2.4 | 6.9 | 12.6 | 18.9 | 24.7 | 28.8 | 30 S |
| 35 S | -28.5 | -22.2 | -15.8 | -9.9 | -4.9 | -1.2 | 1.5 | 3.6 | 5.8 | 8.7 | 12.7 | 17.8 | 23.3 | 28.3 | 32.0 | 35 S |
| 40 S | -29.3 | -21.4 | -13.9 | -7.1 | -1.5 | 2.9 | 6.1 | 8.6 | 11.2 | 14.2 | 18.1 | 22.8 | 27.9 | 32.6 | 36.2 | 40 S |
| 45 S | -27.0 | -18.8 | -11.1 | -4.3 | 1.4 | 5.9 | 9.5 | 12.5 | 15.4 | 18.8 | 22.8 | 27.4 | 32.4 | 37.3 | 41.3 | 45 S |
| 50 S | -20.7 | -13.4 | -6.6 | -0.4 | 4.8 | 9.1 | 12.7 | 16.0 | 19.2 | 22.9 | 27.1 | 31.9 | 37.0 | 42.1 | 46.8 | 50 S |
| 55 S | -10.2 | -4.6 | 0.8 | 5.6 | 9.9 | 13.6 | 17.0 | 20.2 | 23.7 | 27.5 | 31.8 | 36.7 | 42.0 | 47.5 | 52.8 | 55 S |
| 60 S | 4.3 | 7.9 | 11.4 | 14.7 | 17.8 | 20.7 | 23.6 | 26.7 | 30.0 | 33.7 | 38.0 | 42.9 | 48.2 | 53.8 | 59.5 | 60 S |
| 65 S | 21.9 | 23.6 | 25.4 | 27.3 | 29.3 | 31.4 | 33.7 | 36.3 | 39.3 | 42.7 | 46.7 | 51.2 | 56.2 | 61.6 | 67.3 | 65 S |
| 70 S | 41.6 | 41.8 | 42.4 | 43.2 | 44.3 | 45.7 | 47.4 | 49.5 | 52.0 | 54.9 | 58.4 | 62.3 | 66.6 | 71.3 | 76.4 | 70 S |
| 75 S | 62.0 | 61.6 | 61.5 | 61.7 | 62.2 | 63.0 | 64.2 | 65.8 | 67.7 | 70.0 | 72.7 | 75.7 | 79.1 | 82.8 | 86.8 | 75 S |
| 80 S | 82.1 | 81.6 | 81.3 | 81.3 | 81.5 | 82.0 | 82.7 | 83.7 | 85.0 | 86.6 | 88.3 | 90.4 | 92.6 | 95.0 | 97.6 | 80 S |
| 85 S | 100.6 | 100.3 | 100.2 | 100.2 | 100.3 | 100.5 | 100.9 | 101.4 | 102.0 | 102.7 | 103.6 | 104.5 | 105.6 | 106.7 | 107.9 | 85 S |
| 90 S | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 90 S |
| LAT. | 128.1 | 128.1 | 128.0 | 127.8 | 127.6 | 127.3 | 127.0 | 126.6 | 126.1 | 125.6 | 125.0 | 124.4 | 123.7 | 122.9 | 122.1 | LAT. |
| E.LONG. | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | E.LONG. |

TABLE 6 B IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 41.6 | 41.9 | 42.2 | 42.4 | 42.7 | 42.9 | 43.1 | 43.3 | 43.5 | 43.6 | 43.7 | 43.7 | 43.7 | 43.6 | 43.5 LAT. |
| 90 N | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 90 N |
| 85 N | 31.9 | 31.5 | 31.2 | 30.9 | 30.8 | 30.6 | 30.6 | 30.6 | 30.7 | 30.8 | 31.0 | 31.3 | 31.6 | 32.0 | 32.3 85 N |
| 80 N | 23.4 | 22.7 | 22.1 | 21.8 | 21.5 | 21.5 | 21.5 | 21.7 | 22.1 | 22.6 | 23.2 | 23.9 | 24.7 | 25.6 | 26.6 80 N |
| 75 N | 13.7 | 12.9 | 12.3 | 12.0 | 11.8 | 11.9 | 12.2 | 12.6 | 13.3 | 14.1 | 15.1 | 16.2 | 17.6 | 19.1 | 20.7 75 N |
| 70 N | 4.4 | 3.7 | 3.3 | 3.2 | 3.3 | 3.5 | 4.0 | 4.5 | 5.3 | 6.2 | 7.3 | 8.7 | 10.3 | 12.2 | 14.3 70 N |
| 65 N | -3.2 | -3.4 | -3.3 | -3.1 | -2.8 | -2.4 | -2.0 | -1.6 | -1.1 | -0.5 | 0.3 | 1.3 | 2.8 | 4.6 | 6.9 65 N |
| 60 N | -8.0 | -7.6 | -7.0 | -6.4 | -5.8 | -5.5 | -5.3 | -5.4 | -5.7 | -5.9 | -6.0 | -5.8 | -5.1 | -3.8 | -1.8 60 N |
| 55 N | -10.0 | -8.9 | -7.8 | -6.8 | -6.1 | -6.0 | -6.4 | -7.3 | -8.6 | -10.2 | -11.7 | -12.7 | -13.2 | -12.8 | -11.4 55 N |
| 50 N | -10.0 | -8.4 | -6.8 | -5.6 | -4.9 | -5.1 | -6.1 | -8.1 | -10.7 | -13.8 | -16.8 | -19.4 | -21.2 | -21.9 | -21.3 50 N |
| 45 N | -9.0 | -7.1 | -5.3 | -4.0 | -3.5 | -4.0 | -5.8 | -8.8 | -12.7 | -17.1 | -21.6 | -25.6 | -28.6 | -30.2 | -30.5 45 N |
| 40 N | -8.2 | -6.3 | -4.5 | -3.3 | -3.0 | -4.0 | -6.3 | -9.9 | -14.7 | -20.1 | -25.6 | -30.5 | -34.4 | -36.7 | -37.6 40 N |
| 35 N | -8.3 | -6.5 | -4.9 | -3.9 | -3.9 | -5.1 | -7.6 | -11.5 | -16.5 | -22.2 | -28.0 | -33.2 | -37.4 | -40.2 | -41.5 35 N |
| 30 N | -9.3 | -7.5 | -6.2 | -5.4 | -5.6 | -6.8 | -9.2 | -12.7 | -17.2 | -22.3 | -27.6 | -32.5 | -36.6 | -39.5 | -41.3 30 N |
| 25 N | -10.5 | -8.7 | -7.4 | -6.8 | -6.9 | -7.9 | -9.7 | -12.2 | -15.4 | -19.2 | -23.3 | -27.4 | -31.0 | -34.0 | -36.3 25 N |
| 20 N | -11.3 | -9.1 | -7.6 | -6.8 | -6.7 | -7.1 | -7.9 | -8.9 | -10.3 | -12.2 | -14.5 | -17.4 | -20.5 | -23.6 | -26.7 20 N |
| 15 N | -10.8 | -7.8 | -5.7 | -4.5 | -3.9 | -3.6 | -3.2 | -2.5 | -1.8 | -1.4 | -1.7 | -3.2 | -5.8 | -9.2 | -13.4 15 N |
| 10 N | -9.0 | -4.8 | -1.7 | 0.2 | 1.4 | 2.5 | 4.2 | 6.5 | 9.3 | 11.9 | 13.5 | 13.4 | 11.3 | 7.5 | 2.2 10 N |
| 5 N | -5.9 | -0.3 | 3.9 | 6.6 | 8.5 | 10.4 | 12.9 | 16.6 | 21.0 | 25.3 | 28.5 | 29.6 | 28.0 | 24.0 | 17.9 5 N |
| 0 | -2.2 | 4.8 | 10.0 | 13.6 | 16.0 | 18.2 | 21.2 | 25.5 | 30.7 | 36.1 | 40.4 | 42.4 | 41.5 | 37.6 | 31.4 0 |
| 5 S | 1.7 | 9.6 | 15.7 | 19.8 | 22.3 | 24.5 | 27.2 | 31.2 | 36.3 | 41.9 | 46.6 | 49.3 | 49.1 | 46.1 | 40.6 5 S |
| 10 S | 5.2 | 13.6 | 20.1 | 24.3 | 26.6 | 28.0 | 29.7 | 32.6 | 36.6 | 41.4 | 46.0 | 49.0 | 49.9 | 48.3 | 44.6 10 S |
| 15 S | 8.4 | 16.7 | 23.0 | 26.9 | 28.5 | 28.8 | 28.9 | 29.9 | 32.1 | 35.5 | 39.2 | 42.5 | 44.4 | 44.8 | 43.6 15 S |
| 20 S | 11.6 | 19.2 | 24.9 | 28.1 | 28.8 | 27.8 | 26.0 | 24.8 | 24.9 | 26.3 | 28.9 | 32.1 | 35.1 | 37.6 | 39.4 20 S |
| 25 S | 15.0 | 21.7 | 26.6 | 29.0 | 28.8 | 26.5 | 23.1 | 19.9 | 17.9 | 17.5 | 18.9 | 21.9 | 25.8 | 30.2 | 34.7 25 S |
| 30 S | 18.9 | 24.7 | 28.8 | 30.6 | 29.7 | 26.7 | 22.3 | 17.8 | 14.3 | 12.6 | 13.1 | 15.8 | 20.4 | 26.3 | 32.8 30 S |
| 35 S | 23.3 | 28.3 | 32.0 | 33.6 | 32.7 | 29.7 | 25.3 | 20.6 | 16.6 | 14.4 | 14.5 | 17.1 | 22.0 | 28.7 | 36.4 35 S |
| 40 S | 27.9 | 32.6 | 36.2 | 38.1 | 37.9 | 35.9 | 32.5 | 28.7 | 25.5 | 23.8 | 24.2 | 26.9 | 31.9 | 38.8 | 46.7 40 S |
| 45 S | 32.4 | 37.3 | 41.3 | 44.0 | 45.1 | 44.8 | 43.3 | 41.5 | 40.0 | 39.6 | 40.8 | 44.0 | 49.1 | 55.7 | 63.1 45 S |
| 50 S | 37.0 | 42.1 | 46.8 | 50.7 | 53.5 | 55.2 | 56.2 | 56.8 | 57.6 | 59.0 | 61.6 | 65.5 | 70.6 | 76.6 | 83.1 50 S |
| 55 S | 42.0 | 47.5 | 52.8 | 57.8 | 62.1 | 65.9 | 69.2 | 72.2 | 75.3 | 78.7 | 82.6 | 87.1 | 92.3 | 97.7 | 103.2 55 S |
| 60 S | 48.2 | 53.8 | 59.5 | 65.2 | 70.7 | 76.0 | 81.0 | 85.8 | 90.6 | 95.4 | 100.3 | 105.4 | 110.4 | 115.4 | 119.9 60 S |
| 65 S | 56.2 | 61.6 | 67.3 | 73.1 | 79.0 | 84.9 | 90.7 | 96.3 | 101.9 | 107.4 | 112.7 | 117.8 | 122.6 | 127.0 | 130.8 65 S |
| 70 S | 66.6 | 71.3 | 76.4 | 81.7 | 87.1 | 92.7 | 98.2 | 103.7 | 109.1 | 114.3 | 119.3 | 124.0 | 128.3 | 132.0 | 135.3 70 S |
| 75 S | 79.1 | 82.8 | 86.8 | 90.9 | 95.3 | 99.7 | 104.2 | 108.7 | 113.1 | 117.3 | 121.3 | 125.0 | 128.5 | 131.5 | 134.1 75 S |
| 80 S | 92.6 | 95.0 | 97.6 | 100.4 | 103.2 | 106.2 | 109.1 | 112.1 | 115.0 | 117.8 | 120.5 | 123.0 | 125.4 | 127.5 | 129.4 80 S |
| 85 S | 105.6 | 106.7 | 107.9 | 109.2 | 110.5 | 111.8 | 113.2 | 114.6 | 115.9 | 117.2 | 118.5 | 119.8 | 121.0 | 122.1 | 123.1 85 S |
| 90 S | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 90 S |
| LAT. | 123.7 | 122.9 | 122.1 | 121.2 | 120.3 | 119.3 | 118.3 | 117.2 | 116.0 | 114.8 | 113.7 | 112.4 | 111.2 | 110.0 | 108.8 LAT. |
| E.LONG. | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 E.LONG. |

TABLE 6 B IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 43.7 | 43.6 | 43.5 | 43.4 | 443.1 | 42.8 | 42.5 | 42.1 | 41.6 | 41.1 | 40.5 | 39.9 | 39.3 | 38.6 | 38.0 | LAT. |
| 90 N | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 90 N |
| 85 N | 31.6 | 32.0 | 32.3 | 32.8 | 33.2 | 33.7 | 34.2 | 34.6 | 35.1 | 35.6 | 36.1 | 36.6 | 37.1 | 37.5 | 38.0 | 85 N |
| 80 N | 24.7 | 25.6 | 26.6 | 27.6 | 28.7 | 29.9 | 31.0 | 32.1 | 33.2 | 34.3 | 35.2 | 36.2 | 37.0 | 37.8 | 38.5 | 80 N |
| 75 N | 17.6 | 19.1 | 20.7 | 22.5 | 24.3 | 26.2 | 28.2 | 30.1 | 31.9 | 33.6 | 35.2 | 36.6 | 37.8 | 38.8 | 39.6 | 75 N |
| 70 N | 10.3 | 12.2 | 14.3 | 16.7 | 19.2 | 22.0 | 24.7 | 27.5 | 30.2 | 32.8 | 35.0 | 37.0 | 38.6 | 39.9 | 40.8 | 70 N |
| 65 N | 2.8 | 4.6 | 6.9 | 9.6 | 12.7 | 16.1 | 19.6 | 23.3 | 26.8 | 30.1 | 33.2 | 35.7 | 37.8 | 39.3 | 40.3 | 65 N |
| 60 N | -5.1 | -3.8 | -1.8 | 0.9 | 4.2 | 8.0 | 12.1 | 16.3 | 20.5 | 24.4 | 28.0 | 31.0 | 33.4 | 35.2 | 36.2 | 60 N |
| 55 N | -13.2 | -12.8 | -11.4 | -9.1 | -5.9 | -2.1 | 2.1 | 6.4 | 10.7 | 14.7 | 18.3 | 21.4 | 23.8 | 25.5 | 26.5 | 55 N |
| 50 N | -21.2 | -21.9 | -21.3 | -19.6 | -16.8 | -13.4 | -9.7 | -5.9 | -2.2 | 1.1 | 3.9 | 6.3 | 8.2 | 9.5 | 10.2 | 50 N |
| 45 N | -28.6 | -30.2 | -30.5 | -29.4 | -27.3 | -24.7 | -21.9 | -19.3 | -17.2 | -15.6 | -14.5 | -13.6 | -13.1 | -12.8 | -12.8 | 45 N |
| 40 N | -34.4 | -36.7 | -37.6 | -37.1 | -35.8 | -34.3 | -33.0 | -32.4 | -32.7 | -33.7 | -35.2 | -36.9 | -38.4 | -39.7 | -40.8 | 40 N |
| 35 N | -37.4 | -40.2 | -41.5 | -41.7 | -41.3 | -41.1 | -41.7 | -43.6 | -46.8 | -51.1 | -56.0 | -60.8 | -65.1 | -68.6 | -71.1 | 35 N |
| 30 N | -36.6 | -39.5 | -41.3 | -42.1 | -42.8 | -44.2 | -46.9 | -51.5 | -58.0 | -65.8 | -74.4 | -82.7 | -90.0 | -95.9 | -100.2 | 30 N |
| 25 N | -31.0 | -34.0 | -36.3 | -38.1 | -40.2 | -43.2 | -48.1 | -55.4 | -64.9 | -76.1 | -88.1 | -99.7 | -110.0 | -118.3 | -124.6 | 25 N |
| 20 N | -20.5 | -23.6 | -26.7 | -29.8 | -33.5 | -38.4 | -45.4 | -54.8 | -66.8 | -80.7 | -95.4 | -109.7 | -122.6 | -133.2 | -141.4 | 20 N |
| 15 N | -5.8 | -9.2 | -13.4 | -18.0 | -23.5 | -30.2 | -38.9 | -50.1 | -63.7 | -79.2 | -95.7 | -111.8 | -126.5 | -139.1 | -149.1 | 15 N |
| 10 N | 11.3 | 7.5 | 2.2 | -4.0 | -11.1 | -19.4 | -29.4 | -41.5 | -55.8 | -71.9 | -89.1 | -106.1 | -121.9 | -135.8 | -147.5 | 10 N |
| 5 N | 28.0 | 24.0 | 17.9 | 10.5 | 2.1 | -7.2 | -17.7 | -29.9 | -44.1 | -59.9 | -76.8 | -93.8 | -110.1 | -124.9 | -137.9 | 5 N |
| 0 | 41.5 | 37.6 | 31.4 | 23.6 | 14.8 | 5.3 | -5.0 | -16.6 | -29.8 | -44.6 | -60.6 | -77.0 | -93.3 | -108.6 | -122.5 | 0 |
| 5 S | 49.1 | 46.1 | 40.6 | 33.5 | 25.5 | 16.9 | 7.7 | -2.6 | -14.4 | -27.8 | -42.5 | -58.2 | -74.0 | -89.5 | -104.2 | 5 S |
| 10 S | 49.9 | 48.3 | 44.6 | 39.4 | 33.3 | 26.6 | 19.2 | 10.7 | 0.6 | -11.2 | -24.8 | -39.5 | -54.9 | -70.3 | -85.4 | 10 S |
| 15 S | 44.4 | 44.8 | 43.6 | 41.3 | 38.0 | 34.0 | 29.0 | 22.5 | 14.2 | 3.7 | -8.7 | -22.6 | -37.5 | -52.8 | -67.8 | 15 S |
| 20 S | 35.1 | 37.6 | 39.4 | 40.3 | 40.4 | 39.4 | 36.9 | 32.5 | 25.8 | 16.6 | 5.1 | -8.3 | -22.7 | -37.6 | -52.1 | 20 S |
| 25 S | 25.8 | 30.2 | 34.7 | 38.8 | 42.0 | 43.8 | 43.8 | 41.2 | 35.8 | 27.5 | 16.7 | 3.9 | -10.1 | -24.3 | -38.1 | 25 S |
| 30 S | 20.4 | 26.3 | 32.8 | 39.3 | 45.0 | 49.0 | 50.8 | 49.5 | 45.1 | 37.5 | 27.2 | 14.8 | 1.5 | -12.0 | -24.6 | 30 S |
| 35 S | 22.0 | 28.7 | 36.4 | 44.3 | 51.3 | 56.6 | 59.2 | 58.8 | 54.9 | 47.7 | 37.9 | 26.2 | 13.6 | 1.1 | -10.4 | 35 S |
| 40 S | 31.9 | 38.8 | 46.7 | 54.8 | 62.1 | 67.5 | 70.3 | 69.9 | 66.2 | 59.5 | 50.1 | 39.1 | 27.4 | 16.1 | 6.0 | 40 S |
| 45 S | 49.1 | 55.7 | 63.1 | 70.5 | 77.0 | 81.7 | 84.0 | 83.3 | 79.6 | 73.2 | 64.5 | 54.4 | 43.9 | 33.8 | 25.0 | 45 S |
| 50 S | 70.6 | 76.6 | 83.1 | 89.3 | 94.5 | 98.1 | 99.5 | 98.3 | 94.6 | 88.6 | 80.8 | 71.9 | 62.6 | 53.8 | 46.3 | 50 S |
| 55 S | 92.3 | 97.7 | 103.2 | 108.1 | 112.0 | 114.4 | 114.9 | 113.4 | 109.8 | 104.5 | 97.8 | 90.2 | 82.4 | 75.1 | 68.9 | 55 S |
| 60 S | 110.4 | 115.4 | 119.9 | 123.7 | 126.5 | 128.1 | 128.1 | 126.5 | 123.5 | 119.1 | 113.7 | 107.7 | 101.6 | 95.8 | 90.9 | 60 S |
| 65 S | 122.6 | 127.0 | 130.8 | 133.9 | 136.0 | 137.1 | 137.1 | 135.9 | 133.6 | 130.4 | 126.6 | 122.3 | 117.9 | 113.7 | 110.0 | 65 S |
| 70 S | 128.3 | 132.0 | 135.3 | 137.8 | 139.6 | 140.7 | 140.9 | 140.3 | 139.1 | 137.2 | 134.9 | 132.2 | 129.5 | 126.8 | 124.4 | 70 S |
| 75 S | 128.5 | 131.5 | 134.1 | 136.2 | 137.9 | 139.0 | 139.6 | 139.8 | 139.5 | 138.8 | 137.8 | 136.6 | 135.2 | 133.9 | 132.5 | 75 S |
| 80 S | 125.4 | 127.5 | 129.4 | 131.0 | 132.4 | 133.5 | 134.3 | 134.9 | 135.2 | 135.3 | 135.3 | 135.0 | 134.7 | 134.2 | 133.7 | 80 S |
| 85 S | 121.0 | 122.1 | 123.1 | 124.0 | 124.9 | 125.6 | 126.3 | 126.8 | 127.2 | 127.6 | 127.8 | 128.0 | 128.1 | 128.1 | 128.0 | 85 S |
| 90 S | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 90 S |
| LAT. | 111.2 | 110.0 | 108.8 | 107.7 | 106.6 | 105.5 | 104.5 | 103.6 | 102.8 | 102.1 | 101.5 | 101.0 | 100.6 | 100.3 | 100.2 | LAT. |
| E.LONG. | 235 | 240 | 245 | 250 | 255 | 260 | 265 | 270 | 275 | 280 | 285 | 290 | 295 | 300 | 305 | E.LONG. |

TABLE 6 B IGRF VERTICAL COMPONENT (Z)

GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR (DOWNWARD POSITIVE)

| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 39.3 | 38.6 | 38.0 | 37.3 | 36.6 | 35.9 | 35.2 | 34.5 | 33.9 | 33.3 | 32.8 | 32.3 | 31.9 | 31.5 | 31.2 | LAT. |
| 90 N | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 | 90 N |
| 85 N | 37.1 | 37.5 | 38.0 | 38.4 | 38.8 | 39.2 | 39.6 | 40.0 | 40.3 | 40.7 | 41.0 | 41.3 | 41.6 | 41.9 | 42.2 | 85 N |
| 80 N | 37.0 | 37.8 | 38.5 | 39.1 | 39.6 | 40.0 | 40.5 | 40.8 | 41.2 | 41.5 | 41.9 | 42.3 | 42.6 | 43.1 | 43.5 | 80 N |
| 75 N | 37.8 | 38.8 | 39.6 | 40.2 | 40.6 | 40.9 | 41.0 | 41.1 | 41.2 | 41.2 | 41.3 | 41.5 | 41.8 | 42.2 | 42.7 | 75 N |
| 70 N | 38.6 | 39.9 | 40.8 | 41.3 | 41.4 | 41.4 | 41.1 | 40.7 | 40.3 | 39.9 | 39.7 | 39.6 | 39.7 | 40.0 | 40.5 | 70 N |
| 65 N | 37.8 | 39.3 | 40.3 | 40.7 | 40.6 | 40.2 | 39.5 | 38.6 | 37.8 | 37.1 | 36.6 | 36.4 | 36.5 | 36.9 | 37.5 | 65 N |
| 60 N | 33.4 | 35.2 | 36.2 | 36.5 | 36.3 | 35.6 | 34.6 | 33.5 | 32.5 | 31.8 | 31.5 | 31.6 | 32.2 | 33.1 | 34.2 | 60 N |
| 55 N | 23.8 | 25.5 | 26.5 | 26.8 | 26.4 | 25.7 | 24.6 | 23.7 | 23.1 | 22.9 | 23.5 | 24.6 | 26.3 | 28.4 | 30.6 | 55 N |
| 50 N | 8.2 | 9.5 | 10.2 | 10.3 | 9.9 | 9.3 | 8.6 | 8.2 | 8.6 | 9.8 | 12.0 | 15.0 | 18.8 | 22.8 | 26.7 | 50 N |
| 45 N | -13.1 | -12.8 | -12.8 | -13.0 | -13.4 | -13.7 | -13.7 | -12.9 | -11.0 | -7.7 | -3.0 | 2.9 | 9.5 | 16.1 | 22.4 | 45 N |
| 40 N | -38.4 | -39.7 | -40.8 | -41.5 | -42.0 | -42.0 | -41.0 | -38.7 | -34.6 | -28.6 | -20.6 | -11.2 | -1.2 | 8.7 | 17.6 | 40 N |
| 35 N | -65.1 | -68.6 | -71.1 | -72.7 | -73.4 | -73.0 | -71.0 | -67.0 | -60.4 | -51.2 | -39.5 | -26.3 | -12.4 | 0.7 | 12.2 | 35 N |
| 30 N | -90.0 | -95.9 | -100.2 | -102.9 | -104.1 | -103.5 | -100.7 | -95.0 | -86.0 | -73.6 | -58.3 | -41.2 | -23.8 | -7.6 | 6.2 | 30 N |
| 25 N | -110.0 | -118.3 | -124.6 | -128.7 | -130.7 | -130.3 | -126.9 | -120.0 | -109.0 | -93.9 | -75.5 | -55.1 | -34.8 | -16.3 | -1.0 | 25 N |
| 20 N | -122.6 | -133.2 | -141.4 | -147.1 | -150.3 | -150.5 | -147.3 | -139.9 | -127.7 | -110.8 | -90.2 | -67.7 | -45.4 | -25.6 | -9.6 | 20 N |
| 15 N | -126.5 | -139.1 | -149.1 | -156.5 | -161.2 | -162.7 | -160.4 | -153.3 | -141.0 | -123.5 | -102.1 | -78.7 | -55.8 | -35.7 | -19.8 | 15 N |
| 10 N | -121.9 | -135.8 | -147.5 | -156.6 | -163.1 | -166.5 | -165.7 | -160.0 | -148.7 | -132.0 | -111.1 | -88.2 | -65.8 | -46.3 | -31.0 | 10 N |
| 5 N | -110.1 | -124.9 | -137.9 | -148.7 | -157.2 | -162.6 | -164.0 | -160.4 | -151.1 | -136.2 | -117.1 | -95.8 | -74.8 | -56.4 | -42.0 | 5 N |
| 0 | -93.3 | -108.6 | -122.5 | -134.9 | -145.2 | -152.7 | -156.4 | -155.3 | -148.6 | -136.3 | -119.7 | -100.7 | -81.6 | -64.5 | -50.7 | 0 |
| 5 S | -74.0 | -89.5 | -104.2 | -117.7 | -129.5 | -138.8 | -144.6 | -145.8 | -141.6 | -132.2 | -118.3 | -101.6 | -84.4 | -68.3 | -54.7 | 5 S |
| 10 S | -54.9 | -70.3 | -85.4 | -99.5 | -112.1 | -122.5 | -129.7 | -132.6 | -130.6 | -123.4 | -111.8 | -97.2 | -81.4 | -65.8 | -51.8 | 10 S |
| 15 S | -37.5 | -52.8 | -67.8 | -81.9 | -94.7 | -105.3 | -112.9 | -116.5 | -115.6 | -109.8 | -99.7 | -86.4 | -71.2 | -55.6 | -40.7 | 15 S |
| 20 S | -22.7 | -37.6 | -52.1 | -65.7 | -77.8 | -87.7 | -94.6 | -97.9 | -96.9 | -91.4 | -81.8 | -68.8 | -53.7 | -37.7 | -21.9 | 20 S |
| 25 S | -10.1 | -24.3 | -38.1 | -50.6 | -61.4 | -69.8 | -75.2 | -77.1 | -75.0 | -68.8 | -58.7 | -45.4 | -30.0 | -13.5 | 3.0 | 25 S |
| 30 S | 1.5 | -12.0 | -24.6 | -35.8 | -44.8 | -51.2 | -54.6 | -54.5 | -50.6 | -43.1 | -32.1 | -18.2 | -2.4 | 14.4 | 30.9 | 30 S |
| 35 S | 13.6 | 1.1 | -10.4 | -20.0 | -27.2 | -31.5 | -32.7 | -30.5 | -24.9 | -16.0 | -4.0 | 10.3 | 26.2 | 42.5 | 58.2 | 35 S |
| 40 S | 27.4 | 16.1 | 6.0 | -2.1 | -7.7 | -10.2 | -9.7 | -5.9 | 1.1 | 11.0 | 23.3 | 37.5 | 52.7 | 67.9 | 81.9 | 40 S |
| 45 S | 43.9 | 33.8 | 25.0 | 18.2 | 14.0 | 12.7 | 14.3 | 19.0 | 26.4 | 36.4 | 48.2 | 61.4 | 75.1 | 88.3 | 100.1 | 45 S |
| 50 S | 62.6 | 53.8 | 46.3 | 40.7 | 37.4 | 36.7 | 38.7 | 43.3 | 50.3 | 59.3 | 69.8 | 81.1 | 92.5 | 103.2 | 112.2 | 50 S |
| 55 S | 82.4 | 75.1 | 68.9 | 64.3 | 61.5 | 61.0 | 62.7 | 66.5 | 72.2 | 79.4 | 87.7 | 96.6 | 105.2 | 113.0 | 119.2 | 55 S |
| 60 S | 101.6 | 95.8 | 90.9 | 87.1 | 84.8 | 84.1 | 85.1 | 87.6 | 91.6 | 96.6 | 102.4 | 108.4 | 114.1 | 119.1 | 122.8 | 60 S |
| 65 S | 117.9 | 113.7 | 110.0 | 107.1 | 105.2 | 104.3 | 104.5 | 105.8 | 107.9 | 110.8 | 114.0 | 117.4 | 120.5 | 123.0 | 124.6 | 65 S |
| 70 S | 129.5 | 126.8 | 124.4 | 122.4 | 120.9 | 119.9 | 119.5 | 119.8 | 120.4 | 121.5 | 122.7 | 123.9 | 125.0 | 125.6 | 125.7 | 70 S |
| 75 S | 135.2 | 133.9 | 132.5 | 131.3 | 130.3 | 129.4 | 128.8 | 128.4 | 128.1 | 128.0 | 127.9 | 127.7 | 127.4 | 126.9 | 126.1 | 75 S |
| 80 S | 134.7 | 134.2 | 133.7 | 133.1 | 132.5 | 131.9 | 131.4 | 130.8 | 130.2 | 129.5 | 128.9 | 128.1 | 127.3 | 126.3 | 125.2 | 80 S |
| 85 S | 128.1 | 128.1 | 128.0 | 127.8 | 127.6 | 127.3 | 127.0 | 126.6 | 126.1 | 125.6 | 125.0 | 124.4 | 123.7 | 122.9 | 122.1 | 85 S |
| 90 S | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 116.3 | 90 S |
| LAT. | 100.6 | 100.3 | 100.2 | 100.2 | 100.3 | 100.5 | 100.9 | 101.4 | 102.0 | 102.7 | 103.6 | 104.5 | 105.6 | 106.7 | 107.9 | LAT. |
| E.LONG. | 295 | 300 | 305 | 310 | 315 | 320 | 325 | 330 | 335 | 340 | 345 | 350 | 355 | 360 | 365 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | | | | | | | | | | | | | | | | LAT. |
| | 56791 | 56787 | 56783 | 56778 | 56774 | 56768 | 56763 | 56757 | 56751 | 56745 | 56739 | 56732 | 56725 | 56717 | 56709 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 55980 | 55983 | 55987 | 55991 | 55996 | 56002 | 56008 | 56015 | 56023 | 56031 | 56040 | 56049 | 56059 | 56069 | 56080 | 88 N |
| 86 N | 55522 | 55528 | 55535 | 55544 | 55554 | 55566 | 55579 | 55594 | 55610 | 55628 | 55647 | 55667 | 55689 | 55712 | 55736 | 86 N |
| 84 N | 55044 | 55051 | 55061 | 55074 | 55089 | 55107 | 55127 | 55150 | 55176 | 55204 | 55234 | 55267 | 55302 | 55339 | 55379 | 84 N |
| 82 N | 54555 | 54563 | 54575 | 54590 | 54610 | 54634 | 54661 | 54693 | 54728 | 54766 | 54809 | 54855 | 54904 | 54957 | 55013 | 82 N |
| 80 N | 54062 | 54070 | 54083 | 54101 | 54125 | 54154 | 54188 | 54228 | 54272 | 54322 | 54376 | 54435 | 54499 | 54567 | 54640 | 80 N |
| 78 N | 53573 | 53580 | 53593 | 53614 | 53641 | 53674 | 53714 | 53761 | 53814 | 53874 | 53940 | 54012 | 54090 | 54174 | 54263 | 78 N |
| 76 N | 53093 | 53098 | 53111 | 53132 | 53161 | 53199 | 53244 | 53297 | 53359 | 53428 | 53504 | 53588 | 53680 | 53778 | 53883 | 76 N |
| 74 N | 52624 | 52626 | 52638 | 52660 | 52691 | 52731 | 52781 | 52840 | 52908 | 52985 | 53071 | 53166 | 53269 | 53381 | 53501 | 74 N |
| 72 N | 52168 | 52167 | 52178 | 52199 | 52231 | 52273 | 52326 | 52390 | 52464 | 52548 | 52642 | 52746 | 52860 | 52983 | 53117 | 72 N |
| 70 N | 51725 | 51721 | 51730 | 51750 | 51782 | 51826 | 51881 | 51948 | 52026 | 52116 | 52217 | 52329 | 52451 | 52585 | 52729 | 70 N |
| 68 N | 51293 | 51287 | 51293 | 51312 | 51344 | 51388 | 51445 | 51514 | 51596 | 51689 | 51795 | 51913 | 52043 | 52185 | 52338 | 68 N |
| 66 N | 50870 | 50860 | 50865 | 50883 | 50914 | 50958 | 51015 | 51087 | 51170 | 51267 | 51377 | 51499 | 51635 | 51783 | 51943 | 66 N |
| 64 N | 50451 | 50439 | 50442 | 50458 | 50489 | 50533 | 50591 | 50663 | 50748 | 50846 | 50959 | 51084 | 51223 | 51376 | 51542 | 64 N |
| 62 N | 50032 | 50018 | 50020 | 50035 | 50065 | 50109 | 50167 | 50239 | 50325 | 50425 | 50539 | 50666 | 50808 | 50964 | 51134 | 62 N |
| 60 N | 49607 | 49593 | 49593 | 49608 | 49638 | 49682 | 49740 | 49812 | 49899 | 49999 | 50114 | 50243 | 50386 | **50544** | **50716** | **60 N** |
| 58 N | **49170** | **49156** | **49157** | **49173** | **49203** | **49247** | **49305** | **49378** | **49465** | **49566** | **49681** | **49811** | **49955** | **50114** | **50288** | **58 N** |
| 56 N | 48717 | 48704 | 48706 | 48722 | 48754 | 48799 | 48856 | 48932 | 49020 | 49121 | 49237 | 49368 | 49513 | 49672 | 49847 | 56 N |
| 54 N | 48240 | 48230 | 48234 | 48253 | 48286 | 48333 | 48394 | 48469 | 48558 | 48661 | 48778 | 48909 | 49055 | 49215 | 49390 | 54 N |
| 52 N | 47736 | 47728 | 47736 | 47758 | 47795 | 47845 | 47909 | 47988 | 48077 | 48181 | 48300 | 48432 | 48578 | 48740 | 48915 | 52 N |
| 50 N | 47190 | 47195 | 47208 | 47234 | 47275 | 47329 | 47397 | 47477 | 47571 | 47678 | 47799 | 47933 | 48081 | 48243 | 48420 | 50 N |
| 48 N | 46623 | 46627 | 46645 | 46677 | 46723 | 46782 | 46854 | 46939 | 47037 | 47148 | 47271 | 47408 | 47558 | 47722 | 47900 | 48 N |
| 46 N | 46060 | 46019 | 46044 | 46083 | 46135 | 46201 | 46279 | 46369 | 46472 | 46587 | 46714 | 46854 | 47008 | 47174 | 47354 | 46 N |
| 44 N | 45351 | 45369 | 45402 | 45449 | 45509 | 45582 | 45666 | 45763 | 45872 | 45992 | 46125 | 46269 | 46426 | 46596 | 46778 | 44 N |
| 42 N | 44651 | 44677 | 44719 | 44774 | 44843 | 44924 | 45016 | 45120 | 45236 | 45362 | 45500 | 45650 | 45811 | 45985 | 46170 | 42 N |
| 40 N | 43907 | 43943 | 43994 | 44059 | 44136 | 44226 | 44327 | 44439 | 44562 | 44696 | 44840 | 44995 | 45162 | 45339 | 45529 | 40 N |
| 38 N | 43123 | 43168 | 43229 | 43303 | 43390 | 43490 | 43600 | 43720 | 43851 | 43993 | 44144 | 44305 | 44477 | 44659 | 44852 | 38 N |
| 36 N | 42300 | 42355 | 42426 | 42511 | 42608 | 42717 | 42836 | 42966 | 43105 | 43254 | 43412 | 43580 | 43757 | 43944 | 44141 | 36 N |
| 34 N | 41444 | 41509 | 41590 | 41685 | 41792 | 41911 | 42040 | 42178 | 42326 | 42483 | 42648 | 42822 | 43004 | 43196 | 43397 | 34 N |
| 32 N | 40561 | 40637 | 40728 | 40833 | 40950 | 41078 | 41216 | 41364 | 41519 | 41683 | 41855 | 42035 | 42223 | 42419 | 42623 | 32 N |
| 30 N | 39659 | 39745 | 39846 | 39960 | 40087 | 40225 | 40372 | 40528 | 40692 | 40863 | 41041 | 41226 | 41419 | 41619 | 41826 | 30 N |
| 28 N | 38748 | 38843 | 38954 | 39078 | 39214 | 39361 | 39516 | 39680 | 39851 | 40029 | 40213 | 40403 | 40599 | 40802 | 41012 | 28 N |
| 26 N | 37839 | 37943 | 38063 | 38196 | 38341 | 38496 | 38660 | 38831 | 39008 | 39192 | 39381 | 39575 | 39775 | 39980 | 40190 | 26 N |
| 24 N | 36942 | 37056 | 37185 | 37327 | 37480 | 37643 | 37813 | 37991 | 38175 | 38363 | 38556 | 38754 | 38956 | 39162 | 39373 | 24 N |
| 22 N | 36072 | 36194 | 36332 | 36482 | 36643 | 36813 | 36991 | 37174 | 37363 | 37556 | 37753 | 37953 | 38156 | 38363 | 38574 | 22 N |
| 20 N | 35239 | 35371 | 35517 | 35676 | 35844 | 36021 | 36205 | 36394 | 36587 | 36784 | 36983 | 37185 | 37390 | 37596 | 37805 | 20 N |
| 18 N | 34457 | 34599 | 34753 | 34920 | 35096 | 35279 | 35468 | 35662 | 35860 | 36060 | 36262 | 36466 | 36670 | 36876 | 37083 | 18 N |
| 16 N | 33736 | 33888 | 34052 | 34226 | 34409 | 34599 | 34794 | 34993 | 35195 | 35398 | 35602 | 35806 | 36011 | 36215 | 36419 | 16 N |
| 14 N | 33086 | 33248 | 33421 | 33604 | 33795 | 33991 | 34192 | 34396 | 34601 | 34808 | 35014 | 35219 | 35423 | 35625 | 35825 | 14 N |
| 12 N | 32512 | 32685 | 32869 | 33061 | 33259 | 33463 | 33670 | 33879 | 34089 | 34298 | 34506 | 34712 | 34915 | 35115 | 35312 | 12 N |
| 10 N | 32018 | 32204 | 32390 | 32600 | 32807 | 33010 | 33232 | 33446 | 33660 | 33873 | 34083 | 34290 | 34492 | 34690 | 34883 | 10 N |
| 8 N | 31604 | 31803 | 32009 | 32222 | 32438 | 32657 | 32878 | 33098 | 33318 | 33534 | 33747 | 33954 | 34156 | 34351 | 34540 | 8 N |
| 6 N | 31267 | 31488 | 31699 | 31922 | 32148 | 32377 | 32605 | 32832 | 33056 | 33277 | 33492 | 33701 | 33902 | 34095 | 34279 | 6 N |
| 4 N | 30999 | 31227 | 31459 | 31694 | 31931 | 32169 | 32405 | 32639 | 32869 | 33094 | 33312 | 33521 | 33722 | 33912 | 34093 | 4 N |
| 2 N | 30792 | 31034 | 31280 | 31527 | 31775 | 32023 | 32267 | 32508 | 32744 | 32973 | 33194 | 33404 | 33604 | 33792 | 33968 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 30633 | 30891 | 31150 | 31410 | 31669 | 31926 | 32179 | 32427 | 32668 | 32901 | 33124 | 33335 | 33534 | 33719 | 33890 | 0 |
| 2 S | 30511 | 30783 | 31056 | 31327 | 31597 | 31863 | 32124 | 32379 | 32625 | 32861 | 33086 | 33297 | 33494 | 33676 | 33842 | 2 S |
| 4 S | 30413 | 30699 | 30984 | 31266 | 31545 | 31820 | 32088 | 32348 | 32599 | 32838 | 33063 | 33274 | 33468 | 33646 | 33807 | 4 S |
| 6 S | 30327 | 30625 | 30920 | 31213 | 31501 | 31782 | 32056 | 32321 | 32574 | 32815 | 33040 | 33249 | 33440 | 33613 | 33768 | 6 S |
| 8 S | 30242 | 30550 | 30855 | 31155 | 31450 | 31737 | 32015 | 32283 | 32537 | 32777 | 33001 | 33207 | 33394 | 33562 | 33710 | 8 S |
| 10 S | 30150 | 30466 | 30777 | 31083 | 31382 | 31673 | 31954 | 32222 | 32476 | 32714 | 32935 | 33137 | 33318 | 33480 | 33622 | 10 S |
| 12 S | 30044 | 30364 | 30680 | 30989 | 31291 | 31583 | 31863 | 32130 | 32382 | 32616 | 32832 | 33028 | 33204 | 33359 | 33494 | 12 S |
| 14 S | 29920 | 30243 | 30559 | 30869 | 31170 | 31460 | 31738 | 32002 | 32249 | 32478 | 32687 | 32877 | 33045 | 33193 | 33322 | 14 S |
| 16 S | 29778 | 30099 | 30414 | 30721 | 31018 | 31304 | 31577 | 31834 | 32075 | 32296 | 32498 | 32679 | 32840 | 32980 | 33103 | 16 S |
| 18 S | 29617 | 29933 | 30243 | 30545 | 30836 | 31115 | 31380 | 31629 | 31861 | 32073 | 32266 | 32438 | 32590 | 32723 | 32840 | 18 S |
| 20 S | 29441 | 29750 | 30052 | 30345 | 30627 | 30896 | 31151 | 31390 | 31611 | 31813 | 31995 | 32158 | 32302 | 32428 | 32539 | 20 S |
| 22 S | 29257 | 29556 | 29846 | 30128 | 30398 | 30655 | 30898 | 31124 | 31333 | 31523 | 31694 | 31847 | 31983 | 32103 | 32210 | 22 S |
| 24 S | 29071 | 29356 | 29633 | 29901 | 30157 | 30400 | 30628 | 30840 | 31036 | 31214 | 31374 | 31517 | 31645 | 31759 | 31864 | 24 S |
| 26 S | 28893 | 29162 | 29423 | 29674 | 29914 | 30141 | 30354 | 30551 | 30733 | 30898 | 31047 | 31181 | 31302 | 31413 | 31517 | 26 S |
| 28 S | 28731 | 28982 | 29226 | 29459 | 29681 | 29891 | 30087 | 30269 | 30437 | 30589 | 30728 | 30854 | 30970 | 31079 | 31184 | 28 S |
| 30 S | 28596 | 28828 | 29053 | 29267 | 29471 | 29663 | 29843 | 30009 | 30163 | 30304 | 30433 | 30553 | 30665 | 30774 | 30884 | 30 S |
| 32 S | 28498 | 28711 | 28916 | 29111 | 29297 | 29471 | 29635 | 29786 | 29927 | 30057 | 30179 | 30294 | 30406 | 30517 | 30633 | 32 S |
| 34 S | 28449 | 28642 | 28827 | 29004 | 29171 | 29329 | 29477 | 29615 | 29744 | 29866 | 29982 | 30095 | 30208 | 30324 | 30449 | 34 S |
| 36 S | 28457 | 28631 | 28798 | 28956 | 29106 | 29249 | 29383 | 29509 | 29630 | 29745 | 29858 | 29971 | 30088 | 30212 | 30349 | 36 S |
| 38 S | 28534 | 28689 | 28838 | 28980 | 29115 | 29243 | 29366 | 29483 | 29597 | 29709 | 29821 | 29937 | 30060 | 30195 | 30345 | 38 S |
| 40 S | 28686 | 28824 | 28957 | 29085 | 29207 | 29324 | 29437 | 29548 | 29658 | 29768 | 29883 | 30005 | 30137 | 30284 | 30451 | 40 S |
| 42 S | 28921 | 29045 | 29164 | 29280 | 29391 | 29500 | 29607 | 29713 | 29822 | 29935 | 30054 | 30184 | 30328 | 30490 | 30674 | 42 S |
| 44 S | 29247 | 29358 | 29466 | 29571 | 29675 | 29778 | 29881 | 29987 | 30098 | 30215 | 30342 | 30482 | 30639 | 30817 | 31020 | 44 S |
| 46 S | 29667 | 29768 | 29867 | 29966 | 30064 | 30164 | 30267 | 30375 | 30490 | 30614 | 30751 | 30903 | 31075 | 31270 | 31491 | 46 S |
| 48 S | 30187 | 30280 | 30373 | 30467 | 30563 | 30663 | 30768 | 30880 | 31001 | 31134 | 31282 | 31448 | 31635 | 31847 | 32087 | 48 S |
| 50 S | 30809 | 30896 | 30986 | 31077 | 31173 | 31275 | 31384 | 31502 | 31632 | 31776 | 31936 | 32116 | 32319 | 32547 | 32805 | 50 S |
| 52 S | 31536 | 31619 | 31706 | 31798 | 31896 | 32002 | 32116 | 32242 | 32382 | 32536 | 32710 | 32904 | 33121 | 33366 | 33639 | 52 S |
| 54 S | 32368 | 32449 | 32536 | 32629 | 32731 | 32841 | 32963 | 33097 | 33246 | 33413 | 33598 | 33806 | 34037 | 34296 | 34583 | 54 S |
| 56 S | 33306 | 33386 | 33474 | 33570 | 33675 | 33791 | 33920 | 34063 | 34222 | 34400 | 34597 | 34816 | 35060 | 35330 | 35628 | 56 S |
| 58 S | 34349 | 34428 | 34517 | 34616 | 34726 | 34848 | 34985 | 35136 | 35304 | 35491 | 35698 | 35927 | 36181 | 36460 | 36766 | 58 S |
| 60 S | 35493 | 35573 | 35664 | 35766 | 35880 | 36008 | 36150 | 36309 | 36485 | 36679 | 36894 | 37131 | 37391 | 37677 | 37988 | 60 S |
| 62 S | 36737 | 36817 | 36909 | 37014 | 37132 | 37264 | 37411 | 37575 | 37757 | 37957 | 38177 | 38419 | 38683 | 38971 | 39284 | 62 S |
| 64 S | 38074 | 38155 | 38248 | 38354 | 38474 | 38610 | 38760 | 38928 | 39113 | 39316 | 39539 | 39782 | 40047 | 40333 | 40643 | 64 S |
| 66 S | 39499 | 39579 | 39673 | 39780 | 39901 | 40037 | 40189 | 40358 | 40543 | 40747 | 40969 | 41210 | 41471 | 41754 | 42057 | 66 S |
| 68 S | 41004 | 41083 | 41175 | 41282 | 41402 | 41538 | 41689 | 41855 | 42039 | 42239 | 42457 | 42693 | 42948 | 43221 | 43514 | 68 S |
| 70 S | 42580 | 42657 | 42747 | 42850 | 42968 | 43101 | 43248 | 43411 | 43589 | 43783 | 43993 | 44221 | 44465 | 44726 | 45005 | 70 S |
| 72 S | 44215 | 44289 | 44375 | 44475 | 44588 | 44715 | 44856 | 45012 | 45182 | 45366 | 45566 | 45781 | 46011 | 46257 | 46518 | 72 S |
| 74 S | 45898 | 45967 | 46048 | 46142 | 46248 | 46368 | 46500 | 46646 | 46805 | 46977 | 47163 | 47362 | 47575 | 47802 | 48042 | 74 S |
| 76 S | 47613 | 47676 | 47751 | 47838 | 47936 | 48046 | 48167 | 48300 | 48446 | 48603 | 48771 | 48952 | 49145 | 49349 | 49565 | 76 S |
| 78 S | 49345 | 49402 | 49469 | 49547 | 49635 | 49733 | 49841 | 49960 | 50089 | 50228 | 50377 | 50537 | 50706 | 50886 | 51075 | 78 S |
| 80 S | 51079 | 51128 | 51187 | 51254 | 51330 | 51414 | 51508 | 51610 | 51720 | 51839 | 51967 | 52103 | 52247 | 52400 | 52560 | 80 S |
| 82 S | 52796 | 52837 | 52885 | 52941 | 53003 | 53073 | 53150 | 53233 | 53324 | 53421 | 53525 | 53636 | 53753 | 53876 | 54006 | 82 S |
| 84 S | 54478 | 54510 | 54548 | 54591 | 54639 | 54692 | 54751 | 54815 | 54884 | 54958 | 55037 | 55121 | 55209 | 55303 | 55400 | 84 S |
| 86 S | 56109 | 56131 | 56157 | 56186 | 56219 | 56255 | 56295 | 56338 | 56384 | 56434 | 56487 | 56543 | 56602 | 56665 | 56730 | 86 S |
| 88 S | 57669 | 57681 | 57694 | 57709 | 57726 | 57744 | 57764 | 57786 | 57809 | 57834 | 57860 | 57888 | 57918 | 57949 | 57982 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 60514 | 60502 | 60488 | 60473 | 60456 | 60437 | 60417 | 60395 | 60372 | 60347 | 60321 | 60293 | 60264 | 60234 | 60202 | LAT. |
| E.LONG. | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56725 | 56717 | 56709 | 56701 | 56693 | 56685 | 56676 | 56667 | 56658 | 56648 | 56638 | 56628 | 56618 | 56608 | 56597 |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56059 | 56069 | 56080 | 56091 | 56103 | 56115 | 56128 | 56141 | 56155 | 56168 | 56183 | 56197 | 56212 | 56227 | 56242 88 N |
| 86 N | 55689 | 55712 | 55736 | 55761 | 55788 | 55815 | 55844 | 55874 | 55904 | 55936 | 55968 | 56001 | 56034 | 56068 | 56103 86 N |
| 84 N | 55302 | 55339 | 55379 | 55420 | 55464 | 55509 | 55556 | 55605 | 55655 | 55707 | 55760 | 55815 | 55870 | 55926 | 55983 84 N |
| 82 N | 54904 | 54957 | 55013 | 55072 | 55133 | 55198 | 55265 | 55335 | 55407 | 55482 | 55558 | 55636 | 55716 | 55797 | 55879 82 N |
| 80 N | 54499 | 54567 | 54640 | 54717 | 54798 | 54883 | 54971 | 55063 | 55158 | 55257 | 55357 | 55461 | 55566 | 55674 | 55783 80 N |
| 78 N | 54090 | 54174 | 54263 | 54358 | 54458 | 54563 | 54673 | 54787 | 54906 | 55028 | 55154 | 55284 | 55416 | 55551 | 55688 78 N |
| 76 N | 53680 | 53778 | 53883 | 53995 | 54114 | 54239 | 54369 | 54505 | 54647 | 54794 | 54945 | 55100 | 55259 | 55422 | 55587 76 N |
| 74 N | 53269 | 53381 | 53501 | 53629 | 53765 | 53908 | 54058 | 54215 | 54379 | 54548 | 54724 | 54904 | 55090 | 55279 | 55472 74 N |
| 72 N | 52860 | 52983 | 53117 | 53259 | 53410 | 53570 | 53738 | 53914 | 54098 | 54290 | 54488 | 54692 | 54902 | 55118 | 55338 72 N |
| 70 N | 52451 | 52585 | 52729 | 52884 | 53049 | 53223 | 53408 | 53601 | 53803 | 54014 | 54233 | 54459 | 54693 | 54932 | 55177 70 N |
| 68 N | 52043 | 52185 | 52338 | 52503 | 52680 | 52867 | 53065 | 53273 | 53492 | 53720 | 53957 | 54203 | 54457 | 54719 | 54987 68 N |
| 66 N | 51635 | 51783 | 51943 | 52116 | 52302 | 52499 | 52709 | 52930 | 53162 | 53405 | 53658 | 53921 | 54194 | 54475 | 54764 66 N |
| 64 N | 51223 | 51376 | 51542 | 51722 | 51914 | 52120 | 52338 | 52569 | 52812 | 53068 | 53335 | 53612 | 53900 | 54198 | 54505 64 N |
| 62 N | 50808 | 50964 | 51134 | 51318 | 51515 | 51727 | 51952 | 52191 | 52443 | 52708 | 52986 | 53275 | 53576 | 53888 | 54210 62 N |
| 60 N | 50386 | 50544 | 50716 | 50903 | 51105 | 51321 | 51551 | 51796 | 52054 | 52327 | 52612 | 52911 | 53222 | 53545 | 53878 60 N |
| 58 N | 49955 | 50114 | 50288 | 50477 | 50681 | 50899 | 51133 | 51381 | 51645 | 51922 | 52214 | 52520 | 52838 | 53169 | 53511 58 N |
| 56 N | 49513 | 49672 | 49847 | 50037 | 50242 | 50462 | 50698 | 50949 | 51215 | 51496 | 51791 | 52101 | 52425 | 52761 | 53110 56 N |
| 54 N | 49055 | 49215 | 49390 | 49581 | 49786 | 50007 | 50244 | 50496 | 50764 | 51047 | 51345 | 51657 | 51983 | 52323 | 52675 54 N |
| 52 N | 48578 | 48740 | 48915 | 49106 | 49312 | 49534 | 49771 | 50024 | 50292 | 50575 | 50874 | 51187 | 51514 | 51855 | 52208 52 N |
| 50 N | 48081 | 48243 | 48420 | 48611 | 48818 | 49040 | 49277 | 49529 | 49797 | 50080 | 50378 | 50691 | 51017 | 51357 | 51709 50 N |
| 48 N | 47558 | 47722 | 47900 | 48093 | 48300 | 48522 | 48759 | 49011 | 49279 | 49561 | 49857 | 50168 | 50492 | 50829 | 51178 48 N |
| 46 N | 47008 | 47174 | 47354 | 47548 | 47756 | 47979 | 48216 | 48468 | 48734 | 49014 | 49309 | 49617 | 49938 | 50271 | 50616 46 N |
| 44 N | 46426 | 46596 | 46778 | 46974 | 47184 | 47407 | 47645 | 47896 | 48161 | 48440 | 48732 | 49037 | 49354 | 49682 | 50021 44 N |
| 42 N | 45811 | 45985 | 46170 | 46369 | 46580 | 46805 | 47043 | 47294 | 47558 | 47835 | 48124 | 48425 | 48738 | 49061 | 49393 42 N |
| 40 N | 45162 | 45339 | 45529 | 45730 | 45944 | 46169 | 46408 | 46659 | 46922 | 47197 | 47483 | 47781 | 48088 | 48405 | 48730 40 N |
| 38 N | 44477 | 44659 | 44852 | 45057 | 45272 | 45500 | 45739 | 45990 | 46252 | 46525 | 46808 | 47101 | 47403 | 47714 | 48031 38 N |
| 36 N | 43757 | 43944 | 44141 | 44349 | 44567 | 44796 | 45035 | 45286 | 45547 | 45817 | 46098 | 46387 | 46683 | 46987 | 47296 36 N |
| 34 N | 43004 | 43196 | 43397 | 43607 | 43828 | 44058 | 44298 | 44548 | 44807 | 45076 | 45352 | 45637 | 45928 | 46224 | 46525 34 N |
| 32 N | 42223 | 42419 | 42623 | 42836 | 43058 | 43289 | 43529 | 43778 | 44036 | 44301 | 44575 | 44854 | 45139 | 45429 | 45721 32 N |
| 30 N | 41419 | 41619 | 41826 | 42041 | 42264 | 42495 | 42734 | 42982 | 43237 | 43499 | 43768 | 44042 | 44321 | 44603 | 44888 30 N |
| 28 N | 40599 | 40802 | 41012 | 41228 | 41451 | 41682 | 41920 | 42165 | 42416 | 42675 | 42939 | 43207 | 43480 | 43755 | 44031 28 N |
| 26 N | 39775 | 39980 | 40190 | 40407 | 40630 | 40859 | 41094 | 41336 | 41583 | 41837 | 42095 | 42357 | 42623 | 42890 | 43158 26 N |
| 24 N | 38956 | 39162 | 39373 | 39589 | 39810 | 40037 | 40268 | 40506 | 40748 | 40996 | 41248 | 41503 | 41761 | 42020 | 42280 24 N |
| 22 N | 38156 | 38363 | 38574 | 38788 | 39006 | 39229 | 39456 | 39688 | 39924 | 40165 | 40409 | 40656 | 40906 | 41157 | 41408 22 N |
| 20 N | 37390 | 37596 | 37805 | 38017 | 38232 | 38449 | 38671 | 38896 | 39124 | 39357 | 39592 | 39831 | 40072 | 40314 | 40557 20 N |
| 18 N | 36670 | 36876 | 37083 | 37291 | 37501 | 37712 | 37927 | 38144 | 38364 | 38587 | 38813 | 39041 | 39273 | 39506 | 39740 18 N |
| 16 N | 36011 | 36215 | 36419 | 36623 | 36827 | 37032 | 37238 | 37446 | 37656 | 37868 | 38084 | 38302 | 38523 | 38746 | 38972 16 N |
| 14 N | 35423 | 35625 | 35825 | 36024 | 36222 | 36420 | 36617 | 36814 | 37013 | 37214 | 37418 | 37625 | 37835 | 38049 | 38267 14 N |
| 12 N | 34915 | 35115 | 35312 | 35505 | 35696 | 35885 | 36072 | 36259 | 36447 | 36635 | 36827 | 37022 | 37221 | 37425 | 37635 12 N |
| 10 N | 34492 | 34690 | 34883 | 35071 | 35255 | 35434 | 35611 | 35787 | 35961 | 36137 | 36316 | 36499 | 36687 | 36882 | 37084 10 N |
| 8 N | 34156 | 34351 | 34540 | 34722 | 34898 | 35069 | 35235 | 35398 | 35560 | 35723 | 35889 | 36060 | 36238 | 36424 | 36620 8 N |
| 6 N | 33902 | 34095 | 34279 | 34455 | 34623 | 34784 | 34940 | 35091 | 35241 | 35391 | 35545 | 35704 | 35872 | 36051 | 36242 6 N |
| 4 N | 33722 | 33912 | 34093 | 34262 | 34423 | 34574 | 34718 | 34858 | 34995 | 35134 | 35276 | 35425 | 35585 | 35758 | 35947 4 N |
| 2 N | 33604 | 33792 | 33968 | 34131 | 34283 | 34425 | 34559 | 34688 | 34814 | 34941 | 35073 | 35213 | 35367 | 35536 | 35725 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 33534 | 33719 | 33890 | 34047 | 34191 | 34324 | 34448 | 34566 | 34682 | 34799 | 34922 | 35056 | 35205 | 35374 | 35565 | 0 |
| 2 S | 33494 | 33676 | 33842 | 33992 | 34129 | 34253 | 34368 | 34476 | 34583 | 34692 | 34809 | 34939 | 35087 | 35258 | 35455 | 2 S |
| 4 S | 33468 | 33646 | 33807 | 33951 | 34080 | 34196 | 34302 | 34402 | 34502 | 34605 | 34718 | 34847 | 34996 | 35172 | 35379 | 4 S |
| 6 S | 33440 | 33613 | 33768 | 33905 | 34027 | 34135 | 34234 | 34328 | 34422 | 34522 | 34634 | 34764 | 34919 | 35104 | 35324 | 6 S |
| 8 S | 33394 | 33562 | 33710 | 33841 | 33956 | 34058 | 34151 | 34240 | 34331 | 34430 | 34543 | 34679 | 34842 | 35040 | 35277 | 8 S |
| 10 S | 33318 | 33480 | 33622 | 33746 | 33855 | 33951 | 34039 | 34126 | 34216 | 34317 | 34436 | 34580 | 34756 | 34970 | 35228 | 10 S |
| 12 S | 33204 | 33359 | 33494 | 33612 | 33715 | 33807 | 33892 | 33978 | 34070 | 34176 | 34304 | 34460 | 34652 | 34887 | 35170 | 12 S |
| 14 S | 33045 | 33193 | 33322 | 33433 | 33532 | 33620 | 33705 | 33793 | 33890 | 34004 | 34143 | 34316 | 34528 | 34787 | 35098 | 14 S |
| 16 S | 32840 | 32980 | 33103 | 33209 | 33304 | 33392 | 33478 | 33570 | 33675 | 33800 | 33955 | 34147 | 34383 | 34670 | 35012 | 16 S |
| 18 S | 32590 | 32723 | 32840 | 32942 | 33035 | 33123 | 33213 | 33312 | 33428 | 33569 | 33742 | 33957 | 34220 | 34538 | 34915 | 18 S |
| 20 S | 32302 | 32428 | 32539 | 32638 | 32731 | 32822 | 32919 | 33028 | 33158 | 33317 | 33513 | 33754 | 34047 | 34398 | 34812 | 20 S |
| 22 S | 31983 | 32103 | 32210 | 32308 | 32402 | 32499 | 32605 | 32727 | 32874 | 33054 | 33276 | 33546 | 33872 | 34259 | 34712 | 22 S |
| 24 S | 31645 | 31759 | 31864 | 31963 | 32062 | 32166 | 32284 | 32423 | 32590 | 32795 | 33044 | 33346 | 33708 | 34132 | 34625 | 24 S |
| 26 S | 31302 | 31413 | 31517 | 31619 | 31724 | 31839 | 31972 | 32130 | 32320 | 32552 | 32833 | 33169 | 33566 | 34030 | 34563 | 26 S |
| 28 S | 30970 | 31079 | 31184 | 31291 | 31406 | 31535 | 31686 | 31865 | 32082 | 32343 | 32656 | 33027 | 33462 | 33965 | 34538 | 28 S |
| 30 S | 30665 | 30774 | 30884 | 30999 | 31126 | 31271 | 31442 | 31646 | 31890 | 32183 | 32530 | 32937 | 33410 | 33951 | 34562 | 30 S |
| 32 S | 30406 | 30517 | 30633 | 30759 | 30900 | 31064 | 31258 | 31488 | 31762 | 32087 | 32468 | 32912 | 33421 | 34000 | 34647 | 32 S |
| 34 S | 30208 | 30324 | 30449 | 30588 | 30747 | 30932 | 31150 | 31408 | 31713 | 32070 | 32486 | 32964 | 33509 | 34122 | 34804 | 34 S |
| 36 S | 30088 | 30212 | 30349 | 30503 | 30681 | 30889 | 31133 | 31420 | 31755 | 32145 | 32594 | 33105 | 33683 | 34327 | 35039 | 36 S |
| 38 S | 30060 | 30195 | 30345 | 30517 | 30717 | 30949 | 31219 | 31535 | 31900 | 32321 | 32800 | 33343 | 33949 | 34622 | 35359 | 38 S |
| 40 S | 30137 | 30284 | 30451 | 30642 | 30863 | 31120 | 31417 | 31761 | 32155 | 32604 | 33112 | 33682 | 34314 | 35009 | 35767 | 40 S |
| 42 S | 30328 | 30490 | 30674 | 30885 | 31129 | 31410 | 31733 | 32103 | 32524 | 32999 | 33533 | 34125 | 34778 | 35492 | 36265 | 42 S |
| 44 S | 30639 | 30817 | 31020 | 31252 | 31518 | 31823 | 32170 | 32564 | 33009 | 33507 | 34061 | 34672 | 35342 | 36068 | 36851 | 44 S |
| 46 S | 31075 | 31270 | 31491 | 31744 | 32031 | 32358 | 32727 | 33143 | 33608 | 34125 | 34696 | 35321 | 36001 | 36735 | 37523 | 46 S |
| 48 S | 31635 | 31847 | 32087 | 32359 | 32667 | 33013 | 33402 | 33836 | 34318 | 34849 | 35432 | 36066 | 36751 | 37488 | 38274 | 48 S |
| 50 S | 32319 | 32547 | 32805 | 33095 | 33420 | 33784 | 34189 | 34638 | 35132 | 35673 | 36263 | 36901 | 37587 | 38320 | 39099 | 50 S |
| 52 S | 33121 | 33366 | 33639 | 33945 | 34285 | 34663 | 35081 | 35540 | 36043 | 36589 | 37181 | 37817 | 38499 | 39224 | 39991 | 52 S |
| 54 S | 34037 | 34296 | 34583 | 34902 | 35255 | 35643 | 36070 | 36535 | 37041 | 37589 | 38178 | 38808 | 39480 | 40191 | 40941 | 54 S |
| 56 S | 35060 | 35330 | 35628 | 35957 | 36319 | 36714 | 37145 | 37613 | 38118 | 38662 | 39244 | 39863 | 40521 | 41214 | 41943 | 56 S |
| 58 S | 36181 | 36460 | 36766 | 37102 | 37469 | 37867 | 38299 | 38764 | 39265 | 39800 | 40370 | 40974 | 41613 | 42284 | 42987 | 58 S |
| 60 S | 37391 | 37677 | 37988 | 38327 | 38695 | 39092 | 39520 | 39979 | 40470 | 40992 | 41546 | 42131 | 42747 | 43392 | 44065 | 60 S |
| 62 S | 38683 | 38971 | 39284 | 39622 | 39987 | 40379 | 40799 | 41248 | 41725 | 42230 | 42764 | 43326 | 43915 | 44530 | 45170 | 62 S |
| 64 S | 40047 | 40333 | 40643 | 40977 | 41335 | 41718 | 42126 | 42560 | 43020 | 43505 | 44015 | 44549 | 45108 | 45689 | 46293 | 64 S |
| 66 S | 41471 | 41754 | 42057 | 42382 | 42729 | 43099 | 43492 | 43907 | 44345 | 44805 | 45288 | 45792 | 46317 | 46862 | 47427 | 66 S |
| 68 S | 42948 | 43221 | 43514 | 43827 | 44160 | 44512 | 44885 | 45278 | 45691 | 46124 | 46576 | 47046 | 47535 | 48041 | 48564 | 68 S |
| 70 S | 44465 | 44726 | 45005 | 45301 | 45616 | 45948 | 46297 | 46665 | 47049 | 47451 | 47869 | 48303 | 48753 | 49218 | 49697 | 70 S |
| 72 S | 46011 | 46257 | 46518 | 46795 | 47087 | 47395 | 47718 | 48056 | 48410 | 48777 | 49159 | 49555 | 49964 | 50385 | 50819 | 72 S |
| 74 S | 47575 | 47802 | 48042 | 48296 | 48563 | 48843 | 49137 | 49443 | 49763 | 50094 | 50438 | 50793 | 51159 | 51535 | 51921 | 74 S |
| 76 S | 49145 | 49349 | 49565 | 49793 | 50032 | 50282 | 50544 | 50816 | 51099 | 51392 | 51695 | 52008 | 52329 | 52659 | 52998 | 76 S |
| 78 S | 50706 | 50886 | 51075 | 51274 | 51483 | 51701 | 51928 | 52164 | 52409 | 52662 | 52923 | 53192 | 53468 | 53751 | 54040 | 78 S |
| 80 S | 52247 | 52400 | 52560 | 52728 | 52904 | 53088 | 53279 | 53477 | 53682 | 53893 | 54111 | 54335 | 54565 | 54800 | 55040 | 80 S |
| 82 S | 53753 | 53876 | 54006 | 54142 | 54284 | 54432 | 54585 | 54744 | 54908 | 55077 | 55252 | 55430 | 55613 | 55800 | 55991 | 82 S |
| 84 S | 55209 | 55303 | 55400 | 55503 | 55610 | 55721 | 55836 | 55955 | 56078 | 56204 | 56334 | 56467 | 56603 | 56743 | 56885 | 84 S |
| 86 S | 56602 | 56665 | 56730 | 56798 | 56869 | 56943 | 57019 | 57098 | 57180 | 57263 | 57349 | 57437 | 57527 | 57619 | 57713 | 86 S |
| 88 S | 57918 | 57949 | 57982 | 58016 | 58051 | 58088 | 58125 | 58164 | 58205 | 58246 | 58289 | 58332 | 58376 | 58422 | 58468 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| | 60264 | 60234 | 60202 | 60169 | 60135 | 60099 | 60062 | 60024 | 59985 | 59945 | 59904 | 59862 | 59819 | 59775 | 59731 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56618 | 56608 | 56597 | 56586 | 56575 | 56563 | 56552 | 56540 | 56528 | 56515 | 56503 | 56490 | 56478 | 56465 | 56451 | LAT. |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56212 | 56227 | 56242 | 56258 | 56273 | 56289 | 56305 | 56321 | 56337 | 56354 | 56370 | 56386 | 56402 | 56418 | 56434 | 88 N |
| 86 N | 56034 | 56068 | 56103 | 56138 | 56173 | 56208 | 56244 | 56280 | 56316 | 56352 | 56388 | 56423 | 56459 | 56494 | 56529 | 86 N |
| 84 N | 55870 | 55926 | 55983 | 56041 | 56099 | 56158 | 56217 | 56276 | 56335 | 56394 | 56453 | 56511 | 56568 | 56625 | 56681 | 84 N |
| 82 N | 55716 | 55797 | 55879 | 55962 | 56046 | 56131 | 56216 | 56301 | 56385 | 56470 | 56554 | 56637 | 56719 | 56800 | 56880 | 82 N |
| 80 N | 55566 | 55674 | 55783 | 55894 | 56005 | 56118 | 56230 | 56343 | 56456 | 56569 | 56680 | 56790 | 56899 | 57006 | 57112 | 80 N |
| 78 N | 55416 | 55551 | 55688 | 55827 | 55968 | 56109 | 56252 | 56394 | 56536 | 56678 | 56819 | 56958 | 57095 | 57230 | 57362 | 78 N |
| 76 N | 55259 | 55422 | 55587 | 55755 | 55925 | 56096 | 56269 | 56441 | 56614 | 56786 | 56957 | 57126 | 57293 | 57457 | 57617 | 76 N |
| 74 N | 55090 | 55279 | 55472 | 55669 | 55868 | 56069 | 56272 | 56475 | 56678 | 56881 | 57083 | 57282 | 57479 | 57673 | 57862 | 74 N |
| 72 N | 54902 | 55118 | 55338 | 55562 | 55789 | 56020 | 56252 | 56485 | 56719 | 56952 | 57184 | 57414 | 57641 | 57864 | 58083 | 72 N |
| 70 N | 54693 | 54932 | 55177 | 55428 | 55682 | 55940 | 56200 | 56463 | 56726 | 56989 | 57250 | 57510 | 57767 | 58019 | 58266 | 70 N |
| 68 N | 54457 | 54719 | 54987 | 55261 | 55541 | 55825 | 56112 | 56401 | 56692 | 56983 | 57273 | 57562 | 57847 | 58127 | 58402 | 68 N |
| 66 N | 54194 | 54475 | 54764 | 55059 | 55361 | 55669 | 55980 | 56295 | 56611 | 56928 | 57245 | 57560 | 57872 | 58179 | 58480 | 66 N |
| 64 N | 53900 | 54198 | 54505 | 54819 | 55141 | 55469 | 55803 | 56140 | 56479 | 56820 | 57161 | 57500 | 57836 | 58168 | 58493 | 64 N |
| 62 N | 53576 | 53888 | 54210 | 54540 | 54879 | 55225 | 55577 | 55933 | 56293 | 56654 | 57016 | 57377 | 57735 | 58088 | 58435 | 62 N |
| 60 N | 53222 | 53545 | 53878 | 54222 | 54574 | 54935 | 55302 | 55674 | 56051 | 56430 | 56809 | 57188 | 57564 | 57936 | 58301 | 60 N |
| 58 N | 52838 | 53169 | 53511 | 53865 | 54228 | 54599 | 54978 | 55363 | 55753 | 56145 | 56539 | 56932 | 57323 | 57710 | 58090 | 58 N |
| 56 N | 52425 | 52761 | 53110 | 53470 | 53840 | 54220 | 54607 | 55001 | 55400 | 55802 | 56206 | 56609 | 57011 | 57408 | 57799 | 56 N |
| 54 N | 51983 | 52323 | 52675 | 53039 | 53413 | 53797 | 54190 | 54589 | 54993 | 55401 | 55811 | 56221 | 56629 | 57033 | 57430 | 54 N |
| 52 N | 51514 | 51855 | 52208 | 52573 | 52949 | 53334 | 53728 | 54128 | 54534 | 54944 | 55356 | 55768 | 56178 | 56584 | 56984 | 52 N |
| 50 N | 51017 | 51357 | 51709 | 52073 | 52447 | 52831 | 53223 | 53622 | 54026 | 54433 | 54843 | 55253 | 55661 | 56065 | 56463 | 50 N |
| 48 N | 50492 | 50829 | 51178 | 51539 | 51909 | 52289 | 52676 | 53070 | 53469 | 53871 | 54275 | 54679 | 55080 | 55478 | 55870 | 48 N |
| 46 N | 49938 | 50271 | 50616 | 50971 | 51336 | 51709 | 52089 | 52475 | 52866 | 53259 | 53653 | 54047 | 54439 | 54826 | 55208 | 46 N |
| 44 N | 49354 | 49682 | 50021 | 50370 | 50727 | 51092 | 51462 | 51838 | 52217 | 52599 | 52980 | 53361 | 53740 | 54114 | 54481 | 44 N |
| 42 N | 48738 | 49061 | 49393 | 49734 | 50082 | 50436 | 50796 | 51159 | 51525 | 51892 | 52259 | 52624 | 52986 | 53344 | 53694 | 42 N |
| 40 N | 48088 | 48405 | 48730 | 49062 | 49400 | 49744 | 50091 | 50440 | 50791 | 51142 | 51492 | 51839 | 52182 | 52520 | 52852 | 40 N |
| 38 N | 47403 | 47714 | 48031 | 48354 | 48682 | 49013 | 49346 | 49681 | 50016 | 50349 | 50681 | 51009 | 51332 | 51649 | 51959 | 38 N |
| 36 N | 46683 | 46987 | 47296 | 47609 | 47926 | 48245 | 48565 | 48884 | 49202 | 49518 | 49830 | 50137 | 50439 | 50735 | 51023 | 36 N |
| 34 N | 45928 | 46224 | 46525 | 46829 | 47135 | 47441 | 47747 | 48051 | 48352 | 48650 | 48943 | 49230 | 49511 | 49784 | 50050 | 34 N |
| 32 N | 45139 | 45429 | 45721 | 46016 | 46311 | 46605 | 46897 | 47186 | 47471 | 47751 | 48025 | 48292 | 48553 | 48805 | 49048 | 32 N |
| 30 N | 44321 | 44603 | 44888 | 45173 | 45457 | 45740 | 46019 | 46294 | 46563 | 46827 | 47083 | 47333 | 47573 | 47806 | 48029 | 30 N |
| 28 N | 43480 | 43755 | 44031 | 44307 | 44581 | 44852 | 45119 | 45381 | 45637 | 45886 | 46127 | 46359 | 46583 | 46797 | 47002 | 28 N |
| 26 N | 42623 | 42890 | 43158 | 43425 | 43690 | 43951 | 44207 | 44458 | 44701 | 44937 | 45165 | 45383 | 45593 | 45792 | 45982 | 26 N |
| 24 N | 41761 | 42020 | 42280 | 42538 | 42794 | 43046 | 43293 | 43534 | 43767 | 43993 | 44210 | 44418 | 44618 | 44804 | 44982 | 24 N |
| 22 N | 40906 | 41157 | 41408 | 41658 | 41906 | 42150 | 42389 | 42622 | 42848 | 43066 | 43276 | 43476 | 43667 | 43847 | 44018 | 22 N |
| 20 N | 40072 | 40314 | 40557 | 40799 | 41039 | 41276 | 41509 | 41736 | 41958 | 42171 | 42377 | 42574 | 42762 | 42939 | 43107 | 20 N |
| 18 N | 39273 | 39506 | 39740 | 39974 | 40208 | 40439 | 40666 | 40892 | 41111 | 41324 | 41530 | 41728 | 41917 | 42096 | 42265 | 18 N |
| 16 N | 38523 | 38748 | 38972 | 39199 | 39427 | 39655 | 39881 | 40104 | 40325 | 40540 | 40750 | 40953 | 41147 | 41333 | 41509 | 16 N |
| 14 N | 37835 | 38049 | 38267 | 38487 | 38710 | 38935 | 39161 | 39387 | 39611 | 39833 | 40051 | 40263 | 40469 | 40667 | 40854 | 14 N |
| 12 N | 37221 | 37425 | 37635 | 37849 | 38069 | 38293 | 38521 | 38752 | 38984 | 39216 | 39446 | 39673 | 39894 | 40108 | 40313 | 12 N |
| 10 N | 36687 | 36882 | 37084 | 37294 | 37513 | 37738 | 37971 | 38209 | 38452 | 38698 | 38945 | 39190 | 39431 | 39666 | 39893 | 10 N |
| 8 N | 36238 | 36424 | 36620 | 36827 | 37045 | 37275 | 37515 | 37764 | 38022 | 38285 | 38552 | 38820 | 39086 | 39347 | 39600 | 8 N |
| 6 N | 35872 | 36051 | 36242 | 36448 | 36668 | 36904 | 37154 | 37418 | 37694 | 37979 | 38270 | 38565 | 38860 | 39151 | 39434 | 6 N |
| 4 N | 35585 | 35750 | 35947 | 36159 | 36379 | 36623 | 36887 | 37169 | 37466 | 37776 | 38096 | 38422 | 38749 | 39073 | 39390 | 4 N |
| 2 N | 35367 | 35530 | 35725 | 35935 | 36168 | 36425 | 36706 | 37008 | 37331 | 37670 | 38022 | 38382 | 38745 | 39106 | 39460 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 35205 | 35374 | 35565 | 35782 | 36027 | 36299 | 36600 | 36927 | 37278 | 37650 | 38037 | 38434 | 38836 | 39238 | 39632 | 0 |
| 2 S | 35087 | 35258 | 35455 | 35682 | 35941 | 36233 | 36558 | 36913 | 37296 | 37702 | 38128 | 38566 | 39010 | 39453 | 39889 | 2 S |
| 4 S | 34996 | 35172 | 35379 | 35620 | 35898 | 36213 | 36564 | 36951 | 37369 | 37814 | 38280 | 38761 | 39249 | 39737 | 40218 | 4 S |
| 6 S | 34919 | 35104 | 35324 | 35583 | 35882 | 36224 | 36606 | 37028 | 37484 | 37970 | 38479 | 39005 | 39539 | 40074 | 40600 | 6 S |
| 8 S | 34842 | 35040 | 35277 | 35557 | 35883 | 36254 | 36671 | 37130 | 37627 | 38156 | 38711 | 39283 | 39865 | 40447 | 41021 | 8 S |
| 10 S | 34756 | 34970 | 35228 | 35534 | 35888 | 36293 | 36747 | 37246 | 37786 | 38361 | 38963 | 39583 | 40213 | 40844 | 41466 | 10 S |
| 12 S | 34652 | 34887 | 35170 | 35504 | 35891 | 36333 | 36826 | 37368 | 37953 | 38574 | 39224 | 39894 | 40573 | 41253 | 41923 | 12 S |
| 14 S | 34528 | 34787 | 35098 | 35464 | 35887 | 36368 | 36903 | 37489 | 38120 | 38790 | 39488 | 40207 | 40936 | 41665 | 42384 | 14 S |
| 16 S | 34383 | 34670 | 35012 | 35413 | 35875 | 36396 | 36975 | 37607 | 38285 | 39003 | 39750 | 40518 | 41295 | 42073 | 42841 | 16 S |
| 18 S | 34220 | 34538 | 34915 | 35353 | 35856 | 36420 | 37043 | 37721 | 38447 | 39212 | 40008 | 40823 | 41649 | 42475 | 43290 | 18 S |
| 20 S | 34047 | 34398 | 34812 | 35290 | 35834 | 36442 | 37111 | 37835 | 38607 | 39419 | 40262 | 41124 | 41997 | 42869 | 43730 | 20 S |
| 22 S | 33872 | 34259 | 34712 | 35231 | 35818 | 36470 | 37183 | 37952 | 38770 | 39627 | 40515 | 41422 | 42339 | 43256 | 44160 | 22 S |
| 24 S | 33708 | 34132 | 34625 | 35186 | 35815 | 36510 | 37268 | 38080 | 38941 | 39842 | 40772 | 41721 | 42680 | 43637 | 44583 | 24 S |
| 26 S | 33566 | 34030 | 34563 | 35165 | 35836 | 36574 | 37373 | 38227 | 39128 | 40068 | 41038 | 42026 | 43023 | 44018 | 45002 | 26 S |
| 28 S | 33462 | 33965 | 34538 | 35180 | 35892 | 36669 | 37507 | 38399 | 39338 | 40314 | 41319 | 42342 | 43373 | 44402 | 45420 | 28 S |
| 30 S | 33410 | 33951 | 34562 | 35243 | 35993 | 36807 | 37680 | 38607 | 39578 | 40586 | 41622 | 42675 | 43735 | 44794 | 45842 | 30 S |
| 32 S | 33421 | 34000 | 34647 | 35365 | 36148 | 36996 | 37900 | 38856 | 39856 | 40891 | 41952 | 43030 | 44115 | 45198 | 46271 | 32 S |
| 34 S | 33509 | 34122 | 34804 | 35553 | 36367 | 37243 | 38174 | 39155 | 40178 | 41234 | 42315 | 43412 | 44516 | 45619 | 46711 | 34 S |
| 36 S | 33683 | 34327 | 35039 | 35816 | 36656 | 37556 | 38508 | 39508 | 40548 | 41619 | 42715 | 43825 | 44943 | 46058 | 47164 | 36 S |
| 38 S | 33949 | 34622 | 35359 | 36159 | 37020 | 37937 | 38905 | 39918 | 40969 | 42050 | 43154 | 44272 | 45397 | 46520 | 47633 | 38 S |
| 40 S | 34314 | 35009 | 35767 | 36586 | 37462 | 38391 | 39368 | 40388 | 41444 | 42528 | 43634 | 44754 | 45879 | 47003 | 48119 | 40 S |
| 42 S | 34778 | 35492 | 36265 | 37096 | 37981 | 38917 | 39897 | 40918 | 41973 | 43054 | 44156 | 45270 | 46391 | 47510 | 48621 | 42 S |
| 44 S | 35342 | 36068 | 36851 | 37689 | 38577 | 39513 | 40491 | 41506 | 42553 | 43626 | 44717 | 45820 | 46930 | 48038 | 49139 | 44 S |
| 46 S | 36001 | 36735 | 37523 | 38361 | 39246 | 40176 | 41146 | 42150 | 43183 | 44241 | 45316 | 46402 | 47495 | 48586 | 49671 | 46 S |
| 48 S | 36751 | 37488 | 38274 | 39107 | 39984 | 40903 | 41858 | 42845 | 43860 | 44896 | 45949 | 47013 | 48083 | 49152 | 50215 | 48 S |
| 50 S | 37587 | 38320 | 39099 | 39922 | 40785 | 41687 | 42622 | 43587 | 44577 | 45587 | 46613 | 47649 | 48691 | 49732 | 50768 | 50 S |
| 52 S | 38499 | 39224 | 39991 | 40798 | 41643 | 42522 | 43432 | 44370 | 45330 | 46310 | 47303 | 48307 | 49315 | 50323 | 51327 | 52 S |
| 54 S | 39480 | 40191 | 40941 | 41728 | 42549 | 43401 | 44282 | 45187 | 46114 | 47058 | 48015 | 48981 | 49951 | 50922 | 51890 | 54 S |
| 56 S | 40521 | 41214 | 41943 | 42705 | 43497 | 44318 | 45165 | 46034 | 46923 | 47827 | 48743 | 49667 | 50596 | 51525 | 52452 | 56 S |
| 58 S | 41613 | 42284 | 42987 | 43719 | 44480 | 45266 | 46075 | 46904 | 47751 | 48611 | 49483 | 50362 | 51245 | 52129 | 53010 | 58 S |
| 60 S | 42747 | 43392 | 44065 | 44765 | 45489 | 46237 | 47005 | 47790 | 48592 | 49406 | 50230 | 51060 | 51895 | 52730 | 53563 | 60 S |
| 62 S | 43915 | 44530 | 45170 | 45833 | 46519 | 47224 | 47948 | 48687 | 49441 | 50205 | 50979 | 51758 | 52541 | 53325 | 54108 | 62 S |
| 64 S | 45108 | 45689 | 46293 | 46917 | 47560 | 48222 | 48898 | 49589 | 50292 | 51005 | 51726 | 52452 | 53181 | 53912 | 54641 | 64 S |
| 66 S | 46317 | 46862 | 47427 | 48009 | 48608 | 49222 | 49850 | 50491 | 51141 | 51801 | 52467 | 53138 | 53812 | 54486 | 55160 | 66 S |
| 68 S | 47535 | 48041 | 48564 | 49102 | 49655 | 50220 | 50798 | 51386 | 51983 | 52587 | 53197 | 53811 | 54428 | 55046 | 55663 | 68 S |
| 70 S | 48753 | 49218 | 49697 | 50189 | 50693 | 51209 | 51734 | 52269 | 52811 | 53359 | 53912 | 54469 | 55028 | 55588 | 56147 | 70 S |
| 72 S | 49964 | 50385 | 50819 | 51263 | 51718 | 52182 | 52654 | 53134 | 53620 | 54112 | 54608 | 55107 | 55607 | 56109 | 56610 | 72 S |
| 74 S | 51159 | 51535 | 51921 | 52317 | 52721 | 53133 | 53551 | 53976 | 54407 | 54841 | 55279 | 55720 | 56162 | 56605 | 57048 | 74 S |
| 76 S | 52329 | 52659 | 52998 | 53343 | 53696 | 54055 | 54420 | 54790 | 55164 | 55541 | 55922 | 56304 | 56688 | 57073 | 57457 | 76 S |
| 78 S | 53468 | 53751 | 54040 | 54335 | 54636 | 54942 | 55253 | 55568 | 55886 | 56207 | 56530 | 56855 | 57181 | 57508 | 57835 | 78 S |
| 80 S | 54565 | 54800 | 55040 | 55285 | 55535 | 55788 | 56045 | 56304 | 56567 | 56832 | 57099 | 57367 | 57636 | 57906 | 58175 | 80 S |
| 82 S | 55613 | 55800 | 55991 | 56186 | 56384 | 56584 | 56788 | 56994 | 57201 | 57411 | 57622 | 57834 | 58047 | 58260 | 58474 | 82 S |
| 84 S | 56603 | 56743 | 56885 | 57029 | 57176 | 57325 | 57476 | 57628 | 57783 | 57938 | 58094 | 58251 | 58409 | 58567 | 58726 | 84 S |
| 86 S | 57527 | 57619 | 57713 | 57808 | 57905 | 58003 | 58102 | 58203 | 58304 | 58406 | 58509 | 58613 | 58716 | 58821 | 58925 | 86 S |
| 88 S | 58376 | 58422 | 58468 | 58515 | 58563 | 58611 | 58660 | 58710 | 58759 | 58810 | 58861 | 58912 | 58963 | 59014 | 59066 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| | 59819 | 59775 | 59731 | 59685 | 59639 | 59592 | 59545 | 59497 | 59449 | 59400 | 59351 | 59301 | 59251 | 59201 | 59151 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 70 | 72 | 74 | 76 | 78 | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56478 | 56465 | 56451 | 56438 | 56425 | 56411 | 56398 | 56384 | 56370 | 56357 | 56343 | 56329 | 56315 | 56301 | 56287 | LAT. |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56402 | 56418 | 56434 | 56450 | 56466 | 56481 | 56497 | 56512 | 56527 | 56542 | 56556 | 56571 | 56584 | 56598 | 56611 | 88 N |
| 86 N | 56459 | 56494 | 56529 | 56563 | 56597 | 56630 | 56663 | 56695 | 56726 | 56756 | 56786 | 56815 | 56843 | 56869 | 56895 | 86 N |
| 84 N | 56568 | 56625 | 56681 | 56736 | 56790 | 56843 | 56895 | 56945 | 56993 | 57040 | 57086 | 57129 | 57171 | 57211 | 57249 | 84 N |
| 82 N | 56719 | 56800 | 56880 | 56958 | 57034 | 57108 | 57180 | 57250 | 57317 | 57382 | 57444 | 57502 | 57558 | 57611 | 57660 | 82 N |
| 80 N | 56899 | 57006 | 57112 | 57214 | 57314 | 57412 | 57506 | 57596 | 57683 | 57766 | 57845 | 57919 | 57989 | 58055 | 58115 | 80 N |
| 78 N | 57095 | 57230 | 57362 | 57491 | 57617 | 57738 | 57855 | 57968 | 58075 | 58177 | 58274 | 58364 | 58449 | 58527 | 58598 | 78 N |
| 76 N | 57293 | 57457 | 57617 | 57774 | 57926 | 58072 | 58214 | 58349 | 58478 | 58600 | 58714 | 58821 | 58920 | 59010 | 59092 | 76 N |
| 74 N | 57479 | 57673 | 57862 | 58046 | 58226 | 58398 | 58565 | 58723 | 58874 | 59016 | 59149 | 59272 | 59385 | 59488 | 59580 | 74 N |
| 72 N | 57641 | 57864 | 58083 | 58295 | 58502 | 58701 | 58892 | 59075 | 59247 | 59410 | 59561 | 59700 | 59828 | 59942 | 60044 | 72 N |
| 70 N | 57767 | 58019 | 58266 | 58507 | 58741 | 58966 | 59182 | 59388 | 59583 | 59765 | 59934 | 60090 | 60231 | 60357 | 60468 | 70 N |
| 68 N | 57847 | 58127 | 58402 | 58670 | 58930 | 59181 | 59422 | 59650 | 59866 | 60068 | 60255 | 60426 | 60580 | 60717 | 60836 | 68 N |
| 66 N | 57872 | 58179 | 58480 | 58774 | 59060 | 59335 | 59598 | 59848 | 60084 | 60305 | 60509 | 60695 | 60861 | 61008 | 61134 | 66 N |
| 64 N | 57836 | 58168 | 58493 | 58811 | 59120 | 59417 | 59702 | 59972 | 60227 | 60465 | 60684 | 60883 | 61061 | 61217 | 61350 | 64 N |
| 62 N | 57735 | 58088 | 58435 | 58774 | 59103 | 59421 | 59725 | 60014 | 60285 | 60539 | 60771 | 60983 | 61170 | 61334 | 61471 | 62 N |
| 60 N | 57564 | 57936 | 58301 | 58659 | 59006 | 59340 | 59661 | 59965 | 60252 | 60518 | 60763 | 60984 | 61180 | 61349 | 61490 | 60 N |
| 58 N | 57323 | 57710 | 58090 | 58462 | 58823 | 59172 | 59506 | 59823 | 60121 | 60398 | 60652 | 60881 | 61083 | 61256 | 61400 | 58 N |
| 56 N | 57011 | 57408 | 57799 | 58182 | 58554 | 58913 | 59257 | 59584 | 59890 | 60175 | 60435 | 60669 | 60875 | 61051 | 61195 | 56 N |
| 54 N | 56629 | 57033 | 57430 | 57820 | 58198 | 58564 | 58914 | 59246 | 59558 | 59847 | 60111 | 60348 | 60555 | 60731 | 60873 | 54 N |
| 52 N | 56178 | 56584 | 56984 | 57376 | 57757 | 58125 | 58477 | 58811 | 59124 | 59414 | 59679 | 59915 | 60121 | 60295 | 60434 | 52 N |
| 50 N | 55661 | 56065 | 56463 | 56853 | 57232 | 57598 | 57948 | 58280 | 58591 | 58879 | 59141 | 59374 | 59576 | 59745 | 59879 | 50 N |
| 48 N | 55080 | 55478 | 55870 | 56253 | 56626 | 56986 | 57330 | 57656 | 57962 | 58244 | 58500 | 58727 | 58923 | 59086 | 59213 | 48 N |
| 46 N | 54439 | 54826 | 55208 | 55581 | 55944 | 56294 | 56628 | 56945 | 57241 | 57514 | 57761 | 57980 | 58167 | 58321 | 58439 | 46 N |
| 44 N | 53740 | 54114 | 54481 | 54841 | 55190 | 55526 | 55847 | 56151 | 56434 | 56695 | 56931 | 57138 | 57315 | 57459 | 57567 | 44 N |
| 42 N | 52986 | 53344 | 53694 | 54037 | 54368 | 54688 | 54993 | 55281 | 55549 | 55795 | 56017 | 56211 | 56376 | 56508 | 56604 | 42 N |
| 40 N | 52182 | 52520 | 52852 | 53174 | 53487 | 53787 | 54073 | 54343 | 54594 | 54823 | 55029 | 55208 | 55359 | 55477 | 55562 | 40 N |
| 38 N | 51332 | 51649 | 51959 | 52260 | 52551 | 52831 | 53096 | 53346 | 53577 | 53788 | 53977 | 54140 | 54275 | 54380 | 54452 | 38 N |
| 36 N | 50439 | 50735 | 51023 | 51301 | 51570 | 51827 | 52071 | 52299 | 52510 | 52702 | 52873 | 53019 | 53139 | 53229 | 53289 | 36 N |
| 34 N | 49511 | 49784 | 50050 | 50306 | 50552 | 50786 | 51008 | 51215 | 51405 | 51578 | 51730 | 51859 | 51963 | 52039 | 52086 | 34 N |
| 32 N | 48553 | 48805 | 49048 | 49282 | 49506 | 49719 | 49919 | 50105 | 50275 | 50428 | 50562 | 50675 | 50763 | 50826 | 50861 | 32 N |
| 30 N | 47573 | 47806 | 48029 | 48242 | 48445 | 48637 | 48817 | 48983 | 49134 | 49269 | 49386 | 49483 | 49557 | 49607 | 49630 | 30 N |
| 28 N | 46583 | 46797 | 47002 | 47197 | 47382 | 47555 | 47716 | 47865 | 47999 | 48117 | 48218 | 48300 | 48362 | 48400 | 48413 | 28 N |
| 26 N | 45593 | 45792 | 45982 | 46161 | 46330 | 46488 | 46633 | 46766 | 46885 | 46989 | 47077 | 47147 | 47196 | 47224 | 47229 | 26 N |
| 24 N | 44616 | 44804 | 44982 | 45149 | 45306 | 45451 | 45585 | 45705 | 45813 | 45905 | 45982 | 46041 | 46081 | 46100 | 46097 | 24 N |
| 22 N | 43667 | 43847 | 44018 | 44178 | 44326 | 44463 | 44588 | 44701 | 44799 | 44883 | 44951 | 45002 | 45035 | 45047 | 45039 | 22 N |
| 20 N | 42762 | 42939 | 43107 | 43263 | 43408 | 43542 | 43663 | 43770 | 43864 | 43943 | 44005 | 44051 | 44078 | 44086 | 44073 | 20 N |
| 18 N | 41917 | 42096 | 42265 | 42423 | 42570 | 42704 | 42826 | 42933 | 43026 | 43103 | 43163 | 43206 | 43230 | 43234 | 43218 | 18 N |
| 16 N | 41147 | 41333 | 41509 | 41674 | 41827 | 41968 | 42094 | 42205 | 42301 | 42380 | 42441 | 42483 | 42506 | 42509 | 42492 | 16 N |
| 14 N | 40469 | 40667 | 40854 | 41031 | 41196 | 41347 | 41483 | 41602 | 41705 | 41789 | 41854 | 41898 | 41923 | 41926 | 41908 | 14 N |
| 12 N | 39894 | 40108 | 40313 | 40506 | 40687 | 40853 | 41003 | 41135 | 41248 | 41341 | 41412 | 41462 | 41490 | 41495 | 41478 | 12 N |
| 10 N | 39431 | 39666 | 39893 | 40108 | 40310 | 40496 | 40664 | 40812 | 40939 | 41044 | 41125 | 41182 | 41215 | 41224 | 41209 | 10 N |
| 8 N | 39086 | 39347 | 39600 | 39841 | 40068 | 40278 | 40468 | 40636 | 40780 | 40900 | 40993 | 41060 | 41100 | **41114** | **41103** | 8 N |
| 6 N | 38860 | 39151 | 39434 | 39705 | 39961 | 40198 | 40414 | 40605 | 40770 | 40906 | **41014** | **41093** | 41142 | 41164 | 41157 | 6 N |
| 4 N | 38749 | 39073 | 39390 | 39695 | 39983 | 40251 | 40495 | 40713 | 40900 | 41057 | 41182 | 41275 | 41336 | 41366 | 41367 | 4 N |
| 2 N | 38745 | 39106 | 39460 | 39802 | 40125 | 40427 | 40702 | 40948 | 41162 | 41341 | 41486 | 41595 | 41669 | 41710 | 41720 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 38836 | 39238 | 39632 | 40012 | 40374 | 40712 | 41021 | 41298 | 41539 | 41744 | 41910 | 42038 | 42129 | 42184 | 42204 | 0 |
| 2 S | 39010 | 39453 | 39889 | 40312 | 40714 | 41090 | 41435 | 41745 | 42017 | 42249 | 42440 | 42589 | 42699 | 42770 | 42804 | 2 S |
| 4 S | 39249 | 39737 | 40218 | 40684 | 41128 | 41544 | 41927 | 42272 | 42577 | 42839 | 43056 | 43230 | 43361 | 43451 | 43503 | 4 S |
| 6 S | 39539 | 40074 | 40600 | 41111 | 41599 | 42057 | 42480 | 42862 | 43202 | 43496 | 43743 | 43944 | 44099 | 44212 | 44283 | 6 S |
| 8 S | 39865 | 40447 | 41021 | 41578 | 42111 | 42612 | 43076 | 43498 | 43875 | 44203 | 44482 | 44713 | 44896 | 45034 | 45129 | 8 S |
| 10 S | 40213 | 40844 | 41466 | 42070 | 42649 | 43195 | 43702 | 44165 | 44580 | 44945 | 45259 | 45522 | 45735 | 45902 | 46024 | 10 S |
| 12 S | 40573 | 41253 | 41923 | 42576 | 43201 | 43793 | 44343 | 44848 | 45304 | 45708 | 46059 | 46357 | 46604 | 46802 | 46954 | 12 S |
| 14 S | 40936 | 41665 | 42384 | 43084 | 43757 | 44394 | 44990 | 45538 | 46036 | 46480 | 46870 | 47206 | 47488 | 47721 | 47906 | 14 S |
| 16 S | 41295 | 42073 | 42841 | 43589 | 44308 | 44992 | 45632 | 46225 | 46766 | 47252 | 47682 | 48058 | 48379 | 48649 | 48869 | 16 S |
| 18 S | 41649 | 42475 | 43290 | 44085 | 44851 | 45580 | 46266 | 46903 | 47487 | 48016 | 48489 | 48905 | 49267 | 49575 | 49834 | 18 S |
| 20 S | 41997 | 42869 | 43730 | 44570 | 45381 | 46155 | 46886 | 47567 | 48195 | 48767 | 49283 | 49741 | 50144 | 50493 | 50792 | 20 S |
| 22 S | 42339 | 43256 | 44160 | 45045 | 45899 | 46716 | 47490 | 48214 | 48886 | 49501 | 50060 | 50561 | 51006 | 51397 | 51736 | 22 S |
| 24 S | 42680 | 43637 | 44583 | 45509 | 46405 | 47263 | 48079 | 48845 | 49559 | 50217 | 50818 | 51361 | 51848 | 52281 | 52660 | 24 S |
| 26 S | 43023 | 44018 | 45002 | 45965 | 46900 | 47797 | 48652 | 49458 | 50212 | 50911 | 51553 | 52138 | 52667 | 53141 | 53561 | 26 S |
| 28 S | 43373 | 44402 | 45420 | 46418 | 47387 | 48320 | 49211 | 50054 | 50846 | 51584 | 52266 | 52891 | 53460 | 53973 | 54434 | 28 S |
| 30 S | 43735 | 44794 | 45842 | 46870 | 47869 | 48834 | 49758 | 50635 | 51462 | 52236 | 52955 | 53617 | 54224 | 54776 | 55275 | 30 S |
| 32 S | 44115 | 45198 | 46271 | 47324 | 48350 | 49342 | 50295 | 51202 | 52060 | 52867 | 53619 | 54317 | 54959 | 55546 | 56081 | 32 S |
| 34 S | 44516 | 45619 | 46711 | 47784 | 48831 | 49846 | 50822 | 51755 | 52641 | 53476 | 54258 | 54987 | 55661 | 56282 | 56849 | 34 S |
| 36 S | 44943 | 46058 | 47164 | 48252 | 49315 | 50348 | 51343 | 52296 | 53204 | 54064 | 54872 | 55628 | 56330 | 56980 | 57577 | 36 S |
| 38 S | 45397 | 46520 | 47633 | 48730 | 49804 | 50848 | 51857 | 52826 | 53751 | 54630 | 55459 | 56237 | 56964 | 57639 | 58262 | 38 S |
| 40 S | 45879 | 47003 | 48119 | 49219 | 50297 | 51347 | 52364 | 53343 | 54280 | 55173 | 56018 | 56815 | 57561 | 58257 | 58901 | 40 S |
| 42 S | 46391 | 47510 | 48621 | 49718 | 50795 | 51845 | 52864 | 53847 | 54791 | 55693 | 56549 | 57358 | 58119 | 58831 | 59493 | 42 S |
| 44 S | 46930 | 48038 | 49139 | 50227 | 51296 | 52341 | 53356 | 54338 | 55283 | 56187 | 57049 | 57866 | 58636 | 59359 | 60034 | 44 S |
| 46 S | 47495 | 48586 | 49671 | 50744 | 51800 | 52833 | 53839 | 54814 | 55754 | 56656 | 57517 | 58336 | 59111 | 59841 | 60524 | 46 S |
| 48 S | 48083 | 49152 | 50215 | 51268 | 52304 | 53320 | 54311 | 55273 | 56202 | 57097 | 57953 | 58769 | 59543 | 60273 | 60960 | 48 S |
| 50 S | 48691 | 49732 | 50768 | 51795 | 52807 | 53800 | 54770 | 55714 | 56628 | 57508 | 58354 | 59161 | 59929 | 60657 | 61342 | 50 S |
| 52 S | 49315 | 50323 | 51327 | 52323 | 53305 | 54271 | 55215 | 56135 | 57028 | 57890 | 58719 | 59513 | 60271 | 60990 | 61669 | 52 S |
| 54 S | 49951 | 50922 | 51890 | 52849 | 53797 | 54730 | 55644 | 56535 | 57402 | 58240 | 59049 | 59825 | 60566 | 61272 | 61941 | 54 S |
| 56 S | 50596 | 51525 | 52452 | 53371 | 54280 | 55176 | 56054 | 56913 | 57749 | 58559 | 59342 | 60095 | 60817 | 61505 | 62159 | 56 S |
| 58 S | 51245 | 52129 | 53010 | 53886 | 54753 | 55607 | 56446 | 57267 | 58068 | 58846 | 59599 | 60325 | 61022 | 61689 | 62325 | 58 S |
| 60 S | 51895 | 52730 | 53563 | 54392 | 55212 | 56021 | 56818 | 57598 | 58360 | 59102 | 59821 | 60516 | 61185 | 61826 | 62439 | 60 S |
| 62 S | 52541 | 53325 | 54108 | 54886 | 55657 | 56418 | 57168 | 57905 | 58624 | 59326 | 60008 | 60668 | 61305 | 61918 | 62504 | 62 S |
| 64 S | 53181 | 53912 | 54641 | 55366 | 56085 | 56797 | 57498 | 58187 | 58862 | 59521 | 60162 | 60784 | 61386 | 61966 | 62523 | 64 S |
| 66 S | 53812 | 54486 | 55160 | 55830 | 56496 | 57155 | 57805 | 58444 | 59072 | 59685 | 60284 | 60865 | 61429 | 61973 | 62498 | 66 S |
| 68 S | 54428 | 55046 | 55663 | 56277 | 56888 | 57492 | 58089 | 58677 | 59255 | 59821 | 60374 | 60913 | 61436 | 61942 | 62431 | 68 S |
| 70 S | 55028 | 55588 | 56147 | 56705 | 57258 | 57807 | 58350 | 58886 | 59412 | 59929 | 60435 | 60928 | 61408 | 61875 | 62326 | 70 S |
| 72 S | 55607 | 56109 | 56610 | 57109 | 57606 | 58099 | 58587 | 59068 | 59542 | 60009 | 60465 | 60912 | 61348 | 61772 | 62183 | 72 S |
| 74 S | 56162 | 56605 | 57048 | 57489 | 57929 | 58365 | 58797 | 59224 | 59645 | 60059 | 60466 | 60865 | 61255 | 61635 | 62004 | 74 S |
| 76 S | 56688 | 57073 | 57457 | 57841 | 58223 | 58602 | 58978 | 59351 | 59718 | 60080 | 60437 | 60786 | 61129 | 61463 | 61789 | 76 S |
| 78 S | 57181 | 57508 | 57835 | 58161 | 58485 | 58808 | 59129 | 59446 | 59760 | 60070 | 60375 | 60675 | 60969 | 61257 | 61539 | 78 S |
| 80 S | 57636 | 57906 | 58175 | 58444 | 58713 | 58979 | 59245 | 59508 | 59768 | 60025 | 60279 | 60528 | 60774 | 61015 | 61251 | 80 S |
| 82 S | 58047 | 58260 | 58474 | 58687 | 58900 | 59111 | 59322 | 59530 | 59737 | 59942 | 60145 | 60344 | 60540 | 60734 | 60923 | 82 S |
| 84 S | 58409 | 58567 | 58726 | 58884 | 59041 | 59199 | 59355 | 59511 | 59665 | 59818 | 59969 | 60118 | 60265 | 60410 | 60552 | 84 S |
| 86 S | 58716 | 58821 | 58925 | 59029 | 59133 | 59237 | 59340 | 59443 | 59545 | 59646 | 59746 | 59846 | 59943 | 60040 | 60135 | 86 S |
| 88 S | 58963 | 59014 | 59066 | 59117 | 59169 | 59220 | 59271 | 59322 | 59373 | 59423 | 59473 | 59522 | 59571 | 59619 | 59667 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 59251 | 59201 | 59151 | 59101 | 59050 | 59000 | 58950 | 58900 | 58850 | 58801 | 58751 | 58703 | 58654 | 58606 | 58559 | LAT. |
| E.LONG. | 70 | 72 | 74 | 76 | 78 | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 | 112 | 114 | 116 | 118 | 120 | 122 E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56315 | 56301 | 56287 | 56273 | 56260 | 56246 | 56233 | 56219 | 56206 | 56193 | 56180 | 56167 | 56154 | 56142 | 56130 |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 90 N |
| 88 N | 56584 | 56598 | 56611 | 56624 | 56637 | 56649 | 56660 | 56672 | 56683 | 56693 | 56703 | 56713 | 56722 | 56730 | 56739 88 N |
| 86 N | 56843 | 56869 | 56895 | 56920 | 56944 | 56966 | 56988 | 57009 | 57028 | 57046 | 57063 | 57079 | 57094 | 57108 | 57120 86 N |
| 84 N | 57171 | 57211 | 57249 | 57285 | 57319 | 57351 | 57380 | 57408 | 57433 | 57457 | 57478 | 57497 | 57514 | 57529 | 57542 84 N |
| 82 N | 57558 | 57611 | 57660 | 57707 | 57750 | 57789 | 57825 | 57858 | 57887 | 57913 | 57935 | 57954 | 57970 | 57982 | 57992 82 N |
| 80 N | 57909 | 58055 | 58115 | 58171 | 58222 | 58268 | 58309 | 58345 | 58375 | 58401 | 58422 | 58438 | 58449 | 58455 | 58457 80 N |
| 78 N | 58449 | 58527 | 58598 | 58663 | 58721 | 58772 | 58816 | 58853 | 58883 | 58906 | 58923 | 58933 | 58936 | 58933 | 58924 78 N |
| 76 N | 58920 | 59010 | 59092 | 59165 | 59229 | 59284 | 59330 | 59367 | 59394 | 59413 | 59423 | 59424 | 59416 | 59400 | 59377 76 N |
| 74 N | 59385 | 59488 | 59580 | 59660 | 59730 | 59788 | 59834 | 59869 | 59892 | 59904 | 59905 | 59894 | 59873 | 59842 | 59800 74 N |
| 72 N | 59828 | 59942 | 60044 | 60132 | 60206 | 60265 | 60311 | 60343 | 60360 | 60363 | 60353 | 60329 | 60292 | 60242 | 60180 72 N |
| 70 N | 60231 | 60357 | 60468 | 60562 | 60640 | 60701 | 60745 | 60772 | 60782 | 60775 | 60751 | 60711 | 60656 | 60585 | 60500 70 N |
| 68 N | 60580 | 60717 | 60836 | 60936 | 61017 | 61078 | 61119 | 61140 | 61141 | 61122 | 61084 | 61027 | 60952 | 60858 | 60748 68 N |
| 66 N | 60861 | 61008 | 61134 | 61239 | 61322 | 61382 | 61419 | 61433 | 61424 | 61393 | 61339 | 61263 | 61166 | 61048 | 60911 66 N |
| 64 N | 61061 | 61217 | 61350 | 61458 | 61542 | 61600 | 61632 | 61639 | 61619 | 61573 | 61503 | 61407 | 61287 | 61144 | 60979 64 N |
| 62 N | 61170 | 61334 | 61471 | 61582 | 61666 | 61721 | 61748 | 61745 | 61714 | 61654 | 61565 | 61449 | 61306 | 61136 | 60943 62 N |
| 60 N | 61180 | 61349 | 61490 | 61603 | 61685 | 61736 | 61756 | 61744 | 61700 | 61625 | 61518 | 61381 | 61214 | 61019 | 60796 60 N |
| 58 N | 61083 | 61256 | 61400 | 61512 | 61592 | 61638 | 61650 | 61628 | 61572 | 61481 | 61356 | 61197 | 61007 | 60785 | 60534 58 N |
| 56 N | 60875 | 61051 | 61195 | 61305 | 61381 | 61422 | 61426 | 61393 | 61323 | 61217 | 61074 | 60895 | 60681 | 60434 | 60156 56 N |
| 54 N | 60555 | 60731 | 60873 | 60980 | 61051 | 61085 | 61080 | 61036 | 60953 | 60831 | 60670 | 60472 | 60236 | 59965 | 59660 54 N |
| 52 N | 60121 | 60295 | 60434 | 60537 | 60602 | 60627 | 60613 | 60558 | 60462 | 60325 | 60147 | 59929 | 59673 | 59379 | 59050 52 N |
| 50 N | 59576 | 59745 | 59879 | 59976 | 60033 | 60051 | 60027 | 59960 | 59851 | 59700 | 59506 | 59271 | 58995 | 58681 | 58330 50 N |
| 48 N | 58923 | 59086 | 59213 | 59302 | 59351 | 59359 | 59325 | 59247 | 59126 | 58961 | 58753 | 58502 | 58209 | 57876 | 57506 48 N |
| 46 N | 58167 | 58321 | 58439 | 58520 | 58560 | 58558 | 58514 | 58426 | 58293 | 58116 | 57894 | 57629 | 57322 | 56974 | 56587 46 N |
| 44 N | 57315 | 57459 | 57567 | 57637 | 57668 | 57656 | 57602 | 57504 | 57361 | 57173 | 56940 | 56663 | 56343 | 55982 | 55583 44 N |
| 42 N | 56376 | 56508 | 56604 | 56664 | 56684 | 56663 | 56599 | 56491 | 56339 | 56142 | 55900 | 55613 | 55284 | 54914 | 54504 42 N |
| 40 N | 55359 | 55477 | 55562 | 55610 | 55620 | 55589 | 55516 | 55400 | 55240 | 55035 | 54786 | 54493 | 54158 | 53781 | 53365 40 N |
| 38 N | 54275 | 54380 | 54452 | 54489 | 54489 | 54448 | 54367 | 54244 | 54077 | 53867 | 53613 | 53316 | 52977 | 52597 | 52179 38 N |
| 36 N | 53139 | 53229 | 53289 | 53314 | 53303 | 53255 | 53167 | 53037 | 52866 | 52652 | 52395 | 52096 | 51757 | 51377 | 50960 36 N |
| 34 N | 51963 | 52039 | 52086 | 52101 | 52081 | 52024 | 51930 | 51796 | 51621 | 51405 | 51148 | 50851 | 50513 | 50137 | 49725 34 N |
| 32 N | 50763 | 50826 | 50861 | 50865 | 50836 | 50773 | 50674 | 50536 | 50360 | 50145 | 49890 | 49595 | 49263 | 48893 | 48488 32 N |
| 30 N | 49557 | 49607 | 49630 | 49625 | 49589 | 49520 | 49416 | 49277 | 49101 | 48888 | 48637 | 48348 | 48023 | 47662 | 47267 30 N |
| 28 N | 48362 | 48400 | 48413 | 48400 | 48357 | 48283 | 48177 | 48037 | 47863 | 47653 | 47407 | 47126 | 46810 | 46461 | 46079 28 N |
| 26 N | 47196 | 47224 | 47229 | 47208 | 47160 | 47083 | 46975 | 46836 | 46664 | 46459 | 46220 | 45948 | 45643 | 45307 | 44940 26 N |
| 24 N | 46061 | 46100 | 46097 | 46071 | 46018 | 45938 | 45830 | 45692 | 45524 | 45324 | 45094 | 44832 | 44539 | 44217 | 43867 24 N |
| 22 N | 45035 | 45047 | 45039 | 45007 | 44951 | 44870 | 44762 | 44626 | 44462 | 44269 | 44046 | 43795 | 43516 | 43210 | 42877 22 N |
| 20 N | 44078 | 44086 | 44073 | 44038 | 43979 | 43897 | 43789 | 43656 | 43496 | 43310 | 43096 | 42857 | 42591 | 42300 | 41985 20 N |
| 18 N | 43230 | 43234 | 43218 | 43181 | 43121 | 43038 | 42931 | 42800 | 42645 | 42465 | 42261 | 42032 | 41779 | 41504 | 41207 18 N |
| 16 N | 42506 | 42509 | 42492 | 42453 | 42392 | 42309 | 42203 | 42075 | 41924 | 41750 | 41554 | 41336 | 41096 | 40836 | 40556 16 N |
| 14 N | 41923 | 41926 | 41908 | 41869 | 41807 | 41724 | 41620 | 41494 | 41346 | 41178 | 40990 | 40781 | 40554 | 40308 | 40045 14 N |
| 12 N | 41490 | 41495 | 41478 | 41439 | 41378 | 41295 | 41192 | 41067 | 40924 | 40760 | 40579 | 40379 | 40163 | 39930 | 39682 12 N |
| 10 N | 41215 | 41224 | 41209 | 41171 | 41110 | 41028 | 40926 | 40804 | 40663 | 40504 | 40328 | 40137 | 39931 | 39710 | 39476 10 N |
| 8 N | 41100 | 41114 | 41103 | 41067 | 41008 | 40927 | 40826 | 40705 | 40567 | 40413 | 40243 | 40058 | 39861 | 39652 | 39431 8 N |
| 6 N | 41142 | 41164 | 41157 | 41125 | 41069 | 40990 | 40890 | 40772 | 40637 | 40486 | 40322 | 40144 | 39956 | 39756 | 39548 6 N |
| 4 N | 41336 | 41366 | 41367 | 41340 | 41287 | 41211 | 41115 | 41000 | 40868 | 40721 | 40562 | 40392 | 40211 | 40021 | 39824 4 N |
| 2 N | 41669 | 41710 | 41720 | 41700 | 41653 | 41583 | 41490 | 41379 | 41252 | 41111 | 40957 | 40794 | 40622 | 40441 | 40254 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 42129 | 42184 | 42204 | 42194 | 42155 | 42091 | 42005 | 41900 | 41779 | 41644 | 41498 | 41342 | 41178 | 41008 | 40831 | 0 |
| 2 S | 42699 | 42770 | 42804 | 42806 | 42778 | 42723 | 42646 | 42549 | 42436 | 42309 | 42171 | 42024 | 41870 | 41709 | 41544 | 2 S |
| 4 S | 43361 | 43451 | 43503 | 43520 | 43505 | 43463 | 43397 | 43311 | 43208 | 43091 | 42964 | 42827 | 42683 | 42534 | 42379 | 4 S |
| 6 S | 44099 | 44212 | 44283 | 44319 | 44321 | 44294 | 44242 | 44170 | 44080 | 43976 | 43860 | 43736 | 43604 | 43467 | 43324 | 6 S |
| 8 S | 44896 | 45034 | 45129 | 45186 | 45208 | 45200 | 45166 | 45110 | 45036 | 44947 | 44847 | 44736 | 44618 | 44494 | 44364 | 8 S |
| 10 S | 45735 | 45902 | 46024 | 46106 | 46152 | 46166 | 46153 | 46117 | 46061 | 45990 | 45906 | 45812 | 45709 | 45599 | 45483 | 10 S |
| 12 S | 46604 | 46802 | 46954 | 47065 | 47137 | 47177 | 47188 | 47174 | 47140 | 47089 | 47025 | 46948 | 46862 | 46768 | 46666 | 12 S |
| 14 S | 47488 | 47721 | 47906 | 48048 | 48151 | 48219 | 48257 | 48269 | 48259 | 48231 | 48187 | 48131 | 48063 | 47985 | 47899 | 14 S |
| 16 S | 48379 | 48649 | 48869 | 49046 | 49181 | 49281 | 49348 | 49388 | 49405 | 49401 | 49380 | 49345 | 49297 | 49237 | 49167 | 16 S |
| 18 S | 49267 | 49575 | 49834 | 50047 | 50217 | 50350 | 50450 | 50520 | 50565 | 50588 | 50591 | 50579 | 50551 | 50510 | 50457 | 18 S |
| 20 S | 50144 | 50493 | 50792 | 51043 | 51250 | 51418 | 51552 | 51654 | 51728 | 51779 | 51809 | 51819 | 51813 | 51792 | 51755 | 20 S |
| 22 S | 51006 | 51397 | 51736 | 52026 | 52272 | 52477 | 52645 | 52780 | 52885 | 52965 | 53021 | 53056 | 53072 | 53070 | 53050 | 22 S |
| 24 S | 51848 | 52281 | 52660 | 52991 | 53275 | 53517 | 53721 | 53890 | 54027 | 54136 | 54219 | 54278 | 54316 | 54334 | 54332 | 24 S |
| 26 S | 52667 | 53141 | 53561 | 53931 | 54255 | 54534 | 54773 | 54976 | 55145 | 55283 | 55393 | 55477 | 55537 | 55574 | 55589 | 26 S |
| 28 S | 53460 | 53973 | 54434 | 54843 | 55204 | 55521 | 55795 | 56031 | 56231 | 56398 | 56535 | 56643 | 56725 | 56781 | 56812 | 28 S |
| 30 S | 54224 | 54776 | 55275 | 55722 | 56120 | 56472 | 56780 | 57049 | 57279 | 57475 | 57638 | 57769 | 57872 | 57946 | 57994 | 30 S |
| 32 S | 54959 | 55546 | 56081 | 56563 | 56996 | 57382 | 57724 | 58023 | 58283 | 58506 | 58694 | 58848 | 58971 | 59064 | 59127 | 32 S |
| 34 S | 55661 | 56282 | 56849 | 57365 | 57830 | 58248 | 58620 | 58949 | 59237 | 59485 | 59697 | 59873 | 60016 | 60126 | 60204 | 34 S |
| 36 S | 56330 | 56980 | 57577 | 58123 | 58618 | 59065 | 59466 | 59822 | 60135 | 60408 | 60642 | 60839 | 61000 | 61126 | 61220 | 36 S |
| 38 S | 56964 | 57639 | 58262 | 58834 | 59356 | 59829 | 60255 | 60636 | 60973 | 61269 | 61524 | 61740 | 61918 | 62061 | 62169 | 38 S |
| 40 S | 57561 | 58257 | 58901 | 59496 | 60041 | 60537 | 60986 | 61389 | 61748 | 62063 | 62337 | 62571 | 62767 | 62924 | 63046 | 40 S |
| 42 S | 58119 | 58831 | 59493 | 60106 | 60670 | 61185 | 61654 | 62076 | 62454 | 62788 | 63079 | 63330 | 63541 | 63713 | 63848 | 42 S |
| 44 S | 58636 | 59359 | 60034 | 60661 | 61240 | 61772 | 62257 | 62695 | 63089 | 63439 | 63746 | 64012 | 64237 | 64423 | 64571 | 44 S |
| 46 S | 59111 | 59841 | 60524 | 61161 | 61751 | 62294 | 62792 | 63244 | 63651 | 64015 | 64336 | 64615 | 64854 | 65052 | 65213 | 46 S |
| 48 S | 59543 | 60273 | 60960 | 61602 | 62199 | 62750 | 63257 | 63720 | 64138 | 64513 | 64846 | 65137 | 65388 | 65599 | 65771 | 48 S |
| 50 S | 59929 | 60657 | 61342 | 61985 | 62584 | 63140 | 63652 | 64122 | 64548 | 64932 | 65275 | 65576 | 65838 | 66060 | 66244 | 50 S |
| 52 S | 60271 | 60990 | 61669 | 62308 | 62906 | 63462 | 63977 | 64450 | 64882 | 65272 | 65623 | 65933 | 66204 | 66437 | 66632 | 52 S |
| 54 S | 60566 | 61272 | 61941 | 62572 | 63164 | 63717 | 64231 | 64705 | 65139 | 65533 | 65889 | 66206 | 66486 | 66728 | 66934 | 54 S |
| 56 S | 60817 | 61505 | 62159 | 62778 | 63361 | 63907 | 64415 | 64887 | 65320 | 65716 | 66075 | 66398 | 66684 | 66934 | 67150 | 56 S |
| 58 S | 61022 | 61689 | 62325 | 62928 | 63497 | 64032 | 64532 | 64998 | 65428 | 65823 | 66183 | 66508 | 66799 | 67056 | 67280 | 58 S |
| 60 S | 61185 | 61826 | 62439 | 63022 | 63574 | 64095 | 64584 | 65040 | 65464 | 65855 | 66214 | 66540 | 66834 | 67096 | 67327 | 60 S |
| 62 S | 61305 | 61918 | 62504 | 63064 | 63595 | 64099 | 64573 | 65017 | 65432 | 65816 | 66171 | 66495 | 66790 | 67055 | 67291 | 62 S |
| 64 S | 61386 | 61966 | 62523 | 63056 | 63564 | 64046 | 64502 | 64931 | 65334 | 65709 | 66056 | 66377 | 66670 | 66935 | 67175 | 64 S |
| 66 S | 61429 | 61973 | 62498 | 63001 | 63482 | 63940 | 64375 | 64786 | 65173 | 65536 | 65874 | 66187 | 66476 | 66740 | 66980 | 66 S |
| 68 S | 61436 | 61942 | 62431 | 62902 | 63353 | 63785 | 64196 | 64586 | 64954 | 65301 | 65627 | 65930 | 66211 | 66471 | 66709 | 68 S |
| 70 S | 61408 | 61875 | 62326 | 62761 | 63180 | 63582 | 63966 | 64332 | 64679 | 65008 | 65317 | 65608 | 65879 | 66131 | 66363 | 70 S |
| 72 S | 61348 | 61772 | 62183 | 62581 | 62965 | 63334 | 63689 | 64028 | 64351 | 64658 | 64949 | 65223 | 65481 | 65722 | 65946 | 72 S |
| 74 S | 61255 | 61635 | 62044 | 62363 | 62709 | 63044 | 63367 | 63676 | 63973 | 64255 | 64524 | 64779 | 65020 | 65246 | 65458 | 74 S |
| 76 S | 61129 | 61463 | 61789 | 62107 | 62415 | 62713 | 63001 | 63278 | 63545 | 63800 | 64044 | 64276 | 64496 | 64705 | 64902 | 76 S |
| 78 S | 60969 | 61257 | 61539 | 61813 | 62081 | 62340 | 62591 | 62834 | 63068 | 63293 | 63509 | 63716 | 63913 | 64100 | 64278 | 78 S |
| 80 S | 60774 | 61015 | 61251 | 61481 | 61706 | 61925 | 62138 | 62344 | 62543 | 62736 | 62921 | 63099 | 63270 | 63432 | 63587 | 80 S |
| 82 S | 60540 | 60734 | 60923 | 61108 | 61290 | 61467 | 61639 | 61807 | 61970 | 62127 | 62279 | 62425 | 62566 | 62701 | 62830 | 82 S |
| 84 S | 60265 | 60410 | 60552 | 60692 | 60829 | 60963 | 61094 | 61221 | 61345 | 61465 | 61582 | 61694 | 61803 | 61907 | 62008 | 84 S |
| 86 S | 59943 | 60040 | 60135 | 60228 | 60320 | 60410 | 60498 | 60584 | 60667 | 60749 | 60828 | 60904 | 60979 | 61050 | 61119 | 86 S |
| 88 S | 59571 | 59619 | 59667 | 59713 | 59759 | 59805 | 59849 | 59892 | 59934 | 59976 | 60016 | 60055 | 60092 | 60129 | 60164 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 58654 | 58606 | 58559 | 58513 | 58467 | 58421 | 58377 | 58333 | 58291 | 58249 | 58208 | 58168 | 58130 | 58092 | 58056 | LAT. |
| E.LONG. | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 | 112 | 114 | 116 | 118 | 120 | 122 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 118 | 120 | 122 | 124 | 126 | 128 | 130 | 132 | 134 | 136 | 138 | 140 | 142 | 144 | 146 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56154 | 56142 | 56130 | 56118 | 56107 | 56096 | 56085 | 56075 | 56065 | 56056 | 56046 | 56038 | 56030 | 56022 | 56015 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56722 | 56730 | 56739 | 56747 | 56754 | 56761 | 56767 | 56773 | 56778 | 56783 | 56788 | 56792 | 56796 | 56799 | 56802 | 88 N |
| 86 N | 57094 | 57108 | 57120 | 57132 | 57142 | 57151 | 57160 | 57167 | 57173 | 57178 | 57183 | 57186 | 57189 | 57190 | 57191 | 86 N |
| 84 N | 57514 | 57529 | 57542 | 57553 | 57562 | 57569 | 57575 | 57578 | 57581 | 57581 | 57580 | 57578 | 57574 | 57570 | 57564 | 84 N |
| 82 N | 57970 | 57982 | 57992 | 57998 | 58002 | 58002 | 58000 | 57996 | 57989 | 57980 | 57969 | 57956 | 57941 | 57925 | 57908 | 82 N |
| 80 N | 58449 | 58455 | 58457 | 58455 | 58449 | 58438 | 58424 | 58407 | 58386 | 58363 | 58336 | 58308 | 58277 | 58245 | 58211 | 80 N |
| 78 N | 58936 | 58933 | 58924 | 58909 | 58889 | 58863 | 58833 | 58798 | 58758 | 58716 | 58670 | 58621 | 58569 | 58516 | 58461 | 78 N |
| 76 N | 59416 | 59400 | 59377 | 59346 | 59307 | 59262 | 59211 | 59154 | 59092 | 59026 | 58955 | 58881 | 58805 | 58726 | 58646 | 76 N |
| 74 N | 59873 | 59842 | 59800 | 59749 | 59690 | 59622 | 59546 | 59463 | 59375 | 59280 | 59181 | 59078 | 58972 | 58864 | 58754 | 74 N |
| 72 N | 60292 | 60242 | 60180 | 60106 | 60022 | 59927 | 59824 | 59712 | 59592 | 59467 | 59335 | 59200 | 59061 | 58920 | 58777 | 72 N |
| 70 N | 60656 | 60585 | 60500 | 60401 | 60289 | 60166 | 60031 | 59887 | 59734 | 59573 | 59407 | 59236 | 59061 | 58884 | 58705 | 70 N |
| 68 N | 60952 | 60858 | 60748 | 60621 | 60480 | 60325 | 60157 | 59978 | 59789 | 59591 | 59387 | 59178 | 58964 | 58749 | 58533 | 68 N |
| 66 N | 61166 | 61048 | 60911 | 60755 | 60582 | 60394 | 60191 | 59975 | 59748 | 59512 | 59268 | 59019 | 58766 | 58511 | 58256 | 66 N |
| 64 N | 61287 | 61144 | 60979 | 60793 | 60587 | 60364 | 60125 | 59871 | 59605 | 59329 | 59045 | 58755 | 58461 | 58165 | 57870 | 64 N |
| 62 N | 61306 | 61136 | 60943 | 60725 | 60487 | 60229 | 59952 | 59661 | 59355 | 59039 | 58714 | 58383 | 58048 | 57712 | 57377 | 62 N |
| 60 N | 61214 | 61019 | 60796 | 60548 | 60276 | 59983 | 59670 | 59340 | 58996 | 58640 | 58274 | 57903 | 57527 | 57151 | 56777 | 60 N |
| 58 N | 61007 | 60785 | 60534 | 60256 | 59951 | 59624 | 59275 | 58908 | 58526 | 58131 | 57727 | 57316 | 56902 | 56487 | 56076 | 58 N |
| 56 N | 60681 | 60434 | 60156 | 59847 | 59512 | 59151 | 58768 | 58366 | 57947 | 57516 | 57074 | 56626 | 56176 | 55725 | 55279 | 56 N |
| 54 N | 60236 | 59965 | 59660 | 59324 | 58959 | 58567 | 58152 | 57716 | 57264 | 56798 | 56322 | 55840 | 55356 | 54872 | 54393 | 54 N |
| 52 N | 59673 | 59379 | 59050 | 58688 | 58295 | 57875 | 57431 | 56965 | 56482 | 55985 | 55478 | 54965 | 54450 | 53937 | 53430 | 52 N |
| 50 N | 58995 | 58681 | 58330 | 57944 | 57527 | 57082 | 56611 | 56118 | 55608 | 55083 | 54549 | 54009 | 53468 | 52929 | 52398 | 50 N |
| 48 N | 58209 | 57876 | 57506 | 57100 | 56662 | 56194 | 55701 | 55185 | 54651 | 54104 | 53547 | 52984 | 52421 | 51861 | 51310 | 48 N |
| 46 N | 57322 | 56974 | 56587 | 56164 | 55708 | 55222 | 54710 | 54176 | 53623 | 53057 | 52482 | 51901 | 51321 | 50745 | 50178 | 46 N |
| 44 N | 56343 | 55982 | 55583 | 55146 | 54676 | 54176 | 53650 | 53102 | 52535 | 51955 | 51366 | 50773 | 50180 | 49593 | 49016 | 44 N |
| 42 N | 55284 | 54914 | 54504 | 54058 | 53579 | 53069 | 52533 | 51975 | 51399 | 50810 | 50213 | 49612 | 49013 | 48419 | 47837 | 42 N |
| 40 N | 54158 | 53781 | 53365 | 52913 | 52428 | 51913 | 51372 | 50809 | 50229 | 49636 | 49036 | 48432 | 47831 | 47236 | 46654 | 40 N |
| 38 N | 52977 | 52597 | 52179 | 51725 | 51238 | 50722 | 50181 | 49618 | 49038 | 48447 | 47848 | 47247 | 46649 | 46058 | 45479 | 38 N |
| 36 N | 51757 | 51377 | 50960 | 50508 | 50024 | 49511 | 48974 | 48415 | 47841 | 47256 | 46663 | 46070 | 45479 | 44897 | 44327 | 36 N |
| 34 N | 50513 | 50137 | 49725 | 49278 | 48800 | 48295 | 47766 | 47216 | 46652 | 46077 | 45496 | 44913 | 44335 | 43765 | 43209 | 34 N |
| 32 N | 49263 | 48893 | 48488 | 48051 | 47583 | 47089 | 46571 | 46035 | 45485 | 44924 | 44358 | 43791 | 43229 | 42676 | 42137 | 32 N |
| 30 N | 48023 | 47662 | 47267 | 46842 | 46387 | 45908 | 45406 | 44886 | 44353 | 43811 | 43263 | 42716 | 42174 | 41640 | 41121 | 30 N |
| 28 N | 46810 | 46461 | 46079 | 45668 | 45230 | 44767 | 44284 | 43784 | 43272 | 42750 | 42225 | 41700 | 41180 | 40669 | 40172 | 28 N |
| 26 N | 45643 | 45307 | 44940 | 44546 | 44126 | 43683 | 43221 | 42743 | 42254 | 41756 | 41255 | 40755 | 40260 | 39774 | 39301 | 26 N |
| 24 N | 44539 | 44217 | 43867 | 43491 | 43091 | 42670 | 42231 | 41778 | 41313 | 40841 | 40366 | 39892 | 39423 | 38964 | 38517 | 24 N |
| 22 N | 43516 | 43210 | 42877 | 42520 | 42142 | 41743 | 41328 | 40900 | 40462 | 40017 | 39569 | 39123 | 38681 | 38248 | 37828 | 22 N |
| 20 N | 42591 | 42300 | 41985 | 41648 | 41291 | 40917 | 40526 | 40124 | 39712 | 39295 | 38875 | 38457 | 38043 | 37637 | 37243 | 20 N |
| 18 N | 41779 | 41504 | 41207 | 40890 | 40555 | 40203 | 39838 | 39462 | 39077 | 38687 | 38295 | 37904 | 37518 | 37139 | 36771 | 18 N |
| 16 N | 41096 | 40836 | 40556 | 40259 | 39944 | 39616 | 39275 | 38924 | 38566 | 38203 | 37838 | 37474 | 37114 | 36761 | 36417 | 16 N |
| 14 N | 40554 | 40308 | 40045 | 39765 | 39472 | 39165 | 38848 | 38522 | 38188 | 37851 | 37512 | 37174 | 36839 | 36510 | 36190 | 14 N |
| 12 N | 40163 | 39930 | 39682 | 39420 | 39146 | 38860 | 38565 | 38262 | 37953 | 37640 | 37325 | 37011 | 36699 | 36393 | 36093 | 12 N |
| 10 N | 39931 | 39710 | 39476 | 39231 | 38974 | 38708 | 38433 | 38151 | 37864 | 37574 | 37282 | 36989 | 36699 | 36413 | 36133 | 10 N |
| 8 N | 39861 | 39652 | 39431 | 39200 | 38960 | 38711 | 38455 | 38194 | 37927 | 37657 | 37385 | 37113 | 36842 | 36574 | 36310 | 8 N |
| 6 N | 39956 | 39756 | 39548 | 39330 | 39105 | 38873 | 38634 | 38390 | 38142 | 37891 | 37637 | 37382 | 37128 | 36876 | 36626 | 6 N |
| 4 N | 40211 | 40021 | 39824 | 39619 | 39407 | 39190 | 38967 | 38739 | 38508 | 38273 | 38035 | 37796 | 37557 | 37317 | 37079 | 4 N |
| 2 N | 40622 | 40441 | 40254 | 40061 | 39863 | 39659 | 39450 | 39237 | 39020 | 38800 | 38576 | 38351 | 38123 | 37895 | 37667 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 41178 | 41008 | 40831 | 40649 | 40463 | 40272 | 40076 | 39876 | 39672 | 39465 | 39254 | 39039 | 38822 | 38603 | 38382 | 0 |
| 2 S | 41870 | 41709 | 41544 | 41373 | 41198 | 41019 | 40835 | 40648 | 40456 | 40259 | 40059 | 39854 | 39645 | 39433 | 39217 | 2 S |
| 4 S | 42683 | 42534 | 42379 | 42220 | 42057 | 41889 | 41717 | 41540 | 41358 | 41172 | 40980 | 40783 | 40581 | 40374 | 40163 | 4 S |
| 6 S | 43604 | 43467 | 43324 | 43177 | 43025 | 42868 | 42707 | 42540 | 42368 | 42191 | 42007 | 41816 | 41620 | 41416 | 41207 | 6 S |
| 8 S | 44618 | 44494 | 44364 | 44229 | 44088 | 43943 | 43792 | 43635 | 43472 | 43302 | 43124 | 42939 | 42746 | 42546 | 42337 | 8 S |
| 10 S | 45709 | 45599 | 45483 | 45361 | 45232 | 45098 | 44957 | 44809 | 44654 | 44491 | 44319 | 44138 | 43948 | 43749 | 43540 | 10 S |
| 12 S | 46862 | 46768 | 46666 | 46557 | 46442 | 46318 | 46187 | 46048 | 45900 | 45743 | 45576 | 45398 | 45210 | 45012 | 44802 | 12 S |
| 14 S | 48063 | 47985 | 47899 | 47804 | 47701 | 47589 | 47468 | 47337 | 47196 | 47044 | 46880 | 46705 | 46518 | 46319 | 46109 | 14 S |
| 16 S | 49297 | 49237 | 49167 | 49087 | 48996 | 48895 | 48784 | 48661 | 48526 | 48378 | 48218 | 48045 | 47859 | 47659 | 47446 | 16 S |
| 18 S | 50551 | 50510 | 50457 | 50391 | 50314 | 50224 | 50121 | 50006 | 49877 | 49734 | 49576 | 49404 | 49217 | 49016 | 48800 | 18 S |
| 20 S | 51813 | 51792 | 51755 | 51705 | 51640 | 51561 | 51467 | 51359 | 51235 | 51096 | 50940 | 50769 | 50582 | 50378 | 50159 | 20 S |
| 22 S | 53072 | 53070 | 53050 | 53015 | 52963 | 52894 | 52809 | 52708 | 52589 | 52453 | 52299 | 52128 | 51940 | 51734 | 51512 | 22 S |
| 24 S | 54316 | 54334 | 54332 | 54311 | 54271 | 54213 | 54137 | 54041 | 53927 | 53794 | 53642 | 53471 | 53281 | 53073 | 52848 | 24 S |
| 26 S | 55537 | 55574 | 55589 | 55582 | 55555 | 55507 | 55438 | 55349 | 55239 | 55109 | 54958 | 54787 | 54596 | 54386 | 54157 | 26 S |
| 28 S | 56725 | 56781 | 56812 | 56820 | 56805 | 56767 | 56706 | 56622 | 56517 | 56389 | 56239 | 56068 | 55876 | 55664 | 55432 | 28 S |
| 30 S | 57872 | 57946 | 57994 | 58016 | 58012 | 57984 | 57930 | 57853 | 57751 | 57626 | 57478 | 57307 | 57114 | 56900 | 56666 | 30 S |
| 32 S | 58971 | 59064 | 59127 | 59162 | 59170 | 59151 | 59105 | 59033 | 58936 | 58814 | 58667 | 58497 | 58304 | 58089 | 57853 | 32 S |
| 34 S | 60016 | 60126 | 60204 | 60253 | 60272 | 60262 | 60223 | 60158 | 60065 | 59946 | 59802 | 59633 | 59440 | 59225 | 58989 | 34 S |
| 36 S | 61000 | 61126 | 61220 | 61281 | 61311 | 61310 | 61280 | 61220 | 61133 | 61018 | 60877 | 60710 | 60519 | 60305 | 60070 | 36 S |
| 38 S | 61918 | 62061 | 62169 | 62242 | 62283 | 62292 | 62270 | 62217 | 62136 | 62026 | 61889 | 61726 | 61538 | 61327 | 61093 | 38 S |
| 40 S | 62767 | 62924 | 63046 | 63132 | 63184 | 63202 | 63189 | 63144 | 63069 | 62966 | 62834 | 62676 | 62493 | 62286 | 62056 | 40 S |
| 42 S | 63541 | 63713 | 63848 | 63946 | 64009 | 64038 | 64034 | 63998 | 63931 | 63835 | 63711 | 63559 | 63382 | 63181 | 62958 | 42 S |
| 44 S | 64237 | 64423 | 64571 | 64681 | 64756 | 64796 | 64802 | 64776 | 64718 | 64631 | 64515 | 64372 | 64204 | 64011 | 63795 | 44 S |
| 46 S | 64854 | 65052 | 65213 | 65335 | 65422 | 65473 | 65490 | 65475 | 65428 | 65352 | 65246 | 65114 | 64955 | 64773 | 64568 | 46 S |
| 48 S | 65388 | 65599 | 65771 | 65906 | 66004 | 66068 | 66097 | 66094 | 66059 | 65995 | 65902 | 65781 | 65636 | 65466 | 65274 | 48 S |
| 50 S | 65838 | 66060 | 66244 | 66391 | 66502 | 66579 | 66621 | 66631 | 66610 | 66559 | 66480 | 66374 | 66242 | 66087 | 65910 | 50 S |
| 52 S | 66204 | 66437 | 66632 | 66791 | 66915 | 67004 | 67060 | 67084 | 67077 | 67042 | 66978 | 66888 | 66773 | 66635 | 66475 | 52 S |
| 54 S | 66486 | 66728 | 66934 | 67104 | 67240 | 67343 | 67413 | 67452 | 67461 | 67442 | 67395 | 67323 | 67226 | 67107 | 66966 | 54 S |
| 56 S | 66684 | 66934 | 67150 | 67331 | 67479 | 67595 | 67680 | 67734 | 67760 | 67758 | 67729 | 67676 | 67599 | 67499 | 67379 | 56 S |
| 58 S | 66799 | 67056 | 67280 | 67472 | 67631 | 67760 | 67859 | 67929 | 67971 | 67987 | 67978 | 67944 | 67887 | 67809 | 67711 | 58 S |
| 60 S | 66834 | 67096 | 67327 | 67527 | 67697 | 67838 | 67951 | 68036 | 68095 | 68129 | 68138 | 68125 | 68089 | 68032 | 67956 | 60 S |
| 62 S | 66790 | 67055 | 67291 | 67498 | 67678 | 67830 | 67956 | 68055 | 68130 | 68181 | 68209 | 68215 | 68200 | 68166 | 68112 | 62 S |
| 64 S | 66670 | 66935 | 67175 | 67387 | 67574 | 67736 | 67873 | 67986 | 68076 | 68143 | 68188 | 68213 | 68219 | 68205 | 68173 | 64 S |
| 66 S | 66476 | 66740 | 66980 | 67196 | 67388 | 67557 | 67703 | 67827 | 67930 | 68012 | 68074 | 68116 | 68140 | 68146 | 68136 | 66 S |
| 68 S | 66211 | 66471 | 66709 | 66925 | 67119 | 67293 | 67446 | 67580 | 67693 | 67788 | 67863 | 67921 | 67962 | 67986 | 67995 | 68 S |
| 70 S | 65879 | 66131 | 66363 | 66577 | 66771 | 66947 | 67104 | 67243 | 67365 | 67469 | 67556 | 67627 | 67682 | 67722 | 67747 | 70 S |
| 72 S | 65481 | 65722 | 65946 | 66153 | 66344 | 66518 | 66676 | 66818 | 66944 | 67055 | 67150 | 67231 | 67297 | 67349 | 67388 | 72 S |
| 74 S | 65020 | 65246 | 65458 | 65656 | 65839 | 66008 | 66163 | 66304 | 66432 | 66545 | 66645 | 66732 | 66806 | 66868 | 66917 | 74 S |
| 76 S | 64496 | 64705 | 64902 | 65086 | 65259 | 65419 | 65567 | 65703 | 65828 | 65940 | 66041 | 66130 | 66208 | 66275 | 66331 | 76 S |
| 78 S | 63913 | 64100 | 64278 | 64445 | 64603 | 64750 | 64888 | 65015 | 65133 | 65240 | 65338 | 65425 | 65503 | 65571 | 65630 | 78 S |
| 80 S | 63270 | 63432 | 63587 | 63734 | 63873 | 64004 | 64127 | 64242 | 64348 | 64446 | 64536 | 64618 | 64692 | 64758 | 64815 | 80 S |
| 82 S | 62566 | 62701 | 62830 | 62953 | 63070 | 63181 | 63285 | 63383 | 63475 | 63560 | 63639 | 63711 | 63776 | 63835 | 63888 | 82 S |
| 84 S | 61803 | 61907 | 62008 | 62103 | 62195 | 62282 | 62364 | 62442 | 62515 | 62583 | 62647 | 62705 | 62759 | 62808 | 62852 | 84 S |
| 86 S | 60979 | 61050 | 61119 | 61185 | 61248 | 61308 | 61366 | 61420 | 61471 | 61519 | 61564 | 61606 | 61644 | 61680 | 61711 | 86 S |
| 88 S | 60092 | 60129 | 60164 | 60198 | 60230 | 60261 | 60291 | 60319 | 60346 | 60371 | 60395 | 60417 | 60437 | 60456 | 60473 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 58130 | 58092 | 58056 | 58021 | 57988 | 57955 | 57924 | 57895 | 57867 | 57840 | 57815 | 57791 | 57770 | 57749 | 57731 | LAT. |
| E.LONG. | 118 | 120 | 122 | 124 | 126 | 128 | 130 | 132 | 134 | 136 | 138 | 140 | 142 | 144 | 146 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 142 | 144 | 146 | 148 | 150 | 152 | 154 | 156 | 158 | 160 | 162 | 164 | 166 | 168 | 170 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56030 | 56022 | 56015 | 56008 | 56002 | 55997 | 55992 | 55987 | 55983 | 55980 | 55978 | 55976 | 55974 | 55974 | 55974 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56796 | 56799 | 56802 | 56804 | 56806 | 56807 | 56808 | 56809 | 56809 | 56809 | 56809 | 56808 | 56806 | 56805 | 56802 | 88 N |
| 86 N | 57189 | 57190 | 57191 | 57191 | 57191 | 57189 | 57187 | 57184 | 57181 | 57177 | 57173 | 57168 | 57162 | 57157 | 57150 | 86 N |
| 84 N | 57574 | 57570 | 57564 | 57557 | 57549 | 57540 | 57531 | 57521 | 57510 | 57499 | 57487 | 57475 | 57463 | 57450 | 57438 | 84 N |
| 82 N | 57941 | 57925 | 57908 | 57889 | 57869 | 57849 | 57828 | 57806 | 57784 | 57762 | 57740 | 57718 | 57696 | 57675 | 57654 | 82 N |
| 80 N | 58277 | 58245 | 58211 | 58176 | 58140 | 58103 | 58066 | 58029 | 57992 | 57955 | 57919 | 57884 | 57851 | 57818 | 57787 | 80 N |
| 78 N | 58569 | 58516 | 58461 | 58405 | 58348 | 58291 | 58234 | 58177 | 58122 | 58068 | 58015 | 57965 | 57916 | 57871 | 57828 | 78 N |
| 76 N | 58805 | 58726 | 58646 | 58564 | 58483 | 58401 | 58321 | 58241 | 58164 | 58089 | 58018 | 57949 | 57884 | 57824 | 57768 | 76 N |
| 74 N | 58972 | 58864 | 58754 | 58644 | 58534 | 58424 | 58317 | 58212 | 58110 | 58012 | 57919 | 57830 | 57748 | 57671 | 57601 | 74 N |
| 72 N | 59061 | 58920 | 58777 | 58634 | 58492 | 58352 | 58215 | 58082 | 57953 | 57830 | 57713 | 57603 | 57501 | 57407 | 57322 | 72 N |
| 70 N | 59061 | 58884 | 58705 | 58528 | 58352 | 58178 | 58009 | 57845 | 57688 | 57538 | 57396 | 57264 | 57141 | 57029 | 56929 | 70 N |
| 68 N | 58964 | 58749 | 58533 | 58318 | 58106 | 57898 | 57695 | 57499 | 57312 | 57134 | 56967 | 56811 | 56668 | 56538 | 56422 | 68 N |
| 66 N | 58766 | 58511 | 58256 | 58002 | 57753 | 57508 | 57271 | 57043 | 56825 | 56618 | 56425 | 56246 | 56082 | 55934 | 55804 | 66 N |
| 64 N | 58461 | 58165 | 57870 | 57578 | 57290 | 57010 | 56738 | 56477 | 56228 | 55993 | 55774 | 55572 | 55388 | 55223 | 55078 | 64 N |
| 62 N | 58048 | 57712 | 57377 | 57046 | 56720 | 56404 | 56098 | 55804 | 55526 | 55263 | 55019 | 54795 | 54592 | 54411 | 54253 | 62 N |
| 60 N | 57527 | 57151 | 56777 | 56408 | 56046 | 55695 | 55356 | 55031 | 54724 | 54436 | 54168 | 53923 | 53702 | 53506 | 53336 | 60 N |
| 58 N | 56902 | 56487 | 56076 | 55671 | 55274 | 54889 | 54519 | 54165 | 53831 | 53518 | 53229 | 52965 | 52728 | 52519 | 52339 | 58 N |
| 56 N | 56176 | 55725 | 55279 | 54839 | 54410 | 53995 | 53596 | 53215 | 52857 | 52522 | 52214 | 51933 | 51682 | 51461 | 51272 | 56 N |
| 54 N | 55356 | 54872 | 54393 | 53923 | 53465 | 53021 | 52596 | 52193 | 51813 | 51459 | 51134 | 50839 | 50576 | 50346 | 50151 | 54 N |
| 52 N | 54450 | 53937 | 53430 | 52932 | 52448 | 51980 | 51533 | 51109 | 50710 | 50341 | 50002 | 49695 | 49423 | 49187 | 48987 | 52 N |
| 50 N | 53468 | 52929 | 52398 | 51877 | 51371 | 50883 | 50417 | 49977 | 49564 | 49181 | 48832 | 48517 | 48239 | 47998 | 47796 | 50 N |
| 48 N | 52421 | 51861 | 51310 | 50770 | 50247 | 49743 | 49263 | 48810 | 48386 | 47995 | 47638 | 47318 | 47037 | 46795 | 46593 | 48 N |
| 46 N | 51321 | 50745 | 50178 | 49624 | 49088 | 48573 | 48083 | 47622 | 47191 | 46795 | 46435 | 46113 | 45831 | 45589 | 45390 | 46 N |
| 44 N | 50180 | 49593 | 49016 | 48453 | 47909 | 47387 | 46892 | 46426 | 45993 | 45595 | 45235 | 44914 | 44634 | 44396 | 44201 | 44 N |
| 42 N | 49013 | 48419 | 47837 | 47270 | 46722 | 46198 | 45702 | 45236 | 44804 | 44409 | 44052 | 43735 | 43460 | 43228 | 43039 | 42 N |
| 40 N | 47831 | 47236 | 46654 | 46087 | 45541 | 45019 | 44526 | 44064 | 43638 | 43248 | 42897 | 42588 | 42321 | 42096 | 41915 | 40 N |
| 38 N | 46649 | 46058 | 45479 | 44918 | 44378 | 43863 | 43377 | 42923 | 42505 | 42124 | 41783 | 41483 | 41226 | 41011 | 40839 | 38 N |
| 36 N | 45479 | 44897 | 44327 | 43775 | 43245 | 42741 | 42266 | 41824 | 41417 | 41048 | 40719 | 40431 | 40185 | 39981 | 39821 | 36 N |
| 34 N | 44335 | 43765 | 43209 | 42671 | 42154 | 41664 | 41203 | 40776 | 40383 | 40028 | 39713 | 39439 | 39206 | 39015 | 38866 | 34 N |
| 32 N | 43229 | 42676 | 42137 | 41615 | 41116 | 40643 | 40199 | 39788 | 39412 | 39074 | 38774 | 38515 | 38296 | 38118 | 37981 | 32 N |
| 30 N | 42174 | 41640 | 41121 | 40619 | 40140 | 39687 | 39262 | 38870 | 38513 | 38191 | 37908 | 37664 | 37460 | 37295 | 37170 | 30 N |
| 28 N | 41180 | 40669 | 40172 | 39693 | 39236 | 38804 | 38401 | 38029 | 37690 | 37387 | 37122 | 36893 | 36703 | 36552 | 36438 | 28 N |
| 26 N | 40260 | 39774 | 39301 | 38846 | 38413 | 38003 | 37622 | 37271 | 36952 | 36667 | 36418 | 36206 | 36030 | 35890 | 35786 | 26 N |
| 24 N | 39423 | 38964 | 38517 | 38087 | 37678 | 37292 | 36932 | 36602 | 36303 | 36036 | 35804 | 35605 | 35442 | 35313 | 35218 | 24 N |
| 22 N | 38681 | 38248 | 37828 | 37424 | 37039 | 36676 | 36339 | 36029 | 35748 | 35499 | 35281 | 35096 | 34944 | 34824 | 34736 | 22 N |
| 20 N | 38043 | 37637 | 37243 | 36864 | 36504 | 36164 | 35847 | 35557 | 35293 | 35059 | 34855 | 34681 | 34537 | 34424 | 34341 | 20 N |
| 18 N | 37518 | 37139 | 36771 | 36416 | 36079 | 35760 | 35464 | 35191 | 34943 | 34722 | 34528 | 34363 | 34226 | 34117 | 34035 | 18 N |
| 16 N | 37114 | 36761 | 36417 | 36086 | 35770 | 35472 | 35193 | 34935 | 34701 | 34491 | 34306 | 34147 | 34013 | 33906 | 33823 | 16 N |
| 14 N | 36839 | 36510 | 36190 | 35880 | 35584 | 35303 | 35040 | 34796 | 34573 | 34371 | 34192 | 34036 | 33903 | 33793 | 33706 | 14 N |
| 12 N | 36699 | 36393 | 36093 | 35803 | 35525 | 35260 | 35010 | 34777 | 34561 | 34365 | 34189 | 34033 | 33898 | 33783 | 33689 | 12 N |
| 10 N | 36699 | 36413 | 36133 | 35860 | 35597 | 35345 | 35105 | 34880 | 34671 | 34477 | 34301 | 34143 | 34002 | 33880 | 33775 | 10 N |
| 8 N | 36842 | 36574 | 36310 | 36052 | 35802 | 35560 | 35329 | 35109 | 34903 | 34709 | 34531 | 34367 | 34218 | 34085 | 33967 | 8 N |
| 6 N | 37128 | 36876 | 36626 | 36380 | 36140 | 35907 | 35681 | 35465 | 35258 | 35063 | 34879 | 34707 | 34548 | 34402 | 34268 | 6 N |
| 4 N | 37557 | 37317 | 37079 | 36844 | 36612 | 36384 | 36162 | 35946 | 35738 | 35538 | 35346 | 35165 | 34993 | 34832 | 34681 | 4 N |
| 2 N | 38123 | 37895 | 37667 | 37439 | 37212 | 36988 | 36767 | 36550 | 36338 | 36131 | 35931 | 35738 | 35552 | 35374 | 35204 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 38822 | 38603 | 38382 | 38160 | 37937 | 37714 | 37493 | 37273 | 37055 | 36841 | 36630 | 36423 | 36222 | 36026 | 35836 | 0 |
| 2 S | 39645 | 39433 | 39217 | 38999 | 38778 | 38555 | 38331 | 38107 | 37882 | 37659 | 37437 | 37217 | 36999 | 36785 | 36575 | 2 S |
| 4 S | 40581 | 40374 | 40163 | 39946 | 39726 | 39502 | 39274 | 39044 | 38812 | 38579 | 38344 | 38110 | 37876 | 37644 | 37413 | 4 S |
| 6 S | 41620 | 41416 | 41207 | 40991 | 40770 | 40543 | 40311 | 40074 | 39834 | 39590 | 39344 | 39095 | 38845 | 38595 | 38344 | 6 S |
| 8 S | 42746 | 42546 | 42337 | 42121 | 41898 | 41667 | 41430 | 41186 | 40937 | 40683 | 40424 | 40161 | 39896 | 39628 | 39358 | 8 S |
| 10 S | 43948 | 43749 | 43540 | 43323 | 43096 | 42861 | 42618 | 42367 | 42109 | 41844 | 41573 | 41297 | 41016 | 40732 | 40444 | 10 S |
| 12 S | 45210 | 45012 | 44802 | 44582 | 44352 | 44112 | 43863 | 43604 | 43336 | 43061 | 42779 | 42490 | 42195 | 41895 | 41591 | 12 S |
| 14 S | 46518 | 46319 | 46109 | 45886 | 45651 | 45406 | 45150 | 44883 | 44607 | 44321 | 44028 | 43727 | 43418 | 43104 | 42785 | 14 S |
| 16 S | 47859 | 47659 | 47446 | 47219 | 46980 | 46729 | 46466 | 46192 | 45907 | 45612 | 45307 | 44995 | 44674 | 44347 | 44013 | 16 S |
| 18 S | 49217 | 49016 | 48800 | 48570 | 48326 | 48069 | 47799 | 47517 | 47223 | 46919 | 46605 | 46282 | 45950 | 45611 | 45265 | 18 S |
| 20 S | 50582 | 50378 | 50159 | 49925 | 49676 | 49413 | 49136 | 48847 | 48545 | 48232 | 47909 | 47576 | 47234 | 46884 | 46527 | 20 S |
| 22 S | 51940 | 51734 | 51512 | 51274 | 51019 | 50750 | 50467 | 50170 | 49861 | 49540 | 49209 | 48867 | 48516 | 48157 | 47790 | 22 S |
| 24 S | 53281 | 53073 | 52848 | 52605 | 52346 | 52071 | 51782 | 51478 | 51162 | 50834 | 50495 | 50145 | 49786 | 49419 | 49044 | 24 S |
| 26 S | 54596 | 54386 | 54157 | 53910 | 53646 | 53366 | 53071 | 52762 | 52439 | 52105 | 51759 | 51403 | 51037 | 50663 | 50281 | 26 S |
| 28 S | 55876 | 55664 | 55432 | 55182 | 54913 | 54629 | 54329 | 54014 | 53686 | 53346 | 52994 | 52633 | 52262 | 51882 | 51495 | 28 S |
| 30 S | 57114 | 56900 | 56666 | 56412 | 56141 | 55852 | 55548 | 55229 | 54897 | 54552 | 54196 | 53830 | 53455 | 53072 | 52681 | 30 S |
| 32 S | 58304 | 58089 | 57853 | 57597 | 57323 | 57032 | 56725 | 56403 | 56067 | 55719 | 55360 | 54992 | 54614 | 54228 | 53835 | 32 S |
| 34 S | 59440 | 59225 | 58989 | 58732 | 58457 | 58164 | 57855 | 57531 | 57194 | 56845 | 56484 | 56114 | 55735 | 55349 | 54955 | 34 S |
| 36 S | 60519 | 60305 | 60070 | 59814 | 59538 | 59245 | 58936 | 58612 | 58275 | 57926 | 57566 | 57196 | 56818 | 56433 | 56041 | 36 S |
| 38 S | 61538 | 61327 | 61093 | 60839 | 60565 | 60274 | 59967 | 59645 | 59309 | 58962 | 58604 | 58237 | 57861 | 57479 | 57090 | 38 S |
| 40 S | 62493 | 62286 | 62056 | 61806 | 61536 | 61249 | 60945 | 60627 | 60295 | 59952 | 59599 | 59236 | 58865 | 58488 | 58105 | 40 S |
| 42 S | 63382 | 63181 | 62958 | 62713 | 62449 | 62168 | 61870 | 61558 | 61233 | 60896 | 60549 | 60193 | 59829 | 59459 | 59083 | 42 S |
| 44 S | 64204 | 64011 | 63795 | 63559 | 63304 | 63030 | 62741 | 62437 | 62121 | 61793 | 61454 | 61108 | 60753 | 60393 | 60027 | 44 S |
| 46 S | 64955 | 64773 | 64568 | 64342 | 64097 | 63835 | 63556 | 63264 | 62958 | 62641 | 62314 | 61979 | 61636 | 61287 | 60933 | 46 S |
| 48 S | 65636 | 65466 | 65274 | 65061 | 64829 | 64580 | 64315 | 64035 | 63743 | 63440 | 63127 | 62805 | 62477 | 62142 | 61802 | 48 S |
| 50 S | 66242 | 66087 | 65910 | 65713 | 65496 | 65263 | 65013 | 64750 | 64474 | 64187 | 63890 | 63584 | 63272 | 62953 | 62629 | 50 S |
| 52 S | 66773 | 66635 | 66475 | 66295 | 66097 | 65881 | 65650 | 65404 | 65147 | 64878 | 64599 | 64312 | 64017 | 63716 | 63410 | 52 S |
| 54 S | 67226 | 67107 | 66966 | 66805 | 66627 | 66431 | 66220 | 65995 | 65757 | 65509 | 65250 | 64983 | 64708 | 64427 | 64141 | 54 S |
| 56 S | 67599 | 67499 | 67379 | 67240 | 67082 | 66908 | 66719 | 66516 | 66300 | 66074 | 65837 | 65592 | 65338 | 65079 | 64813 | 56 S |
| 58 S | 67887 | 67809 | 67711 | 67593 | 67458 | 67307 | 67141 | 66962 | 66769 | 66566 | 66353 | 66130 | 65900 | 65662 | 65419 | 58 S |
| 60 S | 68089 | 68032 | 67956 | 67862 | 67751 | 67623 | 67481 | 67326 | 67158 | 66979 | 66790 | 66591 | 66384 | 66170 | 65949 | 60 S |
| 62 S | 68200 | 68166 | 68112 | 68041 | 67953 | 67850 | 67732 | 67602 | 67458 | 67304 | 67139 | 66964 | 66781 | 66590 | 66392 | 62 S |
| 64 S | 68219 | 68205 | 68173 | 68125 | 68061 | 67981 | 67888 | 67781 | 67662 | 67532 | 67391 | 67241 | 67082 | 66914 | 66739 | 64 S |
| 66 S | 68140 | 68146 | 68136 | 68109 | 68067 | 68010 | 67940 | 67857 | 67762 | 67655 | 67538 | 67411 | 67275 | 67131 | 66978 | 66 S |
| 68 S | 67962 | 67986 | 67995 | 67988 | 67966 | 67931 | 67883 | 67822 | 67749 | 67665 | 67571 | 67466 | 67352 | 67230 | 67099 | 68 S |
| 70 S | 67682 | 67722 | 67747 | 67757 | 67754 | 67738 | 67710 | 67669 | 67617 | 67554 | 67480 | 67397 | 67304 | 67202 | 67091 | 70 S |
| 72 S | 67297 | 67349 | 67388 | 67414 | 67426 | 67427 | 67416 | 67393 | 67359 | 67315 | 67260 | 67196 | 67122 | 67040 | 66948 | 72 S |
| 74 S | 66806 | 66868 | 66917 | 66954 | 66979 | 66993 | 66996 | 66989 | 66971 | 66943 | 66905 | 66857 | 66801 | 66736 | 66662 | 74 S |
| 76 S | 66208 | 66275 | 66331 | 66376 | 66411 | 66435 | 66449 | 66453 | 66448 | 66434 | 66410 | 66377 | 66336 | 66286 | 66227 | 76 S |
| 78 S | 65503 | 65571 | 65630 | 65679 | 65720 | 65750 | 65772 | 65785 | 65790 | 65786 | 65773 | 65752 | 65724 | 65687 | 65642 | 78 S |
| 80 S | 64692 | 64758 | 64815 | 64865 | 64907 | 64940 | 64966 | 64985 | 64996 | 64999 | 64995 | 64984 | 64965 | 64939 | 64907 | 80 S |
| 82 S | 63776 | 63835 | 63888 | 63934 | 63974 | 64007 | 64034 | 64054 | 64068 | 64076 | 64078 | 64073 | 64062 | 64045 | 64023 | 82 S |
| 84 S | 62759 | 62808 | 62852 | 62891 | 62925 | 62954 | 62978 | 62997 | 63012 | 63021 | 63026 | 63025 | 63020 | 63010 | 62996 | 84 S |
| 86 S | 61644 | 61680 | 61711 | 61740 | 61765 | 61787 | 61806 | 61821 | 61833 | 61841 | 61846 | 61848 | 61846 | 61841 | 61833 | 86 S |
| 88 S | 60437 | 60456 | 60473 | 60488 | 60502 | 60514 | 60524 | 60533 | 60540 | 60545 | 60548 | 60550 | 60550 | 60548 | 60545 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 57770 | 57749 | 57731 | 57714 | 57698 | 57685 | 57673 | 57663 | 57654 | 57648 | 57643 | 57640 | 57639 | 57639 | 57642 | LAT. |
| E.LONG. | 142 | 144 | 146 | 148 | 150 | 152 | 154 | 156 | 158 | 160 | 162 | 164 | 166 | 168 | 170 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 166 | 168 | 170 | 172 | 174 | 176 | 178 | 180 | 182 | 184 | 186 | 188 | 190 | 192 | 194 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 55974 | 55974 | 55974 | 55974 | 55975 | 55977 | 55980 | 55983 | 55987 | 55991 | 55996 | 56002 | 56008 | 56015 | 56023 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56806 | 56805 | 56802 | 56800 | 56797 | 56794 | 56791 | 56787 | 56783 | 56778 | 56774 | 56768 | 56763 | 56757 | 56751 | 88 N |
| 86 N | 57162 | 57157 | 57150 | 57144 | 57136 | 57129 | 57121 | 57113 | 57105 | 57096 | 57087 | 57078 | 57069 | 57059 | 57049 | 86 N |
| 84 N | 57463 | 57450 | 57438 | 57425 | 57412 | 57400 | 57387 | 57374 | 57362 | 57349 | 57337 | 57325 | 57313 | 57301 | 57289 | 84 N |
| 82 N | 57696 | 57675 | 57654 | 57633 | 57614 | 57595 | 57576 | 57559 | 57543 | 57527 | 57513 | 57499 | 57486 | 57474 | 57463 | 82 N |
| 80 N | 57851 | 57818 | 57787 | 57757 | 57730 | 57704 | 57680 | 57658 | 57638 | 57620 | 57605 | 57591 | 57580 | 57570 | 57563 | 80 N |
| 78 N | 57916 | 57871 | 57828 | 57788 | 57751 | 57718 | 57688 | 57662 | 57639 | 57621 | 57605 | 57594 | 57586 | 57581 | 57580 | 78 N |
| 76 N | 57884 | 57824 | 57768 | 57717 | 57670 | 57630 | 57594 | 57564 | 57539 | 57520 | 57507 | 57499 | 57497 | 57500 | 57507 | 76 N |
| 74 N | 57748 | 57671 | 57601 | 57537 | 57481 | 57433 | 57392 | 57358 | 57333 | 57315 | 57305 | 57303 | 57308 | 57321 | 57340 | 74 N |
| 72 N | 57501 | 57407 | 57322 | 57246 | 57180 | 57124 | 57078 | 57042 | 57016 | 57001 | 56996 | 57001 | 57016 | 57041 | 57074 | 72 N |
| 70 N | 57141 | 57029 | 56929 | 56841 | 56765 | 56701 | 56651 | 56613 | 56589 | 56577 | 56579 | 56593 | 56620 | 56658 | 56708 | 70 N |
| 68 N | 56668 | 56538 | 56422 | 56321 | 56236 | 56166 | 56112 | 56073 | 56051 | 56045 | 56054 | 56079 | 56119 | 56173 | 56241 | 68 N |
| 66 N | 56082 | 55934 | 55804 | 55691 | 55597 | 55521 | 55464 | 55426 | 55407 | 55407 | 55425 | 55461 | 55516 | 55587 | 55675 | 66 N |
| 64 N | 55388 | 55223 | 55078 | 54954 | 54852 | 54771 | 54712 | 54675 | 54661 | 54668 | 54696 | 54746 | 54815 | 54905 | 55013 | 64 N |
| 62 N | 54592 | 54411 | 54253 | 54119 | 54009 | 53924 | 53865 | 53830 | 53820 | 53836 | 53875 | 53938 | 54024 | 54132 | 54261 | 62 N |
| 60 N | 53702 | 53506 | 53336 | 53193 | 53078 | 52990 | 52931 | 52899 | 52895 | 52919 | 52970 | 53047 | 53149 | 53276 | 53426 | 60 N |
| 58 N | 52728 | 52519 | 52339 | 52188 | 52068 | 51979 | 51921 | 51893 | 51896 | 51929 | 51992 | 52083 | 52201 | 52347 | 52517 | 58 N |
| 56 N | 51682 | 51461 | 51272 | 51116 | 50993 | 50904 | 50848 | 50825 | 50835 | 50878 | 50952 | 51057 | 51191 | 51355 | 51545 | 56 N |
| 54 N | 50576 | 50346 | 50151 | 49991 | 49866 | 49777 | 49724 | 49707 | 49725 | 49777 | 49863 | 49981 | 50131 | 50311 | 50520 | 54 N |
| 52 N | 49423 | 49187 | 48987 | 48825 | 48700 | 48614 | 48565 | 48554 | 48579 | 48641 | 48738 | 48869 | 49033 | 49229 | 49454 | 52 N |
| 50 N | 48239 | 47998 | 47796 | 47634 | 47511 | 47428 | 47384 | 47379 | 47413 | 47484 | 47591 | 47734 | 47911 | 48120 | 48360 | 50 N |
| 48 N | 47037 | 46795 | 46593 | 46432 | 46312 | 46233 | 46195 | 46197 | 46238 | 46318 | 46436 | 46589 | 46777 | 46997 | 47250 | 48 N |
| 46 N | 45831 | 45589 | 45390 | 45232 | 45117 | 45043 | 45012 | 45021 | 45070 | 45158 | 45284 | 45446 | 45644 | 45874 | 46136 | 46 N |
| 44 N | 44634 | 44396 | 44201 | 44049 | 43939 | 43872 | 43847 | 43864 | 43920 | 44016 | 44149 | 44319 | 44524 | 44762 | 45031 | 44 N |
| 42 N | 43460 | 43228 | 43039 | 42893 | 42791 | 42731 | 42714 | 42737 | 42801 | 42903 | 43043 | 43218 | 43428 | 43671 | 43945 | 42 N |
| 40 N | 42321 | 42096 | 41915 | 41778 | 41683 | 41631 | 41621 | 41651 | 41721 | 41829 | 41974 | 42153 | 42367 | 42612 | 42887 | 40 N |
| 38 N | 41226 | 41011 | 40839 | 40711 | 40625 | 40582 | 40579 | 40616 | 40691 | 40804 | 40952 | 41133 | 41348 | 41593 | 41867 | 38 N |
| 36 N | 40185 | 39981 | 39821 | 39702 | 39626 | 39590 | 39595 | 39638 | 39718 | 39833 | 39983 | 40165 | 40379 | 40621 | 40892 | 36 N |
| 34 N | 39206 | 39015 | 38866 | 38758 | 38691 | 38664 | 38675 | 38723 | 38807 | 38924 | 39074 | 39255 | 39465 | 39702 | 39966 | 34 N |
| 32 N | 38296 | 38118 | 37981 | 37884 | 37826 | 37806 | 37824 | 37876 | 37962 | 38080 | 38228 | 38406 | 38610 | 38841 | 39095 | 32 N |
| 30 N | 37460 | 37295 | 37170 | 37084 | 37035 | 37022 | 37044 | 37100 | 37187 | 37304 | 37449 | 37621 | 37818 | 38038 | 38282 | 30 N |
| 28 N | 36703 | 36552 | 36438 | 36361 | 36320 | 36313 | 36339 | 36396 | 36482 | 36597 | 36737 | 36901 | 37089 | 37298 | 37527 | 28 N |
| 26 N | 36030 | 35890 | 35786 | 35718 | 35683 | 35681 | 35709 | 35766 | 35850 | 35960 | 36093 | 36248 | 36424 | 36619 | 36833 | 26 N |
| 24 N | 35442 | 35313 | 35218 | 35157 | 35127 | 35127 | 35155 | 35210 | 35290 | 35393 | 35517 | 35661 | 35824 | 36003 | 36199 | 24 N |
| 22 N | 34944 | 34824 | 34736 | 34679 | 34651 | 34652 | 34678 | 34729 | 34803 | 34897 | 35010 | 35141 | 35288 | 35450 | 35626 | 22 N |
| 20 N | 34537 | 34424 | 34341 | 34286 | 34258 | 34257 | 34279 | 34323 | 34388 | 34472 | 34572 | 34687 | 34817 | 34960 | 35115 | 20 N |
| 18 N | 34226 | 34117 | 34035 | 33980 | 33950 | 33943 | 33959 | 33994 | 34048 | 34118 | 34203 | 34301 | 34412 | 34533 | 34666 | 18 N |
| 16 N | 34013 | 33906 | 33823 | 33764 | 33728 | 33714 | 33719 | 33743 | 33783 | 33837 | 33905 | 33984 | 34073 | 34173 | 34281 | 16 N |
| 14 N | 33903 | 33793 | 33706 | 33641 | 33596 | 33571 | 33564 | 33573 | 33596 | 33633 | 33680 | 33738 | 33805 | 33880 | 33962 | 14 N |
| 12 N | 33898 | 33783 | 33689 | 33614 | 33558 | 33519 | 33496 | 33487 | 33492 | 33507 | 33533 | 33568 | 33610 | 33660 | 33715 | 12 N |
| 10 N | 34002 | 33880 | 33775 | 33687 | 33616 | 33560 | 33519 | 33490 | 33473 | 33466 | **33468** | **33477** | **33494** | **33516** | **33544** | **10 N** |
| 8 N | 34218 | 34085 | 33967 | 33864 | 33776 | 33700 | 33638 | 33587 | 33546 | 33514 | 33489 | 33472 | 33461 | 33455 | 33454 | 8 N |
| 6 N | 34548 | 34402 | 34268 | 34148 | 34039 | 33942 | 33857 | 33781 | 33714 | 33655 | 33603 | 33558 | 33517 | 33482 | 33451 | 6 N |
| 4 N | 34993 | 34832 | 34681 | 34540 | 34410 | 34290 | 34179 | 34076 | 33982 | 33895 | 33814 | 33739 | 33669 | 33603 | 33542 | 4 N |
| 2 N | 35552 | 35374 | 35204 | 35042 | 34889 | 34744 | 34606 | 34476 | 34353 | 34237 | 34126 | 34021 | 33920 | 33823 | 33731 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 36222 | 36026 | 35836 | 35653 | 35475 | 35305 | 35140 | 34982 | 34830 | 34683 | 34542 | 34406 | 34274 | 34146 | 34022 | 0 |
| 2 S | 36999 | 36785 | 36575 | 36369 | 36167 | 35971 | 35779 | 35593 | 35411 | 35235 | 35063 | 34895 | 34732 | 34573 | 34419 | 2 S |
| 4 S | 37876 | 37644 | 37413 | 37185 | 36960 | 36738 | 36519 | 36305 | 36095 | 35889 | 35687 | 35489 | 35295 | 35105 | 34919 | 4 S |
| 6 S | 38845 | 38595 | 38344 | 38095 | 37846 | 37600 | 37355 | 37114 | 36876 | 36641 | 36409 | 36182 | 35958 | 35738 | 35522 | 6 S |
| 8 S | 39896 | 39628 | 39358 | 39088 | 38817 | 38548 | 38279 | 38012 | 37747 | 37484 | 37225 | 36969 | 36716 | 36467 | 36222 | 8 S |
| 10 S | 41016 | 40732 | 40444 | 40155 | 39864 | 39572 | 39280 | 38989 | 38699 | 38411 | 38125 | 37842 | 37562 | 37286 | 37012 | 10 S |
| 12 S | 42195 | 41895 | 41591 | 41283 | 40973 | 40661 | 40348 | 40035 | 39722 | 39410 | 39100 | 38792 | 38486 | 38183 | 37884 | 12 S |
| 14 S | 43418 | 43104 | 42785 | 42461 | 42133 | 41803 | 41471 | 41137 | 40803 | 40470 | 40137 | 39806 | 39477 | 39150 | 38826 | 14 S |
| 16 S | 44674 | 44347 | 44013 | 43675 | 43332 | 42985 | 42635 | 42284 | 41932 | 41579 | 41226 | 40874 | 40524 | 40175 | 39829 | 16 S |
| 18 S | 45950 | 45611 | 45265 | 44913 | 44556 | 44195 | 43830 | 43463 | 43094 | 42724 | 42354 | 41984 | 41614 | 41246 | 40880 | 18 S |
| 20 S | 47234 | 46884 | 46527 | 46164 | 45795 | 45421 | 45044 | 44663 | 44280 | 43895 | 43509 | 43123 | 42737 | 42352 | 41968 | 20 S |
| 22 S | 48516 | 48157 | 47790 | 47417 | 47038 | 46653 | 46265 | 45873 | 45478 | 45080 | 44682 | 44282 | 43883 | 43483 | 43084 | 22 S |
| 24 S | 49786 | 49419 | 49044 | 48663 | 48275 | 47882 | 47484 | 47082 | 46678 | 46271 | 45862 | 45451 | 45040 | 44629 | 44219 | 24 S |
| 26 S | 51037 | 50663 | 50281 | 49893 | 49498 | 49098 | 48693 | 48285 | 47873 | 47458 | 47041 | 46623 | 46203 | 45783 | 45363 | 26 S |
| 28 S | 52262 | 51882 | 51495 | 51101 | 50702 | 50296 | 49887 | 49473 | 49056 | 48635 | 48213 | 47789 | 47364 | 46938 | 46512 | 28 S |
| 30 S | 53455 | 53072 | 52681 | 52284 | 51880 | 51472 | 51059 | 50642 | 50222 | 49799 | 49374 | 48946 | 48518 | 48089 | 47660 | 30 S |
| 32 S | 54614 | 54228 | 53835 | 53436 | 53031 | 52621 | 52207 | 51789 | 51368 | 50944 | 50518 | 50091 | 49662 | 49232 | 48802 | 32 S |
| 34 S | 55735 | 55349 | 54955 | 54556 | 54151 | 53742 | 53328 | 52912 | 52492 | 52070 | 51646 | 51220 | 50793 | 50366 | 49938 | 34 S |
| 36 S | 56818 | 56433 | 56041 | 55643 | 55240 | 54833 | 54423 | 54009 | 53593 | 53175 | 52755 | 52333 | 51911 | 51488 | 51064 | 36 S |
| 38 S | 57861 | 57479 | 57090 | 56696 | 56298 | 55895 | 55490 | 55081 | 54671 | 54258 | 53844 | 53429 | 53013 | 52597 | 52181 | 38 S |
| 40 S | 58865 | 58488 | 58105 | 57716 | 57324 | 56928 | 56529 | 56128 | 55725 | 55320 | 54914 | 54508 | 54100 | 53693 | 53285 | 40 S |
| 42 S | 59829 | 59459 | 59083 | 58703 | 58319 | 57931 | 57541 | 57149 | 56755 | 56360 | 55965 | 55568 | 55172 | 54775 | 54378 | 42 S |
| 44 S | 60753 | 60393 | 60027 | 59656 | 59282 | 58905 | 58526 | 58145 | 57762 | 57379 | 56995 | 56610 | 56225 | 55840 | 55455 | 44 S |
| 46 S | 61636 | 61287 | 60933 | 60575 | 60213 | 59848 | 59482 | 59113 | 58744 | 58373 | 58002 | 57631 | 57259 | 56888 | 56516 | 46 S |
| 48 S | 62477 | 62142 | 61802 | 61457 | 61109 | 60759 | 60407 | 60053 | 59697 | 59341 | 58985 | 58628 | 58270 | 57913 | 57555 | 48 S |
| 50 S | 63272 | 62953 | 62629 | 62300 | 61969 | 61634 | 61297 | 60959 | 60619 | 60279 | 59938 | 59596 | 59254 | 58911 | 58568 | 50 S |
| 52 S | 64017 | 63716 | 63410 | 63100 | 62785 | 62468 | 62149 | 61828 | 61505 | 61181 | 60856 | 60530 | 60203 | 59876 | 59547 | 52 S |
| 54 S | 64708 | 64427 | 64141 | 63849 | 63554 | 63256 | 62955 | 62651 | 62346 | 62039 | 61731 | 61422 | 61111 | 60799 | 60485 | 54 S |
| 56 S | 65338 | 65079 | 64813 | 64542 | 64267 | 63988 | 63707 | 63422 | 63135 | 62846 | 62555 | 62262 | 61968 | 61671 | 61372 | 56 S |
| 58 S | 65900 | 65662 | 65419 | 65169 | 64915 | 64657 | 64395 | 64130 | 63862 | 63591 | 63317 | 63041 | 62763 | 62482 | 62198 | 58 S |
| 60 S | 66384 | 66170 | 65949 | 65721 | 65489 | 65252 | 65010 | 64765 | 64515 | 64263 | 64007 | 63747 | 63485 | 63219 | 62949 | 60 S |
| 62 S | 66781 | 66590 | 66392 | 66187 | 65977 | 65761 | 65540 | 65314 | 65084 | 64849 | 64611 | 64368 | 64121 | 63871 | 63616 | 62 S |
| 64 S | 67082 | 66914 | 66739 | 66557 | 66368 | 66173 | 65972 | 65766 | 65555 | 65338 | 65117 | 64891 | 64660 | 64425 | 64184 | 64 S |
| 66 S | 67275 | 67131 | 66978 | 66817 | 66650 | 66476 | 66295 | 66108 | 65916 | 65718 | 65514 | 65304 | 65089 | 64869 | 64642 | 66 S |
| 68 S | 67352 | 67230 | 67099 | 66959 | 66813 | 66659 | 66498 | 66330 | 66156 | 65975 | 65789 | 65596 | 65396 | 65191 | 64979 | 68 S |
| 70 S | 67304 | 67202 | 67091 | 66973 | 66846 | 66711 | 66569 | 66420 | 66264 | 66101 | 65931 | 65754 | 65571 | 65381 | 65185 | 70 S |
| 72 S | 67122 | 67040 | 66948 | 66848 | 66740 | 66624 | 66500 | 66369 | 66230 | 66085 | 65932 | 65772 | 65605 | 65431 | 65250 | 72 S |
| 74 S | 66801 | 66736 | 66662 | 66579 | 66489 | 66390 | 66284 | 66170 | 66048 | 65919 | 65783 | 65640 | 65489 | 65332 | 65167 | 74 S |
| 76 S | 66336 | 66286 | 66227 | 66161 | 66086 | 66004 | 65914 | 65817 | 65712 | 65600 | 65481 | 65354 | 65221 | 65080 | 64933 | 76 S |
| 78 S | 65724 | 65687 | 65642 | 65590 | 65530 | 65463 | 65389 | 65307 | 65219 | 65123 | 65021 | 64912 | 64796 | 64673 | 64544 | 78 S |
| 80 S | 64965 | 64939 | 64907 | 64867 | 64821 | 64767 | 64708 | 64641 | 64568 | 64489 | 64404 | 64312 | 64214 | 64111 | 64001 | 80 S |
| 82 S | 64062 | 64045 | 64023 | 63994 | 63959 | 63919 | 63873 | 63821 | 63764 | 63701 | 63632 | 63559 | 63480 | 63395 | 63306 | 82 S |
| 84 S | 63020 | 63010 | 62996 | 62976 | 62952 | 62923 | 62890 | 62852 | 62810 | 62763 | 62712 | 62656 | 62596 | 62532 | 62464 | 84 S |
| 86 S | 61846 | 61841 | 61833 | 61821 | 61806 | 61788 | 61767 | 61742 | 61714 | 61683 | 61649 | 61612 | 61572 | 61529 | 61483 | 86 S |
| 88 S | 60550 | 60548 | 60545 | 60539 | 60532 | 60524 | 60514 | 60502 | 60488 | 60473 | 60456 | 60437 | 60417 | 60395 | 60372 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 57639 | 57639 | 57642 | 57646 | 57652 | 57660 | 57669 | 57681 | 57694 | 57709 | 57726 | 57744 | 57764 | 57786 | 57809 | LAT. |
| E.LONG. | 166 | 168 | 170 | 172 | 174 | 176 | 178 | 180 | 182 | 184 | 186 | 188 | 190 | 192 | 194 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 190 | 192 | 194 | 196 | 198 | 200 | 202 | 204 | 206 | 208 | 210 | 212 | 214 | 216 | 218 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56008 | 56015 | 56023 | 56031 | 56040 | 56049 | 56059 | 56069 | 56080 | 56091 | 56103 | 56115 | 56128 | 56141 | 56155 | LAT. |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56763 | 56757 | 56751 | 56745 | 56739 | 56732 | 56725 | 56717 | 56709 | 56701 | 56693 | 56685 | 56676 | 56667 | 56658 | 88 N |
| 86 N | 57069 | 57059 | 57049 | 57038 | 57028 | 57017 | 57006 | 56995 | 56983 | 56971 | 56958 | 56946 | 56933 | 56919 | 56905 | 86 N |
| 84 N | 57313 | 57301 | 57289 | 57277 | 57266 | 57254 | 57243 | 57231 | 57219 | 57208 | 57196 | 57183 | 57171 | 57158 | 57145 | 84 N |
| 82 N | 57486 | 57474 | 57463 | 57453 | 57444 | 57435 | 57427 | 57419 | 57412 | 57405 | 57398 | 57391 | 57384 | 57377 | 57369 | 82 N |
| 80 N | 57580 | 57570 | 57563 | 57557 | 57553 | 57551 | 57550 | 57550 | 57552 | 57554 | 57557 | 57561 | 57565 | 57569 | 57572 | 80 N |
| 78 N | 57586 | 57581 | 57580 | 57582 | 57587 | 57594 | 57605 | 57617 | 57632 | 57648 | 57666 | 57685 | 57704 | 57725 | 57745 | 78 N |
| 76 N | 57497 | 57500 | 57507 | 57520 | 57537 | 57558 | 57584 | 57612 | 57644 | 57679 | 57716 | 57755 | 57795 | 57836 | 57878 | 76 N |
| 74 N | 57308 | 57321 | 57340 | 57366 | 57399 | 57437 | 57481 | 57530 | 57583 | 57640 | 57700 | 57763 | 57828 | 57895 | 57962 | 74 N |
| 72 N | 57016 | 57041 | 57074 | 57117 | 57167 | 57226 | 57291 | 57363 | 57441 | 57524 | 57611 | 57702 | 57795 | 57891 | 57988 | 72 N |
| 70 N | 56620 | 56658 | 56708 | 56769 | 56840 | 56921 | 57011 | 57109 | 57214 | 57325 | 57442 | 57564 | 57690 | 57818 | 57948 | 70 N |
| 68 N | 56119 | 56173 | 56241 | 56322 | 56416 | 56521 | 56637 | 56763 | 56898 | 57041 | 57190 | 57345 | 57505 | 57667 | 57832 | 68 N |
| 66 N | 55516 | 55587 | 55675 | 55778 | 55895 | 56027 | 56171 | 56326 | 56492 | 56667 | 56851 | 57040 | 57235 | 57435 | 57636 | 66 N |
| 64 N | 54815 | 54905 | 55013 | 55139 | 55281 | 55439 | 55612 | 55798 | 55996 | 56205 | 56422 | 56647 | 56879 | 57115 | 57355 | 64 N |
| 62 N | 54024 | 54132 | 54261 | 54410 | 54578 | 54763 | 54965 | 55181 | 55411 | 55653 | 55905 | 56166 | 56434 | 56707 | 56984 | 62 N |
| 60 N | 53149 | 53276 | 53426 | 53598 | 53791 | 54003 | 54233 | 54480 | 54741 | 55016 | 55301 | 55597 | 55900 | 56209 | 56523 | 60 N |
| 58 N | 52201 | 52347 | 52517 | 52712 | 52929 | 53167 | 53425 | 53700 | 53991 | 54297 | 54615 | 54943 | 55280 | 55624 | 55973 | 58 N |
| 56 N | 51191 | 51355 | 51545 | 51761 | 52001 | 52263 | 52546 | 52849 | 53168 | 53503 | 53851 | 54210 | 54579 | 54955 | 55336 | 56 N |
| 54 N | 50131 | 50311 | 50520 | 50755 | 51016 | 51301 | 51608 | 51935 | 52280 | 52641 | 53016 | 53403 | 53801 | 54206 | 54617 | 54 N |
| 52 N | 49033 | 49229 | 49454 | 49707 | 49987 | 50292 | 50619 | 50968 | 51335 | 51720 | 52119 | 52531 | 52954 | 53385 | 53822 | 52 N |
| 50 N | 47911 | 48120 | 48360 | 48628 | 48925 | 49247 | 49592 | 49959 | 50345 | 50750 | 51169 | 51602 | 52046 | 52499 | 52958 | 50 N |
| 48 N | 46777 | 46997 | 47250 | 47531 | 47841 | 48177 | 48537 | 48918 | 49320 | 49740 | 50176 | 50626 | 51087 | 51557 | 52035 | 48 N |
| 46 N | 45644 | 45874 | 46136 | 46428 | 46748 | 47094 | 47465 | 47858 | 48271 | 48703 | 49150 | 49612 | 50086 | 50569 | 51060 | 46 N |
| 44 N | 44524 | 44762 | 45031 | 45330 | 45657 | 46010 | 46388 | 46788 | 47208 | 47647 | 48102 | 48572 | 49053 | 49545 | 50045 | 44 N |
| 42 N | 43428 | 43671 | 43945 | 44248 | 44579 | 44935 | 45316 | 45719 | 46142 | 46584 | 47042 | 47515 | 48000 | 48495 | 48998 | 42 N |
| 40 N | 42367 | 42612 | 42887 | 43191 | 43522 | 43879 | 44259 | 44661 | 45083 | 45523 | 45980 | 46451 | 46934 | 47428 | 47931 | 40 N |
| 38 N | 41348 | 41593 | 41867 | 42169 | 42497 | 42850 | 43226 | 43623 | 44039 | 44474 | 44924 | 45389 | 45867 | 46355 | 46851 | 38 N |
| 36 N | 40379 | 40621 | 40892 | 41189 | 41511 | 41856 | 42223 | 42611 | 43019 | 43443 | 43883 | 44338 | 44805 | 45282 | 45769 | 36 N |
| 34 N | 39465 | 39702 | 39966 | 40255 | 40568 | 40903 | 41258 | 41634 | 42028 | 42438 | 42865 | 43305 | 43757 | 44220 | 44691 | 34 N |
| 32 N | 38610 | 38841 | 39095 | 39374 | 39674 | 39995 | 40336 | 40695 | 41072 | 41466 | 41874 | 42295 | 42729 | 43173 | 43626 | 32 N |
| 30 N | 37818 | 38038 | 38282 | 38547 | 38832 | 39136 | 39459 | 39800 | 40157 | 40529 | 40916 | 41316 | 41728 | 42150 | 42581 | 30 N |
| 28 N | 37089 | 37298 | 37527 | 37776 | 38044 | 38330 | 38632 | 38951 | 39285 | 39634 | 39996 | 40371 | 40758 | 41154 | 41560 | 28 N |
| 26 N | 36424 | 36619 | 36833 | 37064 | 37312 | 37576 | 37856 | 38150 | 38459 | 38782 | 39117 | 39465 | 39824 | 40192 | 40570 | 26 N |
| 24 N | 35824 | 36003 | 36199 | 36411 | 36637 | 36878 | 37132 | 37401 | 37682 | 37976 | 38283 | 38601 | 38929 | 39268 | 39615 | 24 N |
| 22 N | 35288 | 35450 | 35626 | 35816 | 36019 | 36235 | 36463 | 36703 | 36955 | 37220 | 37495 | 37782 | 38079 | 38385 | 38700 | 22 N |
| 20 N | 34817 | 34960 | 35115 | 35282 | 35459 | 35649 | 35849 | 36060 | 36282 | 36515 | 36758 | 37012 | 37276 | 37549 | 37831 | 20 N |
| 18 N | 34412 | 34533 | 34666 | 34808 | 34960 | 35121 | 35292 | 35473 | 35664 | 35864 | 36075 | 36295 | 36525 | 36764 | 37011 | 18 N |
| 16 N | 34073 | 34173 | 34281 | 34397 | 34522 | 34654 | 34796 | 34946 | 35104 | 35272 | 35449 | 35636 | 35831 | 36035 | 36247 | 16 N |
| 14 N | 33805 | 33880 | 33962 | 34052 | 34148 | 34252 | 34363 | 34481 | 34608 | 34743 | 34886 | 35038 | 35199 | 35368 | 35545 | 14 N |
| 12 N | 33610 | 33660 | 33715 | 33777 | 33844 | 33918 | 33998 | 34085 | 34179 | 34281 | 34390 | 34508 | 34634 | 34768 | 34910 | 12 N |
| 10 N | 33494 | 33516 | 33544 | 33577 | 33615 | 33658 | 33707 | 33762 | 33824 | 33892 | 33968 | 34052 | 34143 | 34242 | 34349 | 10 N |
| 8 N | 33461 | 33455 | 33454 | 33457 | 33465 | 33478 | 33495 | 33519 | 33548 | 33584 | 33626 | 33676 | 33733 | 33797 | 33869 | 8 N |
| 6 N | 33517 | 33482 | 33451 | 33424 | 33402 | 33383 | 33370 | 33361 | 33358 | 33361 | 33371 | 33387 | 33410 | 33441 | 33478 | 6 N |
| 4 N | 33669 | 33603 | 33542 | 33484 | 33431 | 33381 | 33336 | 33296 | 33261 | 33232 | 33209 | 33192 | 33182 | 33178 | 33182 | 4 N |
| 2 N | 33920 | 33823 | 33731 | 33642 | 33558 | 33477 | 33401 | 33329 | 33262 | 33201 | 33145 | 33096 | 33053 | 33016 | 32986 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 34274 | 34146 | 34022 | 33903 | 33787 | 33675 | 33567 | 33464 | 33366 | 33273 | 33185 | 33104 | 33028 | 32958 | 32895 | 0 |
| 2 S | 34732 | 34573 | 34419 | 34268 | 34121 | 33978 | 33839 | 33705 | 33576 | 33451 | 33332 | 33218 | 33110 | 33008 | 32912 | 2 S |
| 4 S | 35295 | 35105 | 34919 | 34738 | 34560 | 34386 | 34217 | 34052 | 33891 | 33736 | 33585 | 33440 | 33301 | 33167 | 33039 | 4 S |
| 6 S | 35958 | 35738 | 35522 | 35310 | 35102 | 34898 | 34699 | 34503 | 34313 | 34127 | 33945 | 33769 | 33599 | 33433 | 33274 | 6 S |
| 8 S | 36716 | 36467 | 36222 | 35981 | 35743 | 35510 | 35281 | 35056 | 34836 | 34620 | 34409 | 34202 | 34001 | 33806 | 33615 | 8 S |
| 10 S | 37562 | 37286 | 37012 | 36743 | 36477 | 36216 | 35958 | 35704 | 35455 | 35210 | 34970 | 34735 | 34504 | 34279 | 34059 | 10 S |
| 12 S | 38486 | 38183 | 37884 | 37588 | 37295 | 37006 | 36721 | 36440 | 36164 | 35891 | 35623 | 35359 | 35101 | 34847 | 34599 | 12 S |
| 14 S | 39477 | 39150 | 38826 | 38505 | 38188 | 37873 | 37563 | 37256 | 36953 | 36654 | 36359 | 36069 | 35784 | 35504 | 35229 | 14 S |
| 16 S | 40524 | 40175 | 39829 | 39485 | 39144 | 38806 | 38472 | 38141 | 37814 | 37490 | 37171 | 36856 | 36546 | 36241 | 35941 | 16 S |
| 18 S | 41614 | 41246 | 40880 | 40515 | 40154 | 39795 | 39439 | 39086 | 38736 | 38391 | 38049 | 37712 | 37379 | 37051 | 36728 | 18 S |
| 20 S | 42737 | 42352 | 41968 | 41586 | 41206 | 40828 | 40453 | 40081 | 39712 | 39346 | 38984 | 38627 | 38274 | 37926 | 37583 | 20 S |
| 22 S | 43883 | 43483 | 43084 | 42687 | 42291 | 41897 | 41506 | 41117 | 40731 | 40348 | 39969 | 39594 | 39224 | 38858 | 38497 | 22 S |
| 24 S | 45040 | 44629 | 44219 | 43809 | 43400 | 42993 | 42588 | 42185 | 41786 | 41389 | 40995 | 40606 | 40220 | 39840 | 39463 | 24 S |
| 26 S | 46203 | 45783 | 45363 | 44944 | 44526 | 44108 | 43693 | 43280 | 42869 | 42461 | 42056 | 41655 | 41258 | 40865 | 40476 | 26 S |
| 28 S | 47364 | 46938 | 46512 | 46086 | 45661 | 45237 | 44814 | 44393 | 43975 | 43559 | 43146 | 42736 | 42330 | 41928 | 41530 | 28 S |
| 30 S | 48518 | 48089 | 47660 | 47230 | 46801 | 46373 | 45946 | 45521 | 45098 | 44677 | 44259 | 43844 | 43432 | 43024 | 42619 | 30 S |
| 32 S | 49662 | 49232 | 48802 | 48372 | 47943 | 47514 | 47086 | 46659 | 46235 | 45812 | 45392 | 44974 | 44559 | 44147 | 43737 | 32 S |
| 34 S | 50793 | 50366 | 49938 | 49510 | 49082 | 48655 | 48229 | 47804 | 47381 | 46959 | 46539 | 46122 | 45706 | 45293 | 44881 | 34 S |
| 36 S | 51911 | 51488 | 51064 | 50641 | 50218 | 49795 | 49374 | 48953 | 48533 | 48115 | 47698 | 47283 | 46869 | 46457 | 46045 | 36 S |
| 38 S | 53013 | 52597 | 52181 | 51764 | 51348 | 50932 | 50517 | 50103 | 49689 | 49277 | 48865 | 48454 | 48044 | 47634 | 47224 | 38 S |
| 40 S | 54100 | 53693 | 53285 | 52878 | 52471 | 52064 | 51657 | 51251 | 50846 | 50440 | 50036 | 49631 | 49226 | 48820 | 48414 | 40 S |
| 42 S | 55172 | 54775 | 54378 | 53981 | 53584 | 53188 | 52791 | 52395 | 51999 | 51603 | 51206 | 50808 | 50410 | 50010 | 49607 | 42 S |
| 44 S | 56225 | 55840 | 55455 | 55071 | 54686 | 54301 | 53916 | 53531 | 53145 | 52758 | 52371 | 51982 | 51590 | 51196 | 50799 | 44 S |
| 46 S | 57259 | 56888 | 56516 | 56144 | 55772 | 55400 | 55027 | 54653 | 54279 | 53903 | 53525 | 53144 | 52761 | 52374 | 51982 | 46 S |
| 48 S | 58270 | 57913 | 57555 | 57197 | 56839 | 56479 | 56119 | 55758 | 55394 | 55029 | 54661 | 54290 | 53914 | 53534 | 53149 | 48 S |
| 50 S | 59254 | 58911 | 58568 | 58224 | 57879 | 57533 | 57186 | 56836 | 56485 | 56130 | 55772 | 55410 | 55042 | 54670 | 54290 | 50 S |
| 52 S | 60203 | 59876 | 59547 | 59218 | 58887 | 58554 | 58219 | 57882 | 57542 | 57198 | 56849 | 56496 | 56137 | 55771 | 55398 | 52 S |
| 54 S | 61111 | 60799 | 60485 | 60170 | 59853 | 59533 | 59211 | 58886 | 58556 | 58223 | 57884 | 57539 | 57188 | 56830 | 56463 | 54 S |
| 56 S | 61968 | 61671 | 61372 | 61071 | 60768 | 60461 | 60151 | 59837 | 59518 | 59194 | 58865 | 58529 | 58186 | 57835 | 57475 | 56 S |
| 58 S | 62763 | 62482 | 62198 | 61910 | 61620 | 61326 | 61028 | 60725 | 60417 | 60103 | 59783 | 59455 | 59120 | 58776 | 58424 | 58 S |
| 60 S | 63485 | 63219 | 62949 | 62676 | 62399 | 62117 | 61830 | 61538 | 61241 | 60937 | 60626 | 60307 | 59980 | 59644 | 59299 | 60 S |
| 62 S | 64121 | 63871 | 63616 | 63356 | 63092 | 62822 | 62547 | 62266 | 61979 | 61685 | 61383 | 61074 | 60756 | 60429 | 60092 | 62 S |
| 64 S | 64660 | 64425 | 64184 | 63938 | 63687 | 63429 | 63166 | 62896 | 62620 | 62336 | 62045 | 61745 | 61437 | 61119 | 60792 | 64 S |
| 66 S | 65089 | 64869 | 64642 | 64410 | 64172 | 63927 | 63676 | 63418 | 63153 | 62881 | 62600 | 62311 | 62014 | 61707 | 61391 | 66 S |
| 68 S | 65396 | 65191 | 64979 | 64761 | 64537 | 64305 | 64067 | 63822 | 63569 | 63309 | 63040 | 62764 | 62478 | 62184 | 61881 | 68 S |
| 70 S | 65571 | 65381 | 65185 | 64981 | 64771 | 64554 | 64329 | 64098 | 63858 | 63612 | 63357 | 63094 | 62823 | 62544 | 62255 | 70 S |
| 72 S | 65605 | 65431 | 65250 | 65062 | 64867 | 64664 | 64455 | 64238 | 64014 | 63783 | 63544 | 63297 | 63042 | 62779 | 62508 | 72 S |
| 74 S | 65489 | 65332 | 65167 | 64996 | 64817 | 64631 | 64438 | 64238 | 64031 | 63817 | 63595 | 63366 | 63130 | 62886 | 62635 | 74 S |
| 76 S | 65221 | 65080 | 64933 | 64779 | 64618 | 64450 | 64275 | 64094 | 63905 | 63710 | 63508 | 63300 | 63085 | 62863 | 62634 | 76 S |
| 78 S | 64796 | 64673 | 64544 | 64409 | 64266 | 64118 | 63963 | 63802 | 63635 | 63462 | 63282 | 63096 | 62905 | 62707 | 62504 | 78 S |
| 80 S | 64214 | 64111 | 64001 | 63885 | 63764 | 63636 | 63503 | 63365 | 63221 | 63071 | 62916 | 62756 | 62591 | 62420 | 62245 | 80 S |
| 82 S | 63480 | 63395 | 63306 | 63211 | 63112 | 63007 | 62898 | 62784 | 62665 | 62541 | 62414 | 62281 | 62145 | 62004 | 61859 | 82 S |
| 84 S | 62596 | 62532 | 62464 | 62392 | 62315 | 62235 | 62151 | 62063 | 61972 | 61877 | 61778 | 61676 | 61571 | 61462 | 61350 | 84 S |
| 86 S | 61572 | 61529 | 61483 | 61434 | 61382 | 61328 | 61271 | 61211 | 61148 | 61083 | 61016 | 60946 | 60874 | 60800 | 60724 | 86 S |
| 88 S | 60417 | 60395 | 60372 | 60347 | 60321 | 60293 | 60264 | 60234 | 60202 | 60169 | 60135 | 60099 | 60062 | 60024 | 59985 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 57764 | 57786 | 57809 | 57834 | 57860 | 57888 | 57918 | 57949 | 57982 | 58016 | 58051 | 58088 | 58125 | 58164 | 58205 | LAT. |
| E.LONG. | 190 | 192 | 194 | 196 | 198 | 200 | 202 | 204 | 206 | 208 | 210 | 212 | 214 | 216 | 218 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 214 | 216 | 218 | 220 | 222 | 224 | 226 | 228 | 230 | 232 | 234 | 236 | 238 | 240 | 242 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56128 | 56141 | 56155 | 56168 | 56183 | 56197 | 56212 | 56227 | 56242 | 56258 | 56273 | 56289 | 56305 | 56321 | 56337 | LAT. |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56676 | 56667 | 56658 | 56648 | 56638 | 56628 | 56618 | 56608 | 56597 | 56586 | 56575 | 56563 | 56552 | 56540 | 56528 | 88 N |
| 86 N | 56933 | 56919 | 56905 | 56891 | 56876 | 56861 | 56846 | 56830 | 56813 | 56796 | 56779 | 56760 | 56742 | 56723 | 56703 | 86 N |
| 84 N | 57171 | 57158 | 57145 | 57131 | 57117 | 57102 | 57086 | 57070 | 57053 | 57035 | 57016 | 56996 | 56976 | 56954 | 56931 | 84 N |
| 82 N | 57384 | 57377 | 57369 | 57362 | 57353 | 57344 | 57334 | 57323 | 57311 | 57297 | 57282 | 57266 | 57248 | 57228 | 57207 | 82 N |
| 80 N | 57565 | 57569 | 57572 | 57576 | 57579 | 57581 | 57581 | 57581 | 57579 | 57575 | 57570 | 57562 | 57552 | 57539 | 57524 | 80 N |
| 78 N | 57704 | 57725 | 57745 | 57765 | 57784 | 57803 | 57820 | 57835 | 57849 | 57860 | 57869 | 57874 | 57877 | 57876 | 57871 | 78 N |
| 76 N | 57795 | 57836 | 57878 | 57919 | 57960 | 58000 | 58039 | 58075 | 58109 | 58140 | 58168 | 58191 | 58211 | 58226 | 58236 | 76 N |
| 74 N | 57828 | 57895 | 57962 | 58030 | 58097 | 58163 | 58227 | 58289 | 58347 | 58403 | 58453 | 58500 | 58540 | 58575 | 58604 | 74 N |
| 72 N | 57795 | 57891 | 57988 | 58086 | 58183 | 58279 | 58372 | 58464 | 58551 | 58634 | 58712 | 58785 | 58851 | 58909 | 58960 | 72 N |
| 70 N | 57690 | 57818 | 57948 | 58078 | 58208 | 58338 | 58464 | 58588 | 58708 | 58822 | 58931 | 59032 | 59126 | 59212 | 59288 | 70 N |
| 68 N | 57505 | 57667 | 57832 | 57999 | 58165 | 58329 | 58492 | 58651 | 58805 | 58953 | 59095 | 59228 | 59353 | 59468 | 59573 | 68 N |
| 66 N | 57235 | 57435 | 57636 | 57840 | 58043 | 58245 | 58445 | 58640 | 58831 | 59015 | 59191 | 59359 | 59517 | 59664 | 59798 | 66 N |
| 64 N | 56879 | 57115 | 57355 | 57596 | 57838 | 58078 | 58315 | 58549 | 58777 | 58998 | 59210 | 59413 | 59605 | 59785 | 59951 | 64 N |
| 62 N | 56434 | 56707 | 56984 | 57263 | 57543 | 57821 | 58097 | 58369 | 58634 | 58892 | 59141 | 59380 | 59606 | 59820 | 60019 | 62 N |
| 60 N | 55900 | 56209 | 56523 | 56839 | 57156 | 57473 | 57786 | 58095 | 58397 | 58692 | 58977 | 59251 | 59513 | 59760 | 59991 | 60 N |
| 58 N | 55280 | 55624 | 55973 | 56325 | 56678 | 57029 | 57379 | 57724 | 58062 | 58392 | 58712 | 59021 | 59317 | 59597 | 59861 | 58 N |
| 56 N | 54579 | 54955 | 55336 | 55721 | 56107 | 56493 | 56876 | 57255 | 57627 | 57991 | 58344 | 58686 | 59014 | 59327 | 59623 | 56 N |
| 54 N | 53801 | 54206 | 54617 | 55032 | 55449 | 55865 | 56280 | 56689 | 57093 | 57488 | 57873 | 58245 | 58604 | 58947 | 59273 | 54 N |
| 52 N | 52954 | 53385 | 53822 | 54264 | 54708 | 55151 | 55593 | 56031 | 56462 | 56885 | 57298 | 57699 | 58086 | 58457 | 58810 | 52 N |
| 50 N | 52046 | 52499 | 52958 | 53423 | 53890 | 54357 | 54822 | 55284 | 55740 | 56187 | 56625 | 57051 | 57463 | 57859 | 58237 | 50 N |
| 48 N | 51087 | 51557 | 52035 | 52518 | 53003 | 53489 | 53974 | 54456 | 54932 | 55400 | 55858 | 56305 | 56739 | 57157 | 57557 | 48 N |
| 46 N | 50086 | 50569 | 51060 | 51557 | 52057 | 52557 | 53057 | 53554 | 54045 | 54530 | 55005 | 55469 | 55920 | 56356 | 56776 | 46 N |
| 44 N | 49053 | 49545 | 50045 | 50550 | 51059 | 51570 | 52080 | 52587 | 53090 | 53586 | 54073 | 54550 | 55015 | 55465 | 55900 | 44 N |
| 42 N | 48000 | 48495 | 48998 | 49508 | 50021 | 50537 | 51052 | 51565 | 52074 | 52577 | 53072 | 53557 | 54031 | 54492 | 54937 | 42 N |
| 40 N | 46934 | 47428 | 47931 | 48439 | 48952 | 49468 | 49984 | 50498 | 51008 | 51513 | 52011 | 52500 | 52979 | 53445 | 53897 | 40 N |
| 38 N | 45867 | 46355 | 46851 | 47354 | 47862 | 48373 | 48884 | 49394 | 49902 | 50404 | 50901 | 51389 | 51868 | 52335 | 52790 | 38 N |
| 36 N | 44805 | 45282 | 45769 | 46262 | 46760 | 47261 | 47763 | 48265 | 48765 | 49261 | 49751 | 50234 | 50708 | 51173 | 51626 | 36 N |
| 34 N | 43757 | 44220 | 44691 | 45170 | 45654 | 46141 | 46630 | 47119 | 47607 | 48092 | 48571 | 49045 | 49511 | 49969 | 50416 | 34 N |
| 32 N | 42729 | 43173 | 43626 | 44087 | 44552 | 45022 | 45494 | 45966 | 46438 | 46907 | 47372 | 47833 | 48287 | 48733 | 49171 | 32 N |
| 30 N | 41728 | 42150 | 42581 | 43019 | 43463 | 43911 | 44362 | 44814 | 45266 | 45716 | 46163 | 46606 | 47045 | 47476 | 47901 | 30 N |
| 28 N | 40758 | 41154 | 41560 | 41973 | 42392 | 42816 | 43242 | 43671 | 44099 | 44527 | 44953 | 45376 | 45795 | 46209 | 46617 | 28 N |
| 26 N | 39824 | 40192 | 40570 | 40955 | 41346 | 41742 | 42142 | 42544 | 42947 | 43350 | 43751 | 44151 | 44548 | 44941 | 45330 | 26 N |
| 24 N | 38929 | 39268 | 39615 | 39970 | 40331 | 40698 | 41068 | 41441 | 41816 | 42191 | 42566 | 42940 | 43312 | 43682 | 44049 | 24 N |
| 22 N | 38079 | 38385 | 38700 | 39023 | 39353 | 39687 | 40027 | 40369 | 40714 | 41059 | 41406 | 41752 | 42098 | 42442 | 42785 | 22 N |
| 20 N | 37276 | 37549 | 37831 | 38120 | 38416 | 38718 | 39025 | 39335 | 39648 | 39963 | 40279 | 40596 | 40913 | 41230 | 41546 | 20 N |
| 18 N | 36525 | 36764 | 37011 | 37266 | 37528 | 37796 | 38069 | 38346 | 38626 | 38908 | 39193 | 39479 | 39767 | 40055 | 40344 | 18 N |
| 16 N | 35831 | 36035 | 36247 | 36467 | 36694 | 36927 | 37166 | 37408 | 37655 | 37905 | 38157 | 38412 | 38668 | 38927 | 39186 | 16 N |
| 14 N | 35199 | 35368 | 35545 | 35729 | 35921 | 36119 | 36322 | 36531 | 36743 | 36959 | 37179 | 37401 | 37626 | 37854 | 38084 | 14 N |
| 12 N | 34634 | 34768 | 34910 | 35059 | 35215 | 35378 | 35546 | 35720 | 35898 | 36080 | 36267 | 36456 | 36649 | 36845 | 37045 | 12 N |
| 10 N | 34143 | 34242 | 34349 | 34463 | 34584 | 34711 | 34845 | 34984 | 35128 | 35276 | 35429 | 35585 | 35746 | 35910 | 36079 | 10 N |
| 8 N | 33733 | 33797 | 33869 | 33948 | 34034 | 34127 | 34225 | 34330 | 34439 | 34554 | 34673 | 34797 | 34925 | 35057 | 35194 | 8 N |
| 6 N | 33410 | 33441 | 33478 | 33523 | 33574 | 33632 | 33696 | 33765 | 33841 | 33922 | 34007 | 34098 | 34193 | 34293 | 34398 | 6 N |
| 4 N | 33182 | 33178 | 33182 | 33192 | 33209 | 33232 | 33262 | 33298 | 33339 | 33386 | 33439 | 33496 | 33559 | 33627 | 33700 | 4 N |
| 2 N | 33053 | 33016 | 32986 | 32962 | 32945 | 32935 | 32930 | 32932 | 32940 | 32954 | 32973 | 32998 | 33029 | 33064 | 33106 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 33028 | 32958 | 32895 | 32838 | 32787 | 32743 | 32706 | 32674 | 32649 | 32629 | 32616 | 32609 | 32607 | 32611 | 32620 | 0 |
| 2 S | 33110 | 33008 | 32912 | 32822 | 32739 | 32662 | 32591 | 32526 | 32468 | 32417 | 32371 | 32331 | 32298 | 32270 | 32248 | 2 S |
| 4 S | 33301 | 33167 | 33039 | 32916 | 32801 | 32691 | 32588 | 32491 | 32401 | 32317 | 32240 | 32168 | 32103 | 32044 | 31990 | 4 S |
| 6 S | 33599 | 33433 | 33274 | 33120 | 32973 | 32831 | 32697 | 32568 | 32447 | 32331 | 32223 | 32121 | 32025 | 31934 | 31850 | 6 S |
| 8 S | 34001 | 33806 | 33615 | 33431 | 33253 | 33081 | 32915 | 32756 | 32604 | 32458 | 32319 | 32187 | 32060 | 31940 | 31825 | 8 S |
| 10 S | 34504 | 34279 | 34059 | 33845 | 33637 | 33435 | 33240 | 33051 | 32870 | 32695 | 32526 | 32364 | 32208 | 32058 | 31913 | 10 S |
| 12 S | 35101 | 34847 | 34599 | 34357 | 34120 | 33890 | 33667 | 33450 | 33240 | 33036 | 32840 | 32649 | 32465 | 32285 | 32111 | 12 S |
| 14 S | 35784 | 35504 | 35229 | 34960 | 34697 | 34440 | 34189 | 33946 | 33709 | 33478 | 33254 | 33037 | 32824 | 32617 | 32414 | 14 S |
| 16 S | 36546 | 36241 | 35941 | 35647 | 35359 | 35077 | 34802 | 34533 | 34270 | 34014 | 33765 | 33521 | 33282 | 33047 | 32816 | 16 S |
| 18 S | 37379 | 37051 | 36728 | 36411 | 36100 | 35795 | 35497 | 35204 | 34918 | 34639 | 34364 | 34096 | 33831 | 33570 | 33312 | 18 S |
| 20 S | 38274 | 37926 | 37583 | 37245 | 36913 | 36587 | 36268 | 35954 | 35646 | 35344 | 35047 | 34754 | 34465 | 34179 | 33894 | 20 S |
| 22 S | 39224 | 38858 | 38497 | 38141 | 37791 | 37446 | 37108 | 36774 | 36447 | 36124 | 35805 | 35491 | 35179 | 34868 | 34558 | 22 S |
| 24 S | 40220 | 39840 | 39463 | 39092 | 38726 | 38366 | 38010 | 37660 | 37314 | 36972 | 36634 | 36298 | 35964 | 35630 | 35295 | 24 S |
| 26 S | 41258 | 40865 | 40476 | 40093 | 39713 | 39339 | 38969 | 38603 | 38241 | 37882 | 37525 | 37170 | 36815 | 36459 | 36101 | 26 S |
| 28 S | 42330 | 41928 | 41530 | 41136 | 40746 | 40360 | 39977 | 39598 | 39222 | 38848 | 38474 | 38101 | 37726 | 37349 | 36968 | 28 S |
| 30 S | 43432 | 43024 | 42619 | 42217 | 41819 | 41423 | 41031 | 40640 | 40251 | 39863 | 39474 | 39084 | 38691 | 38294 | 37891 | 30 S |
| 32 S | 44559 | 44147 | 43737 | 43330 | 42926 | 42523 | 42123 | 41723 | 41323 | 40922 | 40519 | 40114 | 39703 | 39287 | 38864 | 32 S |
| 34 S | 45706 | 45293 | 44881 | 44471 | 44063 | 43655 | 43248 | 42840 | 42431 | 42019 | 41604 | 41184 | 40758 | 40324 | 39882 | 34 S |
| 36 S | 46869 | 46457 | 46045 | 45634 | 45223 | 44812 | 44400 | 43986 | 43569 | 43148 | 42722 | 42289 | 41848 | 41398 | 40938 | 36 S |
| 38 S | 48044 | 47634 | 47224 | 46814 | 46403 | 45990 | 45574 | 45155 | 44731 | 44302 | 43866 | 43422 | 42968 | 42504 | 42027 | 38 S |
| 40 S | 49226 | 48820 | 48414 | 48005 | 47595 | 47181 | 46763 | 46341 | 45912 | 45476 | 45031 | 44577 | 44111 | 43634 | 43143 | 40 S |
| 42 S | 50410 | 50010 | 49607 | 49202 | 48793 | 48380 | 47961 | 47536 | 47103 | 46661 | 46209 | 45746 | 45271 | 44783 | 44280 | 42 S |
| 44 S | 51590 | 51196 | 50799 | 50398 | 49992 | 49579 | 49161 | 48734 | 48298 | 47851 | 47394 | 46924 | 46441 | 45943 | 45430 | 44 S |
| 46 S | 52761 | 52374 | 51982 | 51585 | 51182 | 50772 | 50354 | 49926 | 49488 | 49039 | 48577 | 48102 | 47612 | 47107 | 46586 | 46 S |
| 48 S | 53914 | 53534 | 53149 | 52757 | 52357 | 51950 | 51533 | 51106 | 50667 | 50216 | 49751 | 49272 | 48778 | 48268 | 47742 | 48 S |
| 50 S | 55042 | 54670 | 54290 | 53903 | 53508 | 53104 | 52689 | 52263 | 51825 | 51373 | 50908 | 50427 | 49931 | 49418 | 48889 | 50 S |
| 52 S | 56137 | 55771 | 55398 | 55017 | 54626 | 54226 | 53814 | 53390 | 52953 | 52503 | 52038 | 51557 | 51061 | 50548 | 50019 | 52 S |
| 54 S | 57188 | 56830 | 56463 | 56087 | 55702 | 55305 | 54898 | 54477 | 54043 | 53595 | 53133 | 52655 | 52161 | 51651 | 51125 | 54 S |
| 56 S | 58186 | 57835 | 57475 | 57105 | 56725 | 56334 | 55931 | 55515 | 55086 | 54642 | 54184 | 53711 | 53222 | 52717 | 52197 | 56 S |
| 58 S | 59120 | 58776 | 58424 | 58061 | 57687 | 57302 | 56905 | 56495 | 56072 | 55634 | 55183 | 54717 | 54235 | 53739 | 53227 | 58 S |
| 60 S | 59980 | 59644 | 59299 | 58944 | 58578 | 58200 | 57810 | 57408 | 56992 | 56563 | 56121 | 55664 | 55193 | 54707 | 54208 | 60 S |
| 62 S | 60756 | 60429 | 60092 | 59745 | 59387 | 59018 | 58638 | 58245 | 57839 | 57421 | 56989 | 56544 | 56086 | 55615 | 55130 | 62 S |
| 64 S | 61437 | 61119 | 60792 | 60455 | 60107 | 59749 | 59379 | 58997 | 58604 | 58199 | 57781 | 57351 | 56908 | 56453 | 55987 | 64 S |
| 66 S | 62014 | 61707 | 61391 | 61066 | 60730 | 60383 | 60027 | 59659 | 59280 | 58890 | 58488 | 58075 | 57651 | 57217 | 56771 | 66 S |
| 68 S | 62478 | 62184 | 61881 | 61569 | 61247 | 60915 | 60574 | 60222 | 59860 | 59488 | 59105 | 58713 | 58310 | 57898 | 57476 | 68 S |
| 70 S | 62823 | 62544 | 62255 | 61959 | 61653 | 61338 | 61014 | 60681 | 60338 | 59987 | 59626 | 59257 | 58878 | 58491 | 58096 | 70 S |
| 72 S | 63042 | 62779 | 62508 | 62229 | 61942 | 61647 | 61343 | 61031 | 60711 | 60383 | 60047 | 59703 | 59351 | 58992 | 58626 | 72 S |
| 74 S | 63130 | 62886 | 62635 | 62377 | 62111 | 61838 | 61557 | 61270 | 60975 | 60673 | 60364 | 60048 | 59726 | 59398 | 59064 | 74 S |
| 76 S | 63085 | 62863 | 62634 | 62399 | 62157 | 61909 | 61654 | 61394 | 61127 | 60854 | 60575 | 60291 | 60001 | 59706 | 59406 | 76 S |
| 78 S | 62905 | 62707 | 62504 | 62295 | 62080 | 61859 | 61634 | 61403 | 61166 | 60925 | 60679 | 60428 | 60173 | 59914 | 59651 | 78 S |
| 80 S | 62591 | 62420 | 62245 | 62064 | 61879 | 61689 | 61495 | 61297 | 61094 | 60887 | 60676 | 60462 | 60244 | 60023 | 59799 | 80 S |
| 82 S | 62145 | 62004 | 61859 | 61710 | 61557 | 61401 | 61241 | 61078 | 60911 | 60741 | 60568 | 60392 | 60214 | 60033 | 59850 | 82 S |
| 84 S | 61571 | 61462 | 61350 | 61235 | 61118 | 60997 | 60874 | 60748 | 60620 | 60489 | 60356 | 60222 | 60085 | 59946 | 59806 | 84 S |
| 86 S | 60874 | 60800 | 60724 | 60645 | 60565 | 60482 | 60398 | 60312 | 60225 | 60136 | 60045 | 59954 | 59861 | 59767 | 59671 | 86 S |
| 88 S | 60062 | 60024 | 59985 | 59945 | 59904 | 59862 | 59819 | 59775 | 59731 | 59685 | 59639 | 59592 | 59545 | 59497 | 59449 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 58125 | 58164 | 58205 | 58246 | 58289 | 58332 | 58376 | 58422 | 58468 | 58515 | 58563 | 58611 | 58660 | 58710 | 58759 | LAT. |
| E.LONG. | 214 | 216 | 218 | 220 | 222 | 224 | 226 | 228 | 230 | 232 | 234 | 236 | 238 | 240 | 242 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 238 | 240 | 242 | 244 | 246 | 248 | 250 | 252 | 254 | 256 | 258 | 260 | 262 | 264 | 266 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56305 | 56321 | 56337 | 56354 | 56370 | 56386 | 56402 | 56418 | 56434 | 56450 | 56466 | 56481 | 56497 | 56512 | 56527 | LAT. |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56552 | 56540 | 56528 | 56515 | 56503 | 56490 | 56478 | 56465 | 56451 | 56438 | 56425 | 56411 | 56398 | 56384 | 56370 | 88 N |
| 86 N | 56742 | 56723 | 56703 | 56683 | 56662 | 56640 | 56618 | 56596 | 56572 | 56549 | 56524 | 56500 | 56474 | 56449 | 56422 | 86 N |
| 84 N | 56976 | 56954 | 56931 | 56907 | 56882 | 56855 | 56828 | 56799 | 56769 | 56737 | 56705 | 56671 | 56636 | 56600 | 56562 | 84 N |
| 82 N | 57248 | 57228 | 57207 | 57184 | 57158 | 57131 | 57101 | 57070 | 57036 | 57000 | 56961 | 56921 | 56878 | 56833 | 56786 | 82 N |
| 80 N | 57552 | 57539 | 57524 | 57505 | 57484 | 57460 | 57432 | 57401 | 57366 | 57329 | 57287 | 57242 | 57193 | 57141 | 57085 | 80 N |
| 78 N | 57877 | 57876 | 57871 | 57862 | 57849 | 57831 | 57809 | 57782 | 57750 | 57713 | 57671 | 57624 | 57571 | 57514 | 57451 | 78 N |
| 76 N | 58211 | 58226 | 58236 | 58240 | 58239 | 58232 | 58219 | 58199 | 58173 | 58140 | 58100 | 58053 | 57999 | 57938 | 57870 | 76 N |
| 74 N | 58540 | 58575 | 58604 | 58626 | 58640 | 58647 | 58646 | 58637 | 58620 | 58593 | 58558 | 58513 | 58460 | 58397 | 58326 | 74 N |
| 72 N | 58851 | 58909 | 58960 | 59003 | 59036 | 59061 | 59075 | 59080 | 59073 | 59056 | 59028 | 58989 | 58938 | 58876 | 58803 | 72 N |
| 70 N | 59126 | 59212 | 59288 | 59355 | 59411 | 59455 | 59488 | 59509 | 59517 | 59512 | 59493 | 59461 | 59415 | 59356 | 59282 | 70 N |
| 68 N | 59353 | 59468 | 59573 | 59666 | 59746 | 59814 | 59867 | 59907 | 59932 | 59941 | 59935 | 59912 | 59874 | 59819 | 59748 | 68 N |
| 66 N | 59517 | 59664 | 59798 | 59920 | 60027 | 60120 | 60197 | 60257 | 60301 | 60327 | 60335 | 60324 | 60295 | 60247 | 60180 | 66 N |
| 64 N | 59605 | 59785 | 59951 | 60102 | 60239 | 60358 | 60460 | 60544 | 60608 | 60653 | 60677 | 60681 | 60663 | 60624 | 60563 | 64 N |
| 62 N | 59606 | 59820 | 60019 | 60201 | 60367 | 60515 | 60643 | 60752 | 60839 | 60904 | 60947 | 60966 | 60962 | 60934 | 60882 | 62 N |
| 60 N | 59513 | 59760 | 59991 | 60206 | 60402 | 60579 | 60735 | 60868 | 60980 | 61067 | 61129 | 61166 | 61178 | 61163 | 61121 | 60 N |
| 58 N | 59317 | 59597 | 59861 | 60107 | 60334 | 60540 | 60724 | 60884 | 61020 | 61130 | 61214 | 61270 | 61299 | 61298 | 61269 | 58 N |
| 56 N | 59014 | 59327 | 59623 | 59900 | 60156 | 60391 | 60603 | 60790 | 60951 | 61085 | 61191 | 61268 | 61314 | 61331 | 61316 | 56 N |
| 54 N | 58604 | 58947 | 59273 | 59579 | 59864 | 60127 | 60366 | 60580 | 60766 | 60925 | 61053 | 61152 | 61218 | 61252 | 61253 | 54 N |
| 52 N | 58086 | 58457 | 58810 | 59144 | 59457 | 59747 | 60012 | 60251 | 60463 | 60645 | 60797 | 60917 | 61004 | 61057 | 61075 | 52 N |
| 50 N | 57463 | 57859 | 58237 | 58597 | 58935 | 59250 | 59540 | 59804 | 60039 | 60245 | 60420 | 60562 | 60670 | 60742 | 60779 | 50 N |
| 48 N | 56739 | 57157 | 57557 | 57939 | 58300 | 58637 | 58951 | 59237 | 59496 | 59725 | 59922 | 60085 | 60214 | 60307 | 60363 | 48 N |
| 46 N | 55920 | 56356 | 56776 | 57177 | 57557 | 57915 | 58249 | 58556 | 58836 | 59086 | 59304 | 59489 | 59639 | 59752 | 59827 | 46 N |
| 44 N | 55015 | 55465 | 55900 | 56316 | 56713 | 57088 | 57439 | 57766 | 58065 | 58334 | 58573 | 58778 | 58948 | 59081 | 59176 | 44 N |
| 42 N | 54031 | 54492 | 54937 | 55365 | 55775 | 56164 | 56530 | 56872 | 57188 | 57475 | 57732 | 57956 | 58146 | 58298 | 58413 | 42 N |
| 40 N | 52979 | 53445 | 53897 | 54333 | 54752 | 55151 | 55529 | 55884 | 56214 | 56517 | 56790 | 57031 | 57239 | 57410 | 57544 | 40 N |
| 38 N | 51868 | 52335 | 52790 | 53230 | 53654 | 54060 | 54446 | 54811 | 55152 | 55467 | 55754 | 56011 | 56235 | 56424 | 56576 | 38 N |
| 36 N | 50708 | 51173 | 51626 | 52066 | 52491 | 52900 | 53291 | 53662 | 54012 | 54337 | 54636 | 54906 | 55144 | 55349 | 55518 | 36 N |
| 34 N | 49511 | 49969 | 50416 | 50852 | 51275 | 51683 | 52075 | 52449 | 52804 | 53136 | 53444 | 53724 | 53975 | 54194 | 54378 | 34 N |
| 32 N | 48287 | 48733 | 49171 | 49599 | 50015 | 50419 | 50809 | 51183 | 51539 | 51875 | 52189 | 52478 | 52739 | 52970 | 53168 | 32 N |
| 30 N | 47045 | 47476 | 47901 | 48318 | 48724 | 49121 | 49505 | 49875 | 50230 | 50567 | 50884 | 51178 | 51447 | 51688 | 51897 | 30 N |
| 28 N | 45795 | 46209 | 46617 | 47019 | 47413 | 47798 | 48173 | 48537 | 48887 | 49222 | 49539 | 49836 | 50110 | 50357 | 50576 | 28 N |
| 26 N | 44548 | 44941 | 45330 | 45714 | 46092 | 46463 | 46826 | 47179 | 47522 | 47851 | 48166 | 48462 | 48738 | 48991 | 49216 | 26 N |
| 24 N | 43312 | 43682 | 44049 | 44412 | 44772 | 45126 | 45474 | 45814 | 46146 | 46468 | 46777 | 47070 | 47345 | 47599 | 47829 | 24 N |
| 22 N | 42098 | 42442 | 42785 | 43125 | 43463 | 43798 | 44128 | 44453 | 44772 | 45083 | 45383 | 45670 | 45941 | 46194 | 46425 | 22 N |
| 20 N | 40913 | 41230 | 41546 | 41862 | 42177 | 42490 | 42800 | 43107 | 43410 | 43707 | 43995 | 44273 | 44538 | 44787 | 45016 | 20 N |
| 18 N | 39767 | 40055 | 40344 | 40633 | 40923 | 41212 | 41500 | 41787 | 42072 | 42352 | 42626 | 42892 | 43148 | 43389 | 43613 | 18 N |
| 16 N | 38668 | 38927 | 39186 | 39448 | 39711 | 39975 | 40239 | 40504 | 40768 | 41029 | 41287 | 41538 | 41781 | 42012 | 42228 | 16 N |
| 14 N | 37626 | 37854 | 38084 | 38316 | 38551 | 38788 | 39028 | 39268 | 39509 | 39749 | 39987 | 40221 | 40448 | 40666 | 40871 | 14 N |
| 12 N | 36649 | 36845 | 37045 | 37248 | 37454 | 37663 | 37875 | 38090 | 38306 | 38523 | 38739 | 38953 | 39162 | 39363 | 39554 | 12 N |
| 10 N | 35746 | 35910 | 36079 | 36251 | 36427 | 36607 | 36791 | 36979 | 37169 | 37360 | 37553 | 37744 | 37931 | 38113 | 38286 | 10 N |
| 8 N | 34925 | 35057 | 35194 | 35335 | 35481 | 35631 | 35786 | 35945 | 36107 | 36272 | 36438 | 36603 | 36767 | 36926 | 37079 | 8 N |
| 6 N | 34193 | 34293 | 34398 | 34508 | 34623 | 34743 | 34868 | 34997 | 35130 | 35265 | 35403 | 35542 | 35679 | 35813 | 35942 | 6 N |
| 4 N | 33559 | 33627 | 33700 | 33779 | 33862 | 33951 | 34045 | 34143 | 34245 | 34351 | 34459 | 34568 | 34676 | 34783 | 34884 | 4 N |
| 2 N | 33029 | 33064 | 33106 | 33152 | 33204 | 33262 | 33324 | 33390 | 33461 | 33535 | 33612 | 33689 | 33767 | 33843 | 33915 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 32607 | 32611 | 32620 | 32635 | 32655 | 32681 | 32711 | 32745 | 32783 | 32825 | 32868 | 32913 | 32958 | 33001 | 33041 | 0 |
| 2 S | 32298 | 32270 | 32248 | 32231 | 32219 | 32212 | 32210 | 32212 | 32217 | 32225 | 32234 | 32245 | 32255 | 32264 | 32270 | 2 S |
| 4 S | 32103 | 32044 | 31990 | 31942 | 31899 | 31860 | 31825 | 31794 | 31765 | 31738 | 31713 | 31688 | 31662 | 31634 | 31604 | 4 S |
| 6 S | 32025 | 31934 | 31850 | 31770 | 31695 | 31624 | 31557 | 31492 | 31429 | 31367 | 31306 | 31245 | 31182 | 31117 | 31049 | 6 S |
| 8 S | 32060 | 31940 | 31825 | 31714 | 31608 | 31505 | 31405 | 31307 | 31209 | 31112 | 31015 | 30916 | 30815 | 30711 | 30605 | 8 S |
| 10 S | 32208 | 32058 | 31913 | 31772 | 31635 | 31500 | 31367 | 31235 | 31104 | 30971 | 30837 | 30700 | 30561 | 30418 | 30271 | 10 S |
| 12 S | 32465 | 32285 | 32111 | 31940 | 31772 | 31606 | 31441 | 31275 | 31109 | 30941 | 30770 | 30595 | 30417 | 30234 | 30047 | 12 S |
| 14 S | 32824 | 32617 | 32414 | 32213 | 32015 | 31818 | 31621 | 31422 | 31221 | 31017 | 30809 | 30597 | 30379 | 30156 | 29928 | 14 S |
| 16 S | 33282 | 33047 | 32816 | 32587 | 32359 | 32131 | 31902 | 31670 | 31435 | 31195 | 30951 | 30700 | 30443 | 30180 | 29912 | 16 S |
| 18 S | 33831 | 33570 | 33312 | 33055 | 32798 | 32539 | 32279 | 32014 | 31745 | 31470 | 31188 | 30899 | 30604 | 30301 | 29993 | 18 S |
| 20 S | 34465 | 34179 | 33894 | 33610 | 33324 | 33036 | 32744 | 32447 | 32144 | 31834 | 31516 | 31190 | 30856 | 30514 | 30165 | 20 S |
| 22 S | 35179 | 34868 | 34558 | 34247 | 33933 | 33615 | 33293 | 32963 | 32627 | 32282 | 31928 | 31565 | 31193 | 30813 | 30425 | 22 S |
| 24 S | 35964 | 35630 | 35295 | 34958 | 34617 | 34271 | 33918 | 33557 | 33187 | 32808 | 32419 | 32020 | 31611 | 31193 | 30767 | 24 S |
| 26 S | 36815 | 36459 | 36101 | 35738 | 35370 | 34996 | 34614 | 34222 | 33820 | 33408 | 32985 | 32550 | 32106 | 31651 | 31188 | 26 S |
| 28 S | 37726 | 37349 | 36968 | 36581 | 36188 | 35786 | 35375 | 34953 | 34520 | 34076 | 33619 | 33151 | 32671 | 32182 | 31684 | 28 S |
| 30 S | 38691 | 38294 | 37891 | 37481 | 37063 | 36635 | 36196 | 35746 | 35283 | 34807 | 34319 | 33818 | 33305 | 32783 | 32251 | 30 S |
| 32 S | 39703 | 39287 | 38864 | 38432 | 37990 | 37537 | 37072 | 36594 | 36103 | 35598 | 35079 | 34548 | 34005 | 33451 | 32888 | 32 S |
| 34 S | 40758 | 40324 | 39882 | 39429 | 38965 | 38489 | 37999 | 37495 | 36977 | 36444 | 35898 | 35338 | 34766 | 34184 | 33593 | 34 S |
| 36 S | 41848 | 41398 | 40938 | 40466 | 39982 | 39483 | 38971 | 38443 | 37900 | 37343 | 36770 | 36185 | 35587 | 34979 | 34363 | 36 S |
| 38 S | 42968 | 42504 | 42027 | 41538 | 41035 | 40517 | 39983 | 39434 | 38869 | 38289 | 37694 | 37086 | 36465 | 35834 | 35196 | 38 S |
| 40 S | 44111 | 43634 | 43143 | 42638 | 42119 | 41583 | 41031 | 40463 | 39879 | 39279 | 38665 | 38037 | 37397 | 36747 | 36090 | 40 S |
| 42 S | 45271 | 44783 | 44280 | 43761 | 43227 | 42676 | 42109 | 41525 | 40925 | 40309 | 39678 | 39035 | 38379 | 37714 | 37042 | 42 S |
| 44 S | 46441 | 45943 | 45430 | 44900 | 44354 | 43792 | 43212 | 42615 | 42002 | 41373 | 40731 | 40075 | 39408 | 38732 | 38049 | 44 S |
| 46 S | 47612 | 47107 | 46586 | 46048 | 45494 | 44922 | 44332 | 43726 | 43104 | 42467 | 41816 | 41152 | 40478 | 39795 | 39106 | 46 S |
| 48 S | 48778 | 48268 | 47742 | 47198 | 46638 | 46060 | 45465 | 44853 | 44226 | 43584 | 42928 | 42261 | 41583 | 40898 | 40207 | 48 S |
| 50 S | 49931 | 49418 | 48889 | 48342 | 47779 | 47199 | 46601 | 45988 | 45359 | 44717 | 44061 | 43394 | 42718 | 42035 | 41346 | 50 S |
| 52 S | 51061 | 50548 | 50019 | 49473 | 48910 | 48331 | 47735 | 47124 | 46498 | 45858 | 45207 | 44545 | 43875 | 43198 | 42516 | 52 S |
| 54 S | 52161 | 51651 | 51125 | 50582 | 50023 | 49448 | 48857 | 48252 | 47633 | 47001 | 46358 | 45706 | 45045 | 44379 | 43708 | 54 S |
| 56 S | 53222 | 52717 | 52197 | 51661 | 51109 | 50542 | 49960 | 49365 | 48756 | 48136 | 47506 | 46867 | 46220 | 45569 | 44914 | 56 S |
| 58 S | 54235 | 53739 | 53227 | 52701 | 52159 | 51604 | 51035 | 50453 | 49859 | 49255 | 48641 | 48019 | 47391 | 46758 | 46123 | 58 S |
| 60 S | 55193 | 54707 | 54208 | 53694 | 53167 | 52626 | 52073 | 51509 | 50933 | 50348 | 49755 | 49154 | 48548 | 47938 | 47325 | 60 S |
| 62 S | 56086 | 55615 | 55130 | 54633 | 54122 | 53600 | 53067 | 52523 | 51970 | 51407 | 50838 | 50262 | 49681 | 49097 | 48511 | 62 S |
| 64 S | 56908 | 56453 | 55987 | 55508 | 55019 | 54518 | 54008 | 53488 | 52959 | 52423 | 51881 | 51333 | 50781 | 50226 | 49669 | 64 S |
| 66 S | 57651 | 57217 | 56771 | 56315 | 55848 | 55373 | 54888 | 54395 | 53895 | 53388 | 52876 | 52359 | 51838 | 51315 | 50791 | 66 S |
| 68 S | 58310 | 57898 | 57476 | 57045 | 56605 | 56156 | 55701 | 55238 | 54768 | 54293 | 53814 | 53330 | 52844 | 52356 | 51867 | 68 S |
| 70 S | 58878 | 58491 | 58096 | 57692 | 57282 | 56864 | 56439 | 56009 | 55573 | 55133 | 54688 | 54241 | 53791 | 53340 | 52888 | 70 S |
| 72 S | 59351 | 58992 | 58626 | 58254 | 57874 | 57489 | 57099 | 56703 | 56303 | 55900 | 55493 | 55083 | 54672 | 54260 | 53848 | 72 S |
| 74 S | 59726 | 59398 | 59064 | 58724 | 58379 | 58029 | 57675 | 57316 | 56954 | 56589 | 56222 | 55853 | 55482 | 55111 | 54739 | 74 S |
| 76 S | 60001 | 59706 | 59406 | 59102 | 58793 | 58480 | 58164 | 57845 | 57523 | 57198 | 56872 | 56544 | 56216 | 55887 | 55558 | 76 S |
| 78 S | 60173 | 59914 | 59651 | 59384 | 59114 | 58841 | 58565 | 58286 | 58006 | 57723 | 57440 | 57155 | 56870 | 56585 | 56300 | 78 S |
| 80 S | 60244 | 60023 | 59799 | 59571 | 59342 | 59110 | 58876 | 58640 | 58403 | 58164 | 57925 | 57685 | 57444 | 57204 | 56964 | 80 S |
| 82 S | 60214 | 60033 | 59850 | 59664 | 59477 | 59288 | 59098 | 58906 | 58714 | 58520 | 58326 | 58132 | 57937 | 57743 | 57549 | 82 S |
| 84 S | 60085 | 59946 | 59806 | 59665 | 59522 | 59378 | 59233 | 59087 | 58940 | 58793 | 58646 | 58498 | 58351 | 58204 | 58057 | 84 S |
| 86 S | 59861 | 59767 | 59671 | 59575 | 59478 | 59381 | 59283 | 59184 | 59085 | 58986 | 58886 | 58787 | 58687 | 58588 | 58490 | 86 S |
| 88 S | 59545 | 59497 | 59449 | 59400 | 59351 | 59301 | 59251 | 59201 | 59151 | 59101 | 59050 | 59000 | 58950 | 58900 | 58850 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 58660 | 58710 | 58759 | 58810 | 58861 | 58912 | 58963 | 59014 | 59066 | 59117 | 59169 | 59220 | 59271 | 59322 | 59373 | LAT. |
| E.LONG. | 238 | 240 | 242 | 244 | 246 | 248 | 250 | 252 | 254 | 256 | 258 | 260 | 262 | 264 | 266 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. | 262 | 264 | 266 | 268 | 270 | 272 | 274 | 276 | 278 | 280 | 282 | 284 | 286 | 288 | 290 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 56497 | 56512 | 56527 | 56542 | 56556 | 56571 | 56584 | 56598 | 56611 | 56624 | 56637 | 56649 | 56660 | 56672 | 56683 | LAT. |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56398 | 56384 | 56370 | 56357 | 56343 | 56329 | 56315 | 56301 | 56287 | 56273 | 56260 | 56246 | 56233 | 56219 | 56206 | 88 N |
| 86 N | 56474 | 56449 | 56422 | 56396 | 56369 | 56341 | 56314 | 56286 | 56257 | 56229 | 56200 | 56171 | 56142 | 56113 | 56084 | 86 N |
| 84 N | 56636 | 56600 | 56562 | 56524 | 56484 | 56443 | 56402 | 56359 | 56316 | 56272 | 56227 | 56181 | 56135 | 56089 | 56042 | 84 N |
| 82 N | 56878 | 56833 | 56786 | 56736 | 56685 | 56631 | 56576 | 56519 | 56460 | 56399 | 56337 | 56274 | 56209 | 56144 | 56077 | 82 N |
| 80 N | 57193 | 57141 | 57085 | 57026 | 56964 | 56898 | 56829 | 56757 | 56682 | 56605 | 56525 | 56442 | 56358 | 56271 | 56183 | 80 N |
| 78 N | 57571 | 57514 | 57451 | 57384 | 57311 | 57234 | 57151 | 57065 | 56974 | 56879 | 56780 | 56678 | 56572 | 56464 | 56352 | 78 N |
| 76 N | 57999 | 57938 | 57870 | 57795 | 57713 | 57625 | 57530 | 57429 | 57322 | 57210 | 57092 | 56969 | 56842 | 56710 | 56575 | 76 N |
| 74 N | 58460 | 58397 | 58326 | 58245 | 58156 | 58058 | 57951 | 57836 | 57714 | 57584 | 57447 | 57303 | 57153 | 56998 | 56838 | 74 N |
| 72 N | 58938 | 58876 | 58803 | 58718 | 58622 | 58515 | 58398 | 58270 | 58133 | 57986 | 57830 | 57665 | 57493 | 57314 | 57128 | 72 N |
| 70 N | 59415 | 59356 | 59282 | 59195 | 59095 | 58981 | 58854 | 58714 | 58563 | 58399 | 58225 | 58040 | 57846 | 57643 | 57432 | 70 N |
| 68 N | 59874 | 59819 | 59748 | 59660 | 59557 | 59437 | 59302 | 59152 | 58987 | 58809 | 58617 | 58412 | 58197 | 57970 | 57734 | 68 N |
| 66 N | 60295 | 60247 | 60180 | 60094 | 59990 | 59866 | 59725 | 59566 | 59390 | 59197 | 58989 | 58766 | 58530 | 58281 | 58020 | 66 N |
| 64 N | 60663 | 60624 | 60563 | 60481 | 60378 | 60253 | 60107 | 59941 | 59755 | 59550 | 59327 | 59087 | 58831 | 58561 | 58277 | 64 N |
| 62 N | 60962 | 60934 | 60882 | 60805 | 60705 | 60580 | 60432 | 60261 | 60067 | 59852 | 59616 | 59361 | 59087 | 58797 | 58491 | 62 N |
| 60 N | 61178 | 61163 | 61121 | 61052 | 60957 | 60835 | 60687 | 60512 | 60313 | 60090 | 59843 | 59574 | 59285 | 58976 | 58650 | 60 N |
| 58 N | 61299 | 61298 | 61269 | 61210 | 61122 | 61005 | 60859 | 60684 | 60481 | 60252 | 59996 | 59716 | 59413 | 59088 | 58744 | 58 N |
| 56 N | 61314 | 61331 | 61316 | 61269 | 61190 | 61080 | 60938 | 60765 | 60561 | 60328 | 60066 | 59777 | 59463 | 59124 | 58764 | 56 N |
| 54 N | **61218** | **61252** | **61253** | **61220** | **61153** | **61052** | **60916** | **60747** | **60545** | **60310** | **60045** | 59749 | 59426 | 59076 | 58703 | 54 N |
| 52 N | 61004 | 61057 | 61075 | 61057 | 61004 | 60913 | 60787 | 60624 | 60426 | 60193 | 59926 | 59627 | 59297 | 58939 | 58554 | 52 N |
| 50 N | 60670 | 60742 | 60779 | 60778 | 60739 | 60662 | 60546 | 60392 | 60200 | 59971 | 59705 | 59405 | 59071 | 58707 | 58314 | 50 N |
| 48 N | 60214 | 60307 | 60363 | 60379 | 60357 | 60294 | 60191 | 60048 | 59865 | 59642 | 59380 | 59081 | 58747 | 58379 | 57981 | 48 N |
| 46 N | 59639 | 59752 | 59827 | 59863 | 59858 | 59811 | 59723 | 59592 | 59419 | 59205 | 58950 | 58655 | 58323 | 57954 | 57553 | 46 N |
| 44 N | 58948 | 59081 | 59176 | 59231 | 59244 | 59215 | 59142 | 59026 | 58866 | 58662 | 58415 | 58127 | 57799 | 57433 | 57032 | 44 N |
| 42 N | 58146 | 58298 | 58413 | 58487 | 58519 | 58508 | 58452 | 58352 | 58206 | 58015 | 57779 | 57500 | 57179 | 56818 | 56420 | 42 N |
| 40 N | 57239 | 57410 | 57544 | 57637 | 57688 | 57695 | 57658 | 57574 | 57444 | 57268 | 57045 | 56777 | 56465 | 56112 | 55719 | 40 N |
| 38 N | 56235 | 56424 | 56576 | 56687 | 56757 | 56784 | 56764 | 56699 | 56586 | 56425 | 56217 | 55963 | 55663 | 55319 | 54934 | 38 N |
| 36 N | 55144 | 55349 | 55518 | 55647 | 55735 | 55780 | 55780 | 55733 | 55638 | 55494 | 55302 | 55063 | 54776 | 54444 | 54070 | 36 N |
| 34 N | 53975 | 54194 | 54378 | 54524 | 54630 | 54693 | 54711 | 54683 | 54606 | 54481 | 54306 | 54083 | 53811 | 53493 | 53131 | 34 N |
| 32 N | 52739 | 52970 | 53168 | 53329 | 53451 | 53532 | 53568 | 53558 | 53500 | 53393 | 53236 | 53030 | 52775 | 52473 | 52125 | 32 N |
| 30 N | 51447 | 51688 | 51897 | 52071 | 52208 | 52305 | 52358 | 52366 | 52327 | 52238 | 52100 | 51912 | 51675 | 51389 | 51057 | 30 N |
| 28 N | 50110 | 50357 | 50576 | 50762 | 50912 | 51023 | 51093 | 51118 | 51096 | 51026 | 50906 | 50737 | 50518 | 50250 | 49935 | 28 N |
| 26 N | 48738 | 48991 | 49216 | 49411 | 49572 | 49696 | 49780 | 49821 | 49816 | 49764 | 49662 | 49511 | 49311 | 49061 | 48764 | 26 N |
| 24 N | 47345 | 47599 | 47829 | 48030 | 48200 | 48335 | 48431 | 48486 | 48496 | 48461 | 48377 | 48244 | 48062 | 47831 | 47553 | 24 N |
| 22 N | 45941 | 46194 | 46425 | 46630 | 46806 | 46949 | 47056 | 47123 | 47147 | 47126 | 47059 | 46944 | 46779 | 46567 | 46307 | 22 N |
| 20 N | 44538 | 44787 | 45016 | 45222 | 45401 | 45550 | 45664 | 45741 | 45777 | 45770 | 45717 | 45618 | 45471 | 45276 | 45035 | 20 N |
| 18 N | 43148 | 43389 | 43613 | 43817 | 43996 | 44147 | 44267 | 44351 | 44396 | 44400 | 44360 | 44276 | 44144 | 43967 | 43743 | 18 N |
| 16 N | 41781 | 42012 | 42228 | 42426 | 42602 | 42753 | 42874 | 42962 | 43014 | 43027 | 42998 | 42925 | 42808 | 42646 | 42439 | 16 N |
| 14 N | 40448 | 40666 | 40871 | 41060 | 41230 | 41377 | 41496 | 41586 | 41641 | 41659 | 41639 | 41577 | 41472 | 41324 | 41132 | 14 N |
| 12 N | 39162 | 39363 | 39554 | 39731 | 39891 | 40030 | 40144 | 40231 | 40287 | 40308 | 40292 | 40238 | 40143 | 40007 | 39829 | 12 N |
| 10 N | 37931 | 38113 | 38286 | 38447 | 38594 | 38722 | 38828 | 38909 | 38961 | 38982 | 38968 | 38919 | 38831 | 38704 | 38538 | 10 N |
| 8 N | 36767 | 36926 | 37079 | 37221 | 37351 | 37464 | 37558 | 37629 | 37675 | 37691 | 37677 | 37628 | 37545 | 37425 | 37269 | 8 N |
| 6 N | 35679 | 35813 | 35942 | 36062 | 36171 | 36266 | 36344 | 36402 | 36437 | 36446 | 36426 | 36376 | 36294 | 36178 | 36029 | 6 N |
| 4 N | 34676 | 34783 | 34884 | 34979 | 35065 | 35138 | 35197 | 35237 | 35258 | 35255 | 35227 | 35171 | 35087 | 34973 | 34828 | 4 N |
| 2 N | 33767 | 33843 | 33915 | 33981 | 34040 | 34088 | 34124 | 34144 | 34146 | 34128 | 34088 | 34024 | 33934 | 33818 | 33675 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 32958 | 33001 | 33041 | 33077 | 33105 | 33125 | 33134 | 33130 | 33110 | 33074 | 33018 | 32942 | 32843 | 32722 | 32577 | 0 |
| 2 S | 32255 | 32264 | 32270 | 32271 | 32267 | 32256 | 32235 | 32203 | 32159 | 32100 | 32025 | 31933 | 31823 | 31693 | 31544 | 2 S |
| 4 S | 31662 | 31634 | 31604 | 31570 | 31531 | 31486 | 31433 | 31370 | 31298 | 31214 | 31117 | 31006 | 30880 | 30739 | 30583 | 4 S |
| 6 S | 31182 | 31117 | 31049 | 30977 | 30901 | 30819 | 30731 | 30636 | 30533 | 30420 | 30298 | 30165 | 30022 | 29867 | 29701 | 6 S |
| 8 S | 30815 | 30711 | 30605 | 30494 | 30379 | 30259 | 30134 | 30004 | 29867 | 29724 | 29574 | 29417 | 29253 | 29081 | 28902 | 8 S |
| 10 S | 30561 | 30418 | 30271 | 30120 | 29966 | 29806 | 29643 | 29476 | 29304 | 29128 | 28948 | 28764 | 28577 | 28386 | 28192 | 10 S |
| 12 S | 30417 | 30234 | 30047 | 29855 | 29660 | 29460 | 29257 | 29051 | 28843 | 28633 | 28421 | 28209 | 27996 | 27784 | 27573 | 12 S |
| 14 S | 30379 | 30156 | 29928 | 29696 | 29459 | 29219 | 28976 | 28731 | 28485 | 28239 | 27995 | 27752 | 27513 | 27278 | 27048 | 14 S |
| 16 S | 30443 | 30180 | 29912 | 29638 | 29360 | 29079 | 28795 | 28511 | 28227 | 27945 | 27667 | 27394 | 27127 | 26868 | 26618 | 16 S |
| 18 S | 30604 | 30301 | 29993 | 29678 | 29359 | 29037 | 28713 | 28389 | 28068 | 27750 | 27438 | 27133 | 26838 | 26553 | 26282 | 18 S |
| 20 S | 30856 | 30514 | 30165 | 29810 | 29451 | 29089 | 28725 | 28363 | 28003 | 27650 | 27303 | 26967 | 26643 | 26333 | 26040 | 20 S |
| 22 S | 31193 | 30813 | 30425 | 30031 | 29632 | 29230 | 28828 | 28428 | 28031 | 27642 | 27263 | 26896 | 26543 | 26207 | 25891 | 22 S |
| 24 S | 31611 | 31193 | 30767 | 30335 | 29898 | 29458 | 29018 | 28581 | 28149 | 27726 | 27314 | 26916 | 26535 | 26174 | 25835 | 24 S |
| 26 S | 32106 | 31651 | 31188 | 30719 | 30245 | 29768 | 29292 | 28820 | 28354 | 27898 | 27455 | 27027 | 26619 | 26233 | 25871 | 26 S |
| 28 S | 32671 | 32182 | 31684 | 31179 | 30670 | 30159 | 29649 | 29143 | 28645 | 28157 | 27684 | 27229 | 26794 | 26384 | 25999 | 28 S |
| 30 S | 33305 | 32783 | 32251 | 31713 | 31171 | 30627 | 30085 | 29548 | 29020 | 28503 | 28002 | 27521 | 27061 | 26627 | 26222 | 30 S |
| 32 S | 34005 | 33451 | 32888 | 32319 | 31747 | 31173 | 30601 | 30036 | 29479 | 28936 | 28409 | 27903 | 27420 | 26964 | 26538 | 32 S |
| 34 S | 34766 | 34184 | 33593 | 32996 | 32395 | 31794 | 31196 | 30604 | 30023 | 29455 | 28905 | 28376 | 27871 | 27395 | 26950 | 34 S |
| 36 S | 35587 | 34979 | 34363 | 33740 | 33115 | 32490 | 31868 | 31253 | 30650 | 30060 | 29489 | 28940 | 28417 | 27922 | 27459 | 36 S |
| 38 S | 36465 | 35834 | 35196 | 34552 | 33905 | 33259 | 32617 | 31983 | 31360 | 30752 | 30164 | 29597 | 29057 | 28546 | 28067 | 38 S |
| 40 S | 37397 | 36747 | 36090 | 35428 | 34763 | 34100 | 33442 | 32792 | 32153 | 31530 | 30927 | 30346 | 29791 | 29266 | 28773 | 40 S |
| 42 S | 38379 | 37714 | 37042 | 36366 | 35688 | 35012 | 34340 | 33678 | 33027 | 32393 | 31778 | 31185 | 30619 | 30082 | 29577 | 42 S |
| 44 S | 39408 | 38732 | 38049 | 37363 | 36675 | 35990 | 35310 | 34639 | 33980 | 33337 | 32714 | 32113 | 31538 | 30992 | 30477 | 44 S |
| 46 S | 40478 | 39795 | 39106 | 38414 | 37721 | 37030 | 36346 | 35670 | 35007 | 34360 | 33732 | 33126 | 32545 | 31993 | 31471 | 46 S |
| 48 S | 41583 | 40898 | 40207 | 39513 | 38820 | 38129 | 37444 | 36768 | 36104 | 35456 | 34827 | 34219 | 33636 | 33080 | 32553 | 48 S |
| 50 S | 42718 | 42035 | 41346 | 40656 | 39965 | 39278 | 38597 | 37925 | 37264 | 36619 | 35992 | 35386 | 34803 | 34247 | 33718 | 50 S |
| 52 S | 43875 | 43198 | 42516 | 41833 | 41150 | 40471 | 39797 | 39133 | 38480 | 37842 | 37221 | 36619 | 36040 | 35486 | 34958 | 52 S |
| 54 S | 45045 | 44379 | 43708 | 43037 | 42366 | 41698 | 41037 | 40384 | 39742 | 39115 | 38503 | 37910 | 37338 | 36789 | 36265 | 54 S |
| 56 S | 46220 | 45569 | 44914 | 44258 | 43603 | 42951 | 42306 | 41668 | 41042 | 40428 | 39829 | 39247 | 38686 | 38145 | 37628 | 56 S |
| 58 S | 47391 | 46758 | 46123 | 45486 | 44851 | 44220 | 43593 | 42975 | 42367 | 41770 | 41188 | 40621 | 40073 | 39544 | 39036 | 58 S |
| 60 S | 48548 | 47938 | 47325 | 46712 | 46100 | 45492 | 44889 | 44293 | 43706 | 43130 | 42567 | 42019 | 41487 | 40973 | 40478 | 60 S |
| 62 S | 49681 | 49097 | 48511 | 47924 | 47340 | 46758 | 46181 | 45611 | 45049 | 44497 | 43956 | 43429 | 42917 | 42421 | 41942 | 62 S |
| 64 S | 50781 | 50226 | 49669 | 49113 | 48558 | 48006 | 47458 | **46917** | **46383** | **45857** | **45343** | **44840** | **44350** | **43874** | **43414** | **64 S** |
| **66 S** | **51838** | **51315** | **50791** | **50267** | **49745** | **49225** | **48710** | 48200 | 47696 | 47201 | 46714 | 46239 | 45774 | 45322 | 44884 | 66 S |
| 68 S | 52844 | 52356 | 51867 | 51378 | 50891 | 50407 | 49925 | 49449 | 48979 | 48516 | 48060 | 47614 | 47178 | 46753 | 46340 | 68 S |
| 70 S | 53791 | 53340 | 52888 | 52437 | 51987 | 51540 | 51095 | 50655 | 50220 | 49792 | 49370 | 48956 | 48551 | 48155 | 47769 | 70 S |
| 72 S | 54672 | 54260 | 53848 | 53436 | 53025 | 52617 | 52211 | 51809 | 51412 | 51020 | 50634 | 50254 | 49882 | 49519 | 49164 | 72 S |
| 74 S | 55482 | 55111 | 54739 | 54368 | 53999 | 53631 | 53266 | 52904 | 52546 | 52193 | 51844 | 51501 | 51165 | 50836 | 50514 | 74 S |
| 76 S | 56216 | 55887 | 55558 | 55229 | 54902 | 54577 | 54254 | 53933 | 53616 | 53303 | 52994 | 52690 | 52392 | 52099 | 51812 | 76 S |
| 78 S | 56870 | 56585 | 56300 | 56015 | 55732 | 55450 | 55171 | 54893 | 54619 | 54347 | 54080 | 53816 | 53557 | 53302 | 53053 | 78 S |
| 80 S | 57444 | 57204 | 56964 | 56725 | 56486 | 56249 | 56014 | 55781 | 55550 | 55322 | 55096 | 54874 | 54656 | 54442 | 54232 | 80 S |
| 82 S | 57937 | 57743 | 57549 | 57356 | 57164 | 56973 | 56783 | 56595 | 56409 | 56225 | 56043 | 55864 | 55688 | 55515 | 55346 | 82 S |
| 84 S | 58351 | 58204 | 58057 | 57911 | 57765 | 57621 | 57478 | 57336 | 57195 | 57056 | 56919 | 56784 | 56651 | 56521 | 56393 | 84 S |
| 86 S | 58687 | 58588 | 58490 | 58391 | 58294 | 58197 | 58100 | 58005 | 57911 | 57818 | 57726 | 57636 | 57547 | 57460 | 57375 | 86 S |
| 88 S | 58950 | 58900 | 58850 | 58801 | 58751 | 58703 | 58654 | 58606 | 58559 | 58513 | 58467 | 58421 | 58377 | 58333 | 58291 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 59271 | 59322 | 59373 | 59423 | 59473 | 59522 | 59571 | 59619 | 59667 | 59713 | 59759 | 59805 | 59849 | 59892 | 59934 | LAT. |
| E.LONG. | 262 | 264 | 266 | 268 | 270 | 272 | 274 | 276 | 278 | 280 | 282 | 284 | 286 | 288 | 290 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 286 | 288 | 290 | 292 | 294 | 296 | 298 | 300 | 302 | 304 | 306 | 308 | 310 | 312 | 314 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56660 | 56672 | 56683 | 56693 | 56703 | 56713 | 56722 | 56730 | 56739 | 56747 | 56754 | 56761 | 56767 | 56773 | 56778 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56233 | 56219 | 56206 | 56193 | 56180 | 56167 | 56154 | 56142 | 56130 | 56118 | 56107 | 56096 | 56085 | 56075 | 56065 | 88 N |
| 86 N | 56142 | 56113 | 56084 | 56055 | 56027 | 55998 | 55970 | 55942 | 55915 | 55887 | 55861 | 55835 | 55809 | 55785 | 55761 | 86 N |
| 84 N | 56135 | 56089 | 56042 | 55995 | 55948 | 55901 | 55854 | 55807 | 55761 | 55715 | 55670 | 55625 | 55581 | 55538 | 55497 | 84 N |
| 82 N | 56209 | 56144 | 56077 | 56010 | 55942 | 55874 | 55805 | 55737 | 55669 | 55601 | 55534 | 55467 | 55402 | 55337 | 55274 | 82 N |
| 80 N | 56358 | 56271 | 56183 | 56094 | 56003 | 55911 | 55819 | 55726 | 55634 | 55541 | 55450 | 55359 | 55269 | 55180 | 55093 | 80 N |
| 78 N | 56572 | 56464 | 56352 | 56239 | 56124 | 56007 | 55889 | 55770 | 55651 | 55531 | 55413 | 55295 | 55178 | 55063 | 54949 | 78 N |
| 76 N | 56842 | 56710 | 56575 | 56436 | 56295 | 56151 | 56005 | 55858 | 55711 | 55563 | 55415 | 55269 | 55123 | 54979 | 54838 | 76 N |
| 74 N | 57153 | 56998 | 56838 | 56673 | 56504 | 56332 | 56158 | 55982 | 55805 | 55627 | 55449 | 55272 | 55097 | 54923 | 54753 | 74 N |
| 72 N | 57493 | 57314 | 57128 | 56937 | 56740 | 56540 | 56336 | 56130 | 55921 | 55713 | 55504 | 55296 | 55089 | 54885 | 54684 | 72 N |
| 70 N | 57846 | 57643 | 57432 | 57213 | 56989 | 56759 | 56526 | 56289 | 56049 | 55809 | 55568 | 55329 | 55091 | 54856 | 54624 | 70 N |
| 68 N | 58197 | 57970 | 57734 | 57489 | 57237 | 56978 | 56714 | 56446 | 56176 | 55904 | 55632 | 55360 | 55091 | 54825 | 54563 | 68 N |
| 66 N | 58530 | 58281 | 58020 | 57749 | 57470 | 57182 | 56889 | 56591 | 56289 | 55986 | 55682 | 55380 | 55079 | 54782 | 54490 | 66 N |
| 64 N | 58831 | 58561 | 58277 | 57981 | 57675 | 57360 | 57037 | 56710 | 56378 | 56044 | 55709 | 55376 | 55045 | 54718 | 54396 | 64 N |
| 62 N | 59087 | 58797 | 58491 | 58171 | 57840 | 57498 | 57148 | 56791 | 56430 | 56066 | 55702 | 55338 | 54978 | 54622 | 54272 | 62 N |
| 60 N | 59285 | 58976 | 58650 | 58308 | 57953 | 57586 | 57210 | 56826 | 56436 | 56044 | 55651 | 55259 | 54870 | 54486 | 54110 | 60 N |
| 58 N | 59413 | 59088 | 58744 | 58382 | 58005 | 57615 | 57213 | 56804 | 56388 | 55969 | 55548 | 55129 | 54713 | 54303 | 53901 | 58 N |
| 56 N | 59463 | 59124 | 58764 | 58384 | 57987 | 57575 | 57151 | 56718 | 56277 | 55832 | 55386 | 54942 | 54501 | 54066 | 53640 | 56 N |
| 54 N | 59426 | 59076 | 58703 | 58307 | 57892 | 57461 | 57016 | 56561 | 56098 | 55630 | 55160 | 54692 | 54228 | 53770 | 53322 | 54 N |
| 52 N | 59297 | 58939 | 58554 | 58145 | 57715 | 57268 | 56804 | 56330 | 55846 | 55357 | 54866 | 54376 | 53890 | 53412 | 52944 | 52 N |
| 50 N | 59071 | 58707 | 58314 | 57895 | 57453 | 56991 | 56512 | 56020 | 55518 | 55010 | 54500 | 53991 | 53486 | 52988 | 52502 | 50 N |
| 48 N | 58747 | 58379 | 57981 | 57554 | 57102 | 56628 | 56137 | 55630 | 55113 | 54589 | 54062 | 53535 | 53013 | 52499 | 51996 | 48 N |
| 46 N | 58323 | 57954 | 57553 | 57122 | 56663 | 56181 | 55678 | 55160 | 54630 | 54092 | 53551 | 53009 | 52472 | 51943 | 51426 | 46 N |
| 44 N | 57799 | 57433 | 57032 | 56599 | 56136 | 55648 | 55138 | 54611 | 54071 | 53522 | 52968 | 52414 | 51865 | 51323 | 50793 | 44 N |
| 42 N | 57179 | 56818 | 56420 | 55987 | 55523 | 55032 | 54518 | 53985 | 53437 | 52879 | 52316 | 51752 | 51192 | 50640 | 50099 | 42 N |
| 40 N | 56465 | 56112 | 55719 | 55290 | 54828 | 54336 | 53820 | 53284 | 52731 | 52168 | 51598 | 51026 | 50458 | 49897 | 49348 | 40 N |
| 38 N | 55663 | 55319 | 54934 | 54511 | 54053 | 53565 | 53049 | 52512 | 51957 | 51391 | 50816 | 50240 | 49666 | 49099 | 48543 | 38 N |
| 36 N | 54776 | 54444 | 54070 | 53655 | 53204 | 52721 | 52209 | 51674 | 51120 | 50553 | 49977 | 49397 | 48819 | 48248 | 47688 | 36 N |
| 34 N | 53811 | 53493 | 53131 | 52728 | 52286 | 51811 | 51305 | 50774 | 50224 | 49658 | 49083 | 48503 | 47924 | 47350 | 46788 | 34 N |
| 32 N | 52775 | 52473 | 52125 | 51735 | 51305 | 50839 | 50342 | 49818 | 49273 | 48712 | 48140 | 47562 | 46984 | 46410 | 45847 | 32 N |
| 30 N | 51675 | 51389 | 51057 | 50682 | 50265 | 49811 | 49325 | 48811 | 48274 | 47719 | 47153 | 46579 | 46004 | 45432 | 44870 | 30 N |
| 28 N | 50518 | 50250 | 49935 | 49575 | 49174 | 48734 | 48261 | 47758 | 47231 | 46686 | 46126 | 45559 | 44989 | 44422 | 43863 | 28 N |
| 26 N | 49311 | 49061 | 48764 | 48422 | 48037 | 47613 | 47154 | 46665 | 46150 | 45616 | 45066 | 44507 | 43945 | 43384 | 42831 | 26 N |
| 24 N | 48062 | 47831 | 47553 | 47228 | 46861 | 46454 | 46011 | 45537 | 45037 | 44515 | 43977 | 43429 | 42877 | 42324 | 41778 | 24 N |
| 22 N | 46779 | 46567 | 46307 | 46001 | 45652 | 45263 | 44838 | 44380 | 43895 | 43388 | 42865 | 42329 | 41788 | 41247 | 40711 | 22 N |
| 20 N | 45471 | 45276 | 45035 | 44747 | 44417 | 44047 | 43640 | 43200 | 42732 | 42242 | 41734 | 41213 | 40686 | 40158 | 39634 | 20 N |
| 18 N | 44144 | 43967 | 43743 | 43474 | 43163 | 42811 | 42423 | 42002 | 41553 | 41080 | 40590 | 40086 | 39575 | 39062 | 38554 | 18 N |
| 16 N | 42808 | 42646 | 42439 | 42189 | 41896 | 41563 | 41195 | 40793 | 40363 | 39910 | 39438 | 38953 | 38460 | 37965 | 37474 | 16 N |
| 14 N | 41472 | 41324 | 41132 | 40898 | 40623 | 40310 | 39960 | 39579 | 39169 | 38736 | 38285 | 37820 | 37348 | 36873 | 36401 | 14 N |
| 12 N | 40143 | 40007 | 39829 | 39610 | 39353 | 39057 | 38727 | 38366 | 37977 | 37565 | 37136 | 36693 | 36243 | 35790 | 35341 | 12 N |
| 10 N | 38831 | 38704 | 38538 | 38334 | 38092 | 37814 | 37502 | 37161 | 36794 | 36404 | 35997 | 35578 | 35152 | 34724 | 34300 | 10 N |
| 8 N | 37545 | 37425 | 37269 | 37076 | 36848 | 36587 | 36294 | 35972 | 35626 | 35259 | 34876 | 34481 | 34081 | 33679 | 33283 | 8 N |
| 6 N | 36294 | 36178 | 36029 | 35846 | 35631 | 35384 | 35108 | 34806 | 34481 | 34137 | 33778 | 33409 | 33036 | 32663 | 32296 | 6 N |
| 4 N | 35087 | 34973 | 34828 | 34653 | 34448 | 34214 | 33954 | 33671 | 33366 | 33045 | 32711 | 32369 | 32024 | 31681 | 31346 | 4 N |
| 2 N | 33934 | 33818 | 33675 | 33504 | 33308 | 33086 | 32840 | 32574 | 32290 | 31991 | 31683 | 31368 | 31052 | 30740 | 30438 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 32843 | 32722 | 32577 | 32409 | 32219 | 32006 | 31774 | 31524 | 31259 | 30983 | 30699 | 30411 | 30125 | 29845 | 29577 | 0 |
| 2 S | 31823 | 31693 | 31544 | 31376 | 31189 | 30984 | 30763 | 30527 | 30280 | 30026 | 29766 | 29506 | 29250 | 29002 | 28768 | 2 S |
| 4 S | 30880 | 30739 | 30583 | 30412 | 30226 | 30026 | 29814 | 29592 | 29362 | 29127 | 28891 | 28658 | 28431 | 28215 | 28015 | 4 S |
| 6 S | 30022 | 29867 | 29701 | 29524 | 29336 | 29139 | 28934 | 28723 | 28508 | 28293 | 28080 | 27872 | 27674 | 27489 | 27322 | 6 S |
| 8 S | 29253 | 29081 | 28902 | 28717 | 28525 | 28329 | 28129 | 27927 | 27726 | 27528 | 27336 | 27153 | 26982 | 26827 | 26691 | 8 S |
| 10 S | 28577 | 28386 | 28192 | 27996 | 27798 | 27600 | 27403 | 27209 | 27020 | 26837 | 26664 | 26503 | 26358 | 26231 | 26125 | 10 S |
| 12 S | 27996 | 27784 | 27573 | 27365 | 27159 | 26957 | 26761 | 26572 | 26391 | 26222 | 26066 | 25926 | 25804 | 25702 | 25624 | 12 S |
| 14 S | 27513 | 27278 | 27048 | 26825 | 26609 | 26401 | 26204 | 26018 | 25844 | 25686 | 25545 | 25423 | 25321 | 25243 | 25189 | 14 S |
| 16 S | 27127 | 26868 | 26618 | 26378 | 26150 | 25935 | 25734 | 25548 | 25380 | 25231 | 25101 | 24994 | 24910 | 24852 | 24820 | 16 S |
| 18 S | 26838 | 26553 | 26282 | 26024 | 25783 | 25558 | 25351 | 25165 | 24999 | 24856 | 24736 | 24641 | 24572 | 24530 | 24516 | 18 S |
| 20 S | 26643 | 26333 | 26040 | 25764 | 25507 | 25271 | 25058 | 24868 | 24702 | 24563 | 24450 | 24364 | 24307 | 24278 | 24278 | 20 S |
| 22 S | 26543 | 26207 | 25891 | 25595 | 25323 | 25075 | 24852 | 24657 | 24490 | 24351 | 24242 | 24163 | 24114 | 24095 | 24105 | 22 S |
| 24 S | 26535 | 26174 | 25835 | 25519 | 25230 | 24969 | 24736 | 24534 | 24362 | 24223 | 24115 | 24039 | 23994 | 23982 | 24000 | 24 S |
| 26 S | 26619 | 26233 | 25871 | 25536 | 25229 | 24953 | 24709 | 24498 | 24321 | 24177 | 24068 | 23992 | 23950 | 23940 | 23962 | 26 S |
| 28 S | 26794 | 26384 | 25999 | 25644 | 25321 | 25030 | 24773 | 24552 | 24366 | 24217 | 24103 | 24025 | 23982 | 23972 | 23994 | 28 S |
| 30 S | 27061 | 26627 | 26222 | 25847 | 25506 | 25199 | 24929 | 24696 | 24501 | 24344 | 24224 | 24140 | 24093 | 24080 | 24099 | 30 S |
| 32 S | 27420 | 26964 | 26538 | 26145 | 25786 | 25464 | 25179 | 24934 | 24727 | 24560 | 24432 | 24341 | 24287 | 24267 | 24281 | 32 S |
| 34 S | 27871 | 27395 | 26950 | 26539 | 26163 | 25825 | 25526 | 25267 | 25048 | 24870 | 24731 | 24630 | 24566 | 24538 | 24543 | 34 S |
| 36 S | 28417 | 27922 | 27459 | 27031 | 26639 | 26286 | 25972 | 25699 | 25467 | 25275 | 25124 | 25011 | 24936 | 24897 | 24890 | 36 S |
| 38 S | 29057 | 28546 | 28067 | 27623 | 27216 | 26847 | 26519 | 26232 | 25985 | 25780 | 25614 | 25488 | 25400 | 25346 | 25327 | 38 S |
| 40 S | 29791 | 29266 | 28773 | 28315 | 27894 | 27511 | 27168 | 26866 | 26605 | 26385 | 26205 | 26064 | 25960 | 25891 | 25856 | 40 S |
| 42 S | 30619 | 30082 | 29577 | 29106 | 28672 | 28277 | 27920 | 27604 | 27328 | 27093 | 26897 | 26739 | 26619 | 26533 | 26481 | 42 S |
| 44 S | 31538 | 30992 | 30477 | 29996 | 29551 | 29144 | 28774 | 28445 | 28154 | 27903 | 27691 | 27517 | 27378 | 27275 | 27203 | 44 S |
| 46 S | 32545 | 31993 | 31471 | 30982 | 30527 | 30109 | 29728 | 29386 | 29081 | 28815 | 28587 | 28395 | 28238 | 28116 | 28025 | 46 S |
| 48 S | 33636 | 33080 | 32553 | 32058 | 31596 | 31169 | 30779 | 30424 | 30107 | 29826 | 29581 | 29372 | 29197 | 29055 | 28944 | 48 S |
| 50 S | 34803 | 34247 | 33718 | 33219 | 32753 | 32319 | 31920 | 31555 | 31226 | 30931 | 30672 | 30446 | 30253 | 30092 | 29960 | 50 S |
| 52 S | 36040 | 35486 | 34958 | 34459 | 33989 | 33551 | 33145 | 32772 | 32433 | 32126 | 31852 | 31611 | 31401 | 31221 | 31069 | 52 S |
| 54 S | 37338 | 36789 | 36265 | 35767 | 35298 | 34858 | 34447 | 34068 | 33720 | 33403 | 33117 | 32861 | 32635 | 32437 | 32267 | 54 S |
| 56 S | 38686 | 38145 | 37628 | 37135 | 36668 | 36228 | 35817 | 35433 | 35079 | 34754 | 34457 | 34189 | 33949 | 33735 | 33548 | 56 S |
| 58 S | 40073 | 39544 | 39036 | 38551 | 38090 | 37653 | 37242 | 36858 | 36500 | 36169 | 35864 | 35586 | 35334 | 35107 | 34904 | 58 S |
| 60 S | 41487 | 40973 | 40478 | 40004 | 39551 | 39121 | 38714 | 38331 | 37972 | 37638 | 37329 | 37043 | 36782 | 36544 | 36328 | 60 S |
| 62 S | 42917 | 42421 | 41942 | 41481 | 41040 | 40619 | 40219 | 39841 | 39485 | 39151 | 38839 | 38550 | 38282 | 38036 | 37812 | 62 S |
| 64 S | 44350 | 43874 | 43414 | 42971 | 42544 | 42136 | 41747 | 41377 | 41027 | 40696 | 40386 | 40096 | 39826 | 39575 | 39344 | 64 S |
| 66 S | 45774 | 45322 | 44884 | 44461 | 44052 | 43660 | 43284 | 42926 | 42585 | 42262 | 41957 | 41670 | 41401 | 41149 | 40916 | 66 S |
| 68 S | 47178 | 46753 | 46340 | 45939 | 45552 | 45179 | 44820 | 44477 | 44149 | 43837 | 43540 | 43260 | 42996 | 42749 | 42517 | 68 S |
| 70 S | 48551 | 48155 | 47769 | 47395 | 47032 | 46681 | 46343 | 46018 | 45707 | 45410 | 45126 | 44857 | 44602 | 44362 | 44136 | 70 S |
| 72 S | 49882 | 49519 | 49164 | 48818 | 48483 | 48157 | 47843 | 47540 | 47249 | 46970 | 46703 | 46449 | 46207 | 45978 | 45762 | 72 S |
| 74 S | 51165 | 50836 | 50514 | 50200 | 49894 | 49598 | 49310 | 49033 | 48765 | 48508 | 48261 | 48026 | 47801 | 47588 | 47386 | 74 S |
| 76 S | 52392 | 52099 | 51812 | 51532 | 51259 | 50994 | 50737 | 50487 | 50247 | 50015 | 49792 | 49578 | 49374 | 49180 | 48996 | 76 S |
| 78 S | 53557 | 53302 | 53053 | 52809 | 52571 | 52340 | 52115 | 51897 | 51686 | 51482 | 51286 | 51098 | 50918 | 50746 | 50582 | 78 S |
| 80 S | 54656 | 54442 | 54232 | 54026 | 53825 | 53630 | 53439 | 53254 | 53076 | 52903 | 52736 | 52576 | 52423 | 52276 | 52137 | 80 S |
| 82 S | 55688 | 55515 | 55346 | 55180 | 55017 | 54859 | 54706 | 54556 | 54411 | 54271 | 54136 | 54007 | 53882 | 53763 | 53650 | 82 S |
| 84 S | 56651 | 56521 | 56393 | 56268 | 56146 | 56027 | 55911 | 55798 | 55689 | 55583 | 55481 | 55383 | 55289 | 55200 | 55114 | 84 S |
| 86 S | 57547 | 57460 | 57375 | 57291 | 57209 | 57130 | 57052 | 56977 | 56904 | 56834 | 56766 | 56701 | 56638 | 56579 | 56522 | 86 S |
| 88 S | 58377 | 58333 | 58291 | 58249 | 58208 | 58168 | 58130 | 58092 | 58056 | 58021 | 57988 | 57955 | 57924 | 57895 | 57867 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 59849 | 59892 | 59934 | 59976 | 60016 | 60055 | 60092 | 60129 | 60164 | 60198 | 60230 | 60261 | 60291 | 60319 | 60346 | LAT. |
| E.LONG. | 286 | 288 | 290 | 292 | 294 | 296 | 298 | 300 | 302 | 304 | 306 | 308 | 310 | 312 | 314 | E.LONG. |

TABLE 7 A IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 310 | 312 | 314 | 316 | 318 | 320 | 322 | 324 | 326 | 328 | 330 | 332 | 334 | 336 | 338 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56767 | 56773 | 56778 | 56783 | 56788 | 56792 | 56796 | 56799 | 56802 | 56804 | 56806 | 56807 | 56808 | 56809 | 56809 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 56085 | 56075 | 56065 | 56056 | 56046 | 56038 | 56030 | 56022 | 56015 | 56008 | 56002 | 55997 | 55992 | 55987 | 55983 | 88 N |
| 86 N | 55809 | 55785 | 55761 | 55737 | 55715 | 55694 | 55673 | 55654 | 55635 | 55618 | 55602 | 55587 | 55574 | 55562 | 55551 | 86 N |
| 84 N | 55581 | 55538 | 55497 | 55456 | 55416 | 55378 | 55342 | 55307 | 55274 | 55243 | 55213 | 55186 | 55161 | 55138 | 55117 | 84 N |
| 82 N | 55402 | 55337 | 55274 | 55213 | 55153 | 55095 | 55040 | 54986 | 54935 | 54887 | 54841 | 54798 | 54759 | 54722 | 54689 | 82 N |
| 80 N | 55269 | 55180 | 55093 | 55008 | 54925 | 54845 | 54767 | 54693 | 54621 | 54553 | 54489 | 54428 | 54372 | 54320 | 54272 | 80 N |
| 78 N | 55178 | 55063 | 54949 | 54838 | 54730 | 54625 | 54524 | 54426 | 54332 | 54242 | 54158 | 54078 | 54003 | 53933 | 53870 | 78 N |
| 76 N | 55123 | 54979 | 54838 | 54700 | 54565 | 54433 | 54306 | 54183 | 54066 | 53953 | 53847 | 53746 | 53652 | 53564 | 53484 | 76 N |
| 74 N | 55097 | 54923 | 54753 | 54585 | 54422 | 54263 | 54109 | 53961 | 53818 | 53683 | 53554 | 53432 | 53318 | 53211 | 53113 | 74 N |
| 72 N | 55089 | 54885 | 54684 | 54487 | 54295 | 54108 | 53927 | 53753 | 53585 | 53426 | 53274 | 53131 | 52997 | 52872 | 52756 | 72 N |
| 70 N | 55091 | 54856 | 54624 | 54398 | 54176 | 53961 | 53753 | 53553 | 53360 | 53177 | 53003 | 52839 | 52685 | 52542 | 52410 | 70 N |
| 68 N | 55091 | 54825 | 54563 | 54306 | 54056 | 53813 | 53578 | 53352 | 53136 | 52929 | 52734 | 52550 | 52377 | 52216 | 52068 | 68 N |
| 66 N | 55079 | 54782 | 54490 | 54204 | 53926 | 53656 | 53395 | 53144 | 52904 | 52676 | 52460 | 52256 | 52066 | 51889 | 51726 | 66 N |
| 64 N | 55045 | 54718 | 54396 | 54082 | 53776 | 53480 | 53194 | 52919 | 52657 | 52408 | 52173 | 51952 | 51745 | 51554 | 51378 | 64 N |
| 62 N | 54978 | 54622 | 54272 | 53931 | 53599 | 53277 | 52967 | 52671 | 52388 | 52119 | 51866 | 51629 | 51408 | 51204 | 51016 | 62 N |
| 60 N | 54870 | 54486 | 54110 | 53742 | 53385 | 53040 | 52708 | 52390 | 52088 | 51802 | 51533 | 51282 | 51048 | 50832 | 50634 | 60 N |
| 58 N | 54713 | 54303 | 53901 | 53509 | 53129 | 52761 | 52409 | 52072 | 51752 | 51450 | 51167 | 50903 | 50658 | 50432 | 50226 | 58 N |
| 56 N | 54501 | 54066 | 53640 | 53225 | 52823 | 52435 | 52064 | 51710 | 51374 | 51058 | 50762 | 50487 | 50232 | 49998 | 49786 | 56 N |
| 54 N | 54228 | 53770 | 53322 | 52886 | 52464 | 52057 | 51668 | 51298 | 50949 | 50620 | 50313 | 50028 | 49766 | 49526 | 49308 | 54 N |
| 52 N | 53890 | 53412 | 52944 | 52488 | 52047 | 51624 | 51219 | 50835 | 50473 | 50133 | 49817 | 49524 | 49255 | 49011 | 48790 | 52 N |
| 50 N | 53486 | 52988 | 52502 | 52029 | 51571 | 51133 | 50714 | 50317 | 49944 | 49594 | 49270 | 48971 | 48697 | 48449 | 48226 | 50 N |
| 48 N | 53013 | 52499 | 51996 | 51507 | 51035 | 50582 | 50151 | 49743 | 49360 | 49003 | 48671 | 48367 | 48089 | 47839 | 47614 | 48 N |
| 46 N | 52472 | 51943 | 51426 | 50923 | 50438 | 49973 | 49531 | 49113 | 48722 | 48357 | 48020 | 47711 | 47431 | 47178 | 46954 | 46 N |
| 44 N | 51865 | 51323 | 50793 | 50278 | 49782 | 49306 | 48855 | 48428 | 48029 | 47659 | 47317 | 47004 | 46722 | 46468 | 46244 | 44 N |
| 42 N | 51192 | 50640 | 50099 | 49574 | 49068 | 48584 | 48124 | 47690 | 47285 | 46909 | 46563 | 46247 | 45963 | 45709 | 45485 | 42 N |
| 40 N | 50458 | 49897 | 49348 | 48815 | 48300 | 47808 | 47341 | 46901 | 46490 | 46110 | 45760 | 45443 | 45157 | 44903 | 44680 | 40 N |
| 38 N | 49666 | 49099 | 48543 | 48003 | 47482 | 46984 | 46511 | 46066 | 45650 | 45265 | 44913 | 44594 | 44307 | 44053 | 43832 | 38 N |
| 36 N | 48819 | 48248 | 47688 | 47143 | 46617 | 46114 | 45636 | 45187 | 44767 | 44380 | 44025 | 43704 | 43417 | 43164 | 42943 | 36 N |
| 34 N | 47924 | 47350 | 46788 | 46239 | 45710 | 45203 | 44722 | 44270 | 43847 | 43458 | 43101 | 42779 | 42492 | 42239 | 42021 | 34 N |
| 32 N | 46984 | 46410 | 45847 | 45297 | 44766 | 44257 | 43774 | 43319 | 42896 | 42504 | 42147 | 41825 | 41538 | 41286 | 41070 | 32 N |
| 30 N | 46004 | 45432 | 44870 | 44321 | 43790 | 43281 | 42797 | 42342 | 41917 | 41526 | 41169 | 40847 | 40561 | 40312 | 40098 | 30 N |
| 28 N | 44989 | 44422 | 43863 | 43317 | 42788 | 42280 | 41797 | 41343 | 40919 | 40528 | 40173 | 39853 | 39569 | 39323 | 39113 | 28 N |
| 26 N | 43945 | 43384 | 42831 | 42289 | 41764 | 41259 | 40780 | 40328 | 39907 | 39519 | 39166 | 38850 | 38571 | 38329 | 38124 | 26 N |
| 24 N | 42877 | 42324 | 41778 | 41243 | 40724 | 40226 | 39751 | 39304 | 38888 | 38505 | 38158 | 37847 | 37573 | 37337 | 37139 | 24 N |
| 22 N | 41788 | 41247 | 40711 | 40185 | 39675 | 39184 | 38717 | 38278 | 37869 | 37494 | 37154 | 36850 | 36585 | 36358 | 36169 | 22 N |
| 20 N | 40686 | 40158 | 39634 | 39120 | 38621 | 38141 | 37684 | 37255 | 36857 | 36492 | 36162 | 35870 | 35616 | 35401 | 35223 | 20 N |
| 18 N | 39575 | 39062 | 38554 | 38054 | 37568 | 37102 | 36659 | 36243 | 35858 | 35507 | 35191 | 34913 | 34674 | 34473 | 34311 | 18 N |
| 16 N | 38460 | 37965 | 37474 | 36991 | 36523 | 36073 | 35647 | 35248 | 34880 | 34546 | 34248 | 33988 | 33766 | 33584 | 33440 | 16 N |
| 14 N | 37348 | 36873 | 36401 | 35939 | 35490 | 35060 | 34654 | 34276 | 33929 | 33616 | 33339 | 33101 | 32901 | 32741 | 32619 | 14 N |
| 12 N | 36243 | 35790 | 35341 | 34901 | 34476 | 34069 | 33687 | 33333 | 33010 | 32723 | 32472 | 32259 | 32085 | 31950 | 31853 | 12 N |
| 10 N | 35152 | 34724 | 34300 | 33885 | 33486 | 33106 | 32751 | 32425 | 32131 | 31872 | 31650 | 31466 | 31322 | 31216 | 31147 | 10 N |
| 8 N | 34081 | 33679 | 33283 | 32897 | 32526 | 32176 | 31852 | 31557 | 31294 | 31068 | 30878 | 30728 | 30616 | 30542 | 30505 | 8 N |
| 6 N | 33036 | 32663 | 32296 | 31941 | 31602 | 31285 | 30994 | 30733 | 30505 | 30314 | 30160 | 30045 | 29968 | 29929 | 29925 | 6 N |
| 4 N | 32024 | 31681 | 31346 | 31023 | 30718 | 30436 | 30181 | 29957 | 29767 | 29613 | 29497 | 29420 | 29380 | 29377 | 29408 | 4 N |
| 2 N | 31052 | 30740 | 30438 | 30149 | 29880 | 29635 | 29418 | 29232 | 29081 | 28967 | 28890 | 28851 | 28849 | 28883 | 28950 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 30125 | 29845 | 29577 | 29324 | 29091 | 28884 | 28706 | 28560 | 28449 | 28375 | 28337 | 28337 | 28373 | 28443 | 28545 | 0 |
| 2 S | 29250 | 29002 | 28768 | 28551 | 28356 | 28187 | 28048 | 27942 | 27871 | 27836 | 27838 | 27876 | 27949 | 28054 | 28190 | 2 S |
| 4 S | 28431 | 28215 | 28015 | 27834 | 27676 | 27546 | 27446 | 27379 | 27347 | 27350 | 27390 | 27464 | 27571 | 27710 | 27877 | 4 S |
| 6 S | 27674 | 27489 | 27322 | 27176 | 27055 | 26961 | 26899 | 26870 | 26875 | 26914 | 26989 | 27096 | 27236 | 27404 | 27599 | 6 S |
| 8 S | 26982 | 26827 | 26691 | 26579 | 26492 | 26434 | 26407 | 26413 | 26453 | 26526 | 26632 | 26770 | 26938 | 27133 | 27352 | 8 S |
| 10 S | 26358 | 26231 | 26125 | 26044 | 25990 | 25965 | 25970 | 26008 | 26079 | 26182 | 26316 | 26480 | 26673 | 26890 | 27131 | 10 S |
| 12 S | 25804 | 25702 | 25624 | 25572 | 25547 | 25552 | 25587 | 25653 | 25751 | 25880 | 26038 | 26225 | 26437 | 26673 | 26930 | 12 S |
| 14 S | 25321 | 25243 | 25189 | 25162 | 25164 | 25195 | 25255 | 25347 | 25468 | 25618 | 25797 | 26001 | 26229 | 26479 | 26747 | 14 S |
| 16 S | 24910 | 24852 | 24820 | 24815 | 24839 | 24893 | 24975 | 25087 | 25227 | 25395 | 25589 | 25807 | 26047 | 26306 | 26582 | 16 S |
| 18 S | 24572 | 24530 | 24516 | 24530 | 24573 | 24645 | 24745 | 24874 | 25029 | 25210 | 25415 | 25642 | 25889 | 26154 | 26435 | 18 S |
| 20 S | 24307 | 24278 | 24278 | 24307 | 24365 | 24451 | 24565 | 24706 | 24872 | 25063 | 25275 | 25508 | 25759 | 26025 | 26306 | 20 S |
| 22 S | 24114 | 24095 | 24105 | 24146 | 24215 | 24312 | 24436 | 24585 | 24759 | 24954 | 25171 | 25405 | 25656 | 25922 | 26200 | 22 S |
| 24 S | 23994 | 23982 | 24000 | 24047 | 24124 | 24228 | 24358 | 24513 | 24690 | 24887 | 25104 | 25338 | 25586 | 25847 | 26119 | 24 S |
| 26 S | 23950 | 23940 | 23962 | 24013 | 24094 | 24201 | 24334 | 24490 | 24668 | 24865 | 25079 | 25308 | 25551 | 25805 | 26069 | 26 S |
| 28 S | 23982 | 23972 | 23994 | 24046 | 24127 | 24235 | 24367 | 24522 | 24697 | 24890 | 25099 | 25322 | 25557 | 25802 | 26056 | 28 S |
| 30 S | 24093 | 24080 | 24099 | 24149 | 24227 | 24332 | 24460 | 24611 | 24781 | 24967 | 25169 | 25384 | 25609 | 25844 | 26085 | 30 S |
| 32 S | 24287 | 24267 | 24281 | 24325 | 24398 | 24496 | 24619 | 24762 | 24924 | 25102 | 25295 | 25499 | 25713 | 25935 | 26163 | 32 S |
| 34 S | 24566 | 24538 | 24543 | 24579 | 24643 | 24733 | 24846 | 24980 | 25132 | 25300 | 25481 | 25673 | 25874 | 26082 | 26296 | 34 S |
| 36 S | 24936 | 24897 | 24890 | 24915 | 24968 | 25047 | 25149 | 25271 | 25411 | 25566 | 25733 | 25911 | 26098 | 26291 | 26489 | 36 S |
| 38 S | 25400 | 25346 | 25327 | 25338 | 25377 | 25442 | 25530 | 25639 | 25764 | 25904 | 26057 | 26220 | 26391 | 26568 | 26750 | 38 S |
| 40 S | 25960 | 25891 | 25856 | 25851 | 25875 | 25924 | 25996 | 26088 | 26197 | 26321 | 26458 | 26604 | 26758 | 26918 | 27082 | 40 S |
| 42 S | 26619 | 26533 | 26481 | 26459 | 26465 | 26496 | 26550 | 26624 | 26715 | 26821 | 26939 | 27068 | 27204 | 27346 | 27492 | 42 S |
| 44 S | 27378 | 27275 | 27203 | 27162 | 27149 | 27161 | 27195 | 27249 | 27321 | 27407 | 27506 | 27615 | 27732 | 27856 | 27983 | 44 S |
| 46 S | 28238 | 28116 | 28025 | 27963 | 27929 | 27920 | 27934 | 27967 | 28018 | 28083 | 28162 | 28251 | 28348 | 28452 | 28560 | 46 S |
| 48 S | 29197 | 29055 | 28944 | 28862 | 28807 | 28776 | 28767 | 28778 | 28807 | 28851 | 28908 | 28976 | 29053 | 29137 | 29226 | 48 S |
| 50 S | 30253 | 30092 | 29960 | 29857 | 29780 | 29727 | 29695 | 29684 | 29690 | 29712 | 29747 | 29794 | 29849 | 29913 | 29983 | 50 S |
| 52 S | 31401 | 31221 | 31069 | 30945 | 30846 | 30771 | 30718 | 30684 | 30667 | 30666 | 30679 | 30704 | 30739 | 30783 | 30834 | 52 S |
| 54 S | 32635 | 32437 | 32267 | 32123 | 32003 | 31907 | 31831 | 31775 | 31736 | 31713 | 31704 | 31708 | 31723 | 31747 | 31779 | 54 S |
| 56 S | 33949 | 33735 | 33548 | 33385 | 33246 | 33129 | 33032 | 32955 | 32895 | 32851 | 32821 | 32804 | 32799 | 32804 | 32818 | 56 S |
| 58 S | 35334 | 35107 | 34904 | 34725 | 34568 | 34432 | 34317 | 34220 | 34140 | 34076 | 34026 | 33990 | 33967 | 33954 | 33951 | 58 S |
| 60 S | 36782 | 36544 | 36328 | 36135 | 35963 | 35811 | 35678 | 35564 | 35466 | 35384 | 35317 | 35264 | 35223 | 35194 | 35176 | 60 S |
| 62 S | 38282 | 38036 | 37812 | 37607 | 37423 | 37258 | 37111 | 36981 | 36868 | 36771 | 36688 | 36620 | 36564 | 36521 | 36490 | 62 S |
| 64 S | 39826 | 39575 | 39344 | 39132 | 38939 | 38764 | 38606 | 38464 | 38339 | 38229 | 38134 | 38053 | 37985 | 37930 | 37887 | 64 S |
| 66 S | 41401 | 41149 | 40916 | 40700 | 40502 | 40320 | 40155 | 40005 | 39871 | 39752 | 39647 | 39556 | 39479 | 39414 | 39363 | 66 S |
| 68 S | 42996 | 42749 | 42517 | 42301 | 42101 | 41917 | 41748 | 41594 | 41455 | 41330 | 41219 | 41121 | 41037 | 40966 | 40908 | 68 S |
| 70 S | 44602 | 44362 | 44136 | 43924 | 43727 | 43545 | 43376 | 43222 | 43081 | 42954 | 42840 | 42739 | 42652 | 42577 | 42515 | 70 S |
| 72 S | 46207 | 45978 | 45762 | 45559 | 45369 | 45192 | 45028 | 44877 | 44739 | 44613 | 44500 | 44400 | 44312 | 44236 | 44173 | 72 S |
| 74 S | 47801 | 47588 | 47386 | 47195 | 47016 | 46849 | 46693 | 46549 | 46417 | 46296 | 46188 | 46091 | 46005 | 45932 | 45870 | 74 S |
| 76 S | 49374 | 49180 | 48996 | 48821 | 48657 | 48503 | 48360 | 48227 | 48104 | 47992 | 47891 | 47800 | 47720 | 47651 | 47593 | 76 S |
| 78 S | 50918 | 50746 | 50582 | 50428 | 50282 | 50145 | 50016 | 49898 | 49788 | 49687 | 49596 | 49515 | 49443 | 49381 | 49328 | 78 S |
| 80 S | 52423 | 52276 | 52137 | 52004 | 51880 | 51762 | 51652 | 51550 | 51456 | 51370 | 51291 | 51221 | 51159 | 51106 | 51060 | 80 S |
| 82 S | 53882 | 53763 | 53650 | 53542 | 53441 | 53345 | 53256 | 53173 | 53096 | 53026 | 52962 | 52905 | 52855 | 52811 | 52775 | 82 S |
| 84 S | 55289 | 55200 | 55114 | 55033 | 54956 | 54884 | 54817 | 54754 | 54696 | 54643 | 54596 | 54553 | 54515 | 54483 | 54456 | 84 S |
| 86 S | 56638 | 56579 | 56522 | 56468 | 56417 | 56369 | 56324 | 56283 | 56245 | 56210 | 56179 | 56150 | 56126 | 56105 | 56087 | 86 S |
| 88 S | 57924 | 57895 | 57867 | 57840 | 57815 | 57791 | 57770 | 57749 | 57731 | 57714 | 57698 | 57685 | 57673 | 57663 | 57654 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 60291 | 60319 | 60346 | 60371 | 60395 | 60417 | 60437 | 60456 | 60473 | 60488 | 60502 | 60514 | 60524 | 60533 | 60540 | LAT. |
| E.LONG. | 310 | 312 | 314 | 316 | 318 | 320 | 322 | 324 | 326 | 328 | 330 | 332 | 334 | 336 | 338 | E.LONG. |

TABLE 7 A · IGRF TOTAL FIELD (T) GRID-POINT VALUES FOR EPOCH 1965.0 IN GAMMAS

| E.LONG. LAT. | 334 | 336 | 338 | 340 | 342 | 344 | 346 | 348 | 350 | 352 | 354 | 356 | 358 | 360 | 362 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 56808 | 56809 | 56809 | 56809 | 56809 | 56808 | 56806 | 56805 | 56803 | 56800 | 56798 | 56794 | 56791 | 56787 | 56783 | |
| 90 N | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 56406 | 90 N |
| 88 N | 55992 | 55987 | 55983 | 55980 | 55978 | 55976 | 55974 | 55974 | 55974 | 55974 | 55975 | 55977 | 55980 | 55983 | 55987 | 88 N |
| 86 N | 55574 | 55562 | 55551 | 55541 | 55533 | 55526 | 55521 | 55518 | 55516 | 55515 | 55516 | 55518 | 55522 | 55528 | 55535 | 86 N |
| 84 N | 55161 | 55138 | 55117 | 55098 | 55082 | 55068 | 55057 | 55048 | 55042 | 55039 | 55038 | 55040 | 55044 | 55051 | 55061 | 84 N |
| 82 N | 54759 | 54722 | 54689 | 54659 | 54632 | 54609 | 54590 | 54575 | 54563 | 54555 | 54551 | 54551 | 54555 | 54563 | 54575 | 82 N |
| 80 N | 54372 | 54320 | 54272 | 54229 | 54190 | 54156 | 54127 | 54104 | 54085 | 54071 | 54063 | 54060 | 54062 | 54070 | 54083 | 80 N |
| 78 N | 54003 | 53933 | 53870 | 53812 | 53760 | 53714 | 53674 | 53641 | 53614 | 53594 | 53580 | 53573 | 53573 | 53580 | 53593 | 78 N |
| 76 N | 53652 | 53564 | 53484 | 53410 | 53344 | 53285 | 53234 | 53190 | 53155 | 53127 | 53107 | 53096 | 53093 | 53098 | 53111 | 76 N |
| 74 N | 53318 | 53211 | 53113 | 53024 | 52943 | 52870 | 52807 | 52753 | 52708 | 52673 | 52647 | 52631 | 52624 | 52626 | 52638 | 74 N |
| 72 N | 52997 | 52872 | 52756 | 52651 | 52555 | 52470 | 52395 | 52330 | 52276 | 52233 | 52200 | 52179 | 52168 | 52167 | 52178 | 72 N |
| 70 N | 52685 | 52542 | 52410 | 52289 | 52179 | 52081 | 51994 | 51920 | 51857 | 51806 | 51767 | 51740 | 51725 | 51721 | 51730 | 70 N |
| 68 N | 52377 | 52216 | 52068 | 51932 | 51809 | 51699 | 51602 | 51518 | 51447 | 51389 | 51344 | 51312 | 51293 | 51287 | 51293 | 68 N |
| 66 N | 52066 | 51889 | 51726 | 51577 | 51442 | 51321 | 51215 | 51122 | 51044 | 50979 | 50929 | 50892 | 50870 | 50860 | 50865 | 66 N |
| 64 N | 51745 | 51554 | 51378 | 51217 | 51071 | 50941 | 50826 | 50726 | 50641 | 50572 | 50517 | 50477 | 50451 | 50439 | 50442 | 64 N |
| 62 N | 51408 | 51204 | 51016 | 50844 | 50690 | 50551 | 50430 | 50324 | 50235 | 50161 | 50103 | 50060 | 50032 | 50018 | 50020 | 62 N |
| 60 N | 51048 | 50832 | 50634 | 50454 | 50292 | 50147 | 50021 | 49911 | 49818 | 49741 | 49681 | 49636 | 49607 | 49593 | 49593 | 60 N |
| 58 N | 50658 | 50432 | 50226 | 50039 | 49871 | 49722 | 49592 | 49479 | 49384 | 49306 | 49245 | 49200 | 49170 | 49156 | 49157 | 58 N |
| 56 N | 50232 | 49998 | 49786 | 49594 | 49422 | 49270 | 49138 | 49024 | 48928 | 48851 | 48790 | 48745 | 48717 | 48704 | 48706 | 56 N |
| 54 N | 49766 | 49526 | 49308 | 49113 | 48939 | 48785 | 48652 | 48539 | 48444 | 48368 | 48309 | 48267 | 48240 | 48230 | 48234 | 54 N |
| 52 N | 49255 | 49011 | 48790 | 48592 | 48416 | 48263 | 48131 | 48019 | 47927 | 47853 | 47797 | 47758 | 47736 | 47728 | 47736 | 52 N |
| 50 N | 48697 | 48449 | 48226 | 48027 | 47852 | 47700 | 47570 | 47461 | 47372 | 47302 | 47250 | 47216 | 47198 | 47195 | 47208 | 50 N |
| 48 N | 48089 | 47839 | 47614 | 47415 | 47241 | 47091 | 46965 | 46859 | 46775 | 46710 | 46664 | 46635 | 46623 | 46627 | 46645 | 48 N |
| 46 N | 47431 | 47178 | 46954 | 46756 | 46584 | 46437 | 46314 | 46213 | 46134 | 46076 | 46036 | 46014 | 46008 | 46019 | 46044 | 46 N |
| 44 N | 46722 | 46468 | 46244 | 46047 | 45878 | 45735 | 45616 | 45521 | 45448 | 45396 | 45363 | 45349 | 45351 | 45369 | 45402 | 44 N |
| 42 N | 45963 | 45709 | 45485 | 45291 | 45124 | 44985 | 44872 | 44782 | 44716 | 44671 | 44646 | 44640 | 44651 | 44677 | 44719 | 42 N |
| 40 N | 45157 | 44903 | 44680 | 44488 | 44325 | 44190 | 44082 | 43998 | 43939 | 43902 | 43885 | 43887 | 43907 | 43943 | 43994 | 40 N |
| 38 N | 44307 | 44053 | 43832 | 43642 | 43482 | 43351 | 43248 | 43172 | 43120 | 43090 | 43082 | 43093 | 43123 | 43168 | 43229 | 38 N |
| 36 N | 43417 | 43164 | 42943 | 42756 | 42600 | 42474 | 42376 | 42306 | 42261 | 42240 | 42240 | 42261 | 42300 | 42355 | 42426 | 36 N |
| 34 N | 42492 | 42239 | 42021 | 41836 | 41683 | 41562 | 41470 | 41407 | 41369 | 41356 | 41365 | 41395 | 41444 | 41509 | 41590 | 34 N |
| 32 N | 41538 | 41286 | 41070 | 40888 | 40740 | 40623 | 40537 | 40480 | 40450 | 40445 | 40464 | 40503 | 40561 | 40637 | 40728 | 32 N |
| 30 N | 40561 | 40312 | 40098 | 39920 | 39776 | 39665 | 39585 | 39535 | 39513 | 39516 | 39543 | 39591 | 39659 | 39745 | 39846 | 30 N |
| 28 N | 39569 | 39323 | 39113 | 38939 | 38801 | 38695 | 38622 | 38580 | 38565 | 38577 | 38613 | 38671 | 38748 | 38843 | 38954 | 28 N |
| 26 N | 38571 | 38329 | 38124 | 37956 | 37823 | 37725 | 37660 | 37625 | 37619 | 37640 | 37685 | 37752 | 37839 | 37943 | 38063 | 26 N |
| 24 N | 37573 | 37337 | 37139 | 36979 | 36854 | 36764 | 36707 | 36681 | 36685 | 36715 | 36769 | 36846 | 36942 | 37056 | 37185 | 24 N |
| 22 N | 36585 | 36358 | 36169 | 36018 | 35903 | 35823 | 35777 | 35761 | 35775 | 35815 | 35879 | 35966 | 36072 | 36194 | 36332 | 22 N |
| 20 N | 35616 | 35401 | 35223 | 35084 | 34981 | 34913 | 34879 | 34875 | 34900 | 34952 | 35027 | 35124 | 35239 | 35371 | 35517 | 20 N |
| 18 N | 34674 | 34473 | 34311 | 34186 | 34098 | 34045 | 34024 | 34035 | 34073 | 34137 | 34224 | 34331 | 34457 | 34599 | 34753 | 18 N |
| 16 N | 33766 | 33584 | 33440 | 33333 | 33263 | 33227 | 33223 | 33249 | 33302 | 33380 | 33480 | 33600 | 33736 | 33888 | 34052 | 16 N |
| 14 N | 32901 | 32741 | 32619 | 32534 | 32484 | 32468 | 32483 | 32527 | 32597 | 32691 | 32805 | 32937 | 33086 | 33248 | 33421 | 14 N |
| 12 N | 32085 | 31950 | 31853 | 31793 | 31767 | 31774 | 31811 | 31875 | 31964 | 32074 | 32204 | 32351 | 32512 | 32685 | 32869 | 12 N |
| 10 N | 31322 | 31216 | 31147 | 31115 | 31116 | 31148 | 31209 | 31296 | 31405 | 31534 | 31681 | 31843 | 32018 | 32204 | 32398 | 10 N |
| 8 N | 30616 | 30542 | 30505 | 30503 | 30533 | 30593 | 30679 | 30790 | 30921 | 31071 | 31236 | 31414 | 31604 | 31803 | 32009 | 8 N |
| 6 N | 29968 | 29929 | 29925 | 29956 | 30017 | 30106 | 30220 | 30356 | 30510 | 30681 | 30866 | 31061 | 31267 | 31480 | 31699 | 6 N |
| 4 N | 29380 | 29377 | 29408 | 29472 | 29565 | 29684 | 29826 | 29988 | 30166 | 30359 | 30564 | 30777 | 30999 | 31227 | 31459 | 4 N |
| 2 N | 28849 | 28883 | 28950 | 29047 | 29172 | 29322 | 29492 | 29680 | 29882 | 30097 | 30321 | 30554 | 30792 | 31034 | 31280 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 28373 | 28443 | 28545 | 28676 | 28833 | 29011 | 29209 | 29422 | 29648 | 29884 | 30128 | 30379 | 30633 | 30891 | 31150 | 0 |
| 2 S | 27949 | 28054 | 28190 | 28352 | 28539 | 28745 | 28969 | 29206 | 29454 | 29711 | 29973 | 30241 | 30511 | 30783 | 31056 | 2 S |
| 4 S | 27571 | 27710 | 27877 | 28069 | 28282 | 28514 | 28761 | 29021 | 29289 | 29564 | 29845 | 30128 | 30413 | 30699 | 30984 | 4 S |
| 6 S | 27236 | 27404 | 27599 | 27818 | 28056 | 28311 | 28579 | 28857 | 29144 | 29436 | 29731 | 30029 | 30327 | 30625 | 30920 | 6 S |
| 8 S | 26938 | 27133 | 27352 | 27593 | 27852 | 28126 | 28412 | 28707 | 29009 | 29315 | 29623 | 29933 | 30242 | 30550 | 30855 | 8 S |
| 10 S | 26673 | 26890 | 27131 | 27390 | 27666 | 27956 | 28256 | 28564 | 28877 | 29194 | 29513 | 29832 | 30150 | 30466 | 30777 | 10 S |
| 12 S | 26437 | 26673 | 26930 | 27204 | 27493 | 27794 | 28105 | 28422 | 28744 | 29069 | 29395 | 29721 | 30044 | 30364 | 30680 | 12 S |
| 14 S | 26229 | 26479 | 26747 | 27032 | 27330 | 27639 | 27956 | 28279 | 28606 | 28936 | 29265 | 29594 | 29920 | 30243 | 30559 | 14 S |
| 16 S | 26047 | 26306 | 26582 | 26873 | 27176 | 27489 | 27809 | 28134 | 28463 | 28793 | 29123 | 29452 | 29778 | 30099 | 30414 | 16 S |
| 18 S | 25889 | 26154 | 26435 | 26728 | 27032 | 27345 | 27664 | 27988 | 28315 | 28643 | 28970 | 29295 | 29617 | 29933 | 30243 | 18 S |
| 20 S | 25759 | 26025 | 26306 | 26599 | 26900 | 27210 | 27525 | 27844 | 28165 | 28487 | 28808 | 29127 | 29441 | 29750 | 30052 | 20 S |
| 22 S | 25656 | 25922 | 26200 | 26488 | 26784 | 27087 | 27395 | 27707 | 28019 | 28332 | 28644 | 28953 | 29257 | 29556 | 29846 | 22 S |
| 24 S | 25586 | 25847 | 26119 | 26400 | 26689 | 26983 | 27281 | 27581 | 27883 | 28184 | 28484 | 28780 | 29071 | 29356 | 29633 | 24 S |
| 26 S | 25551 | 25805 | 26069 | 26341 | 26619 | 26902 | 27188 | 27475 | 27763 | 28051 | 28335 | 28617 | 28893 | 29162 | 29423 | 26 S |
| 28 S | 25557 | 25802 | 26056 | 26316 | 26582 | 26851 | 27123 | 27396 | 27668 | 27940 | 28208 | 28472 | 28731 | 28982 | 29226 | 28 S |
| 30 S | 25609 | 25844 | 26085 | 26333 | 26584 | 26839 | 27095 | 27351 | 27607 | 27860 | 28110 | 28356 | 28596 | 28828 | 29053 | 30 S |
| 32 S | 25713 | 25935 | 26163 | 26396 | 26632 | 26871 | 27110 | 27349 | 27586 | 27821 | 28052 | 28278 | 28498 | 28711 | 28916 | 32 S |
| 34 S | 25874 | 26082 | 26296 | 26513 | 26733 | 26955 | 27177 | 27397 | 27616 | 27831 | 28042 | 28249 | 28449 | 28642 | 28827 | 34 S |
| 36 S | 26098 | 26291 | 26489 | 26691 | 26894 | 27098 | 27301 | 27503 | 27703 | 27899 | 28090 | 28277 | 28457 | 28631 | 28798 | 36 S |
| 38 S | 26391 | 26568 | 26750 | 26934 | 27120 | 27306 | 27491 | 27675 | 27855 | 28032 | 28205 | 28372 | 28534 | 28689 | 28838 | 38 S |
| 40 S | 26758 | 26918 | 27082 | 27249 | 27417 | 27585 | 27752 | 27917 | 28079 | 28238 | 28392 | 28542 | 28686 | 28824 | 28957 | 40 S |
| 42 S | 27204 | 27346 | 27492 | 27641 | 27791 | 27941 | 28090 | 28237 | 28382 | 28523 | 28660 | 28793 | 28921 | 29045 | 29164 | 42 S |
| 44 S | 27732 | 27856 | 27983 | 28114 | 28246 | 28378 | 28510 | 28640 | 28767 | 28892 | 29014 | 29132 | 29247 | 29358 | 29466 | 44 S |
| 46 S | 28348 | 28452 | 28560 | 28672 | 28786 | 28901 | 29015 | 29129 | 29241 | 29351 | 29459 | 29564 | 29667 | 29768 | 29867 | 46 S |
| 48 S | 29053 | 29137 | 29226 | 29319 | 29415 | 29513 | 29611 | 29709 | 29807 | 29904 | 29999 | 30094 | 30187 | 30280 | 30373 | 48 S |
| 50 S | 29849 | 29913 | 29983 | 30058 | 30136 | 30217 | 30300 | 30384 | 30468 | 30553 | 30638 | 30723 | 30809 | 30896 | 30986 | 50 S |
| 52 S | 30739 | 30783 | 30834 | 30890 | 30952 | 31017 | 31085 | 31155 | 31228 | 31302 | 31378 | 31456 | 31536 | 31619 | 31706 | 52 S |
| 54 S | 31723 | 31747 | 31779 | 31818 | 31863 | 31912 | 31967 | 32025 | 32086 | 32152 | 32220 | 32292 | 32368 | 32449 | 32536 | 54 S |
| 56 S | 32799 | 32804 | 32818 | 32840 | 32870 | 32905 | 32947 | 32994 | 33046 | 33103 | 33165 | 33233 | 33306 | 33386 | 33474 | 56 S |
| 58 S | 33967 | 33954 | 33951 | 33958 | 33973 | 33996 | 34025 | 34062 | 34106 | 34156 | 34213 | 34277 | 34349 | 34428 | 34517 | 58 S |
| 60 S | 35223 | 35194 | 35176 | 35169 | 35171 | 35181 | 35201 | 35229 | 35265 | 35309 | 35361 | 35423 | 35493 | 35573 | 35664 | 60 S |
| 62 S | 36564 | 36521 | 36490 | 36470 | 36460 | 36460 | 36471 | 36491 | 36520 | 36559 | 36608 | 36667 | 36737 | 36817 | 36909 | 62 S |
| 64 S | 37985 | 37930 | 37887 | 37856 | 37837 | 37829 | 37831 | 37844 | 37868 | 37903 | 37949 | 38006 | 38074 | 38155 | 38248 | 64 S |
| 66 S | 39479 | 39414 | 39363 | 39323 | 39296 | 39280 | 39276 | 39284 | 39303 | 39334 | 39377 | 39432 | 39499 | 39579 | 39673 | 66 S |
| 68 S | 41037 | 40966 | 40908 | 40863 | 40829 | 40808 | 40800 | 40803 | 40818 | 40846 | 40886 | 40939 | 41004 | 41083 | 41175 | 68 S |
| 70 S | 42652 | 42577 | 42515 | 42466 | 42429 | 42404 | 42392 | 42392 | 42404 | 42429 | 42467 | 42517 | 42580 | 42657 | 42747 | 70 S |
| 72 S | 44312 | 44236 | 44173 | 44122 | 44083 | 44056 | 44042 | 44040 | 44050 | 44073 | 44108 | 44155 | 44215 | 44289 | 44375 | 72 S |
| 74 S | 46005 | 45932 | 45870 | 45819 | 45781 | 45754 | 45739 | 45735 | 45744 | 45764 | 45797 | 45841 | 45898 | 45967 | 46048 | 74 S |
| 76 S | 47720 | 47651 | 47593 | 47545 | 47509 | 47483 | 47468 | 47464 | 47472 | 47490 | 47520 | 47560 | 47613 | 47676 | 47751 | 76 S |
| 78 S | 49443 | 49381 | 49328 | 49285 | 49252 | 49229 | 49215 | 49212 | 49218 | 49235 | 49261 | 49298 | 49345 | 49402 | 49469 | 78 S |
| 80 S | 51159 | 51106 | 51060 | 51024 | 50995 | 50975 | 50964 | 50961 | 50967 | 50982 | 51006 | 51038 | 51079 | 51128 | 51187 | 80 S |
| 82 S | 52855 | 52811 | 52775 | 52745 | 52722 | 52707 | 52698 | 52696 | 52702 | 52715 | 52734 | 52761 | 52796 | 52837 | 52885 | 82 S |
| 84 S | 54515 | 54483 | 54456 | 54434 | 54417 | 54406 | 54400 | 54399 | 54404 | 54415 | 54430 | 54452 | 54478 | 54510 | 54548 | 84 S |
| 86 S | 56126 | 56105 | 56087 | 56073 | 56063 | 56056 | 56052 | 56053 | 56057 | 56064 | 56076 | 56090 | 56109 | 56131 | 56157 | 86 S |
| 88 S | 57673 | 57663 | 57654 | 57648 | 57643 | 57640 | 57639 | 57639 | 57642 | 57646 | 57652 | 57660 | 57669 | 57681 | 57694 | 88 S |
| 90 S | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 59143 | 90 S |
| LAT. | 60524 | 60533 | 60540 | 60545 | 60548 | 60550 | 60550 | 60548 | 60545 | 60539 | 60532 | 60524 | 60514 | 60502 | 60488 | LAT. |
| E.LONG. | 334 | 336 | 338 | 340 | 342 | 344 | 346 | 348 | 350 | 352 | 354 | 356 | 358 | 360 | 362 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 35.2 | 35.2 | 35.1 | 35.1 | 35.0 | 35.0 | 34.9 | 34.9 | 34.9 | 34.8 | 34.8 | 34.8 | 34.8 | 34.7 | 34.7 | |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 38.9 | 38.9 | 39.0 | 39.0 | 39.1 | 39.1 | 39.1 | 39.2 | 39.2 | 39.3 | 39.3 | 39.3 | 39.4 | 39.4 | 39.4 | 88 N |
| 86 N | 40.2 | 40.3 | 40.4 | 40.5 | 40.5 | 40.6 | 40.7 | 40.8 | 40.9 | 40.9 | 41.0 | 41.1 | 41.1 | 41.2 | 41.3 | 86 N |
| 84 N | 41.2 | 41.3 | 41.4 | 41.5 | 41.7 | 41.8 | 41.9 | 42.0 | 42.1 | 42.3 | 42.4 | 42.5 | 42.6 | 42.7 | 42.8 | 84 N |
| 82 N | 41.8 | 42.0 | 42.1 | 42.3 | 42.4 | 42.6 | 42.7 | 42.9 | 43.1 | 43.2 | 43.4 | 43.5 | 43.7 | 43.8 | 43.9 | 82 N |
| 80 N | 42.2 | 42.4 | 42.5 | 42.7 | 42.9 | 43.1 | 43.3 | 43.4 | 43.6 | 43.8 | 44.0 | 44.2 | 44.4 | 44.6 | 44.8 | 80 N |
| 78 N | 42.3 | 42.5 | 42.7 | 42.9 | 43.1 | 43.3 | 43.5 | 43.7 | 43.9 | 44.1 | 44.3 | 44.6 | 44.8 | 45.0 | 45.3 | 78 N |
| 76 N | 42.3 | 42.4 | 42.6 | 42.8 | 43.0 | 43.2 | 43.4 | 43.6 | 43.9 | 44.1 | 44.4 | 44.6 | 44.9 | 45.2 | 45.4 | 76 N |
| 74 N | 42.0 | 42.2 | 42.3 | 42.5 | 42.7 | 42.9 | 43.1 | 43.4 | 43.6 | 43.9 | 44.2 | 44.5 | 44.8 | 45.1 | 45.4 | 74 N |
| 72 N | 41.6 | 41.7 | 41.9 | 42.0 | 42.2 | 42.4 | 42.7 | 42.9 | 43.2 | 43.5 | 43.8 | 44.1 | 44.4 | 44.7 | 45.1 | 72 N |
| 70 N | 41.1 | 41.2 | 41.3 | 41.5 | 41.7 | 41.9 | 42.1 | 42.3 | 42.6 | 42.9 | 43.2 | 43.6 | 43.9 | 44.3 | 44.6 | 70 N |
| 68 N | 40.5 | 40.6 | 40.7 | 40.8 | 41.0 | 41.2 | 41.4 | 41.7 | 41.9 | 42.2 | 42.6 | 42.9 | 43.3 | 43.6 | 44.0 | 68 N |
| 66 N | 39.8 | 39.8 | 39.9 | 40.1 | 40.2 | 40.4 | 40.7 | 40.9 | 41.2 | 41.5 | 41.8 | 42.2 | 42.5 | 42.9 | 43.3 | 66 N |
| 64 N | 39.0 | 39.1 | 39.1 | 39.3 | 39.5 | 39.7 | 39.9 | 40.2 | 40.4 | 40.8 | 41.1 | 41.4 | 41.8 | 42.2 | 42.5 | 64 N |
| 62 N | 38.1 | 38.2 | 38.3 | 38.5 | 38.6 | 38.9 | 39.1 | 39.4 | 39.7 | 40.0 | 40.3 | 40.7 | 41.0 | 41.4 | 41.7 | 62 N |
| 60 N | 37.2 | 37.3 | 37.4 | 37.6 | 37.8 | 38.1 | 38.3 | 38.6 | 39.0 | 39.3 | 39.6 | 40.0 | 40.3 | 40.6 | 41.0 | 60 N |
| 58 N | 36.1 | 36.3 | 36.5 | 36.7 | 37.0 | 37.3 | 37.6 | 37.9 | 38.3 | 38.6 | 38.9 | 39.3 | 39.6 | 39.9 | 40.3 | 58 N |
| 56 N | 34.9 | 35.2 | 35.5 | 35.8 | 36.1 | 36.5 | 36.9 | 37.2 | 37.6 | 38.0 | 38.3 | 38.7 | 39.0 | 39.3 | 39.6 | 56 N |
| 54 N | 33.7 | 34.0 | 34.4 | 34.9 | 35.3 | 35.7 | 36.2 | 36.6 | 37.0 | 37.4 | 37.8 | 38.2 | 38.5 | 38.8 | 39.0 | 54 N |
| 52 N | 32.3 | 32.8 | 33.3 | 33.9 | 34.4 | 35.0 | 35.5 | 36.0 | 36.5 | 36.9 | 37.3 | 37.7 | 38.0 | 38.3 | 38.6 | 52 N |
| 50 N | 30.8 | 31.4 | 32.2 | 32.9 | 33.6 | 34.2 | 34.9 | 35.5 | 36.0 | 36.5 | 36.9 | 37.3 | 37.7 | 37.9 | 38.2 | 50 N |
| 48 N | 29.1 | 30.0 | 30.9 | 31.8 | 32.7 | 33.5 | 34.2 | 34.9 | 35.6 | 36.1 | 36.6 | 37.0 | 37.4 | 37.7 | 37.9 | 48 N |
| 46 N | 27.4 | 28.5 | 29.7 | 30.7 | 31.8 | 32.7 | 33.6 | 34.4 | 35.2 | 35.8 | 36.3 | 36.8 | 37.2 | 37.4 | 37.6 | 46 N |
| 44 N | 25.6 | 27.0 | 28.3 | 29.6 | 30.8 | 32.0 | 33.0 | 33.9 | 34.8 | 35.5 | 36.1 | 36.6 | 37.0 | 37.3 | 37.5 | 44 N |
| 42 N | 23.8 | 25.4 | 27.0 | 28.5 | 29.9 | 31.2 | 32.4 | 33.4 | 34.4 | 35.2 | 35.8 | 36.4 | 36.8 | 37.1 | 37.3 | 42 N |
| 40 N | 21.9 | 23.8 | 25.6 | 27.3 | 29.0 | 30.4 | 31.8 | 32.9 | 34.0 | 34.8 | 35.6 | 36.2 | 36.6 | 37.0 | 37.2 | 40 N |
| 38 N | 20.1 | 22.2 | 24.3 | 26.2 | 28.0 | 29.6 | 31.1 | 32.4 | 33.5 | 34.5 | 35.3 | 35.9 | 36.4 | 36.7 | 37.0 | 38 N |
| 36 N | 18.3 | 20.6 | 22.9 | 25.0 | 27.0 | 28.8 | 30.4 | 31.8 | 33.0 | 34.0 | 34.9 | 35.6 | 36.1 | 36.5 | 36.7 | 36 N |
| 34 N | 16.5 | 19.1 | 21.6 | 23.9 | 26.0 | 27.9 | 29.7 | 31.2 | 32.4 | 33.5 | 34.4 | 35.1 | 35.7 | 36.1 | 36.4 | 34 N |
| 32 N | 14.8 | 17.7 | 20.3 | 22.8 | 25.0 | 27.1 | 28.9 | 30.4 | 31.8 | 32.9 | 33.8 | 34.5 | 35.1 | 35.5 | 35.8 | 32 N |
| 30 N | 13.3 | 16.3 | 19.1 | 21.7 | 24.0 | 26.1 | 28.0 | 29.6 | 31.0 | 32.1 | 33.1 | 33.8 | 34.4 | 34.8 | 35.1 | 30 N |
| 28 N | 11.9 | 15.1 | 18.0 | 20.6 | 23.0 | 25.2 | 27.1 | 28.7 | 30.1 | 31.2 | 32.2 | 32.9 | 33.5 | 34.0 | 34.3 | 28 N |
| 26 N | 10.8 | 13.9 | 16.9 | 19.6 | 22.0 | 24.2 | 26.1 | 27.7 | 29.1 | 30.2 | 31.1 | 31.9 | 32.4 | 32.9 | 33.2 | 26 N |
| 24 N | 9.8 | 13.0 | 15.9 | 18.6 | 21.0 | 23.2 | 25.0 | 26.6 | 27.9 | 29.0 | 29.9 | 30.6 | 31.2 | 31.6 | 31.9 | 24 N |
| 22 N | 9.0 | 12.2 | 15.1 | 17.7 | 20.1 | 22.1 | 23.9 | 25.4 | 26.7 | 27.7 | 28.6 | 29.2 | 29.7 | 30.1 | 30.3 | 22 N |
| 20 N | 8.5 | 11.6 | 14.4 | 16.9 | 19.2 | 21.1 | 22.8 | 24.2 | 25.4 | 26.3 | 27.1 | 27.7 | 28.1 | 28.4 | 28.6 | 20 N |
| 18 N | 8.3 | 11.2 | 13.8 | 16.2 | 18.3 | 20.1 | 21.6 | 22.9 | 24.0 | 24.8 | 25.5 | 26.0 | 26.3 | 26.6 | 26.7 | 18 N |
| 16 N | 8.3 | 11.0 | 13.4 | 15.6 | 17.5 | 19.1 | 20.5 | 21.6 | 22.6 | 23.3 | 23.8 | 24.2 | 24.4 | 24.6 | 24.6 | 16 N |
| 14 N | 8.5 | 11.0 | 13.2 | 15.1 | 16.8 | 18.2 | 19.4 | 20.3 | 21.1 | 21.7 | 22.1 | 22.3 | 22.5 | 22.5 | 22.4 | 14 N |
| 12 N | 9.0 | 11.2 | 13.1 | 14.7 | 16.2 | 17.3 | 18.3 | 19.1 | 19.6 | 20.0 | 20.3 | 20.4 | 20.4 | 20.3 | 20.1 | 12 N |
| 10 N | 9.7 | 11.5 | 13.1 | 14.5 | 15.6 | 16.5 | 17.2 | 17.8 | 18.1 | 18.4 | 18.4 | 18.4 | 18.2 | 18.0 | 17.7 | 10 N |
| 8 N | 10.5 | 12.0 | 13.2 | 14.3 | 15.1 | 15.7 | 16.2 | 16.5 | 16.6 | 16.6 | 16.5 | 16.3 | 16.0 | 15.6 | 15.1 | 8 N |
| 6 N | 11.4 | 12.5 | 13.4 | 14.1 | 14.6 | 14.9 | 15.1 | 15.2 | 15.1 | 14.9 | 14.5 | 14.1 | 13.6 | 13.0 | 12.4 | 6 N |
| 4 N | 12.2 | 13.0 | 13.5 | 13.8 | 14.0 | 14.0 | 13.9 | 13.7 | 13.4 | 12.9 | 12.4 | 11.8 | 11.1 | 10.3 | 9.6 | 4 N |
| 2 N | 12.9 | 13.3 | 13.4 | 13.4 | 13.3 | 13.0 | 12.6 | 12.1 | 11.5 | 10.8 | 10.0 | 9.2 | 8.3 | 7.4 | 6.5 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 13.4 | 13.4 | 13.2 | 12.8 | 12.3 | 11.7 | 11.0 | 10.2 | 9.3 | 8.4 | 7.4 | 6.3 | 5.2 | 4.1 | 3.0 | 0 |
| 2 S | 13.5 | 13.1 | 12.5 | 11.8 | 10.9 | 10.0 | 9.0 | 7.9 | 6.7 | 5.6 | 4.3 | 3.0 | 1.8 | 0.5 | -0.7 | 2 S |
| 4 S | 13.1 | 12.3 | 11.4 | 10.3 | 9.1 | 7.8 | 6.5 | 5.1 | 3.7 | 2.3 | 0.8 | -0.7 | -2.2 | -3.6 | -4.9 | 4 S |
| 6 S | 12.1 | 11.0 | 9.7 | 8.2 | 6.7 | 5.1 | 3.5 | 1.8 | 0.1 | -1.6 | -3.3 | -5.0 | -6.6 | -8.2 | -9.6 | 6 S |
| 8 S | 10.4 | 8.9 | 7.3 | 5.5 | 3.6 | 1.7 | -0.2 | -2.2 | -4.1 | -6.1 | -8.0 | -9.8 | -11.6 | -13.3 | -14.8 | 8 S |
| 10 S | 7.9 | 6.1 | 4.1 | 2.0 | -0.2 | -2.4 | -4.6 | -6.9 | -9.1 | -11.2 | -13.3 | -15.3 | -17.2 | -18.9 | -20.5 | 10 S |
| 12 S | 4.6 | 2.4 | 0.1 | -2.3 | -4.8 | -7.3 | -9.8 | -12.3 | -14.7 | -17.0 | -19.3 | -21.4 | -23.4 | -25.2 | -26.7 | 12 S |
| 14 S | 0.3 | -2.1 | -4.7 | -7.4 | -10.2 | -13.0 | -15.7 | -18.4 | -21.0 | -23.6 | -25.9 | -28.1 | -30.1 | -31.9 | -33.4 | 14 S |
| 16 S | -4.8 | -7.6 | -10.5 | -13.4 | -16.4 | -19.4 | -22.4 | -25.3 | -28.1 | -30.7 | -33.2 | -35.4 | -37.4 | -39.1 | -40.4 | 16 S |
| 18 S | -10.8 | -13.9 | -17.0 | -20.2 | -23.4 | -26.6 | -29.8 | -32.8 | -35.7 | -38.4 | -40.9 | -43.1 | -45.1 | -46.6 | -47.8 | 18 S |
| 20 S | -17.7 | -20.9 | -24.3 | -27.7 | -31.1 | -34.5 | -37.8 | -40.9 | -43.9 | -46.6 | -49.1 | -51.2 | -53.0 | -54.4 | -55.3 | 20 S |
| 22 S | -25.3 | -28.7 | -32.3 | -35.8 | -39.4 | -42.9 | -46.3 | -49.5 | -52.4 | -55.1 | -57.5 | -59.6 | -61.2 | -62.3 | -62.9 | 22 S |
| 24 S | -33.5 | -37.1 | -40.8 | -44.5 | -48.1 | -51.7 | -55.1 | -58.3 | -61.2 | -63.9 | -66.1 | -68.0 | -69.3 | -70.1 | -70.4 | 24 S |
| 26 S | -42.1 | -45.9 | -49.7 | -53.5 | -57.2 | -60.8 | -64.1 | -67.3 | -70.1 | -72.6 | -74.7 | -76.2 | -77.3 | -77.8 | -77.6 | 26 S |
| 28 S | -51.1 | -54.9 | -58.8 | -62.6 | -66.3 | -69.9 | -73.2 | -76.2 | -78.9 | -81.1 | -83.0 | -84.2 | -84.9 | -85.0 | -84.4 | 28 S |
| 30 S | -60.1 | -64.0 | -67.9 | -71.7 | -75.4 | -78.8 | -82.0 | -84.9 | -87.3 | -89.3 | -90.8 | -91.8 | -92.1 | -91.7 | -90.6 | 30 S |
| 32 S | -69.1 | -73.0 | -76.8 | -80.5 | -84.1 | -87.4 | -90.4 | -93.0 | -95.2 | -96.9 | -98.1 | -98.6 | -98.5 | -97.7 | -96.1 | 32 S |
| 34 S | -77.7 | -81.6 | -85.3 | -88.9 | -92.3 | -95.4 | -98.2 | -100.6 | -102.5 | -103.8 | -104.6 | -104.7 | -104.1 | -102.8 | -100.7 | 34 S |
| 36 S | -85.9 | -89.6 | -93.3 | -96.7 | -99.9 | -102.7 | -105.2 | -107.3 | -108.8 | -109.8 | -110.2 | -109.9 | -108.8 | -107.0 | -104.4 | 36 S |
| 38 S | -93.4 | -97.0 | -100.4 | -103.6 | -106.5 | -109.1 | -111.3 | -113.0 | -114.2 | -114.8 | -114.7 | -114.0 | -112.5 | -110.2 | -107.2 | 38 S |
| 40 S | -100.1 | -103.5 | -106.7 | -109.6 | -112.3 | -114.5 | -116.3 | -117.7 | -118.5 | -118.7 | -118.2 | -117.0 | -115.1 | -112.4 | -108.9 | 40 S |
| 42 S | -105.9 | -109.0 | -112.0 | -114.6 | -116.9 | -118.8 | -120.3 | -121.3 | -121.7 | -121.4 | -120.6 | -119.0 | -116.7 | -113.7 | -109.9 | 42 S |
| 44 S | -110.8 | -113.6 | -116.2 | -118.5 | -120.5 | -122.1 | -123.2 | -123.7 | -123.8 | -123.2 | -122.0 | -120.0 | -117.4 | -114.1 | -110.0 | 44 S |
| 46 S | -114.7 | -117.2 | -119.5 | -121.4 | -123.1 | -124.3 | -125.0 | -125.2 | -124.9 | -124.0 | -122.4 | -120.2 | -117.3 | -113.8 | -109.5 | 46 S |
| 48 S | -117.7 | -119.9 | -121.8 | -123.4 | -124.7 | -125.5 | -125.9 | -125.8 | -125.1 | -123.9 | -122.1 | -119.7 | -116.6 | -112.9 | -108.6 | 48 S |
| 50 S | -119.8 | -121.7 | -123.2 | -124.5 | -125.4 | -125.9 | -126.0 | -125.6 | -124.7 | -123.2 | -121.2 | -118.6 | -115.4 | -111.7 | -107.4 | 50 S |
| 52 S | -121.3 | -122.8 | -124.0 | -124.9 | -125.5 | -125.7 | -125.4 | -124.8 | -123.6 | -122.0 | -119.9 | -117.2 | -114.0 | -110.3 | -106.0 | 52 S |
| 54 S | -122.1 | -123.2 | -124.1 | -124.7 | -125.0 | -124.9 | -124.5 | -123.6 | -122.3 | -120.5 | -118.3 | -115.6 | -112.4 | -108.8 | -104.7 | 54 S |
| 56 S | -122.5 | -123.3 | -123.8 | -124.1 | -124.2 | -123.8 | -123.2 | -122.1 | -120.7 | -118.9 | -116.6 | -114.0 | -110.9 | -107.4 | -103.5 | 56 S |
| 58 S | -122.4 | -123.0 | -123.2 | -123.3 | -123.1 | -122.6 | -121.7 | -120.6 | -119.1 | -117.2 | -115.0 | -112.4 | -109.5 | -106.2 | -102.6 | 58 S |
| 60 S | -122.2 | -122.4 | -122.5 | -122.3 | -121.9 | -121.2 | -120.3 | -119.0 | -117.5 | -115.7 | -113.5 | -111.1 | -108.3 | -105.3 | -101.9 | 60 S |
| 62 S | -121.8 | -121.8 | -121.6 | -121.3 | -120.7 | -119.9 | -118.9 | -117.6 | -116.1 | -114.3 | -112.3 | -110.0 | -107.4 | -104.6 | -101.6 | 62 S |
| 64 S | -121.3 | -121.1 | -120.8 | -120.3 | -119.6 | -118.7 | -117.6 | -116.4 | -114.9 | -113.2 | -111.2 | -109.1 | -106.8 | -104.2 | -101.5 | 64 S |
| 66 S | -120.8 | -120.4 | -119.9 | -119.3 | -118.5 | -117.6 | -116.5 | -115.3 | -113.8 | -112.2 | -110.5 | -108.5 | -106.4 | -104.1 | -101.6 | 66 S |
| 68 S | -120.2 | -119.7 | -119.1 | -118.4 | -117.6 | -116.7 | -115.6 | -114.4 | -113.0 | -111.5 | -109.9 | -108.1 | -106.2 | -104.2 | -102.0 | 68 S |
| 70 S | -119.6 | -119.0 | -118.4 | -117.6 | -116.8 | -115.8 | -114.8 | -113.6 | -112.3 | -111.0 | -109.5 | -107.9 | -106.2 | -104.4 | -102.5 | 70 S |
| 72 S | -118.9 | -118.3 | -117.6 | -116.8 | -116.0 | -115.1 | -114.1 | -113.0 | -111.8 | -110.5 | -109.2 | -107.8 | -106.3 | -104.7 | -103.0 | 72 S |
| 74 S | -118.2 | -117.5 | -116.8 | -116.0 | -115.2 | -114.3 | -113.4 | -112.4 | -111.3 | -110.2 | -109.0 | -107.7 | -106.4 | -105.0 | -103.6 | 74 S |
| 76 S | -117.3 | -116.6 | -115.9 | -115.2 | -114.4 | -113.6 | -112.7 | -111.8 | -110.8 | -109.8 | -108.7 | -107.6 | -106.5 | -105.3 | -104.1 | 76 S |
| 78 S | -116.2 | -115.5 | -114.9 | -114.2 | -113.5 | -112.7 | -111.9 | -111.1 | -110.2 | -109.3 | -108.4 | -107.5 | -106.5 | -105.5 | -104.5 | 78 S |
| 80 S | -114.8 | -114.2 | -113.6 | -113.0 | -112.3 | -111.7 | -111.0 | -110.3 | -109.5 | -108.8 | -108.0 | -107.2 | -106.4 | -105.5 | -104.7 | 80 S |
| 82 S | -113.1 | -112.6 | -112.1 | -111.6 | -111.0 | -110.5 | -109.9 | -109.3 | -108.7 | -108.1 | -107.4 | -106.8 | -106.1 | -105.4 | -104.7 | 82 S |
| 84 S | -111.1 | -110.7 | -110.3 | -109.9 | -109.5 | -109.0 | -108.6 | -108.1 | -107.6 | -107.1 | -106.6 | -106.1 | -105.6 | -105.1 | -104.6 | 84 S |
| 86 S | -108.8 | -108.5 | -108.2 | -107.9 | -107.6 | -107.3 | -107.0 | -106.7 | -106.3 | -106.0 | -105.7 | -105.3 | -105.0 | -104.6 | -104.3 | 86 S |
| 88 S | -106.1 | -106.0 | -105.8 | -105.7 | -105.5 | -105.3 | -105.2 | -105.0 | -104.8 | -104.7 | -104.5 | -104.3 | -104.1 | -103.9 | -103.8 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -99.8 | -99.9 | -100.1 | -100.3 | -100.4 | -100.6 | -100.8 | -101.0 | -101.2 | -101.3 | -101.5 | -101.7 | -101.9 | -102.1 | -102.3 | LAT. |
| E.LONG. | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 34.8 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.8 | 34.8 | 34.8 | |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 88 N |
| 86 N | 41.1 | 41.2 | 41.3 | 41.3 | 41.4 | 41.4 | 41.4 | 41.5 | 41.5 | 41.5 | 41.6 | 41.6 | 41.6 | 41.6 | 41.6 | 86 N |
| 84 N | 42.6 | 42.7 | 42.8 | 42.9 | 43.0 | 43.0 | 43.1 | 43.2 | 43.2 | 43.3 | 43.4 | 43.4 | 43.4 | 43.5 | 43.5 | 84 N |
| 82 N | 43.7 | 43.8 | 43.9 | 44.1 | 44.2 | 44.3 | 44.5 | 44.6 | 44.7 | 44.8 | 44.9 | 45.0 | 45.0 | 45.1 | 45.2 | 82 N |
| 80 N | 44.4 | 44.6 | 44.8 | 44.9 | 45.1 | 45.3 | 45.5 | 45.6 | 45.8 | 45.9 | 46.1 | 46.2 | 46.3 | 46.4 | 46.5 | 80 N |
| 78 N | 44.8 | 45.0 | 45.3 | 45.5 | 45.7 | 45.9 | 46.2 | 46.4 | 46.6 | 46.8 | 47.0 | 47.2 | 47.3 | 47.5 | 47.6 | 78 N |
| 76 N | 44.9 | 45.2 | 45.4 | 45.7 | 46.0 | 46.3 | 46.6 | 46.8 | 47.1 | 47.3 | 47.6 | 47.8 | 48.0 | 48.2 | 48.4 | 76 N |
| 74 N | 44.8 | 45.1 | 45.4 | 45.7 | 46.0 | 46.3 | 46.7 | 47.0 | 47.3 | 47.6 | 47.9 | 48.2 | 48.4 | 48.7 | 48.9 | 74 N |
| 72 N | 44.4 | 44.7 | 45.1 | 45.4 | 45.8 | 46.2 | 46.5 | 46.9 | 47.2 | 47.6 | 47.9 | 48.2 | 48.5 | 48.8 | 49.1 | 72 N |
| 70 N | 43.9 | 44.3 | 44.6 | 45.0 | 45.4 | 45.8 | 46.1 | 46.5 | 46.9 | 47.3 | 47.6 | 48.0 | 48.3 | 48.6 | 48.9 | 70 N |
| 68 N | 43.3 | 43.6 | 44.0 | 44.4 | 44.8 | 45.2 | 45.6 | 46.0 | 46.4 | 46.8 | 47.1 | 47.5 | 47.9 | 48.2 | 48.5 | 68 N |
| 66 N | 42.5 | 42.9 | 43.3 | 43.7 | 44.1 | 44.5 | 44.9 | 45.3 | 45.7 | 46.1 | 46.5 | 46.8 | 47.2 | 47.5 | 47.8 | 66 N |
| 64 N | 41.8 | 42.2 | 42.5 | 42.9 | 43.3 | 43.7 | 44.1 | 44.5 | 44.9 | 45.2 | 45.6 | 46.0 | 46.3 | 46.6 | 46.9 | 64 N |
| 62 N | 41.0 | 41.4 | 41.7 | 42.1 | 42.5 | 42.9 | 43.2 | 43.6 | 43.9 | 44.3 | 44.6 | 45.0 | 45.3 | 45.6 | 45.9 | 62 N |
| 60 N | 40.3 | 40.6 | 41.0 | 41.3 | 41.7 | 42.0 | 42.3 | 42.7 | 43.0 | 43.3 | 43.6 | 43.9 | 44.2 | 44.4 | 44.7 | 60 N |
| 58 N | 39.6 | 39.9 | 40.3 | 40.6 | 40.9 | 41.2 | 41.5 | 41.7 | 42.0 | 42.3 | 42.5 | 42.7 | 43.0 | 43.2 | 43.4 | 58 N |
| 56 N | 39.0 | 39.3 | 39.6 | 39.9 | 40.1 | 40.4 | 40.6 | 40.8 | 41.1 | 41.3 | 41.4 | 41.6 | 41.8 | 41.9 | 42.1 | 56 N |
| 54 N | 38.5 | 38.8 | 39.0 | 39.3 | 39.5 | 39.7 | 39.9 | 40.0 | 40.2 | 40.3 | 40.4 | 40.5 | 40.6 | 40.7 | 40.8 | 54 N |
| 52 N | 38.0 | 38.3 | 38.6 | 38.8 | 38.9 | 39.1 | 39.2 | 39.3 | 39.4 | 39.4 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 52 N |
| 50 N | 37.7 | 37.9 | 38.2 | 38.4 | 38.5 | 38.6 | 38.6 | 38.7 | 38.7 | 38.7 | 38.6 | 38.6 | 38.5 | 38.4 | 38.3 | 50 N |
| 48 N | 37.4 | 37.7 | 37.9 | 38.0 | 38.1 | 38.2 | 38.2 | 38.2 | 38.1 | 38.0 | 37.9 | 37.8 | 37.6 | 37.4 | 37.3 | 48 N |
| 46 N | 37.2 | 37.4 | 37.6 | 37.8 | 37.9 | 37.9 | 37.8 | 37.8 | 37.6 | 37.5 | 37.3 | 37.1 | 36.8 | 36.6 | 36.3 | 46 N |
| 44 N | 37.0 | 37.3 | 37.5 | 37.6 | 37.6 | 37.6 | 37.6 | 37.4 | 37.3 | 37.0 | 36.8 | 36.5 | 36.2 | 35.8 | 35.5 | 44 N |
| 42 N | 36.8 | 37.1 | 37.3 | 37.4 | 37.5 | 37.5 | 37.4 | 37.2 | 37.0 | 36.7 | 36.4 | 36.0 | 35.6 | 35.2 | 34.7 | 42 N |
| 40 N | 36.6 | 37.0 | 37.2 | 37.3 | 37.3 | 37.3 | 37.2 | 37.0 | 36.7 | 36.4 | 36.1 | 35.6 | 35.2 | 34.6 | 34.1 | 40 N |
| 38 N | 36.4 | 36.7 | 37.0 | 37.1 | 37.2 | 37.1 | 37.0 | 36.8 | 36.5 | 36.2 | 35.7 | 35.3 | 34.7 | 34.1 | 33.5 | 38 N |
| 36 N | 36.1 | 36.5 | 36.7 | 36.9 | 36.9 | 36.9 | 36.7 | 36.5 | 36.2 | 35.9 | 35.4 | 34.9 | 34.3 | 33.7 | 32.9 | 36 N |
| 34 N | 35.7 | 36.1 | 36.4 | 36.5 | 36.6 | 36.5 | 36.4 | 36.2 | 35.9 | 35.5 | 35.1 | 34.5 | 33.9 | 33.2 | 32.4 | 34 N |
| 32 N | 35.1 | 35.5 | 35.8 | 36.0 | 36.1 | 36.1 | 35.9 | 35.7 | 35.4 | 35.1 | 34.6 | 34.0 | 33.4 | 32.6 | 31.7 | 32 N |
| 30 N | 34.4 | 34.8 | 35.1 | 35.3 | 35.4 | 35.4 | 35.3 | 35.1 | 34.8 | 34.5 | 34.0 | 33.4 | 32.7 | 31.9 | 31.0 | 30 N |
| 28 N | 33.5 | 34.0 | 34.3 | 34.5 | 34.6 | 34.6 | 34.5 | 34.3 | 34.0 | 33.7 | 33.2 | 32.6 | 31.9 | 31.1 | 30.2 | 28 N |
| 26 N | 32.4 | 32.9 | 33.2 | 33.4 | 33.5 | 33.5 | 33.4 | 33.2 | 33.0 | 32.6 | 32.2 | 31.6 | 30.9 | 30.1 | 29.2 | 26 N |
| 24 N | 31.2 | 31.6 | 31.9 | 32.0 | 32.1 | 32.1 | 32.1 | 31.9 | 31.7 | 31.4 | 30.9 | 30.4 | 29.7 | 29.0 | 28.1 | 24 N |
| 22 N | 29.7 | 30.1 | 30.3 | 30.5 | 30.6 | 30.6 | 30.5 | 30.4 | 30.1 | 29.8 | 29.4 | 28.9 | 28.3 | 27.6 | 26.7 | 22 N |
| 20 N | 28.1 | 28.4 | 28.6 | 28.7 | 28.8 | 28.8 | 28.7 | 28.5 | 28.3 | 28.1 | 27.7 | 27.3 | 26.7 | 26.0 | 25.3 | 20 N |
| 18 N | 26.3 | 26.6 | 26.7 | 26.8 | 26.8 | 26.7 | 26.6 | 26.5 | 26.3 | 26.0 | 25.7 | 25.3 | 24.9 | 24.3 | 23.7 | 18 N |
| 16 N | 24.4 | 24.6 | 24.6 | 24.6 | 24.6 | 24.5 | 24.3 | 24.2 | 24.0 | 23.8 | 23.5 | 23.2 | 22.9 | 22.4 | 21.9 | 16 N |
| 14 N | 22.5 | 22.5 | 22.4 | 22.3 | 22.2 | 22.0 | 21.9 | 21.7 | 21.5 | 21.3 | 21.1 | 20.9 | 20.7 | 20.4 | 20.0 | 14 N |
| 12 N | 20.4 | 20.3 | 20.1 | 19.9 | 19.7 | 19.4 | 19.2 | 19.0 | 18.8 | 18.7 | 18.5 | 18.4 | 18.3 | 18.2 | 18.1 | 12 N |
| 10 N | 18.2 | 18.0 | 17.7 | 17.4 | 17.0 | 16.7 | 16.4 | 16.1 | 16.0 | 15.8 | 15.8 | 15.8 | 15.9 | 16.0 | 16.1 | 10 N |
| 8 N | 16.0 | 15.6 | 15.1 | 14.7 | 14.2 | 13.8 | 13.4 | 13.1 | 12.9 | 12.9 | 12.9 | 13.0 | 13.3 | 13.6 | 14.0 | 8 N |
| 6 N | 13.6 | 13.0 | 12.4 | 11.8 | 11.3 | 10.7 | 10.3 | 10.0 | 9.8 | 9.8 | 9.9 | 10.2 | 10.6 | 11.2 | 11.9 | 6 N |
| 4 N | 11.1 | 10.3 | 9.6 | 8.8 | 8.1 | 7.5 | 7.0 | 6.6 | 6.5 | 6.5 | 6.7 | 7.2 | 7.8 | 8.7 | 9.6 | 4 N |
| 2 N | 8.3 | 7.4 | 6.5 | 5.6 | 4.7 | 4.0 | 3.5 | 3.1 | 3.0 | 3.1 | 3.4 | 4.1 | 5.0 | 6.1 | 7.4 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 5.2 | 4.1 | 3.0 | 2.0 | 1.1 | 0.3 | -0.3 | -0.6 | -0.7 | -0.5 | 0.0 | 0.8 | 2.0 | 3.4 | 5.0 | 0 |
| 2 S | 1.8 | 0.5 | -0.7 | -1.9 | -2.9 | -3.7 | -4.3 | -4.6 | -4.6 | -4.3 | -3.6 | -2.5 | -1.1 | 0.6 | 2.6 | 2 S |
| 4 S | -2.2 | -3.6 | -4.9 | -6.2 | -7.2 | -8.1 | -8.7 | -8.9 | -8.8 | -8.3 | -7.4 | -6.0 | -4.3 | -2.3 | 0.0 | 4 S |
| 6 S | -6.6 | -8.2 | -9.6 | -10.9 | -12.0 | -12.8 | -13.3 | -13.5 | -13.2 | -12.5 | -11.3 | -9.7 | -7.7 | -5.3 | -2.6 | 6 S |
| 8 S | -11.6 | -13.3 | -14.8 | -16.1 | -17.2 | -17.9 | -18.3 | -18.3 | -17.8 | -16.9 | -15.4 | -13.5 | -11.1 | -8.3 | -5.3 | 8 S |
| 10 S | -17.2 | -18.9 | -20.5 | -21.8 | -22.8 | -23.4 | -23.7 | -23.4 | -22.7 | -21.4 | -19.6 | -17.4 | -14.6 | -11.4 | -7.9 | 10 S |
| 12 S | -23.4 | -25.2 | -26.7 | -27.9 | -28.8 | -29.3 | -29.3 | -28.8 | -27.7 | -26.1 | -24.0 | -21.3 | -18.1 | -14.5 | -10.6 | 12 S |
| 14 S | -30.1 | -31.9 | -33.4 | -34.5 | -35.2 | -35.4 | -35.1 | -34.3 | -32.9 | -30.9 | -28.3 | -25.2 | -21.5 | -17.5 | -13.2 | 14 S |
| 16 S | -37.4 | -39.1 | -40.4 | -41.3 | -41.8 | -41.8 | -41.2 | -40.0 | -38.1 | -35.7 | -32.6 | -29.0 | -24.9 | -20.4 | -15.6 | 16 S |
| 18 S | -45.1 | -46.6 | -47.8 | -48.5 | -48.6 | -48.2 | -47.2 | -45.6 | -43.3 | -40.4 | -36.8 | -32.7 | -28.0 | -23.0 | -17.7 | 18 S |
| 20 S | -53.0 | -54.4 | -55.3 | -55.7 | -55.5 | -54.7 | -53.3 | -51.2 | -48.3 | -44.9 | -40.7 | -36.1 | -30.9 | -25.3 | -19.6 | 20 S |
| 22 S | -61.2 | -62.3 | -62.9 | -62.9 | -62.4 | -61.1 | -59.1 | -56.5 | -53.1 | -49.1 | -44.4 | -39.1 | -33.4 | -27.3 | -21.1 | 22 S |
| 24 S | -69.3 | -70.1 | -70.4 | -70.0 | -69.0 | -67.2 | -64.7 | -61.5 | -57.5 | -52.9 | -47.6 | -41.8 | -35.5 | -28.9 | -22.1 | 24 S |
| 26 S | -77.3 | -77.8 | -77.6 | -76.8 | -75.2 | -72.9 | -69.9 | -66.1 | -61.5 | -56.2 | -50.4 | -44.0 | -37.2 | -30.1 | -22.8 | 26 S |
| 28 S | -84.9 | -85.0 | -84.4 | -83.1 | -81.0 | -78.1 | -74.5 | -70.1 | -64.9 | -59.1 | -52.6 | -45.7 | -38.3 | -30.8 | -23.1 | 28 S |
| 30 S | -92.1 | -91.7 | -90.6 | -88.8 | -86.1 | -82.7 | -78.5 | -73.4 | -67.7 | -61.3 | -54.3 | -46.8 | -39.0 | -31.1 | -23.0 | 30 S |
| 32 S | -98.5 | -97.7 | -96.1 | -93.7 | -90.5 | -86.5 | -81.7 | -76.1 | -69.8 | -62.9 | -55.4 | -47.5 | -39.3 | -31.0 | -22.6 | 32 S |
| 34 S | -104.1 | -102.8 | -100.7 | -97.8 | -94.1 | -89.5 | -84.2 | -78.1 | -71.4 | -64.0 | -56.1 | -47.8 | -39.3 | -30.7 | -22.1 | 34 S |
| 36 S | -108.8 | -107.0 | -104.4 | -101.0 | -96.8 | -91.8 | -86.0 | -79.4 | -72.3 | -64.5 | -56.3 | -47.8 | -39.0 | -30.2 | -21.5 | 36 S |
| 38 S | -112.5 | -110.2 | -107.2 | -103.3 | -98.6 | -93.2 | -87.0 | -80.1 | -72.6 | -64.6 | -56.2 | -47.5 | -38.7 | -29.8 | -21.0 | 38 S |
| 40 S | -115.1 | -112.4 | -108.9 | -104.7 | -99.7 | -93.9 | -87.4 | -80.3 | -72.6 | -64.5 | -56.0 | -47.2 | -38.3 | -29.5 | -20.7 | 40 S |
| 42 S | -116.7 | -113.7 | -109.9 | -105.3 | -100.0 | -94.0 | -87.3 | -80.1 | -72.3 | -64.1 | -55.7 | -47.0 | -38.2 | -29.4 | -20.8 | 42 S |
| 44 S | -117.4 | -114.1 | -110.0 | -105.2 | -99.7 | -93.6 | -86.9 | -79.6 | -71.9 | -63.8 | -55.5 | -46.9 | -38.4 | -29.8 | -21.4 | 44 S |
| 46 S | -117.3 | -113.8 | -109.5 | -104.6 | -99.1 | -92.9 | -86.2 | -79.1 | -71.5 | -63.6 | -55.5 | -47.2 | -39.0 | -30.7 | -22.6 | 46 S |
| 48 S | -116.6 | -112.9 | -108.6 | -103.6 | -98.1 | -92.1 | -85.5 | -78.6 | -71.2 | -63.7 | -55.9 | -48.0 | -40.1 | -32.2 | -24.5 | 48 S |
| 50 S | -115.4 | -111.7 | -107.4 | -102.5 | -97.1 | -91.2 | -84.9 | -78.2 | -71.3 | -64.1 | -56.7 | -49.2 | -41.7 | -34.3 | -27.1 | 50 S |
| 52 S | -114.0 | -110.3 | -106.0 | -101.3 | -96.1 | -90.5 | -84.5 | -78.2 | -71.6 | -64.9 | -58.0 | -51.0 | -44.0 | -37.1 | -30.3 | 52 S |
| 54 S | -112.4 | -108.8 | -104.7 | -100.2 | -95.3 | -90.0 | -84.4 | -78.5 | -72.4 | -66.1 | -59.7 | -53.3 | -46.8 | -40.5 | -34.2 | 54 S |
| 56 S | -110.9 | -107.4 | -103.5 | -99.3 | -94.7 | -89.8 | -84.6 | -79.2 | -73.6 | -67.8 | -62.0 | -56.1 | -50.2 | -44.3 | -38.6 | 56 S |
| 58 S | -109.5 | -106.2 | -102.6 | -98.7 | -94.4 | -89.9 | -85.2 | -80.3 | -75.2 | -69.9 | -64.6 | -59.3 | -54.0 | -48.7 | -43.5 | 58 S |
| 60 S | -108.3 | -105.3 | -101.9 | -98.3 | -94.5 | -90.4 | -86.1 | -81.7 | -77.1 | -72.4 | -67.7 | -62.9 | -58.1 | -53.4 | -48.7 | 60 S |
| 62 S | -107.4 | -104.6 | -101.6 | -98.3 | -94.8 | -91.2 | -87.4 | -83.4 | -79.3 | -75.2 | -70.9 | -66.7 | -62.5 | -58.2 | -54.1 | 62 S |
| 64 S | -106.8 | -104.2 | -101.5 | -98.6 | -95.5 | -92.2 | -88.8 | -85.3 | -81.8 | -78.1 | -74.4 | -70.7 | -66.9 | -63.2 | -59.5 | 64 S |
| 66 S | -106.4 | -104.1 | -101.6 | -99.0 | -96.3 | -93.5 | -90.5 | -87.4 | -84.3 | -81.1 | -77.9 | -74.6 | -71.4 | -68.1 | -64.9 | 66 S |
| 68 S | -106.2 | -104.2 | -102.0 | -99.7 | -97.3 | -94.8 | -92.3 | -89.6 | -86.9 | -84.1 | -81.4 | -78.5 | -75.7 | -72.9 | -70.1 | 68 S |
| 70 S | -106.2 | -104.4 | -102.5 | -100.5 | -98.4 | -96.3 | -94.0 | -91.8 | -89.4 | -87.1 | -84.7 | -82.3 | -79.9 | -77.5 | -75.1 | 70 S |
| 72 S | -106.3 | -104.7 | -103.0 | -101.3 | -99.5 | -97.7 | -95.8 | -93.8 | -91.8 | -89.8 | -87.8 | -85.8 | -83.7 | -81.7 | -79.6 | 72 S |
| 74 S | -106.4 | -105.0 | -103.6 | -102.1 | -100.6 | -99.0 | -97.4 | -95.7 | -94.1 | -92.4 | -90.7 | -88.9 | -87.2 | -85.5 | -83.7 | 74 S |
| 76 S | -106.5 | -105.3 | -104.1 | -102.8 | -101.5 | -100.2 | -98.8 | -97.4 | -96.0 | -94.6 | -93.2 | -91.8 | -90.3 | -88.9 | -87.4 | 76 S |
| 78 S | -106.5 | -105.5 | -104.5 | -103.4 | -102.3 | -101.2 | -100.1 | -98.9 | -97.8 | -96.6 | -95.4 | -94.2 | -93.0 | -91.8 | -90.7 | 78 S |
| 80 S | -106.4 | -105.5 | -104.7 | -103.8 | -102.9 | -102.0 | -101.1 | -100.2 | -99.2 | -98.3 | -97.3 | -96.3 | -95.4 | -94.4 | -93.5 | 80 S |
| 82 S | -106.1 | -105.4 | -104.7 | -104.0 | -103.3 | -102.6 | -101.9 | -101.1 | -100.4 | -99.6 | -98.9 | -98.1 | -97.4 | -96.6 | -95.9 | 82 S |
| 84 S | -105.6 | -105.1 | -104.6 | -104.1 | -103.5 | -103.0 | -102.4 | -101.9 | -101.3 | -100.8 | -100.2 | -99.7 | -99.1 | -98.5 | -98.0 | 84 S |
| 86 S | -105.0 | -104.6 | -104.3 | -103.9 | -103.5 | -103.2 | -102.8 | -102.4 | -102.1 | -101.7 | -101.3 | -101.0 | -100.6 | -100.2 | -99.9 | 86 S |
| 88 S | -104.1 | -103.9 | -103.8 | -103.6 | -103.4 | -103.2 | -103.0 | -102.8 | -102.6 | -102.5 | -102.3 | -102.1 | -101.9 | -101.7 | -101.5 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| | -101.9 | -102.1 | -102.3 | -102.5 | -102.7 | -102.9 | -103.1 | -103.3 | -103.5 | -103.7 | -103.9 | -104.0 | -104.2 | -104.4 | -104.6 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 34.8 | 34.8 | 34.8 | 34.8 | 34.9 | 34.9 | 34.9 | 35.0 | 35.0 | 35.0 | 35.1 | 35.1 | 35.2 | 35.2 | 35.3 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.4 | 39.4 | 39.4 | 39.4 | 39.3 | 39.3 | 39.3 | 39.2 | 39.2 | 88 N |
| 86 N | 41.6 | 41.6 | 41.6 | 41.6 | 41.6 | 41.6 | 41.5 | 41.5 | 41.5 | 41.4 | 41.4 | 41.3 | 41.3 | 41.2 | 41.1 | 86 N |
| 84 N | 43.4 | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 43.5 | 43.4 | 43.4 | 43.4 | 43.3 | 43.2 | 43.1 | 43.0 | 84 N |
| 82 N | 45.0 | 45.1 | 45.2 | 45.2 | 45.2 | 45.2 | 45.3 | 45.3 | 45.2 | 45.2 | 45.2 | 45.1 | 45.0 | 44.9 | 44.8 | 82 N |
| 80 N | 46.3 | 46.4 | 46.5 | 46.6 | 46.7 | 46.7 | 46.8 | 46.8 | 46.8 | 46.8 | 46.7 | 46.7 | 46.6 | 46.5 | 46.4 | 80 N |
| 78 N | 47.3 | 47.5 | 47.6 | 47.8 | 47.9 | 48.0 | 48.0 | 48.1 | 48.1 | 48.1 | 48.1 | 48.0 | 48.0 | 47.9 | 47.7 | 78 N |
| 76 N | 48.0 | 48.2 | 48.4 | 48.6 | 48.7 | 48.9 | 49.0 | 49.1 | 49.1 | 49.1 | 49.1 | 49.1 | 49.0 | 48.9 | 48.8 | 76 N |
| 74 N | 48.4 | 48.7 | 48.9 | 49.1 | 49.3 | 49.5 | 49.6 | 49.7 | 49.8 | 49.8 | 49.9 | 49.8 | 49.8 | 49.7 | 49.5 | 74 N |
| 72 N | 48.5 | 48.8 | 49.1 | 49.3 | 49.5 | 49.7 | 49.9 | 50.0 | 50.1 | 50.2 | 50.2 | 50.2 | 50.2 | 50.1 | 49.9 | 72 N |
| 70 N | 48.3 | 48.6 | 48.9 | 49.2 | 49.5 | 49.7 | 49.9 | 50.0 | 50.1 | 50.2 | 50.3 | 50.3 | 50.2 | 50.1 | 50.0 | 70 N |
| 68 N | 47.9 | 48.2 | 48.5 | 48.8 | 49.1 | 49.3 | 49.5 | 49.7 | 49.8 | 49.9 | 49.9 | 49.9 | 49.9 | 49.8 | 49.6 | 68 N |
| 66 N | 47.2 | 47.5 | 47.8 | 48.1 | 48.4 | 48.6 | 48.8 | 49.0 | 49.2 | 49.2 | 49.3 | 49.3 | 49.2 | 49.1 | 49.0 | 66 N |
| 64 N | 46.3 | 46.6 | 46.9 | 47.2 | 47.5 | 47.7 | 47.9 | 48.1 | 48.2 | 48.3 | 48.3 | 48.3 | 48.3 | 48.2 | 48.0 | 64 N |
| 62 N | 45.3 | 45.6 | 45.9 | 46.1 | 46.4 | 46.6 | 46.8 | 46.9 | 47.0 | 47.1 | 47.1 | 47.1 | 47.0 | 46.9 | 46.7 | 62 N |
| 60 N | 44.2 | 44.4 | 44.7 | 44.9 | 45.1 | 45.3 | 45.5 | 45.6 | 45.7 | 45.7 | 45.7 | 45.7 | 45.6 | 45.4 | 45.2 | 60 N |
| 58 N | 43.0 | 43.2 | 43.4 | 43.6 | 43.7 | 43.9 | 44.0 | 44.1 | 44.1 | 44.2 | 44.1 | 44.1 | 44.0 | 43.8 | 43.6 | 58 N |
| 56 N | 41.8 | 41.9 | 42.1 | 42.2 | 42.3 | 42.4 | 42.5 | 42.5 | 42.5 | 42.5 | 42.4 | 42.3 | 42.2 | 42.0 | 41.8 | 56 N |
| 54 N | 40.6 | 40.7 | 40.8 | 40.8 | 40.9 | 40.9 | 40.9 | 40.9 | 40.8 | 40.8 | 40.7 | 40.5 | 40.4 | 40.1 | 39.9 | 54 N |
| 52 N | 39.5 | 39.5 | 39.5 | 39.5 | 39.4 | 39.4 | 39.3 | 39.3 | 39.1 | 39.0 | 38.9 | 38.7 | 38.5 | 38.2 | 37.9 | 52 N |
| 50 N | 38.5 | 38.4 | 38.3 | 38.2 | 38.1 | 38.0 | 37.8 | 37.7 | 37.5 | 37.3 | 37.1 | 36.8 | 36.6 | 36.3 | 35.9 | 50 N |
| 48 N | 37.6 | 37.4 | 37.3 | 37.1 | 36.8 | 36.6 | 36.4 | 36.1 | 35.9 | 35.6 | 35.3 | 35.0 | 34.7 | 34.4 | 34.0 | 48 N |
| 46 N | 36.8 | 36.6 | 36.3 | 36.0 | 35.7 | 35.4 | 35.0 | 34.7 | 34.3 | 34.0 | 33.6 | 33.2 | 32.9 | 32.5 | 32.0 | 46 N |
| 44 N | 36.2 | 35.8 | 35.5 | 35.1 | 34.7 | 34.2 | 33.8 | 33.3 | 32.9 | 32.4 | 32.0 | 31.5 | 31.1 | 30.6 | 30.1 | 44 N |
| 42 N | 35.6 | 35.2 | 34.7 | 34.2 | 33.7 | 33.2 | 32.6 | 32.1 | 31.5 | 31.0 | 30.4 | 29.9 | 29.3 | 28.8 | 28.3 | 42 N |
| 40 N | 35.2 | 34.6 | 34.1 | 33.5 | 32.9 | 32.2 | 31.5 | 30.9 | 30.2 | 29.5 | 28.9 | 28.2 | 27.6 | 27.0 | 26.5 | 40 N |
| 38 N | 34.7 | 34.1 | 33.5 | 32.8 | 32.1 | 31.3 | 30.5 | 29.7 | 28.9 | 28.2 | 27.4 | 26.7 | 26.0 | 25.3 | 24.7 | 38 N |
| 36 N | 34.3 | 33.7 | 32.9 | 32.2 | 31.3 | 30.5 | 29.6 | 28.6 | 27.7 | 26.8 | 26.0 | 25.1 | 24.3 | 23.6 | 22.9 | 36 N |
| 34 N | 33.9 | 33.2 | 32.4 | 31.5 | 30.6 | 29.6 | 28.6 | 27.6 | 26.5 | 25.5 | 24.6 | 23.6 | 22.8 | 22.0 | 21.2 | 34 N |
| 32 N | 33.4 | 32.6 | 31.7 | 30.8 | 29.8 | 28.7 | 27.6 | 26.5 | 25.4 | 24.3 | 23.2 | 22.2 | 21.2 | 20.3 | 19.6 | 32 N |
| 30 N | 32.7 | 31.9 | 31.0 | 30.0 | 29.0 | 27.8 | 26.6 | 25.4 | 24.2 | 23.0 | 21.8 | 20.7 | 19.7 | 18.8 | 18.0 | 30 N |
| 28 N | 31.9 | 31.1 | 30.2 | 29.2 | 28.0 | 26.8 | 25.6 | 24.3 | 23.0 | 21.8 | 20.5 | 19.4 | 18.3 | 17.3 | 16.5 | 28 N |
| 26 N | 30.9 | 30.1 | 29.2 | 28.2 | 27.0 | 25.8 | 24.5 | 23.2 | 21.9 | 20.6 | 19.3 | 18.1 | 17.0 | 16.0 | 15.1 | 26 N |
| 24 N | 29.7 | 29.0 | 28.1 | 27.0 | 25.9 | 24.7 | 23.4 | 22.1 | 20.8 | 19.5 | 18.2 | 17.0 | 15.9 | 14.8 | 13.9 | 24 N |
| 22 N | 28.3 | 27.6 | 26.7 | 25.8 | 24.7 | 23.5 | 22.3 | 21.0 | 19.7 | 18.4 | 17.2 | 16.0 | 14.9 | 13.9 | 13.0 | 22 N |
| 20 N | 26.7 | 26.0 | 25.3 | 24.4 | 23.4 | 22.3 | 21.2 | 20.0 | 18.8 | 17.6 | 16.4 | 15.2 | 14.2 | 13.2 | 12.3 | 20 N |
| 18 N | 24.9 | 24.3 | 23.7 | 22.9 | 22.0 | 21.1 | 20.1 | 19.0 | 17.9 | 16.8 | 15.7 | 14.7 | 13.7 | 12.7 | 11.9 | 18 N |
| 16 N | 22.9 | 22.4 | 21.9 | 21.3 | 20.6 | 19.9 | 19.1 | 18.2 | 17.2 | 16.3 | 15.3 | 14.4 | 13.5 | 12.6 | 11.7 | 16 N |
| 14 N | 20.7 | 20.4 | 20.0 | 19.7 | 19.2 | 18.7 | 18.1 | 17.4 | 16.7 | 15.9 | 15.2 | 14.4 | 13.5 | 12.7 | 11.9 | 14 N |
| 12 N | 18.3 | 18.2 | 18.1 | 17.9 | 17.7 | 17.5 | 17.2 | 16.8 | 16.3 | 15.8 | 15.2 | 14.6 | 13.9 | 13.1 | 12.3 | 12 N |
| 10 N | 15.9 | 16.0 | 16.1 | 16.2 | 16.3 | 16.3 | 16.3 | 16.2 | 16.1 | 15.8 | 15.4 | 15.0 | 14.4 | 13.7 | 13.0 | 10 N |
| 8 N | 13.3 | 13.6 | 14.0 | 14.4 | 14.8 | 15.2 | 15.5 | 15.8 | 15.9 | 15.9 | 15.8 | 15.5 | 15.1 | 14.5 | 13.8 | 8 N |
| 6 N | 10.6 | 11.2 | 11.9 | 12.6 | 13.3 | 14.1 | 14.8 | 15.4 | 15.8 | 16.1 | 16.2 | 16.2 | 15.9 | 15.4 | 14.7 | 6 N |
| 4 N | 7.8 | 8.7 | 9.6 | 10.7 | 11.8 | 13.0 | 14.0 | 15.0 | 15.7 | 16.3 | 16.7 | 16.8 | 16.6 | 16.2 | 15.5 | 4 N |
| 2 N | 5.0 | 6.1 | 7.4 | 8.8 | 10.3 | 11.8 | 13.2 | 14.5 | 15.6 | 16.5 | 17.1 | 17.4 | 17.3 | 17.0 | 16.3 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2.0 | 3.4 | 5.0 | 6.8 | 8.7 | 10.5 | 12.3 | 14.0 | 15.4 | 16.6 | 17.4 | 17.8 | 17.9 | 17.6 | 16.9 | 0 |
| 2 S | -1.1 | 0.6 | 2.6 | 4.7 | 7.0 | 9.2 | 11.4 | 13.4 | 15.1 | 16.5 | 17.6 | 18.2 | 18.4 | 18.1 | 17.5 | 2 S |
| 4 S | -4.3 | -2.3 | 0.0 | 2.5 | 5.2 | 7.8 | 10.3 | 12.6 | 14.7 | 16.3 | 17.6 | 18.4 | 18.7 | 18.5 | 17.9 | 4 S |
| 6 S | -7.7 | -5.3 | -2.6 | 0.3 | 3.3 | 6.3 | 9.2 | 11.8 | 14.1 | 16.0 | 17.5 | 18.4 | 18.8 | 18.7 | 18.2 | 6 S |
| 8 S | -11.1 | -8.3 | -5.3 | -2.0 | 1.4 | 4.8 | 8.0 | 10.9 | 13.5 | 15.7 | 17.3 | 18.4 | 19.0 | 19.0 | 18.5 | 8 S |
| 10 S | -14.6 | -11.4 | -7.9 | -4.3 | -0.5 | 3.2 | 6.8 | 10.1 | 12.9 | 15.3 | 17.2 | 18.4 | 19.1 | 19.3 | 18.9 | 10 S |
| 12 S | -18.1 | -14.5 | -10.6 | -6.5 | -2.3 | 1.8 | 5.7 | 9.2 | 12.4 | 15.0 | 17.1 | 18.6 | 19.4 | 19.7 | 19.4 | 12 S |
| 14 S | -21.5 | -17.5 | -13.2 | -8.6 | -4.1 | 0.4 | 4.7 | 8.6 | 12.0 | 14.9 | 17.2 | 18.8 | 19.9 | 20.3 | 20.2 | 14 S |
| 16 S | -24.9 | -20.4 | -15.6 | -10.6 | -5.6 | -0.7 | 3.9 | 8.1 | 11.8 | 15.0 | 17.5 | 19.4 | 20.6 | 21.3 | 21.3 | 16 S |
| 18 S | -28.0 | -23.0 | -17.7 | -12.3 | -6.9 | -1.6 | 3.3 | 7.9 | 11.9 | 15.3 | 18.1 | 20.2 | 21.7 | 22.6 | 22.9 | 18 S |
| 20 S | -30.9 | -25.3 | -19.6 | -13.7 | -7.8 | -2.2 | 3.1 | 8.0 | 12.3 | 16.0 | 19.1 | 21.4 | 23.2 | 24.3 | 24.8 | 20 S |
| 22 S | -33.4 | -27.3 | -21.1 | -14.7 | -8.4 | -2.4 | 3.2 | 8.4 | 13.1 | 17.0 | 20.4 | 23.0 | 25.0 | 26.3 | 27.1 | 22 S |
| 24 S | -35.5 | -28.9 | -22.1 | -15.3 | -8.7 | -2.3 | 3.7 | 9.2 | 14.2 | 18.4 | 22.0 | 24.9 | 27.2 | 28.8 | 29.8 | 24 S |
| 26 S | -37.2 | -30.1 | -22.8 | -15.6 | -8.5 | -1.8 | 4.5 | 10.3 | 15.6 | 20.1 | 24.0 | 27.1 | 29.6 | 31.5 | 32.8 | 26 S |
| 28 S | -38.3 | -30.8 | -23.1 | -15.5 | -8.1 | -1.0 | 5.6 | 11.7 | 17.2 | 22.0 | 26.1 | 29.5 | 32.2 | 34.3 | 35.9 | 28 S |
| 30 S | -39.0 | -31.1 | -23.0 | -15.1 | -7.3 | 0.0 | 6.9 | 13.2 | 18.9 | 23.9 | 28.3 | 31.9 | 34.9 | 37.2 | 39.0 | 30 S |
| 32 S | -39.3 | -31.0 | -22.6 | -14.4 | -6.5 | 1.1 | 8.2 | 14.7 | 20.6 | 25.8 | 30.4 | 34.2 | 37.4 | 39.9 | 41.9 | 32 S |
| 34 S | -39.3 | -30.7 | -22.1 | -13.7 | -5.5 | 2.2 | 9.4 | 16.1 | 22.1 | 27.5 | 32.2 | 36.2 | 39.6 | 42.3 | 44.4 | 34 S |
| 36 S | -39.0 | -30.2 | -21.5 | -12.9 | -4.7 | 3.1 | 10.4 | 17.2 | 23.3 | 28.8 | 33.6 | 37.7 | 41.2 | 44.1 | 46.3 | 36 S |
| 38 S | -38.7 | -29.8 | -21.0 | -12.4 | -4.1 | 3.7 | 11.0 | 17.8 | 24.0 | 29.5 | 34.4 | 38.6 | 42.2 | 45.2 | 47.6 | 38 S |
| 40 S | -38.3 | -29.5 | -20.7 | -12.2 | -4.0 | 3.8 | 11.1 | 17.8 | 24.0 | 29.5 | 34.4 | 38.7 | 42.4 | 45.4 | 47.9 | 40 S |
| 42 S | -38.2 | -29.4 | -20.8 | -12.4 | -4.4 | 3.3 | 10.4 | 17.1 | 23.2 | 28.7 | 33.5 | 37.8 | 41.5 | 44.6 | 47.1 | 42 S |
| 44 S | -38.4 | -29.8 | -21.4 | -13.3 | -5.4 | 2.0 | 9.0 | 15.5 | 21.5 | 26.9 | 31.7 | 35.9 | 39.6 | 42.7 | 45.2 | 44 S |
| 46 S | -39.0 | -30.7 | -22.6 | -14.8 | -7.2 | -0.1 | 6.7 | 13.0 | 18.8 | 24.0 | 28.7 | 32.9 | 36.5 | 39.6 | 42.2 | 46 S |
| 48 S | -40.1 | -32.2 | -24.5 | -17.0 | -9.8 | -3.0 | 3.5 | 9.5 | 15.1 | 20.2 | 24.8 | 28.8 | 32.4 | 35.4 | 37.9 | 48 S |
| 50 S | -41.7 | -34.3 | -27.1 | -20.0 | -13.2 | -6.7 | -0.6 | 5.2 | 10.5 | 15.3 | 19.7 | 23.6 | 27.1 | 30.0 | 32.5 | 50 S |
| 52 S | -44.0 | -37.1 | -30.3 | -23.7 | -17.3 | -11.3 | -5.5 | -0.1 | 4.9 | 9.5 | 13.7 | 17.5 | 20.8 | 23.7 | 26.1 | 52 S |
| 54 S | -46.8 | -40.5 | -34.2 | -28.1 | -22.2 | -16.5 | -11.1 | -6.1 | -1.4 | 2.9 | 6.9 | 10.5 | 13.6 | 16.4 | 18.8 | 54 S |
| 56 S | -50.2 | -44.3 | -38.6 | -33.0 | -27.6 | -22.4 | -17.4 | -12.8 | -8.4 | -4.3 | -0.6 | 2.7 | 5.7 | 8.4 | 10.7 | 56 S |
| 58 S | -54.0 | -48.7 | -43.5 | -38.4 | -33.5 | -28.7 | -24.2 | -19.9 | -15.9 | -12.1 | -8.7 | -5.5 | -2.7 | -0.2 | 2.0 | 58 S |
| 60 S | -58.1 | -53.4 | -48.7 | -44.1 | -39.7 | -35.4 | -31.3 | -27.4 | -23.7 | -20.3 | -17.1 | -14.1 | -11.5 | -9.1 | -7.0 | 60 S |
| 62 S | -62.5 | -58.2 | -54.1 | -50.0 | -46.0 | -42.2 | -38.5 | -35.0 | -31.7 | -28.5 | -25.6 | -22.9 | -20.4 | -18.2 | -16.2 | 62 S |
| 64 S | -66.9 | -63.2 | -59.5 | -55.9 | -52.4 | -49.0 | -45.7 | -42.6 | -39.6 | -36.7 | -34.1 | -31.6 | -29.3 | -27.2 | -25.3 | 64 S |
| 66 S | -71.4 | -68.1 | -64.9 | -61.8 | -58.7 | -55.7 | -52.8 | -50.0 | -47.3 | -44.8 | -42.4 | -40.1 | -38.0 | -36.1 | -34.3 | 66 S |
| 68 S | -75.7 | -72.9 | -70.1 | -67.4 | -64.7 | -62.1 | -59.5 | -57.1 | -54.7 | -52.4 | -50.3 | -48.2 | -46.3 | -44.5 | -42.9 | 68 S |
| 70 S | -79.9 | -77.5 | -75.1 | -72.7 | -70.4 | -68.1 | -65.9 | -63.7 | -61.6 | -59.6 | -57.7 | -55.9 | -54.2 | -52.5 | -51.0 | 70 S |
| 72 S | -83.7 | -81.7 | -79.6 | -77.6 | -75.6 | -73.7 | -71.7 | -69.9 | -68.1 | -66.3 | -64.6 | -63.0 | -61.4 | -60.0 | -58.6 | 72 S |
| 74 S | -87.2 | -85.5 | -83.7 | -82.0 | -80.3 | -78.7 | -77.0 | -75.4 | -73.9 | -72.4 | -70.9 | -69.5 | -68.1 | -66.8 | -65.5 | 74 S |
| 76 S | -90.3 | -88.9 | -87.4 | -86.0 | -84.6 | -83.2 | -81.8 | -80.4 | -79.1 | -77.8 | -76.5 | -75.3 | -74.1 | -73.0 | -71.9 | 76 S |
| 78 S | -93.0 | -91.8 | -90.7 | -89.5 | -88.3 | -87.1 | -86.0 | -84.9 | -83.7 | -82.6 | -81.6 | -80.5 | -79.5 | -78.5 | -77.6 | 78 S |
| 80 S | -95.4 | -94.4 | -93.5 | -92.5 | -91.6 | -90.6 | -89.7 | -88.8 | -87.9 | -87.0 | -86.1 | -85.2 | -84.4 | -83.6 | -82.8 | 80 S |
| 82 S | -97.4 | -96.6 | -95.9 | -95.1 | -94.4 | -93.7 | -92.9 | -92.2 | -91.5 | -90.8 | -90.1 | -89.4 | -88.8 | -88.1 | -87.5 | 82 S |
| 84 S | -99.1 | -98.5 | -98.0 | -97.4 | -96.9 | -96.4 | -95.8 | -95.3 | -94.8 | -94.2 | -93.7 | -93.2 | -92.7 | -92.2 | -91.8 | 84 S |
| 86 S | -100.6 | -100.2 | -99.9 | -99.5 | -99.1 | -98.8 | -98.4 | -98.1 | -97.7 | -97.4 | -97.0 | -96.7 | -96.4 | -96.1 | -95.8 | 86 S |
| 88 S | -101.9 | -101.7 | -101.5 | -101.3 | -101.2 | -101.0 | -100.8 | -100.6 | -100.5 | -100.3 | -100.1 | -100.0 | -99.8 | -99.7 | -99.5 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| | -104.2 | -104.4 | -104.6 | -104.8 | -105.0 | -105.1 | -105.3 | -105.5 | -105.7 | -105.8 | -106.0 | -106.1 | -106.3 | -106.4 | -106.6 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 | 70 | 72 | 74 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 70 | 72 | 74 | 76 | 78 | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 35.2 | 35.2 | 35.3 | 35.3 | 35.4 | 35.5 | 35.5 | 35.6 | 35.6 | 35.7 | 35.8 | 35.8 | 35.9 | 36.0 | 36.1 | |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 39.3 | 39.2 | 39.2 | 39.1 | 39.1 | 39.0 | 39.0 | 38.9 | 38.9 | 38.8 | 38.8 | 38.7 | 38.6 | 38.6 | 38.5 | 88 N |
| 86 N | 41.3 | 41.2 | 41.1 | 41.1 | 41.0 | 40.9 | 40.8 | 40.7 | 40.6 | 40.5 | 40.3 | 40.2 | 40.1 | 39.9 | 39.8 | 86 N |
| 84 N | 43.2 | 43.1 | 43.0 | 42.9 | 42.8 | 42.7 | 42.5 | 42.4 | 42.2 | 42.1 | 41.9 | 41.7 | 41.5 | 41.3 | 41.1 | 84 N |
| 82 N | 45.0 | 44.9 | 44.8 | 44.7 | 44.5 | 44.4 | 44.2 | 44.0 | 43.8 | 43.6 | 43.4 | 43.1 | 42.8 | 42.6 | 42.3 | 82 N |
| 80 N | 46.6 | 46.5 | 46.4 | 46.3 | 46.1 | 45.9 | 45.7 | 45.5 | 45.2 | 45.0 | 44.7 | 44.3 | 44.0 | 43.7 | 43.3 | 80 N |
| 78 N | 48.0 | 47.9 | 47.7 | 47.6 | 47.4 | 47.2 | 47.0 | 46.7 | 46.4 | 46.1 | 45.7 | 45.4 | 45.0 | 44.5 | 44.1 | 78 N |
| 76 N | 49.0 | 48.9 | 48.8 | 48.6 | 48.5 | 48.2 | 48.0 | 47.7 | 47.3 | 46.9 | 46.5 | 46.1 | 45.6 | 45.1 | 44.6 | 76 N |
| 74 N | 49.8 | 49.7 | 49.5 | 49.4 | 49.2 | 48.9 | 48.6 | 48.3 | 47.9 | 47.5 | 47.0 | 46.5 | 46.0 | 45.4 | 44.8 | 74 N |
| 72 N | 50.2 | 50.1 | 49.9 | 49.8 | 49.5 | 49.3 | 48.9 | 48.6 | 48.1 | 47.7 | 47.2 | 46.6 | 46.0 | 45.3 | 44.7 | 72 N |
| 70 N | 50.2 | 50.1 | 50.0 | 49.8 | 49.5 | 49.2 | 48.9 | 48.5 | 48.0 | 47.5 | 46.9 | 46.3 | 45.7 | 44.9 | 44.2 | 70 N |
| 68 N | 49.9 | 49.8 | 49.6 | 49.4 | 49.2 | 48.9 | 48.5 | 48.0 | 47.5 | 47.0 | 46.4 | 45.7 | 45.0 | 44.2 | 43.3 | 68 N |
| 66 N | 49.2 | 49.1 | 49.0 | 48.8 | 48.5 | 48.1 | 47.7 | 47.3 | 46.7 | 46.1 | 45.5 | 44.7 | 44.0 | 43.1 | 42.2 | 66 N |
| 64 N | 48.3 | 48.2 | 48.0 | 47.8 | 47.5 | 47.1 | 46.7 | 46.2 | 45.6 | 45.0 | 44.3 | 43.5 | 42.6 | 41.7 | 40.8 | 64 N |
| 62 N | 47.0 | 46.9 | 46.7 | 46.5 | 46.2 | 45.8 | 45.3 | 44.8 | 44.2 | 43.5 | 42.8 | 42.0 | 41.1 | 40.1 | 39.1 | 62 N |
| 60 N | 45.6 | 45.4 | 45.2 | 45.0 | 44.6 | 44.2 | 43.8 | 43.2 | 42.6 | 41.9 | 41.1 | 40.3 | 39.3 | 38.3 | 37.3 | 60 N |
| 58 N | 44.0 | 43.8 | 43.6 | 43.3 | 42.9 | 42.5 | 42.0 | 41.4 | 40.8 | 40.1 | 39.3 | 38.4 | 37.4 | 36.4 | 35.3 | 58 N |
| 56 N | 42.2 | 42.0 | 41.8 | 41.4 | 41.1 | 40.6 | 40.1 | 39.5 | 38.9 | 38.1 | 37.3 | 36.4 | 35.4 | 34.3 | 33.2 | 56 N |
| 54 N | 40.4 | 40.1 | 39.9 | 39.5 | 39.1 | 38.7 | 38.1 | 37.5 | 36.9 | 36.1 | 35.3 | 34.3 | 33.3 | 32.3 | 31.1 | 54 N |
| 52 N | 38.5 | 38.2 | 37.9 | 37.5 | 37.1 | 36.7 | 36.1 | 35.5 | 34.8 | 34.0 | 33.2 | 32.3 | 31.3 | 30.2 | 29.0 | 52 N |
| 50 N | 36.6 | 36.3 | 35.9 | 35.5 | 35.1 | 34.6 | 34.1 | 33.4 | 32.8 | 32.0 | 31.1 | 30.2 | 29.2 | 28.1 | 27.0 | 50 N |
| 48 N | 34.7 | 34.4 | 34.0 | 33.6 | 33.1 | 32.6 | 32.0 | 31.4 | 30.7 | 30.0 | 29.1 | 28.2 | 27.2 | 26.2 | 25.0 | 48 N |
| 46 N | 32.9 | 32.5 | 32.0 | 31.6 | 31.1 | 30.6 | 30.0 | 29.4 | 28.7 | 28.0 | 27.2 | 26.3 | 25.3 | 24.3 | 23.2 | 46 N |
| 44 N | 31.1 | 30.6 | 30.1 | 29.7 | 29.2 | 28.6 | 28.1 | 27.5 | 26.8 | 26.1 | 25.3 | 24.4 | 23.5 | 22.5 | 21.4 | 44 N |
| 42 N | 29.3 | 28.8 | 28.3 | 27.8 | 27.2 | 26.7 | 26.1 | 25.5 | 24.9 | 24.2 | 23.5 | 22.6 | 21.8 | 20.8 | 19.8 | 42 N |
| 40 N | 27.6 | 27.0 | 26.5 | 25.9 | 25.4 | 24.8 | 24.3 | 23.7 | 23.1 | 22.4 | 21.7 | 21.0 | 20.1 | 19.2 | 18.2 | 40 N |
| 38 N | 26.0 | 25.3 | 24.7 | 24.1 | 23.5 | 23.0 | 22.4 | 21.9 | 21.3 | 20.7 | 20.0 | 19.3 | 18.6 | 17.7 | 16.8 | 38 N |
| 36 N | 24.3 | 23.6 | 22.9 | 22.3 | 21.7 | 21.1 | 20.6 | 20.1 | 19.6 | 19.0 | 18.4 | 17.8 | 17.1 | 16.3 | 15.5 | 36 N |
| 34 N | 22.8 | 22.0 | 21.2 | 20.6 | 19.9 | 19.4 | 18.9 | 18.4 | 17.9 | 17.4 | 16.9 | 16.3 | 15.7 | 15.0 | 14.3 | 34 N |
| 32 N | 21.2 | 20.3 | 19.6 | 18.9 | 18.2 | 17.7 | 17.2 | 16.7 | 16.3 | 15.8 | 15.4 | 14.9 | 14.3 | 13.8 | 13.1 | 32 N |
| 30 N | 19.7 | 18.8 | 18.0 | 17.2 | 16.6 | 16.0 | 15.6 | 15.1 | 14.7 | 14.3 | 13.9 | 13.5 | 13.1 | 12.6 | 12.0 | 30 N |
| 28 N | 18.3 | 17.3 | 16.5 | 15.7 | 15.1 | 14.5 | 14.0 | 13.6 | 13.3 | 12.9 | 12.6 | 12.2 | 11.9 | 11.4 | 11.0 | 28 N |
| 26 N | 17.0 | 16.0 | 15.1 | 14.4 | 13.7 | 13.1 | 12.7 | 12.3 | 11.9 | 11.6 | 11.3 | 11.0 | 10.7 | 10.4 | 10.0 | 26 N |
| 24 N | 15.9 | 14.8 | 13.9 | 13.2 | 12.5 | 11.9 | 11.5 | 11.1 | 10.8 | 10.5 | 10.2 | 9.9 | 9.7 | 9.4 | 9.0 | 24 N |
| 22 N | 14.9 | 13.9 | 13.0 | 12.2 | 11.5 | 10.9 | 10.5 | 10.1 | 9.7 | 9.4 | 9.2 | 8.9 | 8.7 | 8.4 | 8.1 | 22 N |
| 20 N | 14.2 | 13.2 | 12.3 | 11.5 | 10.8 | 10.2 | 9.7 | 9.3 | 8.9 | 8.6 | 8.3 | 8.0 | 7.8 | 7.5 | 7.3 | 20 N |
| 18 N | 13.7 | 12.7 | 11.9 | 11.1 | 10.4 | 9.7 | 9.2 | 8.7 | 8.3 | 7.9 | 7.6 | 7.3 | 7.0 | 6.7 | 6.5 | 18 N |
| 16 N | 13.5 | 12.6 | 11.7 | 10.9 | 10.2 | 9.5 | 8.9 | 8.3 | 7.8 | 7.4 | 7.0 | 6.6 | 6.3 | 6.0 | 5.7 | 16 N |
| 14 N | 13.5 | 12.7 | 11.9 | 11.1 | 10.3 | 9.6 | 8.9 | 8.2 | 7.6 | 7.0 | 6.5 | 6.0 | 5.6 | 5.2 | 5.0 | 14 N |
| 12 N | 13.9 | 13.1 | 12.3 | 11.5 | 10.7 | 9.9 | 9.1 | 8.3 | 7.5 | 6.8 | 6.1 | 5.5 | 5.0 | 4.6 | 4.2 | 12 N |
| 10 N | 14.4 | 13.7 | 13.0 | 12.2 | 11.3 | 10.4 | 9.4 | 8.4 | 7.5 | 6.6 | 5.8 | 5.1 | 4.4 | 3.9 | 3.5 | 10 N |
| 8 N | 15.1 | 14.5 | 13.8 | 12.9 | 12.0 | 10.9 | 9.8 | 8.7 | 7.6 | 6.5 | 5.5 | 4.7 | 3.9 | 3.3 | 2.9 | 8 N |
| 6 N | 15.9 | 15.4 | 14.7 | 13.8 | 12.7 | 11.6 | 10.3 | 9.0 | 7.7 | 6.5 | 5.3 | 4.3 | 3.4 | 2.7 | 2.3 | 6 N |
| 4 N | 16.6 | 16.2 | 15.5 | 14.6 | 13.5 | 12.2 | 10.7 | 9.3 | 7.8 | 6.4 | 5.1 | 3.9 | 2.9 | 2.2 | 1.7 | 4 N |
| 2 N | 17.3 | 17.0 | 16.3 | 15.3 | 14.1 | 12.7 | 11.1 | 9.5 | 7.9 | 6.3 | 4.9 | 3.6 | 2.5 | 1.7 | 1.2 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 17.9 | 17.6 | 16.9 | 15.9 | 14.6 | 13.1 | 11.5 | 9.7 | 7.9 | 6.2 | 4.7 | 3.3 | 2.2 | 1.4 | 0.8 | 0 |
| 2 S | 18.4 | 18.1 | 17.5 | 16.4 | 15.1 | 13.5 | 11.7 | 9.9 | 8.0 | 6.2 | 4.6 | 3.2 | 2.0 | 1.2 | 0.6 | 2 S |
| 4 S | 18.7 | 18.5 | 17.9 | 16.8 | 15.4 | 13.8 | 12.0 | 10.1 | 8.1 | 6.3 | 4.6 | 3.2 | 2.0 | 1.2 | 0.7 | 4 S |
| 6 S | 18.8 | 18.7 | 18.2 | 17.2 | 15.8 | 14.1 | 12.3 | 10.3 | 8.4 | 6.6 | 4.9 | 3.4 | 2.3 | 1.5 | 1.0 | 6 S |
| 8 S | 19.0 | 19.0 | 18.5 | 17.5 | 16.2 | 14.6 | 12.7 | 10.8 | 8.9 | 7.1 | 5.4 | 4.0 | 2.9 | 2.1 | 1.7 | 8 S |
| 10 S | 19.1 | 19.3 | 18.9 | 18.0 | 16.7 | 15.2 | 13.4 | 11.5 | 9.7 | 7.9 | 6.3 | 5.0 | 3.9 | 3.2 | 2.8 | 10 S |
| 12 S | 19.4 | 19.7 | 19.4 | 18.6 | 17.5 | 16.0 | 14.4 | 12.6 | 10.9 | 9.2 | 7.7 | 6.4 | 5.4 | 4.7 | 4.3 | 12 S |
| 14 S | 19.9 | 20.3 | 20.2 | 19.6 | 18.6 | 17.3 | 15.8 | 14.1 | 12.5 | 10.9 | 9.5 | 8.3 | 7.4 | 6.7 | 6.3 | 14 S |
| 16 S | 20.6 | 21.3 | 21.3 | 20.9 | 20.1 | 19.0 | 17.6 | 16.1 | 14.6 | 13.2 | 11.9 | 10.7 | 9.8 | 9.2 | 8.8 | 16 S |
| 18 S | 21.7 | 22.6 | 22.9 | 22.7 | 22.0 | 21.1 | 19.9 | 18.6 | 17.2 | 15.9 | 14.7 | 13.6 | 12.8 | 12.1 | 11.7 | 18 S |
| 20 S | 23.2 | 24.3 | 24.8 | 24.8 | 24.4 | 23.7 | 22.7 | 21.6 | 20.4 | 19.2 | 18.0 | 17.0 | 16.2 | 15.5 | 14.9 | 20 S |
| 22 S | 25.0 | 26.3 | 27.1 | 27.4 | 27.2 | 26.7 | 25.9 | 25.0 | 23.9 | 22.8 | 21.8 | 20.8 | 19.9 | 19.2 | 18.5 | 22 S |
| 24 S | 27.2 | 28.8 | 29.8 | 30.3 | 30.4 | 30.1 | 29.5 | 28.7 | 27.8 | 26.8 | 25.8 | 24.8 | 23.9 | 23.1 | 22.3 | 24 S |
| 26 S | 29.6 | 31.5 | 32.8 | 33.5 | 33.8 | 33.7 | 33.3 | 32.7 | 31.9 | 31.0 | 30.0 | 29.1 | 28.1 | 27.1 | 26.2 | 26 S |
| 28 S | 32.2 | 34.3 | 35.9 | 36.8 | 37.4 | 37.5 | 37.2 | 36.8 | 36.1 | 35.2 | 34.3 | 33.3 | 32.2 | 31.2 | 30.1 | 28 S |
| 30 S | 34.9 | 37.2 | 39.0 | 40.1 | 40.9 | 41.2 | 41.1 | 40.7 | 40.1 | 39.3 | 38.4 | 37.3 | 36.2 | 35.0 | 33.7 | 30 S |
| 32 S | 37.4 | 39.9 | 41.9 | 43.2 | 44.1 | 44.6 | 44.7 | 44.4 | 43.9 | 43.1 | 42.2 | 41.1 | 39.8 | 38.5 | 37.0 | 32 S |
| 34 S | 39.6 | 42.3 | 44.4 | 45.9 | 47.0 | 47.6 | 47.8 | 47.6 | 47.1 | 46.4 | 45.4 | 44.3 | 42.9 | 41.4 | 39.8 | 34 S |
| 36 S | 41.2 | 44.1 | 46.3 | 48.0 | 49.2 | 49.9 | 50.2 | 50.1 | 49.7 | 49.0 | 48.0 | 46.8 | 45.4 | 43.8 | 42.0 | 36 S |
| 38 S | 42.2 | 45.2 | 47.6 | 49.4 | 50.7 | 51.5 | 51.9 | 51.8 | 51.5 | 50.7 | 49.7 | 48.5 | 47.0 | 45.3 | 43.4 | 38 S |
| 40 S | 42.4 | 45.4 | 47.9 | 49.8 | 51.1 | 52.0 | 52.5 | 52.5 | 52.2 | 51.5 | 50.5 | 49.2 | 47.7 | 45.9 | 43.9 | 40 S |
| 42 S | 41.5 | 44.6 | 47.1 | 49.1 | 50.5 | 51.5 | 52.0 | 52.1 | 51.8 | 51.2 | 50.2 | 48.9 | 47.3 | 45.5 | 43.5 | 42 S |
| 44 S | 39.6 | 42.7 | 45.2 | 47.2 | 48.8 | 49.8 | 50.4 | 50.5 | 50.3 | 49.7 | 48.7 | 47.5 | 45.9 | 44.1 | 42.1 | 44 S |
| 46 S | 36.5 | 39.6 | 42.2 | 44.2 | 45.8 | 46.8 | 47.5 | 47.7 | 47.5 | 47.0 | 46.1 | 44.9 | 43.4 | 41.7 | 39.7 | 46 S |
| 48 S | 32.4 | 35.4 | 37.9 | 40.0 | 41.5 | 42.7 | 43.3 | 43.6 | 43.5 | 43.1 | 42.3 | 41.2 | 39.8 | 38.2 | 36.3 | 48 S |
| 50 S | 27.1 | 30.0 | 32.5 | 34.6 | 36.2 | 37.3 | 38.1 | 38.4 | 38.4 | 38.1 | 37.4 | 36.4 | 35.2 | 33.7 | 32.0 | 50 S |
| 52 S | 20.8 | 23.7 | 26.1 | 28.1 | 29.7 | 30.9 | 31.7 | 32.2 | 32.3 | 32.0 | 31.5 | 30.7 | 29.6 | 28.3 | 26.8 | 52 S |
| 54 S | 13.6 | 16.4 | 18.8 | 20.8 | 22.4 | 23.6 | 24.5 | 25.0 | 25.2 | 25.1 | 24.7 | 24.1 | 23.2 | 22.1 | 20.8 | 54 S |
| 56 S | 5.7 | 8.4 | 10.7 | 12.6 | 14.2 | 15.5 | 16.4 | 17.0 | 17.4 | 17.4 | 17.2 | 16.7 | 16.1 | 15.2 | 14.1 | 56 S |
| 58 S | -2.7 | -0.2 | 2.0 | 3.9 | 5.5 | 6.8 | 7.8 | 8.5 | 9.0 | 9.2 | 9.1 | 8.8 | 8.4 | 7.7 | 6.9 | 58 S |
| 60 S | -11.5 | -9.1 | -7.0 | -5.1 | -3.6 | -2.3 | -1.2 | -0.4 | 0.1 | 0.5 | 0.6 | 0.5 | 0.3 | -0.1 | -0.7 | 60 S |
| 62 S | -20.4 | -18.2 | -16.2 | -14.4 | -12.9 | -11.5 | -10.4 | -9.6 | -8.9 | -8.4 | -8.1 | -8.0 | -8.0 | -8.2 | -8.6 | 62 S |
| 64 S | -29.3 | -27.2 | -25.3 | -23.6 | -22.1 | -20.8 | -19.7 | -18.7 | -18.0 | -17.4 | -16.9 | -16.6 | -16.5 | -16.5 | -16.6 | 64 S |
| 66 S | -38.0 | -36.1 | -34.3 | -32.7 | -31.2 | -29.9 | -28.8 | -27.8 | -26.9 | -26.2 | -25.7 | -25.2 | -24.9 | -24.7 | -24.6 | 66 S |
| 68 S | -46.3 | -44.5 | -42.9 | -41.4 | -40.0 | -38.7 | -37.5 | -36.5 | -35.6 | -34.9 | -34.2 | -33.6 | -33.2 | -32.8 | -32.6 | 68 S |
| 70 S | -54.2 | -52.5 | -51.0 | -49.6 | -48.2 | -47.0 | -45.9 | -44.9 | -44.0 | -43.2 | -42.4 | -41.8 | -41.2 | -40.8 | -40.4 | 70 S |
| 72 S | -61.4 | -60.0 | -58.6 | -57.2 | -56.0 | -54.9 | -53.8 | -52.8 | -51.9 | -51.0 | -50.3 | -49.6 | -49.0 | -48.4 | -47.9 | 72 S |
| 74 S | -68.1 | -66.8 | -65.5 | -64.3 | -63.2 | -62.1 | -61.1 | -60.2 | -59.3 | -58.5 | -57.7 | -57.0 | -56.4 | -55.8 | -55.2 | 74 S |
| 76 S | -74.1 | -73.0 | -71.9 | -70.8 | -69.8 | -68.8 | -67.9 | -67.0 | -66.2 | -65.4 | -64.7 | -64.0 | -63.4 | -62.8 | -62.2 | 76 S |
| 78 S | -79.5 | -78.5 | -77.6 | -76.7 | -75.8 | -74.9 | -74.1 | -73.3 | -72.6 | -71.9 | -71.2 | -70.6 | -70.0 | -69.5 | -68.9 | 78 S |
| 80 S | -84.4 | -83.6 | -82.8 | -82.0 | -81.3 | -80.5 | -79.8 | -79.2 | -78.5 | -77.9 | -77.3 | -76.8 | -76.3 | -75.8 | -75.3 | 80 S |
| 82 S | -88.8 | -88.1 | -87.5 | -86.9 | -86.3 | -85.7 | -85.1 | -84.6 | -84.1 | -83.6 | -83.1 | -82.6 | -82.2 | -81.8 | -81.4 | 82 S |
| 84 S | -92.7 | -92.2 | -91.8 | -91.3 | -90.9 | -90.4 | -90.0 | -89.6 | -89.2 | -88.8 | -88.5 | -88.1 | -87.8 | -87.5 | -87.2 | 84 S |
| 86 S | -96.4 | -96.1 | -95.8 | -95.5 | -95.2 | -94.9 | -94.6 | -94.3 | -94.1 | -93.8 | -93.6 | -93.4 | -93.2 | -93.0 | -92.8 | 86 S |
| 88 S | -99.8 | -99.7 | -99.5 | -99.4 | -99.2 | -99.1 | -98.9 | -98.8 | -98.7 | -98.6 | -98.5 | -98.3 | -98.2 | -98.1 | -98.1 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| | -106.3 | -106.4 | -106.6 | -106.7 | -106.8 | -107.0 | -107.1 | -107.2 | -107.3 | -107.4 | -107.5 | -107.6 | -107.7 | -107.8 | -107.9 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 70 | 72 | 74 | 76 | 78 | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 | 112 | 114 | 116 | 118 | 120 | 122 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 35.9 | 36.0 | 36.1 | 36.1 | 36.2 | 36.3 | 36.4 | 36.4 | 36.5 | 36.6 | 36.7 | 36.7 | 36.8 | 36.9 | 37.0 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 38.6 | 38.6 | 38.5 | 38.4 | 38.3 | 38.3 | 38.2 | 38.1 | 38.0 | 37.9 | 37.8 | 37.8 | 37.7 | 37.6 | 37.5 | 88 N |
| 86 N | 40.1 | 39.9 | 39.8 | 39.6 | 39.5 | 39.3 | 39.2 | 39.0 | 38.8 | 38.6 | 38.5 | 38.3 | 38.1 | 37.9 | 37.7 | 86 N |
| 84 N | 41.5 | 41.3 | 41.1 | 40.8 | 40.6 | 40.4 | 40.1 | 39.8 | 39.6 | 39.3 | 39.0 | 38.7 | 38.4 | 38.1 | 37.8 | 84 N |
| 82 N | 42.8 | 42.6 | 42.3 | 41.9 | 41.6 | 41.3 | 40.9 | 40.6 | 40.2 | 39.8 | 39.4 | 39.0 | 38.6 | 38.2 | 37.8 | 82 N |
| 80 N | 44.0 | 43.7 | 43.3 | 42.9 | 42.5 | 42.0 | 41.6 | 41.1 | 40.7 | 40.2 | 39.7 | 39.2 | 38.6 | 38.1 | 37.6 | 80 N |
| 78 N | 45.0 | 44.5 | 44.1 | 43.6 | 43.1 | 42.6 | 42.0 | 41.5 | 40.9 | 40.3 | 39.6 | 39.0 | 38.4 | 37.7 | 37.0 | 78 N |
| 76 N | 45.6 | 45.1 | 44.6 | 44.0 | 43.4 | 42.8 | 42.2 | 41.5 | 40.8 | 40.1 | 39.3 | 38.6 | 37.8 | 37.0 | 36.2 | 76 N |
| 74 N | 46.0 | 45.4 | 44.8 | 44.1 | 43.5 | 42.7 | 42.0 | 41.2 | 40.4 | 39.6 | 38.7 | 37.9 | 37.0 | 36.1 | 35.1 | 74 N |
| 72 N | 46.0 | 45.3 | 44.7 | 43.9 | 43.1 | 42.3 | 41.5 | 40.6 | 39.7 | 38.8 | 37.8 | 36.8 | 35.8 | 34.8 | 33.8 | 72 N |
| 70 N | 45.7 | 44.9 | 44.2 | 43.4 | 42.5 | 41.6 | 40.7 | 39.7 | 38.7 | 37.6 | 36.6 | 35.5 | 34.4 | 33.2 | 32.1 | 70 N |
| 68 N | 45.0 | 44.2 | 43.3 | 42.5 | 41.5 | 40.5 | 39.5 | 38.4 | 37.3 | 36.2 | 35.0 | 33.8 | 32.6 | 31.4 | 30.2 | 68 N |
| 66 N | 44.0 | 43.1 | 42.2 | 41.2 | 40.2 | 39.2 | 38.1 | 36.9 | 35.7 | 34.5 | 33.3 | 32.0 | 30.7 | 29.4 | 28.1 | 66 N |
| 64 N | 42.6 | 41.7 | 40.8 | 39.8 | 38.7 | 37.5 | 36.4 | 35.1 | 33.9 | 32.6 | 31.3 | 29.9 | 28.6 | 27.2 | 25.8 | 64 N |
| 62 N | 41.1 | 40.1 | 39.1 | 38.0 | 36.9 | 35.7 | 34.5 | 33.2 | 31.9 | 30.5 | 29.1 | 27.7 | 26.3 | 24.9 | 23.4 | 62 N |
| 60 N | 39.3 | 38.3 | 37.3 | 36.1 | 35.0 | 33.7 | 32.4 | 31.1 | 29.7 | 28.3 | 26.9 | 25.4 | 23.9 | 22.5 | 21.0 | 60 N |
| 58 N | 37.4 | 36.4 | 35.3 | 34.1 | 32.9 | 31.6 | 30.3 | 28.9 | 27.5 | 26.0 | 24.6 | 23.1 | 21.6 | 20.1 | 18.6 | 58 N |
| 56 N | 35.4 | 34.3 | 33.2 | 32.0 | 30.8 | 29.4 | 28.1 | 26.7 | 25.2 | 23.7 | 22.2 | 20.7 | 19.2 | 17.7 | 16.2 | 56 N |
| 54 N | 33.3 | 32.3 | 31.1 | 29.9 | 28.6 | 27.3 | 25.9 | 24.5 | 23.0 | 21.5 | 20.0 | 18.5 | 17.0 | 15.4 | 13.9 | 54 N |
| 52 N | 31.3 | 30.2 | 29.0 | 27.8 | 26.5 | 25.2 | 23.8 | 22.3 | 20.9 | 19.4 | 17.9 | 16.3 | 14.8 | 13.3 | 11.8 | 52 N |
| 50 N | 29.2 | 28.1 | 27.0 | 25.8 | 24.5 | 23.1 | 21.7 | 20.3 | 18.8 | 17.3 | 15.8 | 14.3 | 12.8 | 11.4 | 9.9 | 50 N |
| 48 N | 27.2 | 26.2 | 25.0 | 23.8 | 22.5 | 21.2 | 19.8 | 18.4 | 16.9 | 15.5 | 14.0 | 12.5 | 11.0 | 9.6 | 8.2 | 48 N |
| 46 N | 25.3 | 24.3 | 23.2 | 22.0 | 20.7 | 19.4 | 18.0 | 16.6 | 15.2 | 13.8 | 12.3 | 10.9 | 9.4 | 8.0 | 6.7 | 46 N |
| 44 N | 23.5 | 22.5 | 21.4 | 20.3 | 19.0 | 17.8 | 16.4 | 15.1 | 13.7 | 12.3 | 10.9 | 9.4 | 8.1 | 6.7 | 5.4 | 44 N |
| 42 N | 21.8 | 20.8 | 19.8 | 18.7 | 17.5 | 16.3 | 15.0 | 13.7 | 12.3 | 10.9 | 9.6 | 8.2 | 6.9 | 5.6 | 4.3 | 42 N |
| 40 N | 20.1 | 19.2 | 18.2 | 17.2 | 16.1 | 14.9 | 13.7 | 12.4 | 11.1 | 9.8 | 8.5 | 7.2 | 5.9 | 4.7 | 3.5 | 40 N |
| 38 N | 18.6 | 17.7 | 16.8 | 15.8 | 14.8 | 13.7 | 12.5 | 11.3 | 10.1 | 8.8 | 7.6 | 6.3 | 5.1 | 3.9 | 2.8 | 38 N |
| 36 N | 17.1 | 16.3 | 15.5 | 14.6 | 13.6 | 12.6 | 11.5 | 10.4 | 9.2 | 8.0 | 6.8 | 5.6 | 4.5 | 3.4 | 2.3 | 36 N |
| 34 N | 15.7 | 15.0 | 14.3 | 13.5 | 12.6 | 11.6 | 10.6 | 9.5 | 8.4 | 7.3 | 6.2 | 5.1 | 4.0 | 2.9 | 1.9 | 34 N |
| 32 N | 14.3 | 13.8 | 13.1 | 12.4 | 11.6 | 10.7 | 9.8 | 8.8 | 7.8 | 6.8 | 5.7 | 4.7 | 3.6 | 2.7 | 1.7 | 32 N |
| 30 N | 13.1 | 12.6 | 12.0 | 11.4 | 10.7 | 9.9 | 9.0 | 8.2 | 7.2 | 6.3 | 5.3 | 4.3 | 3.4 | 2.5 | 1.6 | 30 N |
| 28 N | 11.9 | 11.4 | 11.0 | 10.4 | 9.8 | 9.1 | 8.4 | 7.6 | 6.7 | 5.9 | 5.0 | 4.1 | 3.2 | 2.4 | 1.6 | 28 N |
| 26 N | 10.7 | 10.4 | 10.0 | 9.5 | 9.0 | 8.4 | 7.7 | 7.0 | 6.3 | 5.5 | 4.7 | 3.9 | 3.1 | 2.4 | 1.6 | 26 N |
| 24 N | 9.7 | 9.4 | 9.0 | 8.6 | 8.2 | 7.7 | 7.1 | 6.5 | 5.9 | 5.2 | 4.5 | 3.8 | 3.1 | 2.4 | 1.7 | 24 N |
| 22 N | 8.7 | 8.4 | 8.1 | 7.8 | 7.4 | 7.0 | 6.5 | 6.0 | 5.5 | 4.9 | 4.3 | 3.7 | 3.1 | 2.5 | 1.9 | 22 N |
| 20 N | 7.8 | 7.5 | 7.3 | 7.0 | 6.7 | 6.3 | 5.9 | 5.5 | 5.1 | 4.6 | 4.1 | 3.6 | 3.1 | 2.6 | 2.1 | 20 N |
| 18 N | 7.0 | 6.7 | 6.5 | 6.2 | 5.9 | 5.7 | 5.4 | 5.0 | 4.7 | 4.3 | 4.0 | 3.6 | 3.2 | 2.8 | 2.4 | 18 N |
| 16 N | 6.3 | 6.0 | 5.7 | 5.4 | 5.2 | 5.0 | 4.8 | 4.6 | 4.3 | 4.1 | 3.9 | 3.6 | 3.3 | 3.0 | 2.7 | 16 N |
| 14 N | 5.6 | 5.2 | 5.0 | 4.7 | 4.5 | 4.4 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.6 | 3.5 | 3.3 | 3.1 | 14 N |
| 12 N | 5.0 | 4.6 | 4.2 | 4.0 | 3.8 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.6 | 12 N |
| 10 N | 4.4 | 3.9 | 3.5 | 3.3 | 3.1 | 3.1 | 3.1 | 3.2 | 3.4 | 3.5 | 3.7 | 3.8 | 4.0 | 4.1 | 4.1 | 10 N |
| 8 N | 3.9 | 3.3 | 2.9 | 2.6 | 2.5 | 2.5 | 2.6 | 2.8 | 3.1 | 3.4 | 3.7 | 4.0 | 4.3 | 4.5 | 4.7 | 8 N |
| 6 N | 3.4 | 2.7 | 2.3 | 2.0 | 1.9 | 1.9 | 2.1 | 2.5 | 2.9 | 3.3 | 3.8 | 4.2 | 4.6 | 5.0 | 5.2 | 6 N |
| 4 N | 2.9 | 2.2 | 1.7 | 1.4 | 1.3 | 1.5 | 1.8 | 2.2 | 2.7 | 3.3 | 3.9 | 4.5 | 5.0 | 5.5 | 5.8 | 4 N |
| 2 N | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 | 1.1 | 1.5 | 2.0 | 2.7 | 3.4 | 4.1 | 4.8 | 5.4 | 6.0 | 6.4 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2.2 | 1.4 | 0.8 | 0.6 | 0.6 | 0.8 | 1.3 | 2.0 | 2.7 | 3.5 | 4.4 | 5.2 | 5.9 | 6.5 | 7.0 | 0 |
| 2 S | 2.0 | 1.2 | 0.6 | 0.4 | 0.5 | 0.8 | 1.4 | 2.1 | 2.9 | 3.8 | 4.7 | 5.6 | 6.4 | 7.0 | 7.6 | 2 S |
| 4 S | 2.0 | 1.2 | 0.7 | 0.5 | 0.6 | 1.0 | 1.6 | 2.4 | 3.3 | 4.2 | 5.2 | 6.1 | 6.9 | 7.6 | 8.1 | 4 S |
| 6 S | 2.3 | 1.5 | 1.0 | 0.8 | 1.0 | 1.4 | 2.1 | 2.9 | 3.8 | 4.8 | 5.8 | 6.6 | 7.4 | 8.1 | 8.5 | 6 S |
| 8 S | 2.9 | 2.1 | 1.7 | 1.6 | 1.7 | 2.2 | 2.9 | 3.7 | 4.6 | 5.5 | 6.5 | 7.3 | 8.0 | 8.6 | 9.0 | 8 S |
| 10 S | 3.9 | 3.2 | 2.8 | 2.7 | 2.9 | 3.3 | 4.0 | 4.7 | 5.6 | 6.5 | 7.3 | 8.0 | 8.6 | 9.0 | 9.3 | 10 S |
| 12 S | 5.4 | 4.7 | 4.3 | 4.2 | 4.4 | 4.8 | 5.4 | 6.1 | 6.8 | 7.6 | 8.2 | 8.8 | 9.3 | 9.5 | 9.6 | 12 S |
| 14 S | 7.4 | 6.7 | 6.3 | 6.2 | 6.3 | 6.6 | 7.1 | 7.7 | 8.3 | 8.8 | 9.3 | 9.7 | 10.0 | 10.0 | 9.9 | 14 S |
| 16 S | 9.8 | 9.2 | 8.8 | 8.6 | 8.6 | 8.8 | 9.2 | 9.5 | 9.9 | 10.3 | 10.6 | 10.7 | 10.7 | 10.5 | 10.2 | 16 S |
| 18 S | 12.8 | 12.1 | 11.7 | 11.4 | 11.3 | 11.4 | 11.5 | 11.7 | 11.8 | 11.9 | 11.9 | 11.8 | 11.5 | 11.0 | 10.4 | 18 S |
| 20 S | 16.2 | 15.5 | 14.9 | 14.6 | 14.3 | 14.2 | 14.1 | 14.0 | 13.8 | 13.6 | 13.3 | 12.9 | 12.3 | 11.5 | 10.7 | 20 S |
| 22 S | 19.9 | 19.2 | 18.5 | 18.0 | 17.6 | 17.2 | 16.8 | 16.4 | 16.0 | 15.5 | 14.8 | 14.0 | 13.1 | 12.1 | 10.9 | 22 S |
| 24 S | 23.9 | 23.1 | 22.3 | 21.6 | 21.0 | 20.3 | 19.7 | 19.0 | 18.2 | 17.3 | 16.3 | 15.2 | 13.9 | 12.6 | 11.1 | 24 S |
| 26 S | 28.1 | 27.1 | 26.2 | 25.3 | 24.4 | 23.5 | 22.5 | 21.5 | 20.4 | 19.1 | 17.8 | 16.3 | 14.7 | 13.1 | 11.3 | 26 S |
| 28 S | 32.2 | 31.2 | 30.1 | 28.9 | 27.8 | 26.6 | 25.3 | 23.9 | 22.4 | 20.9 | 19.2 | 17.4 | 15.5 | 13.5 | 11.5 | 28 S |
| 30 S | 36.2 | 35.0 | 33.7 | 32.4 | 30.9 | 29.4 | 27.8 | 26.2 | 24.4 | 22.5 | 20.4 | 18.3 | 16.1 | 13.9 | 11.6 | 30 S |
| 32 S | 39.8 | 38.5 | 37.0 | 35.4 | 33.8 | 32.0 | 30.1 | 28.1 | 26.0 | 23.8 | 21.5 | 19.1 | 16.6 | 14.1 | 11.6 | 32 S |
| 34 S | 42.9 | 41.4 | 39.8 | 38.0 | 36.1 | 34.1 | 32.0 | 29.7 | 27.3 | 24.9 | 22.3 | 19.7 | 17.0 | 14.3 | 11.6 | 34 S |
| 36 S | 45.4 | 43.8 | 42.0 | 40.0 | 37.9 | 35.7 | 33.3 | 30.8 | 28.2 | 25.6 | 22.8 | 19.9 | 17.1 | 14.2 | 11.4 | 36 S |
| 38 S | 47.0 | 45.3 | 43.4 | 41.3 | 39.0 | 36.6 | 34.1 | 31.4 | 28.7 | 25.8 | 22.9 | 19.9 | 16.9 | 13.9 | 11.0 | 38 S |
| 40 S | 47.7 | 45.9 | 43.9 | 41.7 | 39.4 | 36.8 | 34.2 | 31.4 | 28.5 | 25.6 | 22.5 | 19.5 | 16.4 | 13.4 | 10.4 | 40 S |
| 42 S | 47.3 | 45.5 | 43.5 | 41.3 | 38.9 | 36.3 | 33.6 | 30.7 | 27.8 | 24.8 | 21.7 | 18.7 | 15.6 | 12.6 | 9.6 | 42 S |
| 44 S | 45.9 | 44.1 | 42.1 | 39.9 | 37.5 | 34.9 | 32.2 | 29.3 | 26.4 | 23.4 | 20.4 | 17.4 | 14.4 | 11.4 | 8.5 | 44 S |
| 46 S | 43.4 | 41.7 | 39.7 | 37.5 | 35.2 | 32.7 | 30.0 | 27.3 | 24.4 | 21.5 | 18.6 | 15.7 | 12.7 | 9.9 | 7.1 | 46 S |
| 48 S | 39.8 | 38.2 | 36.3 | 34.2 | 32.0 | 29.6 | 27.1 | 24.4 | 21.7 | 19.0 | 16.2 | 13.4 | 10.7 | 8.0 | 5.3 | 48 S |
| 50 S | 35.2 | 33.7 | 32.0 | 30.1 | 28.0 | 25.7 | 23.4 | 20.9 | 18.4 | 15.9 | 13.3 | 10.7 | 8.1 | 5.6 | 3.2 | 50 S |
| 52 S | 29.6 | 28.3 | 26.8 | 25.0 | 23.2 | 21.1 | 19.0 | 16.8 | 14.5 | 12.2 | 9.8 | 7.5 | 5.1 | 2.9 | 0.6 | 52 S |
| 54 S | 23.2 | 22.1 | 20.8 | 19.3 | 17.6 | 15.9 | 14.0 | 12.0 | 10.0 | 7.9 | 5.8 | 3.8 | 1.7 | -0.3 | -2.3 | 54 S |
| 56 S | 16.1 | 15.2 | 14.1 | 12.9 | 11.5 | 10.0 | 8.4 | 6.7 | 5.0 | 3.2 | 1.4 | -0.4 | -2.2 | -4.0 | -5.7 | 56 S |
| 58 S | 8.4 | 7.7 | 6.9 | 5.9 | 4.8 | 3.6 | 2.3 | 0.9 | -0.5 | -2.0 | -3.5 | -5.0 | -6.5 | -8.0 | -9.5 | 58 S |
| 60 S | 0.3 | -0.1 | -0.7 | -1.4 | -2.2 | -3.2 | -4.2 | -5.3 | -6.4 | -7.6 | -8.8 | -10.0 | -11.3 | -12.5 | -13.7 | 60 S |
| 62 S | -8.0 | -8.2 | -8.6 | -9.0 | -9.6 | -10.2 | -11.0 | -11.8 | -12.6 | -13.5 | -14.4 | -15.4 | -16.4 | -17.3 | -18.3 | 62 S |
| 64 S | -16.5 | -16.5 | -16.6 | -16.8 | -17.1 | -17.5 | -18.0 | -18.5 | -19.1 | -19.7 | -20.4 | -21.1 | -21.8 | -22.5 | -23.3 | 64 S |
| 66 S | -24.9 | -24.7 | -24.6 | -24.6 | -24.7 | -24.9 | -25.1 | -25.4 | -25.7 | -26.1 | -26.6 | -27.0 | -27.5 | -28.1 | -28.6 | 66 S |
| 68 S | -33.2 | -32.8 | -32.6 | -32.4 | -32.3 | -32.3 | -32.3 | -32.4 | -32.5 | -32.7 | -33.0 | -33.2 | -33.5 | -33.9 | -34.3 | 68 S |
| 70 S | -41.2 | -40.8 | -40.4 | -40.1 | -39.8 | -39.6 | -39.5 | -39.4 | -39.4 | -39.4 | -39.5 | -39.6 | -39.8 | -40.0 | -40.2 | 70 S |
| 72 S | -49.0 | -48.4 | -47.9 | -47.5 | -47.2 | -46.9 | -46.6 | -46.4 | -46.3 | -46.2 | -46.1 | -46.1 | -46.2 | -46.2 | -46.3 | 72 S |
| 74 S | -56.4 | -55.8 | -55.2 | -54.8 | -54.4 | -54.0 | -53.7 | -53.4 | -53.2 | -53.0 | -52.8 | -52.7 | -52.7 | -52.7 | -52.7 | 74 S |
| 76 S | -63.4 | -62.8 | -62.2 | -61.8 | -61.3 | -60.9 | -60.6 | -60.2 | -60.0 | -59.7 | -59.5 | -59.4 | -59.3 | -59.2 | -59.2 | 76 S |
| 78 S | -70.0 | -69.5 | -68.9 | -68.5 | -68.0 | -67.6 | -67.3 | -67.0 | -66.7 | -66.4 | -66.2 | -66.0 | -65.9 | -65.8 | -65.8 | 78 S |
| 80 S | -76.3 | -75.8 | -75.3 | -74.9 | -74.5 | -74.1 | -73.8 | -73.5 | -73.2 | -73.0 | -72.8 | -72.6 | -72.5 | -72.4 | -72.3 | 80 S |
| 82 S | -82.2 | -81.8 | -81.4 | -81.1 | -80.7 | -80.4 | -80.1 | -79.9 | -79.7 | -79.5 | -79.3 | -79.1 | -79.0 | -78.9 | -78.9 | 82 S |
| 84 S | -87.8 | -87.5 | -87.2 | -87.0 | -86.7 | -86.5 | -86.3 | -86.1 | -85.9 | -85.7 | -85.6 | -85.5 | -85.4 | -85.3 | -85.3 | 84 S |
| 86 S | -93.2 | -93.0 | -92.8 | -92.6 | -92.4 | -92.3 | -92.1 | -92.0 | -91.9 | -91.8 | -91.7 | -91.6 | -91.6 | -91.5 | -91.5 | 86 S |
| 88 S | -98.2 | -98.1 | -98.1 | -98.0 | -97.9 | -97.8 | -97.8 | -97.7 | -97.6 | -97.6 | -97.6 | -97.5 | -97.5 | -97.5 | -97.5 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -107.7 | -107.8 | -107.9 | -107.9 | -108.0 | -108.1 | -108.1 | -108.2 | -108.2 | -108.2 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | LAT. |
| E.LONG. | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 | 112 | 114 | 116 | 118 | 120 | 122 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 118 | 120 | 122 | 124 | 126 | 128 | 130 | 132 | 134 | 136 | 138 | 140 | 142 | 144 | 146 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 36.8 | 36.9 | 37.0 | 37.0 | 37.1 | 37.2 | 37.3 | 37.3 | 37.4 | 37.5 | 37.6 | 37.6 | 37.7 | 37.8 | 37.9 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 37.7 | 37.6 | 37.5 | 37.4 | 37.3 | 37.2 | 37.1 | 37.0 | 36.9 | 36.9 | 36.8 | 36.7 | 36.6 | 36.5 | 36.4 | 88 N |
| 86 N | 38.1 | 37.9 | 37.7 | 37.5 | 37.3 | 37.1 | 37.0 | 36.8 | 36.6 | 36.4 | 36.2 | 36.0 | 35.8 | 35.6 | 35.4 | 86 N |
| 84 N | 38.4 | 38.1 | 37.8 | 37.5 | 37.2 | 36.9 | 36.6 | 36.3 | 36.0 | 35.7 | 35.4 | 35.1 | 34.8 | 34.5 | 34.2 | 84 N |
| 82 N | 38.6 | 38.2 | 37.8 | 37.4 | 37.0 | 36.5 | 36.1 | 35.7 | 35.2 | 34.8 | 34.4 | 33.9 | 33.5 | 33.1 | 32.7 | 82 N |
| 80 N | 38.6 | 38.1 | 37.6 | 37.0 | 36.5 | 35.9 | 35.3 | 34.8 | 34.2 | 33.7 | 33.1 | 32.6 | 32.0 | 31.5 | 30.9 | 80 N |
| 78 N | 38.4 | 37.7 | 37.0 | 36.4 | 35.7 | 35.0 | 34.3 | 33.6 | 32.9 | 32.2 | 31.6 | 30.9 | 30.2 | 29.6 | 28.9 | 78 N |
| 76 N | 37.8 | 37.0 | 36.2 | 35.4 | 34.6 | 33.8 | 33.0 | 32.2 | 31.4 | 30.6 | 29.8 | 29.0 | 28.2 | 27.4 | 26.7 | 76 N |
| 74 N | 37.0 | 36.1 | 35.1 | 34.2 | 33.3 | 32.4 | 31.4 | 30.5 | 29.6 | 28.6 | 27.7 | 26.8 | 25.9 | 25.1 | 24.2 | 74 N |
| 72 N | 35.8 | 34.8 | 33.8 | 32.7 | 31.7 | 30.6 | 29.6 | 28.5 | 27.5 | 26.5 | 25.4 | 24.4 | 23.5 | 22.5 | 21.6 | 72 N |
| 70 N | 34.4 | 33.2 | 32.1 | 30.9 | 29.8 | 28.6 | 27.5 | 26.3 | 25.2 | 24.1 | 23.0 | 21.9 | 20.9 | 19.8 | 18.8 | 70 N |
| 68 N | 32.6 | 31.4 | 30.2 | 28.9 | 27.7 | 26.5 | 25.2 | 24.0 | 22.8 | 21.6 | 20.4 | 19.3 | 18.1 | 17.0 | 16.0 | 68 N |
| 66 N | 30.7 | 29.4 | 28.1 | 26.7 | 25.4 | 24.1 | 22.8 | 21.5 | 20.2 | 19.0 | 17.7 | 16.5 | 15.4 | 14.2 | 13.2 | 66 N |
| 64 N | 28.6 | 27.2 | 25.8 | 24.4 | 23.0 | 21.6 | 20.3 | 18.9 | 17.6 | 16.3 | 15.1 | 13.8 | 12.6 | 11.5 | 10.4 | 64 N |
| 62 N | 26.3 | 24.9 | 23.4 | 22.0 | 20.5 | 19.1 | 17.7 | 16.4 | 15.0 | 13.7 | 12.4 | 11.2 | 10.0 | 8.8 | 7.7 | 62 N |
| 60 N | 23.9 | 22.5 | 21.0 | 19.5 | 18.1 | 16.6 | 15.2 | 13.8 | 12.4 | 11.1 | 9.8 | 8.6 | 7.4 | 6.3 | 5.2 | 60 N |
| 58 N | 21.6 | 20.1 | 18.6 | 17.1 | 15.6 | 14.2 | 12.7 | 11.3 | 10.0 | 8.7 | 7.4 | 6.2 | 5.1 | 4.0 | 2.9 | 58 N |
| 56 N | 19.2 | 17.7 | 16.2 | 14.7 | 13.2 | 11.8 | 10.4 | 9.0 | 7.7 | 6.4 | 5.2 | 4.0 | 2.9 | 1.9 | 0.9 | 56 N |
| 54 N | 17.0 | 15.4 | 13.9 | 12.5 | 11.0 | 9.6 | 8.2 | 6.9 | 5.6 | 4.4 | 3.2 | 2.1 | 1.0 | 0.0 | -0.9 | 54 N |
| 52 N | 14.8 | 13.3 | 11.8 | 10.4 | 9.0 | 7.6 | 6.2 | 5.0 | 3.7 | 2.6 | 1.4 | 0.4 | -0.6 | -1.5 | -2.4 | 52 N |
| 50 N | 12.8 | 11.4 | 9.9 | 8.5 | 7.1 | 5.8 | 4.5 | 3.3 | 2.1 | 1.0 | -0.1 | -1.0 | -2.0 | -2.8 | -3.6 | 50 N |
| 48 N | 11.0 | 9.6 | 8.2 | 6.8 | 5.5 | 4.2 | 3.0 | 1.8 | 0.7 | -0.3 | -1.3 | -2.2 | -3.0 | -3.8 | -4.5 | 48 N |
| 46 N | 9.4 | 8.0 | 6.7 | 5.4 | 4.1 | 2.9 | 1.7 | 0.6 | -0.4 | -1.4 | -2.3 | -3.1 | -3.8 | -4.5 | -5.1 | 46 N |
| 44 N | 8.1 | 6.7 | 5.4 | 4.1 | 2.9 | 1.8 | 0.7 | -0.3 | -1.3 | -2.2 | -3.0 | -3.7 | -4.4 | -5.0 | -5.5 | 44 N |
| 42 N | 6.9 | 5.6 | 4.3 | 3.1 | 2.0 | 0.9 | -0.1 | -1.1 | -1.9 | -2.7 | -3.4 | -4.1 | -4.7 | -5.2 | -5.7 | 42 N |
| 40 N | 5.9 | 4.7 | 3.5 | 2.3 | 1.2 | 0.2 | -0.7 | -1.6 | -2.4 | -3.1 | -3.7 | -4.3 | -4.8 | -5.3 | -5.7 | 40 N |
| 38 N | 5.1 | 3.9 | 2.8 | 1.7 | 0.7 | -0.2 | -1.1 | -1.9 | -2.6 | -3.2 | -3.8 | -4.3 | -4.8 | -5.2 | -5.6 | 38 N |
| 36 N | 4.5 | 3.4 | 2.3 | 1.3 | 0.3 | -0.5 | -1.3 | -2.0 | -2.7 | -3.3 | -3.8 | -4.2 | -4.6 | -5.0 | -5.3 | 36 N |
| 34 N | 4.0 | 2.9 | 1.9 | 1.0 | 0.1 | -0.7 | -1.4 | -2.1 | -2.6 | -3.2 | -3.6 | -4.0 | -4.4 | -4.7 | -4.9 | 34 N |
| 32 N | 3.6 | 2.7 | 1.7 | 0.8 | 0.0 | -0.7 | -1.4 | -2.0 | -2.5 | -3.0 | -3.4 | -3.7 | -4.0 | -4.3 | -4.5 | 32 N |
| 30 N | 3.4 | 2.5 | 1.6 | 0.8 | 0.0 | -0.6 | -1.2 | -1.8 | -2.3 | -2.7 | -3.0 | -3.3 | -3.6 | -3.9 | -4.1 | 30 N |
| 28 N | 3.2 | 2.4 | 1.6 | 0.8 | 0.1 | -0.5 | -1.0 | -1.5 | -1.9 | -2.3 | -2.6 | -2.9 | -3.2 | -3.4 | -3.6 | 28 N |
| 26 N | 3.1 | 2.4 | 1.6 | 0.9 | 0.3 | -0.2 | -0.7 | -1.2 | -1.6 | -1.9 | -2.2 | -2.5 | -2.7 | -2.9 | -3.1 | 26 N |
| 24 N | 3.1 | 2.4 | 1.7 | 1.1 | 0.6 | 0.1 | -0.4 | -0.8 | -1.1 | -1.4 | -1.7 | -2.0 | -2.2 | -2.4 | -2.6 | 24 N |
| 22 N | 3.1 | 2.5 | 1.9 | 1.4 | 0.9 | 0.4 | 0.0 | -0.3 | -0.7 | -0.9 | -1.2 | -1.4 | -1.6 | -1.9 | -2.1 | 22 N |
| 20 N | 3.1 | 2.6 | 2.1 | 1.7 | 1.2 | 0.9 | 0.5 | 0.2 | -0.1 | -0.4 | -0.6 | -0.8 | -1.1 | -1.3 | -1.6 | 20 N |
| 18 N | 3.2 | 2.8 | 2.4 | 2.0 | 1.7 | 1.4 | 1.1 | 0.8 | 0.5 | 0.3 | 0.0 | -0.2 | -0.4 | -0.7 | -1.0 | 18 N |
| 16 N | 3.3 | 3.0 | 2.7 | 2.5 | 2.2 | 1.9 | 1.7 | 1.4 | 1.2 | 1.0 | 0.7 | 0.5 | 0.2 | -0.0 | -0.3 | 16 N |
| 14 N | 3.5 | 3.3 | 3.1 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 | 2.0 | 1.7 | 1.5 | 1.3 | 1.0 | 0.7 | 0.3 | 14 N |
| 12 N | 3.7 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.1 | 3.0 | 2.8 | 2.6 | 2.3 | 2.1 | 1.8 | 1.4 | 1.1 | 12 N |
| 10 N | 4.0 | 4.1 | 4.1 | 4.1 | 4.1 | 4.0 | 3.9 | 3.8 | 3.6 | 3.4 | 3.2 | 2.9 | 2.6 | 2.2 | 1.8 | 10 N |
| 8 N | 4.3 | 4.5 | 4.7 | 4.8 | 4.8 | 4.8 | 4.8 | 4.7 | 4.5 | 4.3 | 4.1 | 3.8 | 3.4 | 3.0 | 2.6 | 8 N |
| 6 N | 4.6 | 5.0 | 5.2 | 5.4 | 5.6 | 5.6 | 5.6 | 5.5 | 5.4 | 5.2 | 4.9 | 4.6 | 4.2 | 3.8 | 3.3 | 6 N |
| 4 N | 5.0 | 5.5 | 5.8 | 6.1 | 6.3 | 6.4 | 6.4 | 6.3 | 6.2 | 6.0 | 5.7 | 5.4 | 5.0 | 4.6 | 4.0 | 4 N |
| 2 N | 5.4 | 6.0 | 6.4 | 6.8 | 7.0 | 7.1 | 7.2 | 7.1 | 6.9 | 6.7 | 6.4 | 6.1 | 5.7 | 5.2 | 4.7 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 5.9 | 6.5 | 7.0 | 7.4 | 7.7 | 7.8 | 7.8 | 7.7 | 7.6 | 7.3 | 7.0 | 6.6 | 6.2 | 5.7 | 5.1 | 0 |
| 2 S | 6.4 | 7.0 | 7.6 | 8.0 | 8.2 | 8.4 | 8.3 | 8.2 | 8.0 | 7.7 | 7.4 | 7.0 | 6.5 | 6.0 | 5.4 | 2 S |
| 4 S | 6.9 | 7.6 | 8.1 | 8.5 | 8.7 | 8.8 | 8.7 | 8.6 | 8.3 | 8.0 | 7.6 | 7.1 | 6.7 | 6.1 | 5.6 | 4 S |
| 6 S | 7.4 | 8.1 | 8.5 | 8.9 | 9.0 | 9.0 | 8.9 | 8.7 | 8.4 | 8.0 | 7.6 | 7.1 | 6.6 | 6.0 | 5.5 | 6 S |
| 8 S | 8.0 | 8.6 | 9.0 | 9.2 | 9.3 | 9.2 | 9.0 | 8.7 | 8.3 | 7.8 | 7.3 | 6.8 | 6.3 | 5.7 | 5.1 | 8 S |
| 10 S | 8.6 | 9.0 | 9.3 | 9.4 | 9.4 | 9.2 | 8.8 | 8.4 | 7.9 | 7.4 | 6.8 | 6.3 | 5.7 | 5.1 | 4.6 | 10 S |
| 12 S | 9.3 | 9.5 | 9.6 | 9.6 | 9.4 | 9.0 | 8.5 | 8.0 | 7.4 | 6.8 | 6.2 | 5.5 | 4.9 | 4.4 | 3.8 | 12 S |
| 14 S | 10.0 | 10.0 | 9.9 | 9.7 | 9.3 | 8.7 | 8.1 | 7.4 | 6.7 | 6.0 | 5.3 | 4.6 | 4.0 | 3.4 | 2.8 | 14 S |
| 16 S | 10.7 | 10.5 | 10.2 | 9.7 | 9.1 | 8.4 | 7.6 | 6.7 | 5.9 | 5.1 | 4.3 | 3.5 | 2.8 | 2.2 | 1.6 | 16 S |
| 18 S | 11.5 | 11.0 | 10.4 | 9.7 | 8.9 | 7.9 | 6.9 | 5.9 | 4.9 | 4.0 | 3.1 | 2.3 | 1.6 | 0.9 | 0.3 | 18 S |
| 20 S | 12.3 | 11.5 | 10.7 | 9.7 | 8.6 | 7.4 | 6.2 | 5.1 | 3.9 | 2.9 | 1.9 | 1.0 | 0.2 | -0.5 | -1.1 | 20 S |
| 22 S | 13.1 | 12.1 | 10.9 | 9.6 | 8.3 | 6.9 | 5.5 | 4.2 | 2.9 | 1.7 | 0.6 | -0.4 | -1.2 | -1.9 | -2.6 | 22 S |
| 24 S | 13.9 | 12.6 | 11.1 | 9.6 | 8.0 | 6.4 | 4.8 | 3.2 | 1.8 | 0.5 | -0.7 | -1.7 | -2.6 | -3.4 | -4.1 | 24 S |
| 26 S | 14.7 | 13.1 | 11.3 | 9.5 | 7.6 | 5.8 | 4.0 | 2.4 | 0.8 | -0.7 | -1.9 | -3.1 | -4.0 | -4.9 | -5.6 | 26 S |
| 28 S | 15.5 | 13.5 | 11.5 | 9.4 | 7.3 | 5.3 | 3.3 | 1.5 | -0.2 | -1.8 | -3.1 | -4.3 | -5.4 | -6.3 | -7.0 | 28 S |
| 30 S | 16.1 | 13.9 | 11.6 | 9.3 | 7.0 | 4.8 | 2.7 | 0.7 | -1.1 | -2.8 | -4.3 | -5.5 | -6.6 | -7.6 | -8.4 | 30 S |
| 32 S | 16.6 | 14.1 | 11.6 | 9.1 | 6.7 | 4.3 | 2.1 | -0.0 | -2.0 | -3.7 | -5.3 | -6.6 | -7.8 | -8.8 | -9.7 | 32 S |
| 34 S | 17.0 | 14.3 | 11.6 | 8.9 | 6.3 | 3.8 | 1.5 | -0.7 | -2.8 | -4.6 | -6.2 | -7.6 | -8.9 | -9.9 | -10.9 | 34 S |
| 36 S | 17.1 | 14.2 | 11.4 | 8.6 | 5.9 | 3.3 | 0.9 | -1.4 | -3.5 | -5.3 | -7.0 | -8.5 | -9.8 | -10.9 | -11.9 | 36 S |
| 38 S | 16.9 | 13.9 | 11.0 | 8.1 | 5.4 | 2.7 | 0.3 | -2.0 | -4.1 | -6.1 | -7.8 | -9.3 | -10.6 | -11.8 | -12.9 | 38 S |
| 40 S | 16.4 | 13.4 | 10.4 | 7.5 | 4.8 | 2.1 | -0.4 | -2.7 | -4.8 | -6.7 | -8.5 | -10.0 | -11.4 | -12.6 | -13.7 | 40 S |
| 42 S | 15.6 | 12.6 | 9.6 | 6.7 | 4.0 | 1.4 | -1.1 | -3.4 | -5.5 | -7.4 | -9.1 | -10.7 | -12.1 | -13.3 | -14.5 | 42 S |
| 44 S | 14.4 | 11.4 | 8.5 | 5.7 | 3.0 | 0.5 | -1.9 | -4.2 | -6.2 | -8.1 | -9.8 | -11.4 | -12.8 | -14.1 | -15.2 | 44 S |
| 46 S | 12.7 | 9.9 | 7.1 | 4.4 | 1.8 | -0.6 | -2.9 | -5.1 | -7.1 | -8.9 | -10.6 | -12.1 | -13.5 | -14.8 | -16.0 | 46 S |
| 48 S | 10.7 | 8.0 | 5.3 | 2.8 | 0.3 | -2.0 | -4.2 | -6.2 | -8.1 | -9.8 | -11.5 | -13.0 | -14.3 | -15.6 | -16.8 | 48 S |
| 50 S | 8.1 | 5.6 | 3.2 | 0.8 | -1.4 | -3.6 | -5.6 | -7.5 | -9.3 | -11.0 | -12.5 | -14.0 | -15.3 | -16.6 | -17.8 | 50 S |
| 52 S | 5.1 | 2.9 | 0.6 | -1.5 | -3.6 | -5.6 | -7.4 | -9.2 | -10.8 | -12.4 | -13.8 | -15.2 | -16.5 | -17.7 | -18.9 | 52 S |
| 54 S | 1.7 | -0.3 | -2.3 | -4.2 | -6.1 | -7.9 | -9.5 | -11.1 | -12.6 | -14.1 | -15.4 | -16.7 | -17.9 | -19.1 | -20.3 | 54 S |
| 56 S | -2.2 | -4.0 | -5.7 | -7.4 | -9.0 | -10.6 | -12.0 | -13.5 | -14.8 | -16.1 | -17.4 | -18.6 | -19.7 | -20.9 | -22.0 | 56 S |
| 58 S | -6.5 | -8.0 | -9.5 | -10.9 | -12.3 | -13.7 | -15.0 | -16.2 | -17.4 | -18.6 | -19.7 | -20.8 | -21.9 | -23.0 | -24.0 | 58 S |
| 60 S | -11.3 | -12.5 | -13.7 | -14.9 | -16.0 | -17.2 | -18.3 | -19.4 | -20.4 | -21.5 | -22.5 | -23.5 | -24.5 | -25.5 | -26.5 | 60 S |
| 62 S | -16.4 | -17.3 | -18.3 | -19.3 | -20.2 | -21.1 | -22.1 | -23.0 | -23.9 | -24.8 | -25.7 | -26.6 | -27.5 | -28.4 | -29.4 | 62 S |
| 64 S | -21.8 | -22.5 | -23.3 | -24.0 | -24.8 | -25.5 | -26.3 | -27.0 | -27.8 | -28.6 | -29.4 | -30.2 | -31.0 | -31.9 | -32.7 | 64 S |
| 66 S | -27.5 | -28.1 | -28.6 | -29.2 | -29.7 | -30.3 | -30.9 | -31.5 | -32.2 | -32.8 | -33.5 | -34.2 | -35.0 | -35.8 | -36.6 | 66 S |
| 68 S | -33.5 | -33.9 | -34.3 | -34.6 | -35.1 | -35.5 | -36.0 | -36.5 | -37.0 | -37.6 | -38.1 | -38.8 | -39.4 | -40.1 | -40.9 | 68 S |
| 70 S | -39.8 | -40.0 | -40.2 | -40.4 | -40.7 | -41.0 | -41.4 | -41.8 | -42.2 | -42.7 | -43.2 | -43.7 | -44.3 | -44.9 | -45.6 | 70 S |
| 72 S | -46.2 | -46.2 | -46.3 | -46.5 | -46.7 | -46.9 | -47.2 | -47.5 | -47.8 | -48.2 | -48.6 | -49.1 | -49.6 | -50.2 | -50.8 | 72 S |
| 74 S | -52.7 | -52.7 | -52.7 | -52.8 | -52.9 | -53.0 | -53.2 | -53.4 | -53.7 | -54.0 | -54.4 | -54.8 | -55.2 | -55.7 | -56.3 | 74 S |
| 76 S | -59.3 | -59.2 | -59.2 | -59.2 | -59.3 | -59.3 | -59.5 | -59.6 | -59.9 | -60.1 | -60.4 | -60.8 | -61.2 | -61.6 | -62.1 | 76 S |
| 78 S | -65.9 | -65.8 | -65.8 | -65.7 | -65.7 | -65.8 | -65.9 | -66.0 | -66.2 | -66.4 | -66.7 | -66.9 | -67.3 | -67.6 | -68.1 | 78 S |
| 80 S | -72.5 | -72.4 | -72.3 | -72.3 | -72.3 | -72.3 | -72.4 | -72.5 | -72.6 | -72.8 | -73.0 | -73.2 | -73.5 | -73.8 | -74.2 | 80 S |
| 82 S | -79.0 | -78.9 | -78.9 | -78.8 | -78.8 | -78.8 | -78.9 | -79.0 | -79.1 | -79.2 | -79.4 | -79.5 | -79.8 | -80.0 | -80.3 | 82 S |
| 84 S | -85.4 | -85.3 | -85.3 | -85.2 | -85.2 | -85.2 | -85.3 | -85.3 | -85.4 | -85.5 | -85.6 | -85.8 | -86.0 | -86.1 | -86.3 | 84 S |
| 86 S | -91.6 | -91.5 | -91.5 | -91.5 | -91.5 | -91.5 | -91.5 | -91.6 | -91.6 | -91.7 | -91.8 | -91.9 | -92.0 | -92.1 | -92.2 | 86 S |
| 88 S | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.6 | -97.6 | -97.7 | -97.7 | -97.8 | -97.8 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.2 | -108.2 | -108.1 | -108.1 | -108.0 | -108.0 | -107.9 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 118 | 120 | 122 | 124 | 126 | 128 | 130 | 132 | 134 | 136 | 138 | 140 | 142 | 144 | 146 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 142 | 144 | 146 | 148 | 150 | 152 | 154 | 156 | 158 | 160 | 162 | 164 | 166 | 168 | 170 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 37.7 | 37.8 | 37.9 | 37.9 | 38.0 | 38.1 | 38.1 | 38.2 | 38.3 | 38.3 | 38.4 | 38.5 | 38.5 | 38.6 | 38.7 | |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 36.6 | 36.5 | 36.4 | 36.3 | 36.2 | 36.2 | 36.1 | 36.0 | 35.9 | 35.8 | 35.8 | 35.7 | 35.6 | 35.5 | 35.5 | 88 N |
| 86 N | 35.8 | 35.6 | 35.4 | 35.2 | 35.0 | 34.9 | 34.7 | 34.5 | 34.3 | 34.2 | 34.0 | 33.9 | 33.7 | 33.6 | 33.4 | 86 N |
| 84 N | 34.8 | 34.5 | 34.2 | 33.9 | 33.6 | 33.3 | 33.0 | 32.8 | 32.5 | 32.2 | 32.0 | 31.7 | 31.5 | 31.3 | 31.1 | 84 N |
| 82 N | 33.5 | 33.1 | 32.7 | 32.3 | 31.9 | 31.5 | 31.1 | 30.7 | 30.4 | 30.0 | 29.7 | 29.3 | 29.0 | 28.7 | 28.4 | 82 N |
| 80 N | 32.0 | 31.5 | 30.9 | 30.4 | 29.9 | 29.4 | 28.9 | 28.4 | 28.0 | 27.5 | 27.1 | 26.7 | 26.3 | 25.9 | 25.6 | 80 N |
| 78 N | 30.2 | 29.6 | 28.9 | 28.3 | 27.7 | 27.1 | 26.5 | 25.9 | 25.4 | 24.8 | 24.3 | 23.8 | 23.4 | 22.9 | 22.5 | 78 N |
| 76 N | 28.2 | 27.4 | 26.7 | 25.9 | 25.2 | 24.5 | 23.8 | 23.2 | 22.6 | 22.0 | 21.4 | 20.8 | 20.3 | 19.8 | 19.3 | 76 N |
| 74 N | 25.9 | 25.1 | 24.2 | 23.4 | 22.6 | 21.8 | 21.0 | 20.3 | 19.6 | 19.0 | 18.3 | 17.7 | 17.2 | 16.6 | 16.1 | 74 N |
| 72 N | 23.5 | 22.5 | 21.6 | 20.7 | 19.8 | 18.9 | 18.1 | 17.3 | 16.6 | 15.9 | 15.2 | 14.6 | 14.0 | 13.4 | 12.9 | 72 N |
| 70 N | 20.9 | 19.8 | 18.8 | 17.8 | 16.9 | 16.0 | 15.1 | 14.3 | 13.5 | 12.8 | 12.1 | 11.5 | 10.9 | 10.3 | 9.8 | 70 N |
| 68 N | 18.1 | 17.0 | 16.0 | 15.0 | 14.0 | 13.1 | 12.2 | 11.3 | 10.5 | 9.8 | 9.1 | 8.4 | 7.8 | 7.3 | 6.8 | 68 N |
| 66 N | 15.4 | 14.2 | 13.2 | 12.1 | 11.1 | 10.2 | 9.3 | 8.4 | 7.6 | 6.9 | 6.2 | 5.6 | 5.0 | 4.5 | 4.0 | 66 N |
| 64 N | 12.6 | 11.5 | 10.4 | 9.3 | 8.3 | 7.4 | 6.5 | 5.7 | 4.9 | 4.2 | 3.5 | 2.9 | 2.4 | 1.9 | 1.5 | 64 N |
| 62 N | 10.0 | 8.8 | 7.7 | 6.7 | 5.7 | 4.8 | 3.9 | 3.1 | 2.3 | 1.7 | 1.1 | 0.5 | 0.1 | -0.3 | -0.7 | 62 N |
| 60 N | 7.4 | 6.3 | 5.2 | 4.2 | 3.2 | 2.3 | 1.5 | 0.8 | 0.1 | -0.5 | -1.1 | -1.6 | -2.0 | -2.3 | -2.6 | 60 N |
| 58 N | 5.1 | 4.0 | 2.9 | 1.9 | 1.0 | 0.2 | -0.6 | -1.3 | -1.9 | -2.5 | -2.9 | -3.3 | -3.7 | -3.9 | -4.1 | 58 N |
| 56 N | 2.9 | 1.9 | 0.9 | -0.1 | -0.9 | -1.7 | -2.4 | -3.0 | -3.6 | -4.1 | -4.5 | -4.8 | -5.1 | -5.2 | -5.4 | 56 N |
| 54 N | 1.0 | 0.0 | -0.9 | -1.8 | -2.6 | -3.3 | -3.9 | -4.5 | -5.0 | -5.4 | -5.7 | -5.9 | -6.1 | -6.2 | -6.2 | 54 N |
| 52 N | -0.6 | -1.5 | -2.4 | -3.2 | -3.9 | -4.5 | -5.1 | -5.6 | -6.0 | -6.3 | -6.6 | -6.8 | -6.9 | -6.9 | -6.8 | 52 N |
| 50 N | -2.0 | -2.8 | -3.6 | -4.3 | -4.9 | -5.5 | -6.0 | -6.4 | -6.7 | -7.0 | -7.2 | -7.3 | -7.3 | -7.3 | -7.2 | 50 N |
| 48 N | -3.0 | -3.8 | -4.5 | -5.1 | -5.7 | -6.2 | -6.6 | -7.0 | -7.2 | -7.4 | -7.5 | -7.6 | -7.5 | -7.4 | -7.3 | 48 N |
| 46 N | -3.8 | -4.5 | -5.1 | -5.7 | -6.2 | -6.6 | -7.0 | -7.2 | -7.5 | -7.6 | -7.7 | -7.6 | -7.6 | -7.4 | -7.2 | 46 N |
| 44 N | -4.4 | -5.0 | -5.5 | -6.0 | -6.4 | -6.8 | -7.1 | -7.3 | -7.5 | -7.6 | -7.6 | -7.5 | -7.4 | -7.2 | -7.0 | 44 N |
| 42 N | -4.7 | -5.2 | -5.7 | -6.1 | -6.5 | -6.8 | -7.0 | -7.2 | -7.3 | -7.4 | -7.4 | -7.3 | -7.2 | -7.0 | -6.7 | 42 N |
| 40 N | -4.8 | -5.3 | -5.7 | -6.1 | -6.4 | -6.6 | -6.8 | -7.0 | -7.1 | -7.1 | -7.1 | -7.0 | -6.9 | -6.7 | -6.4 | 40 N |
| 38 N | -4.8 | -5.2 | -5.6 | -5.9 | -6.1 | -6.3 | -6.5 | -6.7 | -6.7 | -6.8 | -6.8 | -6.7 | -6.6 | -6.4 | -6.2 | 38 N |
| 36 N | -4.6 | -5.0 | -5.3 | -5.6 | -5.8 | -6.0 | -6.1 | -6.3 | -6.4 | -6.4 | -6.4 | -6.4 | -6.3 | -6.1 | -5.9 | 36 N |
| 34 N | -4.4 | -4.7 | -4.9 | -5.2 | -5.4 | -5.6 | -5.7 | -5.9 | -6.0 | -6.0 | -6.1 | -6.0 | -6.0 | -5.9 | -5.8 | 34 N |
| 32 N | -4.0 | -4.3 | -4.5 | -4.7 | -4.9 | -5.1 | -5.3 | -5.4 | -5.6 | -5.7 | -5.7 | -5.8 | -5.8 | -5.8 | -5.7 | 32 N |
| 30 N | -3.6 | -3.9 | -4.1 | -4.3 | -4.5 | -4.7 | -4.9 | -5.0 | -5.2 | -5.3 | -5.5 | -5.6 | -5.7 | -5.7 | -5.7 | 30 N |
| 28 N | -3.2 | -3.4 | -3.6 | -3.8 | -4.0 | -4.2 | -4.4 | -4.7 | -4.9 | -5.1 | -5.3 | -5.4 | -5.6 | -5.7 | -5.9 | 28 N |
| 26 N | -2.7 | -2.9 | -3.1 | -3.3 | -3.6 | -3.8 | -4.1 | -4.3 | -4.6 | -4.8 | -5.1 | -5.4 | -5.6 | -5.8 | -6.0 | 26 N |
| 24 N | -2.2 | -2.4 | -2.6 | -2.9 | -3.1 | -3.4 | -3.7 | -4.0 | -4.3 | -4.6 | -5.0 | -5.3 | -5.6 | -6.0 | -6.3 | 24 N |
| 22 N | -1.6 | -1.9 | -2.1 | -2.4 | -2.7 | -3.0 | -3.3 | -3.7 | -4.0 | -4.4 | -4.9 | -5.3 | -5.7 | -6.1 | -6.5 | 22 N |
| 20 N | -1.1 | -1.3 | -1.6 | -1.9 | -2.2 | -2.5 | -2.9 | -3.3 | -3.8 | -4.3 | -4.8 | -5.3 | -5.8 | -6.3 | -6.8 | 20 N |
| 18 N | -0.4 | -0.7 | -1.0 | -1.3 | -1.7 | -2.1 | -2.5 | -3.0 | -3.5 | -4.1 | -4.6 | -5.2 | -5.8 | -6.5 | -7.1 | 18 N |
| 16 N | 0.2 | -0.0 | -0.3 | -0.7 | -1.1 | -1.5 | -2.0 | -2.6 | -3.2 | -3.8 | -4.5 | -5.2 | -5.9 | -6.6 | -7.3 | 16 N |
| 14 N | 1.0 | 0.7 | 0.3 | -0.1 | -0.5 | -1.0 | -1.6 | -2.2 | -2.8 | -3.5 | -4.3 | -5.1 | -5.9 | -6.7 | -7.5 | 14 N |
| 12 N | 1.8 | 1.4 | 1.1 | 0.6 | 0.1 | -0.4 | -1.0 | -1.7 | -2.4 | -3.2 | -4.1 | -4.9 | -5.8 | -6.8 | -7.7 | 12 N |
| 10 N | 2.6 | 2.2 | 1.8 | 1.4 | 0.8 | 0.2 | -0.5 | -1.2 | -2.0 | -2.9 | -3.8 | -4.8 | -5.8 | -6.8 | -7.8 | 10 N |
| 8 N | 3.4 | 3.0 | 2.6 | 2.1 | 1.5 | 0.9 | 0.1 | -0.7 | -1.5 | -2.5 | -3.5 | -4.5 | -5.6 | -6.7 | -7.9 | 8 N |
| 6 N | 4.2 | 3.8 | 3.3 | 2.8 | 2.2 | 1.5 | 0.7 | -0.1 | -1.1 | -2.1 | -3.2 | -4.3 | -5.5 | -6.7 | -7.9 | 6 N |
| 4 N | 5.0 | 4.6 | 4.0 | 3.5 | 2.8 | 2.1 | 1.3 | 0.4 | -0.6 | -1.7 | -2.8 | -4.1 | -5.3 | -6.6 | -8.0 | 4 N |
| 2 N | 5.7 | 5.2 | 4.7 | 4.1 | 3.4 | 2.6 | 1.8 | 0.8 | -0.2 | -1.3 | -2.6 | -3.9 | -5.2 | -6.6 | -8.0 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 6.2 | 5.7 | 5.1 | 4.5 | 3.8 | 3.0 | 2.2 | 1.2 | 0.1 | -1.1 | -2.3 | -3.7 | -5.1 | -6.6 | -8.1 | C |
| 2 S | 6.5 | 6.0 | 5.4 | 4.8 | 4.1 | 3.3 | 2.4 | 1.4 | 0.3 | -0.9 | -2.2 | -3.6 | -5.1 | -6.6 | -8.2 | 2 S |
| 4 S | 6.7 | 6.1 | 5.6 | 4.9 | 4.2 | 3.4 | 2.5 | 1.6 | 0.4 | -0.8 | -2.1 | -3.6 | -5.1 | -6.8 | -8.4 | 4 S |
| 6 S | 6.6 | 6.0 | 5.5 | 4.8 | 4.1 | 3.3 | 2.5 | 1.5 | 0.4 | -0.9 | -2.2 | -3.7 | -5.3 | -7.0 | -8.7 | 6 S |
| 8 S | 6.3 | 5.7 | 5.1 | 4.5 | 3.8 | 3.1 | 2.2 | 1.2 | 0.1 | -1.1 | -2.4 | -3.9 | -5.6 | -7.3 | -9.0 | 8 S |
| 10 S | 5.7 | 5.1 | 4.6 | 3.9 | 3.3 | 2.6 | 1.7 | 0.8 | -0.3 | -1.5 | -2.8 | -4.3 | -5.9 | -7.7 | -9.5 | 10 S |
| 12 S | 4.9 | 4.4 | 3.8 | 3.2 | 2.5 | 1.8 | 1.1 | 0.2 | -0.9 | -2.1 | -3.4 | -4.9 | -6.5 | -8.2 | -10.0 | 12 S |
| 14 S | 4.0 | 3.4 | 2.8 | 2.2 | 1.6 | 0.9 | 0.2 | -0.7 | -1.7 | -2.8 | -4.1 | -5.6 | -7.2 | -8.9 | -10.7 | 14 S |
| 16 S | 2.8 | 2.2 | 1.6 | 1.0 | 0.5 | -0.2 | -0.9 | -1.7 | -2.6 | -3.7 | -5.0 | -6.4 | -8.0 | -9.7 | -11.5 | 16 S |
| 18 S | 1.6 | 0.9 | 0.3 | -0.3 | -0.8 | -1.4 | -2.1 | -2.9 | -3.8 | -4.8 | -6.0 | -7.4 | -9.0 | -10.6 | -12.4 | 18 S |
| 20 S | 0.2 | -0.5 | -1.1 | -1.7 | -2.2 | -2.8 | -3.4 | -4.2 | -5.0 | -6.0 | -7.2 | -8.6 | -10.1 | -11.7 | -13.5 | 20 S |
| 22 S | -1.2 | -1.9 | -2.6 | -3.2 | -3.7 | -4.3 | -4.9 | -5.6 | -6.4 | -7.4 | -8.5 | -9.8 | -11.3 | -12.9 | -14.6 | 22 S |
| 24 S | -2.6 | -3.4 | -4.1 | -4.7 | -5.2 | -5.8 | -6.4 | -7.1 | -7.9 | -8.8 | -9.9 | -11.2 | -12.6 | -14.2 | -15.9 | 24 S |
| 26 S | -4.0 | -4.9 | -5.6 | -6.2 | -6.8 | -7.4 | -8.0 | -8.6 | -9.4 | -10.3 | -11.4 | -12.6 | -14.0 | -15.6 | -17.2 | 26 S |
| 28 S | -5.4 | -6.3 | -7.0 | -7.7 | -8.3 | -8.9 | -9.5 | -10.2 | -11.0 | -11.9 | -12.9 | -14.1 | -15.5 | -17.0 | -18.6 | 28 S |
| 30 S | -6.6 | -7.6 | -8.4 | -9.1 | -9.8 | -10.4 | -11.0 | -11.7 | -12.5 | -13.4 | -14.5 | -15.7 | -17.0 | -18.5 | -20.1 | 30 S |
| 32 S | -7.8 | -8.8 | -9.7 | -10.5 | -11.1 | -11.8 | -12.5 | -13.2 | -14.0 | -14.9 | -16.0 | -17.2 | -18.5 | -20.0 | -21.6 | 32 S |
| 34 S | -8.9 | -9.9 | -10.9 | -11.7 | -12.4 | -13.1 | -13.9 | -14.6 | -15.5 | -16.4 | -17.5 | -18.7 | -20.1 | -21.5 | -23.1 | 34 S |
| 36 S | -9.8 | -10.9 | -11.9 | -12.8 | -13.6 | -14.4 | -15.2 | -16.0 | -16.9 | -17.8 | -18.9 | -20.2 | -21.5 | -23.0 | -24.6 | 36 S |
| 38 S | -10.6 | -11.8 | -12.9 | -13.8 | -14.7 | -15.5 | -16.3 | -17.2 | -18.2 | -19.2 | -20.3 | -21.6 | -23.0 | -24.5 | -26.1 | 38 S |
| 40 S | -11.4 | -12.6 | -13.7 | -14.7 | -15.6 | -16.5 | -17.4 | -18.4 | -19.4 | -20.5 | -21.7 | -23.0 | -24.4 | -25.9 | -27.6 | 40 S |
| 42 S | -12.1 | -13.3 | -14.5 | -15.5 | -16.5 | -17.5 | -18.4 | -19.5 | -20.5 | -21.7 | -22.9 | -24.3 | -25.7 | -27.3 | -29.0 | 42 S |
| 44 S | -12.8 | -14.1 | -15.2 | -16.3 | -17.4 | -18.4 | -19.4 | -20.5 | -21.6 | -22.8 | -24.1 | -25.5 | -27.0 | -28.6 | -30.3 | 44 S |
| 46 S | -13.5 | -14.8 | -16.0 | -17.1 | -18.2 | -19.3 | -20.4 | -21.5 | -22.7 | -23.9 | -25.3 | -26.7 | -28.3 | -29.9 | -31.7 | 46 S |
| 48 S | -14.3 | -15.6 | -16.8 | -18.0 | -19.1 | -20.2 | -21.3 | -22.5 | -23.7 | -25.1 | -26.5 | -27.9 | -29.5 | -31.2 | -33.0 | 48 S |
| 50 S | -15.3 | -16.6 | -17.8 | -18.9 | -20.1 | -21.2 | -22.4 | -23.6 | -24.9 | -26.2 | -27.7 | -29.2 | -30.8 | -32.6 | -34.4 | 50 S |
| 52 S | -16.5 | -17.7 | -18.9 | -20.1 | -21.2 | -22.4 | -23.6 | -24.8 | -26.1 | -27.5 | -29.0 | -30.6 | -32.2 | -34.0 | -35.8 | 52 S |
| 54 S | -17.9 | -19.1 | -20.3 | -21.4 | -22.6 | -23.8 | -25.0 | -26.2 | -27.6 | -29.0 | -30.5 | -32.0 | -33.7 | -35.5 | -37.3 | 54 S |
| 56 S | -19.7 | -20.9 | -22.0 | -23.1 | -24.2 | -25.4 | -26.6 | -27.9 | -29.2 | -30.6 | -32.1 | -33.7 | -35.4 | -37.2 | -39.0 | 56 S |
| 58 S | -21.9 | -23.0 | -24.0 | -25.1 | -26.2 | -27.4 | -28.6 | -29.8 | -31.2 | -32.6 | -34.1 | -35.7 | -37.3 | -39.1 | -40.9 | 58 S |
| 60 S | -24.5 | -25.5 | -26.5 | -27.5 | -28.6 | -29.7 | -30.9 | -32.2 | -33.5 | -34.9 | -36.3 | -37.9 | -39.5 | -41.3 | -43.1 | 60 S |
| 62 S | -27.5 | -28.4 | -29.4 | -30.4 | -31.4 | -32.5 | -33.6 | -34.9 | -36.1 | -37.5 | -38.9 | -40.5 | -42.1 | -43.8 | -45.5 | 62 S |
| 64 S | -31.0 | -31.9 | -32.7 | -33.7 | -34.7 | -35.7 | -36.8 | -38.0 | -39.2 | -40.5 | -41.9 | -43.4 | -44.9 | -46.6 | -48.3 | 64 S |
| 66 S | -35.0 | -35.8 | -36.6 | -37.5 | -38.4 | -39.4 | -40.4 | -41.5 | -42.7 | -44.0 | -45.3 | -46.7 | -48.2 | -49.7 | -51.4 | 66 S |
| 68 S | -39.4 | -40.1 | -40.9 | -41.7 | -42.6 | -43.5 | -44.5 | -45.5 | -46.6 | -47.8 | -49.1 | -50.4 | -51.8 | -53.3 | -54.8 | 68 S |
| 70 S | -44.3 | -44.9 | -45.6 | -46.4 | -47.2 | -48.0 | -48.9 | -49.9 | -50.9 | -52.1 | -53.2 | -54.5 | -55.8 | -57.2 | -58.6 | 70 S |
| 72 S | -49.6 | -50.2 | -50.8 | -51.5 | -52.2 | -53.0 | -53.8 | -54.7 | -55.6 | -56.7 | -57.7 | -58.9 | -60.1 | -61.3 | -62.7 | 72 S |
| 74 S | -55.2 | -55.7 | -56.3 | -56.9 | -57.5 | -58.2 | -59.0 | -59.8 | -60.7 | -61.6 | -62.6 | -63.6 | -64.7 | -65.8 | -67.0 | 74 S |
| 76 S | -61.2 | -61.6 | -62.1 | -62.6 | -63.2 | -63.8 | -64.5 | -65.2 | -65.9 | -66.8 | -67.6 | -68.5 | -69.5 | -70.5 | -71.6 | 76 S |
| 78 S | -67.3 | -67.6 | -68.1 | -68.5 | -69.0 | -69.5 | -70.1 | -70.7 | -71.4 | -72.1 | -72.9 | -73.7 | -74.5 | -75.3 | -76.2 | 78 S |
| 80 S | -73.5 | -73.8 | -74.2 | -74.5 | -75.0 | -75.4 | -75.9 | -76.4 | -77.0 | -77.6 | -78.2 | -78.8 | -79.5 | -80.3 | -81.0 | 80 S |
| 82 S | -79.8 | -80.0 | -80.3 | -80.6 | -80.9 | -81.3 | -81.7 | -82.1 | -82.5 | -83.0 | -83.5 | -84.0 | -84.6 | -85.2 | -85.8 | 82 S |
| 84 S | -86.0 | -86.1 | -86.3 | -86.6 | -86.8 | -87.1 | -87.4 | -87.7 | -88.0 | -88.4 | -88.8 | -89.1 | -89.6 | -90.0 | -90.4 | 84 S |
| 86 S | -92.0 | -92.1 | -92.2 | -92.4 | -92.6 | -92.7 | -92.9 | -93.1 | -93.3 | -93.6 | -93.8 | -94.1 | -94.3 | -94.6 | -94.9 | 86 S |
| 88 S | -97.7 | -97.8 | -97.8 | -97.9 | -98.0 | -98.1 | -98.2 | -98.3 | -98.4 | -98.5 | -98.6 | -98.8 | -98.9 | -99.0 | -99.2 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| | -108.0 | -108.0 | -107.9 | -107.8 | -107.8 | -107.7 | -107.6 | -107.5 | -107.4 | -107.3 | -107.2 | -107.0 | -106.9 | -106.8 | -106.7 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 142 | 144 | 146 | 148 | 150 | 152 | 154 | 156 | 158 | 160 | 162 | 164 | 166 | 168 | 170 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 166 | 168 | 170 | 172 | 174 | 176 | 178 | 180 | 182 | 184 | 186 | 188 | 190 | 192 | 194 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 38.5 | 38.6 | 38.7 | 38.7 | 38.8 | 38.8 | 38.9 | 38.9 | 39.0 | 39.0 | 39.1 | 39.1 | 39.1 | 39.2 | 39.2 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 35.6 | 35.5 | 35.5 | 35.4 | 35.3 | 35.3 | 35.2 | 35.2 | 35.1 | 35.1 | 35.0 | 35.0 | 34.9 | 34.9 | 34.9 | 88 N |
| 86 N | 33.7 | 33.6 | 33.4 | 33.3 | 33.1 | 33.0 | 32.9 | 32.8 | 32.7 | 32.6 | 32.5 | 32.4 | 32.3 | 32.3 | 32.2 | 86 N |
| 84 N | 31.5 | 31.3 | 31.1 | 30.8 | 30.6 | 30.5 | 30.3 | 30.1 | 30.0 | 29.8 | 29.7 | 29.6 | 29.5 | 29.4 | 29.3 | 84 N |
| 82 N | 29.0 | 28.7 | 28.4 | 28.1 | 27.9 | 27.6 | 27.4 | 27.2 | 27.0 | 26.8 | 26.6 | 26.5 | 26.3 | 26.2 | 26.1 | 82 N |
| 80 N | 26.3 | 25.9 | 25.6 | 25.2 | 24.9 | 24.6 | 24.3 | 24.1 | 23.8 | 23.6 | 23.4 | 23.2 | 23.1 | 23.0 | 22.8 | 80 N |
| 78 N | 23.4 | 22.9 | 22.5 | 22.1 | 21.8 | 21.4 | 21.1 | 20.8 | 20.5 | 20.3 | 20.1 | 19.9 | 19.7 | 19.6 | 19.5 | 78 N |
| 76 N | 20.3 | 19.8 | 19.3 | 18.9 | 18.5 | 18.1 | 17.8 | 17.5 | 17.2 | 16.9 | 16.7 | 16.5 | 16.4 | 16.2 | 16.1 | 76 N |
| 74 N | 17.2 | 16.6 | 16.1 | 15.7 | 15.2 | 14.8 | 14.5 | 14.2 | 13.9 | 13.6 | 13.4 | 13.2 | 13.1 | 13.0 | 12.9 | 74 N |
| 72 N | 14.0 | 13.4 | 12.9 | 12.4 | 12.0 | 11.6 | 11.3 | 11.0 | 10.7 | 10.4 | 10.2 | 10.1 | 9.9 | 9.8 | 9.8 | 72 N |
| 70 N | 10.9 | 10.3 | 9.8 | 9.3 | 8.9 | 8.5 | 8.2 | 7.9 | 7.6 | 7.4 | 7.3 | 7.1 | 7.0 | 6.9 | 6.9 | 70 N |
| 68 N | 7.8 | 7.3 | 6.8 | 6.4 | 6.0 | 5.6 | 5.3 | 5.1 | 4.8 | 4.7 | 4.5 | 4.4 | 4.4 | 4.3 | 4.3 | 68 N |
| 66 N | 5.0 | 4.5 | 4.0 | 3.6 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.2 | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | 66 N |
| 64 N | 2.4 | 1.9 | 1.5 | 1.2 | 0.9 | 0.6 | 0.4 | 0.3 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 64 N |
| 62 N | 0.1 | -0.3 | -0.7 | -1.0 | -1.2 | -1.4 | -1.5 | -1.6 | -1.7 | -1.7 | -1.7 | -1.6 | -1.6 | -1.5 | -1.5 | 62 N |
| 60 N | -2.0 | -2.3 | -2.6 | -2.8 | -2.9 | -3.1 | -3.1 | -3.1 | -3.1 | -3.1 | -3.0 | -2.9 | -2.8 | -2.7 | -2.6 | 60 N |
| 58 N | -3.7 | -3.9 | -4.1 | -4.3 | -4.3 | -4.4 | -4.3 | -4.3 | -4.2 | -4.1 | -4.0 | -3.8 | -3.7 | -3.6 | -3.5 | 58 N |
| 56 N | -5.1 | -5.2 | -5.4 | -5.4 | -5.4 | -5.3 | -5.2 | -5.1 | -4.9 | -4.8 | -4.6 | -4.4 | -4.3 | -4.1 | -4.0 | 56 N |
| 54 N | -6.1 | -6.2 | -6.2 | -6.2 | -6.1 | -6.0 | -5.8 | -5.6 | -5.4 | -5.1 | -4.9 | -4.7 | -4.5 | -4.4 | -4.3 | 54 N |
| 52 N | -6.9 | -6.9 | -6.8 | -6.7 | -6.6 | -6.4 | -6.1 | -5.8 | -5.6 | -5.3 | -5.0 | -4.8 | -4.6 | -4.4 | -4.3 | 52 N |
| 50 N | -7.3 | -7.3 | -7.2 | -7.0 | -6.8 | -6.5 | -6.2 | -5.9 | -5.5 | -5.2 | -4.9 | -4.6 | -4.4 | -4.3 | -4.2 | 50 N |
| 48 N | -7.5 | -7.4 | -7.3 | -7.0 | -6.7 | -6.4 | -6.1 | -5.7 | -5.3 | -5.0 | -4.7 | -4.4 | -4.2 | -4.1 | -4.0 | 48 N |
| 46 N | -7.6 | -7.4 | -7.2 | -6.9 | -6.6 | -6.2 | -5.9 | -5.5 | -5.1 | -4.7 | -4.4 | -4.1 | -3.9 | -3.8 | -3.8 | 46 N |
| 44 N | -7.4 | -7.2 | -7.0 | -6.7 | -6.4 | -6.0 | -5.6 | -5.2 | -4.8 | -4.4 | -4.1 | -3.8 | -3.7 | -3.6 | -3.7 | 44 N |
| 42 N | -7.2 | -7.0 | -6.7 | -6.4 | -6.1 | -5.7 | -5.3 | -4.9 | -4.5 | -4.2 | -3.9 | -3.7 | -3.5 | -3.5 | -3.6 | 42 N |
| 40 N | -6.9 | -6.7 | -6.4 | -6.1 | -5.8 | -5.4 | -5.1 | -4.7 | -4.3 | -4.0 | -3.8 | -3.6 | -3.5 | -3.5 | -3.7 | 40 N |
| 38 N | -6.6 | -6.4 | -6.2 | -5.9 | -5.6 | -5.3 | -4.9 | -4.6 | -4.3 | -4.0 | -3.8 | -3.7 | -3.7 | -3.8 | -4.0 | 38 N |
| 36 N | -6.3 | -6.1 | -5.9 | -5.7 | -5.5 | -5.2 | -4.9 | -4.6 | -4.4 | -4.2 | -4.0 | -4.0 | -4.0 | -4.2 | -4.5 | 36 N |
| 34 N | -6.0 | -5.9 | -5.8 | -5.6 | -5.4 | -5.2 | -5.0 | -4.8 | -4.6 | -4.5 | -4.4 | -4.4 | -4.6 | -4.8 | -5.2 | 34 N |
| 32 N | -5.8 | -5.8 | -5.7 | -5.6 | -5.5 | -5.4 | -5.3 | -5.1 | -5.0 | -5.0 | -5.0 | -5.1 | -5.3 | -5.6 | -6.1 | 32 N |
| 30 N | -5.7 | -5.7 | -5.7 | -5.7 | -5.7 | -5.7 | -5.6 | -5.6 | -5.6 | -5.7 | -5.8 | -5.9 | -6.2 | -6.6 | -7.1 | 30 N |
| 28 N | -5.6 | -5.7 | -5.9 | -5.9 | -6.0 | -6.1 | -6.1 | -6.2 | -6.3 | -6.5 | -6.6 | -6.9 | -7.3 | -7.7 | -8.3 | 28 N |
| 26 N | -5.6 | -5.8 | -6.0 | -6.2 | -6.4 | -6.6 | -6.7 | -6.9 | -7.1 | -7.4 | -7.6 | -8.0 | -8.4 | -9.0 | -9.6 | 26 N |
| 24 N | -5.6 | -6.0 | -6.3 | -6.6 | -6.8 | -7.1 | -7.4 | -7.7 | -8.0 | -8.3 | -8.7 | -9.1 | -9.7 | -10.3 | -11.0 | 24 N |
| 22 N | -5.7 | -6.1 | -6.5 | -6.9 | -7.3 | -7.7 | -8.1 | -8.5 | -8.9 | -9.3 | -9.8 | -10.3 | -10.9 | -11.5 | -12.3 | 22 N |
| 20 N | -5.8 | -6.3 | -6.8 | -7.3 | -7.8 | -8.3 | -8.8 | -9.3 | -9.8 | -10.3 | -10.9 | -11.5 | -12.1 | -12.8 | -13.6 | 20 N |
| 18 N | -5.8 | -6.5 | -7.1 | -7.7 | -8.3 | -8.9 | -9.5 | -10.1 | -10.7 | -11.3 | -11.9 | -12.6 | -13.3 | -14.0 | -14.8 | 18 N |
| 16 N | -5.9 | -6.6 | -7.3 | -8.0 | -8.7 | -9.4 | -10.1 | -10.8 | -11.5 | -12.2 | -12.9 | -13.6 | -14.3 | -15.1 | -15.9 | 16 N |
| 14 N | -5.9 | -6.7 | -7.5 | -8.3 | -9.2 | -10.0 | -10.7 | -11.5 | -12.3 | -13.0 | -13.8 | -14.6 | -15.3 | -16.1 | -16.9 | 14 N |
| 12 N | -5.8 | -6.8 | -7.7 | -8.6 | -9.5 | -10.4 | -11.3 | -12.2 | -13.0 | -13.8 | -14.6 | -15.4 | -16.2 | -17.0 | -17.8 | 12 N |
| 10 N | -5.8 | -6.8 | -7.8 | -8.8 | -9.8 | -10.8 | -11.8 | -12.7 | -13.7 | -14.5 | -15.4 | -16.2 | -17.1 | -17.8 | -18.6 | 10 N |
| 8 N | -5.6 | -6.7 | -7.9 | -9.0 | -10.1 | -11.2 | -12.3 | -13.3 | -14.3 | -15.2 | -16.1 | -17.0 | -17.8 | -18.6 | -19.3 | 8 N |
| 6 N | -5.5 | -6.7 | -7.9 | -9.2 | -10.4 | -11.6 | -12.7 | -13.8 | -14.9 | -15.9 | -16.8 | -17.7 | -18.5 | -19.2 | -19.9 | 6 N |
| 4 N | -5.3 | -6.6 | -8.0 | -9.3 | -10.6 | -11.9 | -13.1 | -14.3 | -15.4 | -16.5 | -17.4 | -18.3 | -19.1 | -19.9 | -20.5 | 4 N |
| 2 N | -5.2 | -6.6 | -8.0 | -9.5 | -10.9 | -12.2 | -13.6 | -14.8 | -16.0 | -17.1 | -18.1 | -19.0 | -19.7 | -20.4 | -21.0 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -5.1 | -6.6 | -8.1 | -9.6 | -11.1 | -12.6 | -14.0 | -15.3 | -16.6 | -17.7 | -18.7 | -19.6 | -20.4 | -21.0 | -21.6 | 0 |
| 2 S | -5.1 | -6.6 | -8.2 | -9.8 | -11.4 | -13.0 | -14.5 | -15.9 | -17.2 | -18.3 | -19.4 | -20.2 | -21.0 | -21.6 | -22.1 | 2 S |
| 4 S | -5.1 | -6.8 | -8.4 | -10.1 | -11.8 | -13.4 | -15.0 | -16.4 | -17.8 | -19.0 | -20.0 | -20.9 | -21.6 | -22.2 | -22.6 | 4 S |
| 6 S | -5.3 | -7.0 | -8.7 | -10.4 | -12.2 | -13.9 | -15.5 | -17.0 | -18.4 | -19.7 | -20.7 | -21.6 | -22.3 | -22.8 | -23.1 | 6 S |
| 8 S | -5.6 | -7.3 | -9.0 | -10.8 | -12.7 | -14.4 | -16.1 | -17.7 | -19.1 | -20.4 | -21.4 | -22.3 | -22.9 | -23.4 | -23.6 | 8 S |
| 10 S | -5.9 | -7.7 | -9.5 | -11.3 | -13.2 | -15.0 | -16.7 | -18.3 | -19.8 | -21.1 | -22.1 | -23.0 | -23.6 | -24.0 | -24.1 | 10 S |
| 12 S | -6.5 | -8.2 | -10.0 | -11.9 | -13.8 | -15.7 | -17.4 | -19.1 | -20.5 | -21.8 | -22.9 | -23.7 | -24.3 | -24.6 | -24.7 | 12 S |
| 14 S | -7.2 | -8.9 | -10.7 | -12.6 | -14.5 | -16.4 | -18.2 | -19.8 | -21.3 | -22.6 | -23.7 | -24.4 | -25.0 | -25.2 | -25.2 | 14 S |
| 16 S | -8.0 | -9.7 | -11.5 | -13.4 | -15.3 | -17.2 | -19.0 | -20.6 | -22.1 | -23.4 | -24.5 | -25.2 | -25.7 | -25.9 | -25.9 | 16 S |
| 18 S | -9.0 | -10.6 | -12.4 | -14.3 | -16.2 | -18.1 | -19.9 | -21.5 | -23.0 | -24.3 | -25.3 | -26.1 | -26.5 | -26.7 | -26.5 | 18 S |
| 20 S | -10.1 | -11.7 | -13.5 | -15.3 | -17.2 | -19.0 | -20.8 | -22.5 | -24.0 | -25.2 | -26.2 | -26.9 | -27.4 | -27.5 | -27.3 | 20 S |
| 22 S | -11.3 | -12.9 | -14.6 | -16.4 | -18.3 | -20.1 | -21.9 | -23.5 | -25.0 | -26.2 | -27.2 | -27.9 | -28.3 | -28.4 | -28.2 | 22 S |
| 24 S | -12.6 | -14.2 | -15.9 | -17.7 | -19.5 | -21.3 | -23.0 | -24.7 | -26.1 | -27.3 | -28.3 | -29.0 | -29.4 | -29.4 | -29.2 | 24 S |
| 26 S | -14.0 | -15.6 | -17.2 | -19.0 | -20.8 | -22.5 | -24.3 | -25.9 | -27.3 | -28.5 | -29.5 | -30.2 | -30.5 | -30.6 | -30.3 | 26 S |
| 28 S | -15.5 | -17.0 | -18.6 | -20.3 | -22.1 | -23.9 | -25.6 | -27.2 | -28.6 | -29.8 | -30.8 | -31.5 | -31.9 | -31.9 | -31.7 | 28 S |
| 30 S | -17.0 | -18.5 | -20.1 | -21.8 | -23.5 | -25.3 | -27.0 | -28.5 | -30.0 | -31.2 | -32.2 | -32.9 | -33.3 | -33.4 | -33.2 | 30 S |
| 32 S | -18.5 | -20.0 | -21.6 | -23.3 | -25.0 | -26.7 | -28.4 | -30.0 | -31.4 | -32.7 | -33.7 | -34.5 | -34.9 | -35.1 | -35.0 | 32 S |
| 34 S | -20.1 | -21.5 | -23.1 | -24.8 | -26.5 | -28.2 | -29.9 | -31.5 | -33.0 | -34.3 | -35.3 | -36.1 | -36.7 | -37.0 | -36.9 | 34 S |
| 36 S | -21.5 | -23.0 | -24.6 | -26.3 | -28.0 | -29.8 | -31.4 | -33.1 | -34.6 | -35.9 | -37.0 | -37.9 | -38.6 | -38.9 | -39.1 | 36 S |
| 38 S | -23.0 | -24.5 | -26.1 | -27.8 | -29.5 | -31.3 | -33.0 | -34.7 | -36.2 | -37.6 | -38.8 | -39.8 | -40.6 | -41.1 | -41.3 | 38 S |
| 40 S | -24.4 | -25.9 | -27.6 | -29.3 | -31.0 | -32.8 | -34.5 | -36.2 | -37.9 | -39.3 | -40.6 | -41.7 | -42.6 | -43.3 | -43.8 | 40 S |
| 42 S | -25.7 | -27.3 | -29.0 | -30.7 | -32.5 | -34.3 | -36.1 | -37.8 | -39.5 | -41.1 | -42.5 | -43.7 | -44.8 | -45.6 | -46.3 | 42 S |
| 44 S | -27.0 | -28.6 | -30.3 | -32.1 | -33.9 | -35.8 | -37.6 | -39.4 | -41.2 | -42.8 | -44.4 | -45.7 | -47.0 | -48.0 | -48.9 | 44 S |
| 46 S | -28.3 | -29.9 | -31.7 | -33.5 | -35.3 | -37.2 | -39.1 | -41.0 | -42.8 | -44.6 | -46.2 | -47.8 | -49.2 | -50.4 | -51.5 | 46 S |
| 48 S | -29.5 | -31.2 | -33.0 | -34.8 | -36.7 | -38.7 | -40.6 | -42.6 | -44.5 | -46.4 | -48.1 | -49.8 | -51.4 | -52.8 | -54.1 | 48 S |
| 50 S | -30.8 | -32.6 | -34.4 | -36.2 | -38.2 | -40.2 | -42.2 | -44.2 | -46.2 | -48.1 | -50.0 | -51.8 | -53.5 | -55.1 | -56.6 | 50 S |
| 52 S | -32.2 | -34.0 | -35.8 | -37.7 | -39.7 | -41.7 | -43.7 | -45.8 | -47.8 | -49.9 | -51.9 | -53.8 | -55.7 | -57.5 | -59.2 | 52 S |
| 54 S | -33.7 | -35.5 | -37.3 | -39.2 | -41.2 | -43.3 | -45.4 | -47.5 | -49.6 | -51.7 | -53.8 | -55.8 | -57.8 | -59.8 | -61.6 | 54 S |
| 56 S | -35.4 | -37.2 | -39.0 | -40.9 | -42.9 | -45.0 | -47.1 | -49.2 | -51.4 | -53.5 | -55.7 | -57.8 | -59.9 | -62.0 | -64.0 | 56 S |
| 58 S | -37.3 | -39.1 | -40.9 | -42.8 | -44.8 | -46.9 | -49.0 | -51.1 | -53.3 | -55.5 | -57.7 | -59.9 | -62.1 | -64.2 | -66.4 | 58 S |
| 60 S | -39.5 | -41.3 | -43.1 | -45.0 | -46.9 | -49.0 | -51.0 | -53.2 | -55.3 | -57.5 | -59.8 | -62.0 | -64.2 | -66.4 | -68.6 | 60 S |
| 62 S | -42.1 | -43.8 | -45.5 | -47.4 | -49.3 | -51.3 | -53.3 | -55.4 | -57.6 | -59.7 | -61.9 | -64.2 | -66.4 | -68.7 | -70.9 | 62 S |
| 64 S | -44.9 | -46.6 | -48.3 | -50.1 | -51.9 | -53.9 | -55.8 | -57.9 | -60.0 | -62.1 | -64.3 | -66.5 | -68.7 | -70.9 | -73.1 | 64 S |
| 66 S | -48.2 | -49.7 | -51.4 | -53.1 | -54.9 | -56.7 | -58.6 | -60.6 | -62.6 | -64.6 | -66.7 | -68.9 | -71.0 | -73.2 | -75.4 | 66 S |
| 68 S | -51.8 | -53.3 | -54.8 | -56.4 | -58.1 | -59.9 | -61.7 | -63.5 | -65.4 | -67.4 | -69.4 | -71.4 | -73.4 | -75.5 | -77.6 | 68 S |
| 70 S | -55.8 | -57.2 | -58.6 | -60.1 | -61.7 | -63.3 | -65.0 | -66.7 | -68.5 | -70.3 | -72.2 | -74.1 | -76.0 | -77.9 | -79.9 | 70 S |
| 72 S | -60.1 | -61.3 | -62.7 | -64.0 | -65.5 | -67.0 | -68.5 | -70.1 | -71.7 | -73.4 | -75.1 | -76.9 | -78.6 | -80.4 | -82.3 | 72 S |
| 74 S | -64.7 | -65.8 | -67.0 | -68.3 | -69.5 | -70.9 | -72.3 | -73.7 | -75.2 | -76.7 | -78.2 | -79.8 | -81.4 | -83.0 | -84.7 | 74 S |
| 76 S | -69.5 | -70.5 | -71.6 | -72.7 | -73.8 | -75.0 | -76.2 | -77.4 | -78.7 | -80.1 | -81.4 | -82.8 | -84.2 | -85.6 | -87.1 | 76 S |
| 78 S | -74.5 | -75.3 | -76.2 | -77.2 | -78.2 | -79.2 | -80.2 | -81.3 | -82.4 | -83.5 | -84.7 | -85.9 | -87.1 | -88.3 | -89.5 | 78 S |
| 80 S | -79.5 | -80.3 | -81.0 | -81.8 | -82.6 | -83.4 | -84.3 | -85.2 | -86.1 | -87.0 | -88.0 | -89.0 | -90.0 | -91.0 | -92.0 | 80 S |
| 82 S | -84.6 | -85.2 | -85.8 | -86.4 | -87.0 | -87.7 | -88.4 | -89.1 | -89.8 | -90.5 | -91.3 | -92.1 | -92.8 | -93.6 | -94.4 | 82 S |
| 84 S | -89.6 | -90.0 | -90.4 | -90.9 | -91.4 | -91.8 | -92.3 | -92.9 | -93.4 | -93.9 | -94.5 | -95.0 | -95.6 | -96.2 | -96.8 | 84 S |
| 86 S | -94.3 | -94.6 | -94.9 | -95.2 | -95.5 | -95.8 | -96.2 | -96.5 | -96.8 | -97.2 | -97.6 | -97.9 | -98.3 | -98.7 | -99.0 | 86 S |
| 88 S | -98.9 | -99.0 | -99.2 | -99.3 | -99.5 | -99.6 | -99.8 | -99.9 | -100.1 | -100.3 | -100.4 | -100.6 | -100.8 | -101.0 | -101.2 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| | -106.9 | -106.8 | -106.7 | -106.5 | -106.4 | -106.3 | -106.1 | -106.0 | -105.8 | -105.7 | -105.5 | -105.3 | -105.2 | -105.0 | -104.8 | |
| LAT. | | | | | | | | | | | | | | | | LAT. |
| E.LONG. | 166 | 168 | 170 | 172 | 174 | 176 | 178 | 180 | 182 | 184 | 186 | 188 | 190 | 192 | 194 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 190 | 192 | 194 | 196 | 198 | 200 | 202 | 204 | 206 | 208 | 210 | 212 | 214 | 216 | 218 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 39.1 | 39.2 | 39.2 | 39.3 | 39.3 | 39.3 | 39.4 | 39.4 | 39.4 | 39.4 | 39.4 | 39.5 | 39.5 | 39.5 | 39.5 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 34.9 | 34.9 | 34.9 | 34.8 | 34.8 | 34.8 | 34.8 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 88 N |
| 86 N | 32.3 | 32.3 | 32.2 | 32.1 | 32.1 | 32.1 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 86 N |
| 84 N | 29.5 | 29.4 | 29.3 | 29.2 | 29.1 | 29.1 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.1 | 29.1 | 29.1 | 84 N |
| 82 N | 26.3 | 26.2 | 26.1 | 26.0 | 26.0 | 25.9 | 25.9 | 25.9 | 25.9 | 25.9 | 25.9 | 26.0 | 26.0 | 26.1 | 26.2 | 82 N |
| 80 N | 23.1 | 23.0 | 22.8 | 22.8 | 22.7 | 22.6 | 22.6 | 22.6 | 22.6 | 22.7 | 22.7 | 22.8 | 22.9 | 23.0 | 23.2 | 80 N |
| 78 N | 19.7 | 19.6 | 19.5 | 19.4 | 19.3 | 19.3 | 19.3 | 19.3 | 19.4 | 19.4 | 19.5 | 19.6 | 19.8 | 19.9 | 20.1 | 78 N |
| 76 N | 16.4 | 16.2 | 16.1 | 16.1 | 16.0 | 16.0 | 16.0 | 16.1 | 16.1 | 16.2 | 16.3 | 16.5 | 16.7 | 16.9 | 17.1 | 76 N |
| 74 N | 13.1 | 13.0 | 12.9 | 12.8 | 12.8 | 12.8 | 12.8 | 12.9 | 13.0 | 13.1 | 13.3 | 13.4 | 13.6 | 13.9 | 14.1 | 74 N |
| 72 N | 9.9 | 9.8 | 9.8 | 9.7 | 9.7 | 9.8 | 9.8 | 9.9 | 10.0 | 10.2 | 10.3 | 10.5 | 10.8 | 11.0 | 11.3 | 72 N |
| 70 N | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 7.0 | 7.1 | 7.2 | 7.4 | 7.6 | 7.8 | 8.0 | 8.3 | 8.6 | 70 N |
| 68 N | 4.4 | 4.3 | 4.3 | 4.3 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.9 | 5.1 | 5.3 | 5.5 | 5.7 | 6.0 | 68 N |
| 66 N | 2.0 | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.8 | 3.0 | 3.1 | 3.4 | 3.6 | 66 N |
| 64 N | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 64 N |
| 62 N | -1.6 | -1.5 | -1.5 | -1.4 | -1.3 | -1.3 | -1.2 | -1.1 | -1.1 | -1.0 | -1.0 | -0.9 | -0.9 | -0.8 | -0.7 | 62 N |
| 60 N | -2.8 | -2.7 | -2.6 | -2.6 | -2.5 | -2.5 | -2.4 | -2.4 | -2.4 | -2.4 | -2.5 | -2.5 | -2.5 | -2.6 | -2.6 | 60 N |
| 58 N | -3.7 | -3.6 | -3.5 | -3.4 | -3.4 | -3.3 | -3.4 | -3.4 | -3.5 | -3.6 | -3.7 | -3.9 | -4.0 | -4.2 | -4.4 | 58 N |
| 56 N | -4.3 | -4.1 | -4.0 | -3.9 | -3.9 | -3.9 | -4.0 | -4.1 | -4.3 | -4.5 | -4.8 | -5.1 | -5.4 | -5.7 | -6.0 | 56 N |
| 54 N | -4.5 | -4.4 | -4.3 | -4.2 | -4.2 | -4.3 | -4.5 | -4.7 | -4.9 | -5.3 | -5.7 | -6.1 | -6.6 | -7.1 | -7.6 | 54 N |
| 52 N | -4.6 | -4.4 | -4.3 | -4.3 | -4.4 | -4.5 | -4.7 | -5.0 | -5.4 | -5.9 | -6.4 | -7.0 | -7.7 | -8.4 | -9.0 | 52 N |
| 50 N | -4.4 | -4.3 | -4.2 | -4.2 | -4.3 | -4.6 | -4.9 | -5.3 | -5.8 | -6.4 | -7.1 | -7.9 | -8.7 | -9.6 | -10.5 | 50 N |
| 48 N | -4.2 | -4.1 | -4.0 | -4.1 | -4.3 | -4.6 | -5.0 | -5.5 | -6.2 | -6.9 | -7.8 | -8.7 | -9.8 | -10.8 | -11.9 | 48 N |
| 46 N | -3.9 | -3.8 | -3.8 | -3.9 | -4.2 | -4.6 | -5.1 | -5.8 | -6.5 | -7.5 | -8.5 | -9.6 | -10.8 | -12.1 | -13.3 | 46 N |
| 44 N | -3.7 | -3.6 | -3.7 | -3.9 | -4.2 | -4.7 | -5.3 | -6.1 | -7.0 | -8.0 | -9.2 | -10.5 | -11.9 | -13.3 | -14.8 | 44 N |
| 42 N | -3.5 | -3.5 | -3.6 | -3.9 | -4.3 | -4.8 | -5.6 | -6.5 | -7.5 | -8.7 | -10.1 | -11.5 | -13.0 | -14.6 | -16.3 | 42 N |
| 40 N | -3.5 | -3.5 | -3.7 | -4.0 | -4.5 | -5.2 | -6.0 | -7.0 | -8.2 | -9.5 | -11.0 | -12.6 | -14.3 | -16.0 | -17.8 | 40 N |
| 38 N | -3.7 | -3.8 | -4.0 | -4.4 | -5.0 | -5.7 | -6.6 | -7.7 | -9.0 | -10.4 | -12.0 | -13.7 | -15.5 | -17.4 | -19.3 | 38 N |
| 36 N | -4.0 | -4.2 | -4.5 | -5.0 | -5.6 | -6.4 | -7.4 | -8.6 | -10.0 | -11.5 | -13.2 | -15.0 | -16.9 | -18.9 | -20.9 | 36 N |
| 34 N | -4.6 | -4.8 | -5.2 | -5.7 | -6.4 | -7.3 | -8.4 | -9.7 | -11.1 | -12.7 | -14.4 | -16.3 | -18.3 | -20.3 | -22.4 | 34 N |
| 32 N | -5.3 | -5.6 | -6.1 | -6.7 | -7.5 | -8.4 | -9.5 | -10.8 | -12.3 | -14.0 | -15.7 | -17.6 | -19.7 | -21.7 | -23.9 | 32 N |
| 30 N | -6.2 | -6.6 | -7.1 | -7.8 | -8.6 | -9.6 | -10.8 | -12.1 | -13.6 | -15.3 | -17.1 | -19.0 | -21.0 | -23.1 | -25.2 | 30 N |
| 28 N | -7.3 | -7.7 | -8.3 | -9.1 | -9.9 | -11.0 | -12.2 | -13.5 | -15.0 | -16.7 | -18.4 | -20.3 | -22.3 | -24.4 | -26.5 | 28 N |
| 26 N | -8.4 | -9.0 | -9.6 | -10.4 | -11.3 | -12.3 | -13.5 | -14.9 | -16.4 | -18.0 | -19.7 | -21.6 | -23.5 | -25.5 | -27.6 | 26 N |
| 24 N | -9.7 | -10.3 | -11.0 | -11.8 | -12.7 | -13.7 | -14.9 | -16.2 | -17.7 | -19.3 | -20.9 | -22.7 | -24.6 | -26.5 | -28.4 | 24 N |
| 22 N | -10.9 | -11.5 | -12.3 | -13.1 | -14.1 | -15.1 | -16.3 | -17.5 | -18.9 | -20.4 | -22.0 | -23.7 | -25.5 | -27.3 | -29.1 | 22 N |
| 20 N | -12.1 | -12.8 | -13.6 | -14.4 | -15.4 | -16.4 | -17.5 | -18.7 | -20.1 | -21.5 | -23.0 | -24.5 | -26.2 | -27.9 | -29.6 | 20 N |
| 18 N | -13.3 | -14.0 | -14.8 | -15.7 | -16.6 | -17.6 | -18.7 | -19.8 | -21.0 | -22.3 | -23.7 | -25.2 | -26.7 | -28.2 | -29.8 | 18 N |
| 16 N | -14.3 | -15.1 | -15.9 | -16.8 | -17.7 | -18.6 | -19.6 | -20.7 | -21.8 | -23.0 | -24.3 | -25.6 | -27.0 | -28.4 | -29.8 | 16 N |
| 14 N | -15.3 | -16.1 | -16.9 | -17.8 | -18.6 | -19.5 | -20.5 | -21.5 | -22.5 | -23.6 | -24.7 | -25.9 | -27.1 | -28.4 | -29.7 | 14 N |
| 12 N | -16.2 | -17.0 | -17.8 | -18.6 | -19.5 | -20.3 | -21.2 | -22.0 | -23.0 | -23.9 | -24.9 | -26.0 | -27.1 | -28.2 | -29.3 | 12 N |
| 10 N | -17.1 | -17.8 | -18.6 | -19.4 | -20.2 | -20.9 | -21.7 | -22.5 | -23.3 | -24.1 | -25.0 | -25.9 | -26.8 | -27.8 | -28.8 | 10 N |
| 8 N | -17.8 | -18.6 | -19.3 | -20.0 | -20.7 | -21.4 | -22.1 | -22.8 | -23.5 | -24.2 | -24.9 | -25.7 | -26.5 | -27.4 | -28.3 | 8 N |
| 6 N | -18.5 | -19.2 | -19.9 | -20.6 | -21.2 | -21.8 | -22.4 | -23.0 | -23.6 | -24.2 | -24.8 | -25.4 | -26.1 | -26.8 | -27.6 | 6 N |
| 4 N | -19.1 | -19.9 | -20.5 | -21.1 | -21.7 | -22.2 | -22.7 | -23.1 | -23.6 | -24.0 | -24.5 | -25.0 | -25.6 | -26.2 | -26.9 | 4 N |
| 2 N | -19.7 | -20.4 | -21.0 | -21.6 | -22.0 | -22.4 | -22.8 | -23.2 | -23.5 | -23.8 | -24.2 | -24.6 | -25.1 | -25.6 | -26.1 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -20.4 | -21.0 | -21.6 | -22.0 | -22.4 | -22.7 | -22.9 | -23.2 | -23.4 | -23.6 | -23.8 | -24.1 | -24.4 | -24.8 | -25.3 | 0 |
| 2 S | -21.0 | -21.6 | -22.1 | -22.4 | -22.7 | -22.9 | -23.0 | -23.1 | -23.2 | -23.3 | -23.4 | -23.6 | -23.8 | -24.1 | -24.5 | 2 S |
| 4 S | -21.6 | -22.2 | -22.6 | -22.8 | -23.0 | -23.1 | -23.1 | -23.0 | -23.0 | -22.9 | -22.9 | -23.1 | -23.3 | -23.6 | -24.0 | 4 S |
| 6 S | -22.3 | -22.8 | -23.1 | -23.3 | -23.3 | -23.2 | -23.1 | -22.9 | -22.7 | -22.5 | -22.4 | -22.3 | -22.3 | -22.4 | -22.6 | 6 S |
| 8 S | -22.9 | -23.4 | -23.6 | -23.7 | -23.6 | -23.4 | -23.1 | -22.8 | -22.4 | -22.1 | -21.8 | -21.6 | -21.5 | -21.4 | -21.6 | 8 S |
| 10 S | -23.6 | -24.0 | -24.1 | -24.1 | -23.9 | -23.6 | -23.2 | -22.7 | -22.2 | -21.7 | -21.2 | -20.8 | -20.6 | -20.5 | -20.5 | 10 S |
| 12 S | -24.3 | -24.6 | -24.7 | -24.5 | -24.2 | -23.8 | -23.2 | -22.6 | -21.9 | -21.2 | -20.6 | -20.1 | -19.7 | -19.4 | -19.3 | 12 S |
| 14 S | -25.0 | -25.2 | -25.2 | -25.0 | -24.6 | -24.0 | -23.3 | -22.5 | -21.6 | -20.8 | -20.1 | -19.4 | -18.8 | -18.4 | -18.2 | 14 S |
| 16 S | -25.7 | -25.9 | -25.9 | -25.5 | -25.0 | -24.3 | -23.4 | -22.5 | -21.5 | -20.5 | -19.6 | -18.7 | -18.0 | -17.5 | -17.2 | 16 S |
| 18 S | -26.5 | -26.7 | -26.5 | -26.1 | -25.5 | -24.7 | -23.7 | -22.6 | -21.5 | -20.3 | -19.2 | -18.2 | -17.4 | -16.7 | -16.3 | 18 S |
| 20 S | -27.4 | -27.5 | -27.3 | -26.8 | -26.1 | -25.2 | -24.1 | -22.9 | -21.6 | -20.3 | -19.1 | -18.0 | -17.0 | -16.2 | -15.6 | 20 S |
| 22 S | -28.3 | -28.4 | -28.2 | -27.6 | -26.8 | -25.8 | -24.7 | -23.3 | -22.0 | -20.6 | -19.2 | -18.0 | -16.9 | -16.0 | -15.3 | 22 S |
| 24 S | -29.4 | -29.4 | -29.2 | -28.6 | -27.8 | -26.7 | -25.5 | -24.1 | -22.6 | -21.1 | -19.7 | -18.4 | -17.2 | -16.2 | -15.4 | 24 S |
| 26 S | -30.5 | -30.6 | -30.3 | -29.8 | -28.9 | -27.8 | -26.6 | -25.1 | -23.6 | -22.1 | -20.6 | -19.2 | -17.9 | -16.9 | -16.0 | 26 S |
| 28 S | -31.9 | -31.9 | -31.7 | -31.1 | -30.3 | -29.2 | -28.0 | -26.5 | -25.0 | -23.5 | -22.0 | -20.5 | -19.2 | -18.1 | -17.2 | 28 S |
| 30 S | -33.3 | -33.4 | -33.2 | -32.7 | -32.0 | -30.9 | -29.7 | -28.3 | -26.9 | -25.3 | -23.8 | -22.4 | -21.1 | -20.0 | -19.1 | 30 S |
| 32 S | -34.9 | -35.1 | -35.0 | -34.6 | -33.9 | -32.9 | -31.8 | -30.5 | -29.1 | -27.7 | -26.2 | -24.9 | -23.6 | -22.5 | -21.7 | 32 S |
| 34 S | -36.7 | -37.0 | -36.9 | -36.6 | -36.0 | -35.2 | -34.2 | -33.1 | -31.8 | -30.5 | -29.1 | -27.9 | -26.7 | -25.7 | -25.0 | 34 S |
| 36 S | -38.6 | -38.9 | -39.1 | -38.9 | -38.5 | -37.8 | -37.0 | -36.0 | -34.9 | -33.7 | -32.6 | -31.5 | -30.4 | -29.6 | -28.9 | 36 S |
| 38 S | -40.6 | -41.1 | -41.3 | -41.3 | -41.1 | -40.7 | -40.0 | -39.3 | -38.4 | -37.4 | -36.5 | -35.5 | -34.7 | -34.0 | -33.5 | 38 S |
| 40 S | -42.6 | -43.3 | -43.8 | -44.0 | -43.9 | -43.7 | -43.3 | -42.8 | -42.2 | -41.5 | -40.8 | -40.1 | -39.5 | -39.0 | -38.7 | 40 S |
| 42 S | -44.8 | -45.6 | -46.3 | -46.7 | -46.9 | -47.0 | -46.8 | -46.6 | -46.2 | -45.8 | -45.4 | -45.0 | -44.6 | -44.4 | -44.3 | 42 S |
| 44 S | -47.0 | -48.0 | -48.9 | -49.5 | -50.0 | -50.3 | -50.5 | -50.5 | -50.5 | -50.4 | -50.2 | -50.1 | -50.0 | -50.0 | -50.2 | 44 S |
| 46 S | -49.2 | -50.4 | -51.5 | -52.4 | -53.1 | -53.7 | -54.2 | -54.5 | -54.8 | -55.0 | -55.2 | -55.4 | -55.6 | -55.9 | -56.3 | 46 S |
| 48 S | -51.4 | -52.8 | -54.1 | -55.2 | -56.2 | -57.1 | -57.9 | -58.5 | -59.1 | -59.7 | -60.2 | -60.7 | -61.2 | -61.8 | -62.4 | 48 S |
| 50 S | -53.5 | -55.1 | -56.6 | -58.0 | -59.3 | -60.5 | -61.5 | -62.5 | -63.4 | -64.2 | -65.1 | -65.9 | -66.7 | -67.6 | -68.5 | 50 S |
| 52 S | -55.7 | -57.5 | -59.2 | -60.8 | -62.3 | -63.7 | -65.0 | -66.3 | -67.5 | -68.7 | -69.8 | -70.9 | -72.0 | -73.1 | -74.3 | 52 S |
| 54 S | -57.8 | -59.8 | -61.6 | -63.4 | -65.2 | -66.8 | -68.4 | -69.9 | -71.4 | -72.8 | -74.2 | -75.6 | -77.0 | -78.4 | -79.8 | 54 S |
| 56 S | -59.9 | -62.0 | -64.0 | -66.0 | -67.9 | -69.8 | -71.6 | -73.3 | -75.0 | -76.7 | -78.3 | -79.9 | -81.6 | -83.2 | -84.8 | 56 S |
| 58 S | -62.1 | -64.2 | -66.4 | -68.5 | -70.5 | -72.5 | -74.5 | -76.4 | -78.3 | -80.2 | -82.1 | -83.9 | -85.7 | -87.5 | -89.3 | 58 S |
| 60 S | -64.2 | -66.4 | -68.6 | -70.8 | -73.0 | -75.1 | -77.2 | -79.3 | -81.4 | -83.4 | -85.4 | -87.3 | -89.3 | -91.2 | -93.2 | 60 S |
| 62 S | -66.4 | -68.7 | -70.9 | -73.1 | -75.3 | -77.6 | -79.7 | -81.9 | -84.0 | -86.2 | -88.3 | -90.3 | -92.4 | -94.4 | -96.4 | 62 S |
| 64 S | -68.7 | -70.9 | -73.1 | -75.4 | -77.6 | -79.8 | -82.0 | -84.2 | -86.4 | -88.6 | -90.7 | -92.8 | -95.0 | -97.0 | -99.1 | 64 S |
| 66 S | -71.0 | -73.2 | -75.4 | -77.6 | -79.8 | -82.0 | -84.2 | -86.3 | -88.5 | -90.7 | -92.8 | -94.9 | -97.0 | -99.1 | -101.2 | 66 S |
| 68 S | -73.4 | -75.5 | -77.6 | -79.7 | -81.9 | -84.0 | -86.1 | -88.2 | -90.4 | -92.5 | -94.5 | -96.6 | -98.7 | -100.7 | -102.7 | 68 S |
| 70 S | -76.0 | -77.9 | -79.9 | -81.9 | -83.9 | -85.9 | -88.0 | -90.0 | -92.0 | -94.0 | -96.0 | -98.0 | -99.9 | -101.9 | -103.8 | 70 S |
| 72 S | -78.6 | -80.4 | -82.3 | -84.1 | -86.0 | -87.8 | -89.7 | -91.6 | -93.4 | -95.3 | -97.2 | -99.0 | -100.8 | -102.6 | -104.4 | 72 S |
| 74 S | -81.4 | -83.0 | -84.7 | -86.3 | -88.0 | -89.7 | -91.4 | -93.1 | -94.8 | -96.5 | -98.2 | -99.8 | -101.5 | -103.1 | -104.8 | 74 S |
| 76 S | -84.2 | -85.6 | -87.1 | -88.6 | -90.0 | -91.5 | -93.0 | -94.5 | -96.0 | -97.5 | -99.0 | -100.5 | -102.0 | -103.4 | -104.9 | 76 S |
| 78 S | -87.1 | -88.3 | -89.5 | -90.8 | -92.1 | -93.3 | -94.6 | -95.9 | -97.2 | -98.5 | -99.8 | -101.0 | -102.3 | -103.6 | -104.8 | 78 S |
| 80 S | -90.0 | -91.0 | -92.0 | -93.0 | -94.1 | -95.1 | -96.2 | -97.2 | -98.3 | -99.4 | -100.4 | -101.5 | -102.5 | -103.6 | -104.6 | 80 S |
| 82 S | -92.8 | -93.6 | -94.4 | -95.2 | -96.1 | -96.9 | -97.7 | -98.6 | -99.4 | -100.2 | -101.1 | -101.9 | -102.7 | -103.6 | -104.4 | 82 S |
| 84 S | -95.6 | -96.2 | -96.8 | -97.4 | -98.0 | -98.6 | -99.2 | -99.8 | -100.4 | -101.0 | -101.7 | -102.3 | -102.9 | -103.5 | -104.1 | 84 S |
| 86 S | -98.3 | -98.7 | -99.0 | -99.4 | -99.8 | -100.2 | -100.6 | -101.0 | -101.4 | -101.8 | -102.2 | -102.6 | -103.0 | -103.4 | -103.8 | 86 S |
| 88 S | -100.8 | -101.0 | -101.2 | -101.3 | -101.5 | -101.7 | -101.9 | -102.1 | -102.3 | -102.5 | -102.7 | -102.9 | -103.1 | -103.3 | -103.5 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -105.2 | -105.0 | -104.8 | -104.7 | -104.5 | -104.3 | -104.1 | -103.9 | -103.8 | -103.6 | -103.4 | -103.2 | -103.0 | -102.8 | -102.6 | LAT. |
| E.LONG. | 190 | 192 | 194 | 196 | 198 | 200 | 202 | 204 | 206 | 208 | 210 | 212 | 214 | 216 | 218 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 214 | 216 | 218 | 220 | 222 | 224 | 226 | 228 | 230 | 232 | 234 | 236 | 238 | 240 | 242 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 | 39.4 | 39.4 | 39.4 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 | 34.8 | 34.8 | 34.8 | 34.8 | 34.9 | 34.9 | 34.9 | 35.0 | 35.0 | 88 N |
| 86 N | 32.0 | 32.0 | 32.0 | 32.0 | 32.1 | 32.1 | 32.2 | 32.2 | 32.3 | 32.3 | 32.4 | 32.5 | 32.6 | 32.7 | 32.8 | 86 N |
| 84 N | 29.1 | 29.1 | 29.1 | 29.2 | 29.3 | 29.4 | 29.5 | 29.6 | 29.7 | 29.8 | 29.9 | 30.1 | 30.2 | 30.4 | 30.5 | 84 N |
| 82 N | 26.0 | 26.1 | 26.2 | 26.3 | 26.4 | 26.5 | 26.7 | 26.9 | 27.0 | 27.2 | 27.4 | 27.6 | 27.8 | 28.1 | 28.3 | 82 N |
| 80 N | 22.9 | 23.0 | 23.2 | 23.3 | 23.5 | 23.7 | 23.9 | 24.1 | 24.3 | 24.6 | 24.9 | 25.2 | 25.5 | 25.8 | 26.1 | 80 N |
| 78 N | 19.8 | 19.9 | 20.1 | 20.3 | 20.5 | 20.8 | 21.1 | 21.4 | 21.7 | 22.0 | 22.3 | 22.7 | 23.1 | 23.5 | 23.9 | 78 N |
| 76 N | 16.7 | 16.9 | 17.1 | 17.3 | 17.6 | 17.9 | 18.3 | 18.6 | 19.0 | 19.4 | 19.8 | 20.2 | 20.7 | 21.2 | 21.7 | 76 N |
| 74 N | 13.6 | 13.9 | 14.1 | 14.4 | 14.8 | 15.1 | 15.5 | 15.9 | 16.3 | 16.8 | 17.3 | 17.8 | 18.3 | 18.9 | 19.5 | 74 N |
| 72 N | 10.8 | 11.0 | 11.3 | 11.6 | 12.0 | 12.3 | 12.7 | 13.2 | 13.7 | 14.2 | 14.7 | 15.3 | 15.9 | 16.5 | 17.2 | 72 N |
| 70 N | 8.0 | 8.3 | 8.6 | 8.9 | 9.3 | 9.6 | 10.1 | 10.5 | 11.0 | 11.6 | 12.1 | 12.7 | 13.4 | 14.1 | 14.8 | 70 N |
| 68 N | 5.5 | 5.7 | 6.0 | 6.3 | 6.7 | 7.0 | 7.5 | 7.9 | 8.4 | 8.9 | 9.5 | 10.1 | 10.8 | 11.5 | 12.3 | 68 N |
| 66 N | 3.1 | 3.4 | 3.6 | 3.9 | 4.2 | 4.5 | 4.9 | 5.3 | 5.8 | 6.3 | 6.9 | 7.5 | 8.2 | 8.9 | 9.7 | 66 N |
| 64 N | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.1 | 2.4 | 2.8 | 3.2 | 3.7 | 4.2 | 4.8 | 5.5 | 6.2 | 7.0 | 64 N |
| 62 N | -0.9 | -0.8 | -0.7 | -0.6 | -0.4 | -0.2 | -0.0 | 0.3 | 0.6 | 1.0 | 1.5 | 2.0 | 2.6 | 3.3 | 4.1 | 62 N |
| 60 N | -2.5 | -2.6 | -2.6 | -2.6 | -2.6 | -2.5 | -2.4 | -2.2 | -2.0 | -1.7 | -1.3 | -0.8 | -0.3 | 0.3 | 1.1 | 60 N |
| 58 N | -4.0 | -4.2 | -4.4 | -4.5 | -4.6 | -4.7 | -4.7 | -4.7 | -4.6 | -4.4 | -4.1 | -3.8 | -3.3 | -2.7 | -2.1 | 58 N |
| 56 N | -5.4 | -5.7 | -6.0 | -6.3 | -6.6 | -6.8 | -7.0 | -7.2 | -7.2 | -7.2 | -7.0 | -6.8 | -6.4 | -5.9 | -5.3 | 56 N |
| 54 N | -6.6 | -7.1 | -7.6 | -8.0 | -8.5 | -8.9 | -9.3 | -9.6 | -9.8 | -9.9 | -9.9 | -9.8 | -9.5 | -9.2 | -8.6 | 54 N |
| 52 N | -7.7 | -8.4 | -9.0 | -9.7 | -10.4 | -11.0 | -11.6 | -12.0 | -12.4 | -12.7 | -12.8 | -12.9 | -12.7 | -12.5 | -12.0 | 52 N |
| 50 N | -8.7 | -9.6 | -10.5 | -11.4 | -12.2 | -13.1 | -13.8 | -14.5 | -15.0 | -15.5 | -15.8 | -15.9 | -15.9 | -15.8 | -15.4 | 50 N |
| 48 N | -9.8 | -10.8 | -11.9 | -13.0 | -14.1 | -15.1 | -16.0 | -16.9 | -17.6 | -18.3 | -18.7 | -19.0 | -19.1 | -19.1 | -18.8 | 48 N |
| 46 N | -10.8 | -12.1 | -13.3 | -14.6 | -15.9 | -17.1 | -18.3 | -19.3 | -20.2 | -21.0 | -21.6 | -22.0 | -22.3 | -22.3 | -22.2 | 46 N |
| 44 N | -11.9 | -13.3 | -14.8 | -16.3 | -17.7 | -19.1 | -20.5 | -21.7 | -22.7 | -23.7 | -24.4 | -25.0 | -25.3 | -25.5 | -25.4 | 44 N |
| 42 N | -13.0 | -14.6 | -16.3 | -17.9 | -19.6 | -21.1 | -22.6 | -24.0 | -25.2 | -26.3 | -27.1 | -27.8 | -28.3 | -28.5 | -28.5 | 42 N |
| 40 N | -14.3 | -16.0 | -17.8 | -19.6 | -21.4 | -23.1 | -24.7 | -26.2 | -27.6 | -28.7 | -29.7 | -30.5 | -31.0 | -31.3 | -31.4 | 40 N |
| 38 N | -15.5 | -17.4 | -19.3 | -21.3 | -23.2 | -25.0 | -26.8 | -28.4 | -29.8 | -31.1 | -32.1 | -33.0 | -33.6 | -34.0 | -34.1 | 38 N |
| 36 N | -16.9 | -18.9 | -20.9 | -22.9 | -24.9 | -26.8 | -28.7 | -30.4 | -31.9 | -33.2 | -34.4 | -35.3 | -35.9 | -36.4 | -36.6 | 36 N |
| 34 N | -18.3 | -20.3 | -22.4 | -24.5 | -26.5 | -28.5 | -30.4 | -32.2 | -33.8 | -35.2 | -36.4 | -37.3 | -38.0 | -38.5 | -38.7 | 34 N |
| 32 N | -19.7 | -21.7 | -23.9 | -26.0 | -28.1 | -30.1 | -32.0 | -33.8 | -35.4 | -36.9 | -38.1 | -39.0 | -39.8 | -40.3 | -40.6 | 32 N |
| 30 N | -21.0 | -23.1 | -25.2 | -27.4 | -29.5 | -31.5 | -33.4 | -35.2 | -36.8 | -38.3 | -39.5 | -40.5 | -41.2 | -41.8 | -42.1 | 30 N |
| 28 N | -22.3 | -24.4 | -26.5 | -28.6 | -30.6 | -32.6 | -34.5 | -36.3 | -37.9 | -39.4 | -40.6 | -41.6 | -42.4 | -42.9 | -43.2 | 28 N |
| 26 N | -23.5 | -25.5 | -27.6 | -29.6 | -31.6 | -33.6 | -35.4 | -37.2 | -38.7 | -40.1 | -41.4 | -42.4 | -43.1 | -43.7 | -44.0 | 26 N |
| 24 N | -24.6 | -26.5 | -28.4 | -30.4 | -32.3 | -34.2 | -36.0 | -37.7 | -39.2 | -40.6 | -41.8 | -42.8 | -43.6 | -44.1 | -44.5 | 24 N |
| 22 N | -25.5 | -27.3 | -29.1 | -31.0 | -32.8 | -34.6 | -36.3 | -37.9 | -39.4 | -40.7 | -41.9 | -42.9 | -43.7 | -44.3 | -44.7 | 22 N |
| 20 N | -26.2 | -27.9 | -29.6 | -31.3 | -33.0 | -34.7 | -36.3 | -37.9 | -39.3 | -40.6 | -41.7 | -42.6 | -43.4 | -44.1 | -44.5 | 20 N |
| 18 N | -26.7 | -28.2 | -29.8 | -31.4 | -33.0 | -34.6 | -36.1 | -37.5 | -38.9 | -40.1 | -41.2 | -42.1 | -42.9 | -43.6 | -44.1 | 18 N |
| 16 N | -27.0 | -28.4 | -29.8 | -31.3 | -32.8 | -34.2 | -35.6 | -37.0 | -38.2 | -39.4 | -40.5 | -41.4 | -42.2 | -42.9 | -43.5 | 16 N |
| 14 N | -27.1 | -28.4 | -29.7 | -31.0 | -32.3 | -33.6 | -34.9 | -36.2 | -37.4 | -38.5 | -39.6 | -40.5 | -41.3 | -42.0 | -42.7 | 14 N |
| 12 N | -27.1 | -28.2 | -29.3 | -30.5 | -31.7 | -32.9 | -34.1 | -35.3 | -36.4 | -37.5 | -38.5 | -39.4 | -40.3 | -41.0 | -41.7 | 12 N |
| 10 N | -26.8 | -27.8 | -28.8 | -29.9 | -31.0 | -32.1 | -33.2 | -34.3 | -35.3 | -36.4 | -37.4 | -38.3 | -39.2 | -40.0 | -40.7 | 10 N |
| 8 N | -26.5 | -27.4 | -28.3 | -29.2 | -30.2 | -31.2 | -32.2 | -33.2 | -34.2 | -35.2 | -36.2 | -37.1 | -38.0 | -38.9 | -39.7 | 8 N |
| 6 N | -26.1 | -26.8 | -27.6 | -28.4 | -29.3 | -30.2 | -31.1 | -32.1 | -33.1 | -34.0 | -35.0 | -36.0 | -36.9 | -37.8 | -38.7 | 6 N |
| 4 N | -25.6 | -26.2 | -26.9 | -27.6 | -28.4 | -29.2 | -30.1 | -31.0 | -31.9 | -32.9 | -33.9 | -34.8 | -35.8 | -36.8 | -37.7 | 4 N |
| 2 N | -25.1 | -25.6 | -26.1 | -26.8 | -27.4 | -28.2 | -29.0 | -29.9 | -30.8 | -31.8 | -32.8 | -33.8 | -34.8 | -35.8 | -36.8 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -24.4 | -24.8 | -25.3 | -25.9 | -26.5 | -27.2 | -28.0 | -28.8 | -29.7 | -30.7 | -31.7 | -32.7 | -33.8 | -34.9 | -36.0 | 0 |
| 2 S | -23.8 | -24.1 | -24.5 | -24.9 | -25.5 | -26.2 | -26.9 | -27.8 | -28.7 | -29.6 | -30.7 | -31.7 | -32.9 | -34.0 | -35.2 | 2 S |
| 4 S | -23.1 | -23.3 | -23.6 | -24.0 | -24.5 | -25.1 | -25.8 | -26.6 | -27.6 | -28.6 | -29.6 | -30.8 | -31.9 | -33.2 | -34.4 | 4 S |
| 6 S | -22.3 | -22.4 | -22.6 | -22.9 | -23.4 | -24.0 | -24.7 | -25.5 | -26.4 | -27.4 | -28.6 | -29.8 | -31.0 | -32.3 | -33.7 | 6 S |
| 8 S | -21.5 | -21.4 | -21.6 | -21.8 | -22.2 | -22.8 | -23.4 | -24.3 | -25.2 | -26.3 | -27.5 | -28.7 | -30.1 | -31.5 | -33.0 | 8 S |
| 10 S | -20.6 | -20.5 | -20.5 | -20.6 | -21.0 | -21.5 | -22.1 | -23.0 | -23.9 | -25.1 | -26.3 | -27.6 | -29.1 | -30.6 | -32.2 | 10 S |
| 12 S | -19.7 | -19.4 | -19.3 | -19.4 | -19.7 | -20.2 | -20.8 | -21.6 | -22.6 | -23.8 | -25.1 | -26.5 | -28.1 | -29.7 | -31.5 | 12 S |
| 14 S | -18.8 | -18.4 | -18.2 | -18.2 | -18.4 | -18.8 | -19.4 | -20.2 | -21.3 | -22.5 | -23.8 | -25.4 | -27.0 | -28.8 | -30.7 | 14 S |
| 16 S | -18.0 | -17.5 | -17.2 | -17.1 | -17.2 | -17.5 | -18.1 | -18.9 | -20.0 | -21.2 | -22.7 | -24.3 | -26.1 | -28.0 | -30.0 | 16 S |
| 18 S | -17.4 | -16.7 | -16.3 | -16.1 | -16.1 | -16.4 | -16.9 | -17.7 | -18.8 | -20.1 | -21.6 | -23.3 | -25.2 | -27.2 | -29.4 | 18 S |
| 20 S | -17.0 | -16.2 | -15.6 | -15.3 | -15.2 | -15.5 | -16.0 | -16.8 | -17.8 | -19.1 | -20.7 | -22.5 | -24.5 | -26.7 | -29.0 | 20 S |
| 22 S | -16.9 | -16.0 | -15.3 | -14.9 | -14.7 | -14.9 | -15.4 | -16.1 | -17.2 | -18.6 | -20.2 | -22.1 | -24.2 | -26.5 | -28.9 | 22 S |
| 24 S | -17.2 | -16.2 | -15.4 | -14.9 | -14.7 | -14.8 | -15.2 | -16.0 | -17.1 | -18.4 | -20.1 | -22.0 | -24.2 | -26.6 | -29.2 | 24 S |
| 26 S | -17.9 | -16.9 | -16.0 | -15.5 | -15.2 | -15.3 | -15.7 | -16.4 | -17.5 | -18.9 | -20.6 | -22.6 | -24.8 | -27.3 | -30.0 | 26 S |
| 28 S | -19.2 | -18.1 | -17.2 | -16.6 | -16.3 | -16.4 | -16.8 | -17.5 | -18.6 | -20.0 | -21.7 | -23.7 | -26.1 | -28.6 | -31.3 | 28 S |
| 30 S | -21.1 | -20.0 | -19.1 | -18.5 | -18.2 | -18.2 | -18.6 | -19.3 | -20.4 | -21.8 | -23.6 | -25.7 | -28.0 | -30.6 | -33.4 | 30 S |
| 32 S | -23.6 | -22.5 | -21.7 | -21.1 | -20.8 | -20.9 | -21.3 | -22.0 | -23.1 | -24.5 | -26.3 | -28.4 | -30.7 | -33.3 | -36.1 | 32 S |
| 34 S | -26.7 | -25.7 | -25.0 | -24.5 | -24.2 | -24.3 | -24.7 | -25.5 | -26.6 | -28.0 | -29.8 | -31.9 | -34.2 | -36.9 | -39.7 | 34 S |
| 36 S | -30.4 | -29.6 | -28.9 | -28.5 | -28.4 | -28.5 | -29.0 | -29.8 | -30.9 | -32.4 | -34.2 | -36.2 | -38.6 | -41.2 | -43.9 | 36 S |
| 38 S | -34.7 | -34.0 | -33.5 | -33.2 | -33.2 | -33.4 | -34.0 | -34.8 | -36.0 | -37.5 | -39.3 | -41.3 | -43.7 | -46.2 | -48.9 | 38 S |
| 40 S | -39.5 | -39.0 | -38.7 | -38.5 | -38.7 | -39.0 | -39.7 | -40.6 | -41.8 | -43.3 | -45.1 | -47.1 | -49.4 | -51.9 | -54.6 | 40 S |
| 42 S | -44.6 | -44.4 | -44.3 | -44.3 | -44.6 | -45.1 | -45.9 | -46.9 | -48.2 | -49.7 | -51.5 | -53.5 | -55.7 | -58.2 | -60.8 | 42 S |
| 44 S | -50.0 | -50.0 | -50.2 | -50.5 | -50.9 | -51.6 | -52.5 | -53.6 | -54.9 | -56.5 | -58.3 | -60.3 | -62.5 | -64.9 | -67.4 | 44 S |
| 46 S | -55.6 | -55.9 | -56.3 | -56.8 | -57.5 | -58.3 | -59.3 | -60.6 | -62.0 | -63.6 | -65.4 | -67.4 | -69.5 | -71.8 | -74.2 | 46 S |
| 48 S | -61.2 | -61.8 | -62.4 | -63.2 | -64.1 | -65.1 | -66.3 | -67.6 | -69.1 | -70.8 | -72.6 | -74.6 | -76.7 | -78.9 | -81.2 | 48 S |
| 50 S | -66.7 | -67.6 | -68.5 | -69.5 | -70.6 | -71.8 | -73.1 | -74.6 | -76.2 | -77.9 | -79.7 | -81.7 | -83.7 | -85.8 | -88.0 | 50 S |
| 52 S | -72.0 | -73.1 | -74.3 | -75.5 | -76.9 | -78.2 | -79.7 | -81.3 | -83.0 | -84.7 | -86.6 | -88.5 | -90.5 | -92.6 | -94.6 | 52 S |
| 54 S | -77.0 | -78.4 | -79.8 | -81.2 | -82.7 | -84.3 | -85.9 | -87.6 | -89.3 | -91.1 | -93.0 | -94.9 | -96.9 | -98.8 | -100.8 | 54 S |
| 56 S | -81.6 | -83.2 | -84.8 | -86.4 | -88.1 | -89.8 | -91.5 | -93.3 | -95.1 | -96.9 | -98.8 | -100.7 | -102.6 | -104.5 | -106.5 | 56 S |
| 58 S | -85.7 | -87.5 | -89.3 | -91.1 | -92.9 | -94.7 | -96.5 | -98.4 | -100.2 | -102.1 | -104.0 | -105.8 | -107.7 | -109.6 | -111.4 | 58 S |
| 60 S | -89.3 | -91.2 | -93.2 | -95.1 | -97.0 | -98.9 | -100.8 | -102.7 | -104.6 | -106.5 | -108.3 | -110.2 | -112.0 | -113.8 | -115.5 | 60 S |
| 62 S | -92.4 | -94.4 | -96.4 | -98.4 | -100.4 | -102.4 | -104.3 | -106.2 | -108.1 | -110.0 | -111.9 | -113.7 | -115.4 | -117.2 | -118.8 | 62 S |
| 64 S | -95.0 | -97.0 | -99.1 | -101.1 | -103.1 | -105.1 | -107.1 | -109.0 | -110.9 | -112.7 | -114.5 | -116.3 | -118.0 | -119.6 | -121.2 | 64 S |
| 66 S | -97.0 | -99.1 | -101.2 | -103.2 | -105.2 | -107.1 | -109.1 | -111.0 | -112.8 | -114.6 | -116.4 | -118.1 | -119.7 | -121.3 | -122.8 | 66 S |
| 68 S | -98.7 | -100.7 | -102.7 | -104.7 | -106.6 | -108.5 | -110.4 | -112.2 | -114.0 | -115.7 | -117.4 | -119.0 | -120.6 | -122.1 | -123.5 | 68 S |
| 70 S | -99.9 | -101.9 | -103.8 | -105.6 | -107.5 | -109.3 | -111.1 | -112.8 | -114.5 | -116.1 | -117.7 | -119.3 | -120.7 | -122.2 | -123.5 | 70 S |
| 72 S | -100.8 | -102.6 | -104.4 | -106.2 | -107.9 | -109.6 | -111.3 | -112.9 | -114.4 | -116.0 | -117.5 | -118.9 | -120.2 | -121.6 | -122.8 | 72 S |
| 74 S | -101.5 | -103.1 | -104.8 | -106.4 | -107.9 | -109.5 | -111.0 | -112.5 | -113.9 | -115.3 | -116.7 | -118.0 | -119.2 | -120.4 | -121.6 | 74 S |
| 76 S | -102.0 | -103.4 | -104.9 | -106.3 | -107.7 | -109.1 | -110.4 | -111.7 | -113.0 | -114.2 | -115.5 | -116.6 | -117.7 | -118.8 | -119.9 | 76 S |
| 78 S | -102.3 | -103.6 | -104.8 | -106.0 | -107.2 | -108.4 | -109.6 | -110.7 | -111.8 | -112.9 | -114.0 | -115.0 | -116.0 | -116.9 | -117.8 | 78 S |
| 80 S | -102.5 | -103.6 | -104.6 | -105.6 | -106.6 | -107.6 | -108.6 | -109.6 | -110.5 | -111.4 | -112.3 | -113.1 | -114.0 | -114.8 | -115.6 | 80 S |
| 82 S | -102.7 | -103.6 | -104.4 | -105.2 | -106.0 | -106.8 | -107.5 | -108.3 | -109.1 | -109.8 | -110.5 | -111.2 | -111.9 | -112.5 | -113.2 | 82 S |
| 84 S | -102.9 | -103.5 | -104.1 | -104.7 | -105.3 | -105.9 | -106.4 | -107.0 | -107.6 | -108.1 | -108.7 | -109.2 | -109.7 | -110.2 | -110.7 | 84 S |
| 86 S | -103.0 | -103.4 | -103.8 | -104.2 | -104.6 | -105.0 | -105.3 | -105.7 | -106.1 | -106.5 | -106.8 | -107.2 | -107.5 | -107.8 | -108.2 | 86 S |
| 88 S | -103.1 | -103.3 | -103.5 | -103.7 | -103.9 | -104.0 | -104.2 | -104.4 | -104.6 | -104.8 | -105.0 | -105.1 | -105.3 | -105.5 | -105.7 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -103.0 | -102.8 | -102.6 | -102.5 | -102.3 | -102.1 | -101.9 | -101.7 | -101.5 | -101.3 | -101.2 | -101.0 | -100.8 | -100.6 | -100.5 | LAT. |
| E.LONG. | 214 | 216 | 218 | 220 | 222 | 224 | 226 | 228 | 230 | 232 | 234 | 236 | 238 | 240 | 242 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 238 | 240 | 242 | 244 | 246 | 248 | 250 | 252 | 254 | 256 | 258 | 260 | 262 | 264 | 266 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 39.4 | 39.4 | 39.4 | 39.4 | 39.3 | 39.3 | 39.3 | 39.2 | 39.2 | 39.1 | 39.1 | 39.0 | 39.0 | 38.9 | 38.9 | |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 34.9 | 35.0 | 35.0 | 35.0 | 35.1 | 35.1 | 35.2 | 35.2 | 35.3 | 35.3 | 35.4 | 35.5 | 35.5 | 35.6 | 35.6 | 88 N |
| 86 N | 32.6 | 32.7 | 32.8 | 32.9 | 33.0 | 33.1 | 33.2 | 33.3 | 33.4 | 33.5 | 33.7 | 33.8 | 33.9 | 34.1 | 34.2 | 86 N |
| 84 N | 30.2 | 30.4 | 30.5 | 30.7 | 30.9 | 31.1 | 31.2 | 31.4 | 31.6 | 31.8 | 32.0 | 32.2 | 32.5 | 32.7 | 32.9 | 84 N |
| 82 N | 27.8 | 28.1 | 28.3 | 28.6 | 28.8 | 29.1 | 29.4 | 29.6 | 29.9 | 30.2 | 30.5 | 30.8 | 31.1 | 31.4 | 31.7 | 82 N |
| 80 N | 25.5 | 25.8 | 26.1 | 26.4 | 26.8 | 27.2 | 27.5 | 27.9 | 28.3 | 28.7 | 29.1 | 29.5 | 29.9 | 30.3 | 30.7 | 80 N |
| 78 N | 23.1 | 23.5 | 23.9 | 24.3 | 24.8 | 25.2 | 25.7 | 26.2 | 26.7 | 27.2 | 27.7 | 28.2 | 28.7 | 29.2 | 29.7 | 78 N |
| 76 N | 20.7 | 21.2 | 21.7 | 22.2 | 22.8 | 23.3 | 23.9 | 24.5 | 25.1 | 25.7 | 26.3 | 26.9 | 27.6 | 28.2 | 28.8 | 76 N |
| 74 N | 18.3 | 18.9 | 19.5 | 20.1 | 20.7 | 21.4 | 22.1 | 22.7 | 23.5 | 24.2 | 24.9 | 25.7 | 26.4 | 27.2 | 27.9 | 74 N |
| 72 N | 15.9 | 16.5 | 17.2 | 17.9 | 18.6 | 19.3 | 20.1 | 20.9 | 21.7 | 22.6 | 23.4 | 24.3 | 25.2 | 26.0 | 26.9 | 72 N |
| 70 N | 13.4 | 14.1 | 14.8 | 15.6 | 16.3 | 17.2 | 18.0 | 18.9 | 19.9 | 20.8 | 21.8 | 22.8 | 23.8 | 24.8 | 25.8 | 70 N |
| 68 N | 10.8 | 11.5 | 12.3 | 13.1 | 14.0 | 14.9 | 15.8 | 16.8 | 17.8 | 18.9 | 19.9 | 21.0 | 22.2 | 23.3 | 24.4 | 68 N |
| 66 N | 8.2 | 8.9 | 9.7 | 10.6 | 11.5 | 12.4 | 13.4 | 14.5 | 15.6 | 16.7 | 17.9 | 19.1 | 20.3 | 21.6 | 22.9 | 66 N |
| 64 N | 5.5 | 6.2 | 7.0 | 7.8 | 8.8 | 9.7 | 10.8 | 11.9 | 13.1 | 14.3 | 15.6 | 16.9 | 18.2 | 19.6 | 21.0 | 64 N |
| 62 N | 2.6 | 3.3 | 4.1 | 4.9 | 5.9 | 6.9 | 8.0 | 9.1 | 10.4 | 11.6 | 13.0 | 14.4 | 15.8 | 17.3 | 18.8 | 62 N |
| 60 N | -0.3 | 0.3 | 1.1 | 1.9 | 2.8 | 3.8 | 4.9 | 6.1 | 7.4 | 8.7 | 10.1 | 11.6 | 13.1 | 14.7 | 16.2 | 60 N |
| 58 N | -3.3 | -2.7 | -2.1 | -1.3 | -0.4 | 0.6 | 1.7 | 2.9 | 4.2 | 5.6 | 7.0 | 8.5 | 10.1 | 11.7 | 13.4 | 58 N |
| 56 N | -6.4 | -5.9 | -5.3 | -4.6 | -3.7 | -2.7 | -1.7 | -0.5 | 0.8 | 2.2 | 3.7 | 5.2 | 6.8 | 8.5 | 10.2 | 56 N |
| 54 N | -9.5 | -9.2 | -8.6 | -8.0 | -7.2 | -6.2 | -5.2 | -4.0 | -2.7 | -1.3 | 0.2 | 1.7 | 3.3 | 5.0 | 6.7 | 54 N |
| 52 N | -12.7 | -12.5 | -12.0 | -11.4 | -10.7 | -9.8 | -8.8 | -7.7 | -6.4 | -5.0 | -3.5 | -2.0 | -0.4 | 1.3 | 3.0 | 52 N |
| 50 N | -15.9 | -15.8 | -15.4 | -14.9 | -14.3 | -13.4 | -12.5 | -11.4 | -10.1 | -8.8 | -7.3 | -5.8 | -4.2 | -2.6 | -0.9 | 50 N |
| 48 N | -19.1 | -19.1 | -18.8 | -18.4 | -17.8 | -17.1 | -16.1 | -15.1 | -13.9 | -12.6 | -11.2 | -9.7 | -8.1 | -6.6 | -5.0 | 48 N |
| 46 N | -22.3 | -22.3 | -22.2 | -21.8 | -21.3 | -20.6 | -19.7 | -18.7 | -17.6 | -16.3 | -15.0 | -13.6 | -12.1 | -10.6 | -9.1 | 46 N |
| 44 N | -25.3 | -25.5 | -25.4 | -25.1 | -24.7 | -24.1 | -23.2 | -22.3 | -21.2 | -20.0 | -18.8 | -17.4 | -16.1 | -14.7 | -13.3 | 44 N |
| 42 N | -28.3 | -28.5 | -28.5 | -28.3 | -27.9 | -27.3 | -26.6 | -25.7 | -24.7 | -23.6 | -22.4 | -21.2 | -19.9 | -18.7 | -17.4 | 42 N |
| 40 N | -31.0 | -31.3 | -31.4 | -31.3 | -31.0 | -30.4 | -29.8 | -28.9 | -28.0 | -27.0 | -25.9 | -24.8 | -23.6 | -22.5 | -21.5 | 40 N |
| 38 N | -33.6 | -34.0 | -34.1 | -34.1 | -33.8 | -33.3 | -32.7 | -31.9 | -31.0 | -30.1 | -29.1 | -28.1 | -27.2 | -26.2 | -25.4 | 38 N |
| 36 N | -35.9 | -36.4 | -36.6 | -36.5 | -36.3 | -35.9 | -35.3 | -34.6 | -33.9 | -33.0 | -32.2 | -31.3 | -30.5 | -29.8 | -29.1 | 36 N |
| 34 N | -38.0 | -38.5 | -38.7 | -38.7 | -38.6 | -38.2 | -37.7 | -37.1 | -36.4 | -35.6 | -34.9 | -34.2 | -33.6 | -33.0 | -32.6 | 34 N |
| 32 N | -39.8 | -40.3 | -40.6 | -40.6 | -40.5 | -40.2 | -39.7 | -39.2 | -38.6 | -38.0 | -37.4 | -36.8 | -36.4 | -36.0 | -35.8 | 32 N |
| 30 N | -41.2 | -41.8 | -42.1 | -42.2 | -42.1 | -41.8 | -41.4 | -41.0 | -40.5 | -40.0 | -39.5 | -39.1 | -38.9 | -38.7 | -38.8 | 30 N |
| 28 N | -42.4 | -42.9 | -43.2 | -43.4 | -43.3 | -43.1 | -42.8 | -42.4 | -42.0 | -41.7 | -41.3 | -41.1 | -41.1 | -41.1 | -41.4 | 28 N |
| 26 N | -43.1 | -43.7 | -44.0 | -44.2 | -44.2 | -44.1 | -43.9 | -43.6 | -43.3 | -43.0 | -42.9 | -42.8 | -42.9 | -43.3 | -43.8 | 26 N |
| 24 N | -43.6 | -44.1 | -44.5 | -44.7 | -44.8 | -44.7 | -44.6 | -44.4 | -44.2 | -44.1 | -44.1 | -44.2 | -44.5 | -45.1 | -45.8 | 24 N |
| 22 N | -43.7 | -44.3 | -44.7 | -44.9 | -45.1 | -45.1 | -45.0 | -45.0 | -44.9 | -44.9 | -45.1 | -45.4 | -45.9 | -46.6 | -47.5 | 22 N |
| 20 N | -43.4 | -44.1 | -44.5 | -44.8 | -45.0 | -45.1 | -45.2 | -45.2 | -45.3 | -45.5 | -45.8 | -46.2 | -46.9 | -47.8 | -49.0 | 20 N |
| 18 N | -42.9 | -43.6 | -44.1 | -44.5 | -44.8 | -45.0 | -45.1 | -45.3 | -45.5 | -45.8 | -46.3 | -46.9 | -47.7 | -48.8 | -50.1 | 18 N |
| 16 N | -42.2 | -42.9 | -43.5 | -43.9 | -44.3 | -44.6 | -44.9 | -45.2 | -45.5 | -46.0 | -46.5 | -47.3 | -48.3 | -49.5 | -51.0 | 16 N |
| 14 N | -41.3 | -42.0 | -42.7 | -43.2 | -43.7 | -44.1 | -44.5 | -44.9 | -45.4 | -45.9 | -46.7 | -47.6 | -48.7 | -50.0 | -51.7 | 14 N |
| 12 N | -40.3 | -41.0 | -41.7 | -42.3 | -42.9 | -43.4 | -43.9 | -44.5 | -45.1 | -45.8 | -46.6 | -47.7 | -48.9 | -50.4 | -52.1 | 12 N |
| 10 N | -39.2 | -40.0 | -40.7 | -41.4 | -42.1 | -42.7 | -43.3 | -44.0 | -44.7 | -45.6 | -46.5 | -47.7 | -49.0 | -50.6 | -52.4 | 10 N |
| 8 N | -38.0 | -38.9 | -39.7 | -40.5 | -41.2 | -42.0 | -42.7 | -43.5 | -44.3 | -45.3 | -46.4 | -47.6 | -49.0 | -50.7 | -52.5 | 8 N |
| 6 N | -36.9 | -37.8 | -38.7 | -39.5 | -40.4 | -41.2 | -42.1 | -43.0 | -43.9 | -45.0 | -46.2 | -47.5 | -49.0 | -50.7 | -52.6 | 6 N |
| 4 N | -35.8 | -36.8 | -37.7 | -38.7 | -39.6 | -40.5 | -41.5 | -42.5 | -43.6 | -44.7 | -46.0 | -47.4 | -48.9 | -50.6 | -52.5 | 4 N |
| 2 N | -34.8 | -35.8 | -36.8 | -37.8 | -38.9 | -39.9 | -41.0 | -42.1 | -43.2 | -44.5 | -45.8 | -47.3 | -48.9 | -50.6 | -52.5 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -33.8 | -34.9 | -36.0 | -37.1 | -38.2 | -39.3 | -40.5 | -41.7 | -43.0 | -44.3 | -45.7 | -47.2 | -48.8 | -50.6 | -52.5 | 0 |
| 2 S | -32.9 | -34.0 | -35.2 | -36.4 | -37.6 | -38.8 | -40.1 | -41.4 | -42.8 | -44.2 | -45.7 | -47.2 | -48.9 | -50.6 | -52.5 | 2 S |
| 4 S | -31.9 | -33.2 | -34.4 | -35.7 | -37.1 | -38.4 | -39.8 | -41.2 | -42.7 | -44.1 | -45.7 | -47.3 | -49.0 | -50.7 | -52.5 | 4 S |
| 6 S | -31.0 | -32.3 | -33.7 | -35.1 | -36.5 | -38.0 | -39.5 | -41.0 | -42.6 | -44.2 | -45.8 | -47.5 | -49.2 | -50.9 | -52.7 | 6 S |
| 8 S | -30.1 | -31.5 | -33.0 | -34.5 | -36.1 | -37.7 | -39.3 | -40.9 | -42.6 | -44.3 | -46.0 | -47.7 | -49.5 | -51.2 | -53.0 | 8 S |
| 10 S | -29.1 | -30.6 | -32.2 | -33.9 | -35.6 | -37.3 | -39.1 | -40.9 | -42.7 | -44.5 | -46.3 | -48.1 | -49.8 | -51.6 | -53.4 | 10 S |
| 12 S | -28.1 | -29.7 | -31.5 | -33.3 | -35.1 | -37.0 | -38.9 | -40.9 | -42.8 | -44.7 | -46.6 | -48.5 | -50.4 | -52.2 | -53.9 | 12 S |
| 14 S | -27.0 | -28.8 | -30.7 | -32.7 | -34.7 | -36.7 | -38.8 | -40.9 | -43.0 | -45.1 | -47.1 | -49.1 | -51.0 | -52.8 | -54.6 | 14 S |
| 16 S | -26.1 | -28.0 | -30.0 | -32.1 | -34.3 | -36.5 | -38.8 | -41.1 | -43.3 | -45.5 | -47.7 | -49.8 | -51.8 | -53.7 | -55.4 | 16 S |
| 18 S | -25.2 | -27.2 | -29.4 | -31.7 | -34.1 | -36.5 | -38.9 | -41.3 | -43.8 | -46.1 | -48.4 | -50.6 | -52.7 | -54.6 | -56.4 | 18 S |
| 20 S | -24.5 | -26.7 | -29.0 | -31.5 | -34.0 | -36.6 | -39.2 | -41.8 | -44.4 | -46.9 | -49.3 | -51.6 | -53.8 | -55.8 | -57.6 | 20 S |
| 22 S | -24.2 | -26.5 | -28.9 | -31.5 | -34.2 | -36.9 | -39.7 | -42.5 | -45.2 | -47.9 | -50.4 | -52.8 | -55.1 | -57.2 | -59.1 | 22 S |
| 24 S | -24.2 | -26.6 | -29.2 | -31.9 | -34.7 | -37.6 | -40.5 | -43.5 | -46.3 | -49.1 | -51.8 | -54.3 | -56.7 | -58.8 | -60.7 | 24 S |
| 26 S | -24.8 | -27.3 | -30.0 | -32.8 | -35.7 | -38.8 | -41.8 | -44.8 | -47.8 | -50.7 | -53.5 | -56.1 | -58.5 | -60.7 | -62.6 | 26 S |
| 28 S | -26.1 | -28.6 | -31.3 | -34.3 | -37.3 | -40.4 | -43.5 | -46.7 | -49.7 | -52.7 | -55.6 | -58.2 | -60.7 | -62.9 | -64.9 | 28 S |
| 30 S | -28.0 | -30.6 | -33.4 | -36.3 | -39.4 | -42.6 | -45.8 | -49.0 | -52.1 | -55.2 | -58.0 | -60.7 | -63.2 | -65.5 | -67.4 | 30 S |
| 32 S | -30.7 | -33.3 | -36.1 | -39.1 | -42.3 | -45.4 | -48.7 | -51.9 | -55.0 | -58.1 | -61.0 | -63.7 | -66.2 | -68.4 | -70.3 | 32 S |
| 34 S | -34.2 | -36.9 | -39.7 | -42.7 | -45.8 | -48.9 | -52.2 | -55.4 | -58.5 | -61.5 | -64.4 | -67.1 | -69.5 | -71.7 | -73.6 | 34 S |
| 36 S | -38.6 | -41.2 | -43.9 | -46.9 | -50.0 | -53.1 | -56.3 | -59.4 | -62.5 | -65.5 | -68.3 | -70.9 | -73.3 | -75.4 | -77.2 | 36 S |
| 38 S | -43.7 | -46.2 | -48.9 | -51.8 | -54.8 | -57.9 | -61.0 | -64.0 | -67.0 | -69.9 | -72.6 | -75.2 | -77.4 | -79.5 | -81.2 | 38 S |
| 40 S | -49.4 | -51.9 | -54.6 | -57.4 | -60.3 | -63.3 | -66.2 | -69.2 | -72.1 | -74.8 | -77.4 | -79.8 | -82.0 | -83.9 | -85.5 | 40 S |
| 42 S | -55.7 | -58.2 | -60.8 | -63.5 | -66.3 | -69.1 | -71.9 | -74.7 | -77.5 | -80.1 | -82.5 | -84.8 | -86.8 | -88.6 | -90.1 | 42 S |
| 44 S | -62.5 | -64.9 | -67.4 | -69.9 | -72.6 | -75.3 | -78.0 | -80.6 | -83.2 | -85.6 | -87.9 | -90.0 | -91.9 | -93.5 | -94.9 | 44 S |
| 46 S | -69.5 | -71.8 | -74.2 | -76.7 | -79.2 | -81.8 | -84.3 | -86.8 | -89.1 | -91.4 | -93.5 | -95.4 | -97.1 | -98.6 | -99.8 | 46 S |
| 48 S | -76.7 | -78.9 | -81.2 | -83.5 | -85.9 | -88.3 | -90.6 | -92.9 | -95.1 | -97.2 | -99.1 | -100.9 | -102.4 | -103.7 | -104.8 | 48 S |
| 50 S | -83.7 | -85.8 | -88.0 | -90.3 | -92.5 | -94.7 | -96.9 | -99.0 | -101.0 | -102.9 | -104.6 | -106.2 | -107.6 | -108.7 | -109.7 | 50 S |
| 52 S | -90.5 | -92.6 | -94.6 | -96.7 | -98.8 | -100.9 | -102.9 | -104.9 | -106.7 | -108.4 | -110.0 | -111.3 | -112.6 | -113.6 | -114.4 | 52 S |
| 54 S | -96.9 | -98.8 | -100.8 | -102.8 | -104.8 | -106.7 | -108.6 | -110.3 | -112.0 | -113.5 | -114.9 | -116.1 | -117.2 | -118.1 | -118.8 | 54 S |
| 56 S | -102.6 | -104.5 | -106.5 | -108.3 | -110.2 | -112.0 | -113.7 | -115.3 | -116.8 | -118.2 | -119.4 | -120.5 | -121.4 | -122.2 | -122.7 | 56 S |
| 58 S | -107.7 | -109.6 | -111.4 | -113.2 | -114.9 | -116.5 | -118.1 | -119.6 | -121.0 | -122.2 | -123.3 | -124.3 | -125.1 | -125.8 | -126.2 | 58 S |
| 60 S | -112.0 | -113.8 | -115.5 | -117.2 | -118.8 | -120.4 | -121.8 | -123.2 | -124.4 | -125.6 | -126.6 | -127.4 | -128.2 | -128.7 | -129.1 | 60 S |
| 62 S | -115.4 | -117.2 | -118.8 | -120.4 | -121.9 | -123.4 | -124.7 | -126.0 | -127.1 | -128.2 | -129.1 | -129.9 | -130.5 | -131.0 | -131.4 | 62 S |
| 64 S | -118.0 | -119.6 | -121.2 | -122.8 | -124.2 | -125.6 | -126.8 | -128.0 | -129.0 | -130.0 | -130.8 | -131.6 | -132.2 | -132.6 | -133.0 | 64 S |
| 66 S | -119.7 | -121.3 | -122.8 | -124.2 | -125.6 | -126.9 | -128.1 | -129.1 | -130.1 | -131.0 | -131.8 | -132.5 | -133.1 | -133.5 | -133.8 | 66 S |
| 68 S | -120.6 | -122.1 | -123.5 | -124.9 | -126.2 | -127.4 | -128.5 | -129.5 | -130.4 | -131.3 | -132.0 | -132.7 | -133.2 | -133.7 | -134.0 | 68 S |
| 70 S | -120.7 | -122.2 | -123.5 | -124.8 | -126.0 | -127.1 | -128.2 | -129.1 | -130.0 | -130.8 | -131.5 | -132.1 | -132.7 | -133.1 | -133.5 | 70 S |
| 72 S | -120.2 | -121.6 | -122.8 | -124.0 | -125.1 | -126.2 | -127.1 | -128.1 | -128.9 | -129.6 | -130.3 | -130.9 | -131.5 | -131.9 | -132.3 | 72 S |
| 74 S | -119.2 | -120.4 | -121.6 | -122.6 | -123.7 | -124.7 | -125.6 | -126.4 | -127.2 | -127.9 | -128.6 | -129.2 | -129.7 | -130.1 | -130.5 | 74 S |
| 76 S | -117.7 | -118.8 | -119.9 | -120.8 | -121.8 | -122.7 | -123.5 | -124.3 | -125.0 | -125.7 | -126.3 | -126.9 | -127.4 | -127.8 | -128.2 | 76 S |
| 78 S | -116.0 | -116.9 | -117.8 | -118.7 | -119.5 | -120.3 | -121.1 | -121.8 | -122.4 | -123.1 | -123.6 | -124.2 | -124.6 | -125.1 | -125.5 | 78 S |
| 80 S | -114.0 | -114.8 | -115.6 | -116.3 | -117.0 | -117.7 | -118.4 | -119.0 | -119.6 | -120.1 | -120.6 | -121.1 | -121.6 | -122.0 | -122.4 | 80 S |
| 82 S | -111.9 | -112.5 | -113.2 | -113.8 | -114.4 | -114.9 | -115.5 | -116.0 | -116.5 | -117.0 | -117.4 | -117.8 | -118.2 | -118.6 | -118.9 | 82 S |
| 84 S | -109.7 | -110.2 | -110.7 | -111.2 | -111.6 | -112.1 | -112.5 | -112.9 | -113.3 | -113.7 | -114.0 | -114.4 | -114.7 | -115.0 | -115.3 | 84 S |
| 86 S | -107.5 | -107.8 | -108.2 | -108.5 | -108.8 | -109.1 | -109.4 | -109.7 | -110.0 | -110.2 | -110.5 | -110.7 | -111.0 | -111.2 | -111.4 | 86 S |
| 88 S | -105.3 | -105.5 | -105.7 | -105.8 | -106.0 | -106.1 | -106.3 | -106.4 | -106.6 | -106.7 | -106.8 | -107.0 | -107.1 | -107.2 | -107.3 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -100.8 | -100.6 | -100.5 | -100.3 | -100.1 | -100.0 | -99.8 | -99.7 | -99.5 | -99.4 | -99.2 | -99.1 | -98.9 | -98.8 | -98.7 | LAT. |
| E.LONG. | 238 | 240 | 242 | 244 | 246 | 248 | 250 | 252 | 254 | 256 | 258 | 260 | 262 | 264 | 266 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. LAT. | 262 | 264 | 266 | 268 | 270 | 272 | 274 | 276 | 278 | 280 | 282 | 284 | 286 | 288 | 290 | E.LONG. LAT. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 39.0 | 38.9 | 38.9 | 38.8 | 38.8 | 38.7 | 38.6 | 38.6 | 38.5 | 38.4 | 38.3 | 38.3 | 38.2 | 38.1 | 38.0 | |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 35.5 | 35.6 | 35.6 | 35.7 | 35.8 | 35.8 | 35.9 | 36.0 | 36.1 | 36.1 | 36.2 | 36.3 | 36.4 | 36.4 | 36.5 | 88 N |
| 86 N | 33.9 | 34.1 | 34.2 | 34.3 | 34.5 | 34.6 | 34.8 | 34.9 | 35.0 | 35.2 | 35.3 | 35.5 | 35.6 | 35.8 | 35.9 | 86 N |
| 84 N | 32.5 | 32.7 | 32.9 | 33.1 | 33.3 | 33.5 | 33.8 | 34.0 | 34.2 | 34.4 | 34.6 | 34.9 | 35.1 | 35.3 | 35.5 | 84 N |
| 82 N | 31.1 | 31.4 | 31.7 | 32.0 | 32.3 | 32.6 | 33.0 | 33.3 | 33.6 | 33.9 | 34.2 | 34.5 | 34.7 | 35.0 | 35.3 | 82 N |
| 80 N | 29.9 | 30.3 | 30.7 | 31.1 | 31.5 | 31.9 | 32.3 | 32.7 | 33.1 | 33.5 | 33.9 | 34.2 | 34.6 | 34.9 | 35.3 | 80 N |
| 78 N | 28.7 | 29.2 | 29.7 | 30.3 | 30.8 | 31.3 | 31.8 | 32.3 | 32.8 | 33.2 | 33.7 | 34.2 | 34.6 | 35.0 | 35.5 | 78 N |
| 76 N | 27.6 | 28.2 | 28.8 | 29.5 | 30.1 | 30.7 | 31.3 | 31.9 | 32.5 | 33.1 | 33.7 | 34.2 | 34.8 | 35.3 | 35.8 | 76 N |
| 74 N | 26.4 | 27.2 | 27.9 | 28.7 | 29.4 | 30.2 | 30.9 | 31.6 | 32.3 | 33.0 | 33.7 | 34.4 | 35.0 | 35.6 | 36.2 | 74 N |
| 72 N | 25.2 | 26.0 | 26.9 | 27.8 | 28.7 | 29.6 | 30.4 | 31.3 | 32.1 | 32.9 | 33.7 | 34.5 | 35.2 | 35.9 | 36.6 | 72 N |
| 70 N | 23.8 | 24.8 | 25.8 | 26.8 | 27.8 | 28.8 | 29.8 | 30.8 | 31.8 | 32.7 | 33.6 | 34.5 | 35.3 | 36.1 | 36.9 | 70 N |
| 68 N | 22.2 | 23.3 | 24.4 | 25.6 | 26.7 | 27.9 | 29.0 | 30.1 | 31.2 | 32.3 | 33.3 | 34.3 | 35.3 | 36.2 | 37.1 | 68 N |
| 66 N | 20.3 | 21.6 | 22.9 | 24.1 | 25.4 | 26.7 | 28.0 | 29.2 | 30.4 | 31.6 | 32.8 | 33.9 | 35.0 | 36.0 | 37.0 | 66 N |
| 64 N | 18.2 | 19.6 | 21.0 | 22.4 | 23.8 | 25.2 | 26.6 | 28.0 | 29.3 | 30.6 | 31.9 | 33.2 | 34.4 | 35.5 | 36.6 | 64 N |
| 62 N | 15.8 | 17.3 | 18.8 | 20.3 | 21.8 | 23.3 | 24.8 | 26.3 | 27.8 | 29.2 | 30.6 | 32.0 | 33.3 | 34.5 | 35.7 | 62 N |
| 60 N | 13.1 | 14.7 | 16.2 | 17.8 | 19.5 | 21.1 | 22.7 | 24.3 | 25.9 | 27.4 | 28.9 | 30.3 | 31.7 | 33.1 | 34.3 | 60 N |
| 58 N | 10.1 | 11.7 | 13.4 | 15.0 | 16.7 | 18.4 | 20.1 | 21.8 | 23.5 | 25.1 | 26.7 | 28.2 | 29.7 | 31.1 | 32.4 | 58 N |
| 56 N | 6.8 | 8.5 | 10.2 | 11.9 | 13.7 | 15.4 | 17.1 | 18.9 | 20.6 | 22.3 | 23.9 | 25.5 | 27.0 | 28.4 | 29.8 | 56 N |
| 54 N | 3.3 | 5.0 | 6.7 | 8.5 | 10.2 | 12.0 | 13.8 | 15.5 | 17.2 | 18.9 | 20.6 | 22.2 | 23.7 | 25.2 | 26.6 | 54 N |
| 52 N | -0.4 | 1.3 | 3.0 | 4.7 | 6.5 | 8.3 | 10.0 | 11.7 | 13.4 | 15.1 | 16.7 | 18.3 | 19.9 | 21.3 | 22.7 | 52 N |
| 50 N | -4.2 | -2.6 | -0.9 | 0.8 | 2.5 | 4.2 | 5.9 | 7.6 | 9.2 | 10.8 | 12.4 | 13.9 | 15.4 | 16.9 | 18.2 | 50 N |
| 48 N | -8.1 | -6.6 | -5.0 | -3.3 | -1.7 | -0.1 | 1.5 | 3.1 | 4.6 | 6.1 | 7.6 | 9.0 | 10.4 | 11.8 | 13.1 | 48 N |
| 46 N | -12.1 | -10.6 | -9.1 | -7.6 | -6.1 | -4.6 | -3.1 | -1.7 | -0.3 | 1.1 | 2.4 | 3.7 | 5.0 | 6.2 | 7.4 | 46 N |
| 44 N | -16.1 | -14.7 | -13.3 | -11.9 | -10.5 | -9.2 | -7.9 | -6.7 | -5.5 | -4.3 | -3.1 | -2.0 | -1.0 | 0.1 | 1.1 | 44 N |
| 42 N | -19.9 | -18.7 | -17.4 | -16.2 | -15.0 | -13.9 | -12.8 | -11.8 | -10.8 | -9.9 | -9.0 | -8.1 | -7.2 | -6.4 | -5.5 | 42 N |
| 40 N | -23.6 | -22.5 | -21.5 | -20.4 | -19.5 | -18.6 | -17.8 | -17.0 | -16.3 | -15.6 | -15.0 | -14.4 | -13.7 | -13.1 | -12.5 | 40 N |
| 38 N | -27.2 | -26.2 | -25.4 | -24.6 | -23.9 | -23.2 | -22.7 | -22.2 | -21.8 | -21.4 | -21.1 | -20.8 | -20.4 | -20.1 | -19.7 | 38 N |
| 36 N | -30.5 | -29.8 | -29.1 | -28.5 | -28.1 | -27.7 | -27.5 | -27.3 | -27.2 | -27.2 | -27.2 | -27.2 | -27.2 | -27.2 | -27.1 | 36 N |
| 34 N | -33.6 | -33.0 | -32.6 | -32.3 | -32.1 | -32.0 | -32.1 | -32.3 | -32.5 | -32.8 | -33.2 | -33.6 | -33.9 | -34.2 | -34.4 | 34 N |
| 32 N | -36.4 | -36.0 | -35.8 | -35.8 | -35.9 | -36.1 | -36.5 | -37.0 | -37.6 | -38.3 | -39.0 | -39.8 | -40.4 | -41.1 | -41.6 | 32 N |
| 30 N | -38.9 | -38.7 | -38.8 | -39.0 | -39.4 | -39.9 | -40.7 | -41.5 | -42.5 | -43.5 | -44.6 | -45.7 | -46.7 | -47.7 | -48.5 | 30 N |
| 28 N | -41.1 | -41.1 | -41.4 | -41.9 | -42.6 | -43.5 | -44.5 | -45.7 | -47.0 | -48.4 | -49.9 | -51.3 | -52.7 | -54.0 | -55.1 | 28 N |
| 26 N | -42.9 | -43.3 | -43.8 | -44.5 | -45.5 | -46.6 | -48.0 | -49.5 | -51.2 | -52.9 | -54.7 | -56.5 | -58.2 | -59.8 | -61.2 | 26 N |
| 24 N | -44.5 | -45.1 | -45.8 | -46.8 | -48.0 | -49.5 | -51.1 | -52.9 | -54.9 | -57.0 | -59.1 | -61.2 | -63.2 | -65.0 | -66.8 | 24 N |
| 22 N | -45.9 | -46.6 | -47.5 | -48.7 | -50.2 | -51.9 | -53.8 | -55.9 | -58.2 | -60.5 | -62.9 | -65.3 | -67.6 | -69.7 | -71.7 | 22 N |
| 20 N | -46.9 | -47.8 | -49.0 | -50.4 | -52.1 | -54.0 | -56.2 | -58.5 | -61.0 | -63.6 | -66.2 | -68.8 | -71.3 | -73.7 | -75.9 | 20 N |
| 18 N | -47.7 | -48.8 | -50.1 | -51.7 | -53.6 | -55.7 | -58.1 | -60.6 | -63.3 | -66.1 | -68.9 | -71.8 | -74.5 | -77.0 | -79.4 | 18 N |
| 16 N | -48.3 | -49.5 | -51.0 | -52.8 | -54.8 | -57.1 | -59.6 | -62.3 | -65.2 | -68.1 | -71.1 | -74.0 | -76.9 | -79.6 | -82.1 | 16 N |
| 14 N | -48.7 | -50.0 | -51.7 | -53.6 | -55.7 | -58.1 | -60.7 | -63.6 | -66.5 | -69.6 | -72.7 | -75.7 | -78.7 | -81.5 | -84.0 | 14 N |
| 12 N | -48.9 | -50.4 | -52.1 | -54.1 | -56.3 | -58.8 | -61.5 | -64.4 | -67.5 | -70.6 | -73.7 | -76.8 | -79.8 | -82.6 | -85.2 | 12 N |
| 10 N | -49.0 | -50.6 | -52.4 | -54.4 | -56.7 | -59.3 | -62.0 | -64.9 | -68.0 | -71.1 | -74.2 | -77.3 | -80.3 | -83.1 | -85.7 | 10 N |
| 8 N | -49.0 | -50.7 | -52.5 | -54.6 | -56.9 | -59.5 | -62.2 | -65.1 | -68.1 | -71.2 | -74.3 | -77.3 | -80.2 | -83.0 | -85.5 | 8 N |
| 6 N | -49.0 | -50.7 | -52.6 | -54.7 | -57.0 | -59.5 | -62.2 | -65.0 | -67.9 | -70.9 | -73.9 | -76.9 | -79.7 | -82.3 | -84.8 | 6 N |
| 4 N | -48.9 | -50.6 | -52.5 | -54.6 | -56.9 | -59.4 | -62.0 | -64.7 | -67.5 | -70.4 | -73.2 | -76.0 | -78.7 | -81.2 | -83.5 | 4 N |
| 2 N | -48.9 | -50.6 | -52.5 | -54.6 | -56.8 | -59.1 | -61.6 | -64.2 | -66.9 | -69.6 | -72.3 | -74.9 | -77.4 | -79.7 | -81.8 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -48.8 | -50.6 | -52.5 | -54.5 | -56.6 | -58.9 | -61.2 | -63.7 | -66.2 | -68.7 | -71.2 | -73.6 | -75.8 | -77.9 | -79.8 | 0 |
| 2 S | -48.9 | -50.6 | -52.5 | -54.4 | -56.5 | -58.6 | -60.8 | -63.1 | -65.4 | -67.7 | -69.9 | -72.1 | -74.1 | -76.0 | -77.6 | 2 S |
| 4 S | -49.0 | -50.7 | -52.5 | -54.4 | -56.4 | -58.4 | -60.4 | -62.5 | -64.6 | -66.7 | -68.7 | -70.6 | -72.3 | -73.9 | -75.3 | 4 S |
| 6 S | -49.2 | -50.9 | -52.7 | -54.5 | -56.4 | -58.3 | -60.2 | -62.0 | -63.9 | -65.7 | -67.5 | -69.1 | -70.6 | -71.9 | -73.0 | 6 S |
| 8 S | -49.5 | -51.2 | -53.0 | -54.7 | -56.5 | -58.2 | -60.0 | -61.7 | -63.3 | -64.9 | -66.4 | -67.7 | -68.9 | -70.0 | -70.8 | 8 S |
| 10 S | -49.8 | -51.6 | -53.4 | -55.1 | -56.8 | -58.4 | -60.0 | -61.5 | -62.9 | -64.2 | -65.5 | -66.5 | -67.4 | -68.2 | -68.7 | 10 S |
| 12 S | -50.4 | -52.2 | -53.9 | -55.6 | -57.2 | -58.7 | -60.1 | -61.5 | -62.7 | -63.8 | -64.7 | -65.5 | -66.2 | -66.6 | -66.8 | 12 S |
| 14 S | -51.0 | -52.8 | -54.6 | -56.2 | -57.8 | -59.2 | -60.5 | -61.7 | -62.7 | -63.6 | -64.3 | -64.8 | -65.2 | -65.3 | -65.3 | 14 S |
| 16 S | -51.8 | -53.7 | -55.4 | -57.1 | -58.6 | -59.9 | -61.1 | -62.1 | -63.0 | -63.6 | -64.1 | -64.4 | -64.5 | -64.3 | -64.0 | 16 S |
| 18 S | -52.7 | -54.6 | -56.4 | -58.1 | -59.5 | -60.8 | -61.9 | -62.8 | -63.5 | -63.9 | -64.2 | -64.3 | -64.1 | -63.7 | -63.1 | 18 S |
| 20 S | -53.8 | -55.8 | -57.6 | -59.3 | -60.7 | -62.0 | -63.0 | -63.7 | -64.3 | -64.6 | -64.6 | -64.5 | -64.1 | -63.5 | -62.7 | 20 S |
| 22 S | -55.1 | -57.2 | -59.1 | -60.7 | -62.1 | -63.3 | -64.2 | -64.9 | -65.3 | -65.5 | -65.4 | -65.0 | -64.4 | -63.6 | -62.6 | 22 S |
| 24 S | -56.7 | -58.8 | -60.7 | -62.4 | -63.8 | -64.9 | -65.8 | -66.4 | -66.7 | -66.7 | -66.4 | -65.9 | -65.2 | -64.2 | -62.9 | 24 S |
| 26 S | -58.5 | -60.7 | -62.6 | -64.3 | -65.7 | -66.8 | -67.6 | -68.1 | -68.3 | -68.2 | -67.8 | -67.2 | -66.3 | -65.1 | -63.7 | 26 S |
| 28 S | -60.7 | -62.9 | -64.9 | -66.5 | -67.9 | -69.0 | -69.7 | -70.2 | -70.3 | -70.1 | -69.6 | -68.8 | -67.8 | -66.5 | -65.0 | 28 S |
| 30 S | -63.2 | -65.5 | -67.4 | -69.1 | -70.4 | -71.5 | -72.1 | -72.5 | -72.5 | -72.3 | -71.7 | -70.8 | -69.7 | -68.3 | -66.7 | 30 S |
| 32 S | -66.2 | -68.4 | -70.3 | -72.0 | -73.3 | -74.2 | -74.9 | -75.2 | -75.1 | -74.8 | -74.1 | -73.2 | -71.9 | -70.5 | -68.8 | 32 S |
| 34 S | -69.5 | -71.7 | -73.6 | -75.2 | -76.4 | -77.4 | -77.9 | -78.2 | -78.1 | -77.6 | -76.9 | -75.9 | -74.6 | -73.1 | -71.3 | 34 S |
| 36 S | -73.3 | -75.4 | -77.2 | -78.7 | -79.9 | -80.8 | -81.3 | -81.5 | -81.3 | -80.8 | -80.0 | -79.0 | -77.6 | -76.1 | -74.3 | 36 S |
| 38 S | -77.4 | -79.5 | -81.2 | -82.6 | -83.8 | -84.5 | -85.0 | -85.1 | -84.9 | -84.3 | -83.5 | -82.4 | -81.0 | -79.4 | -77.7 | 38 S |
| 40 S | -82.0 | -83.9 | -85.5 | -86.9 | -87.9 | -88.6 | -88.9 | -89.0 | -88.7 | -88.1 | -87.2 | -86.1 | -84.7 | -83.2 | -81.4 | 40 S |
| 42 S | -86.8 | -88.6 | -90.1 | -91.3 | -92.2 | -92.8 | -93.1 | -93.1 | -92.8 | -92.1 | -91.2 | -90.1 | -88.7 | -87.1 | -85.4 | 42 S |
| 44 S | -91.9 | -93.5 | -94.9 | -96.0 | -96.8 | -97.3 | -97.5 | -97.4 | -97.0 | -96.4 | -95.4 | -94.3 | -92.9 | -91.4 | -89.6 | 44 S |
| 46 S | -97.1 | -98.6 | -99.8 | -100.8 | -101.5 | -101.9 | -102.0 | -101.8 | -101.4 | -100.7 | -99.8 | -98.6 | -97.3 | -95.7 | -94.1 | 46 S |
| 48 S | -102.4 | -103.7 | -104.8 | -105.6 | -106.2 | -106.5 | -106.5 | -106.3 | -105.8 | -105.1 | -104.2 | -103.0 | -101.7 | -100.2 | -98.6 | 48 S |
| 50 S | -107.6 | -108.7 | -109.7 | -110.4 | -110.8 | -111.0 | -111.0 | -110.7 | -110.2 | -109.5 | -108.5 | -107.4 | -106.1 | -104.7 | -103.1 | 50 S |
| 52 S | -112.6 | -113.6 | -114.4 | -114.9 | -115.3 | -115.4 | -115.3 | -115.0 | -114.5 | -113.7 | -112.8 | -111.7 | -110.5 | -109.1 | -107.6 | 52 S |
| 54 S | -117.2 | -118.1 | -118.8 | -119.2 | -119.5 | -119.5 | -119.4 | -119.0 | -118.5 | -117.8 | -116.9 | -115.8 | -114.6 | -113.3 | -111.9 | 54 S |
| 56 S | -121.4 | -122.2 | -122.7 | -123.1 | -123.3 | -123.3 | -123.1 | -122.8 | -122.2 | -121.5 | -120.7 | -119.7 | -118.5 | -117.3 | -116.0 | 56 S |
| 58 S | -125.1 | -125.8 | -126.2 | -126.5 | -126.7 | -126.6 | -126.4 | -126.1 | -125.5 | -124.9 | -124.1 | -123.1 | -122.1 | -121.0 | -119.8 | 58 S |
| 60 S | -128.2 | -128.7 | -129.1 | -129.4 | -129.5 | -129.5 | -129.2 | -128.9 | -128.4 | -127.8 | -127.1 | -126.2 | -125.3 | -124.3 | -123.2 | 60 S |
| 62 S | -130.5 | -131.0 | -131.4 | -131.6 | -131.7 | -131.7 | -131.5 | -131.2 | -130.7 | -130.2 | -129.5 | -128.8 | -127.9 | -127.0 | -126.1 | 62 S |
| 64 S | -132.2 | -132.6 | -133.0 | -133.2 | -133.3 | -133.3 | -133.1 | -132.8 | -132.5 | -132.0 | -131.4 | -130.8 | -130.1 | -129.3 | -128.4 | 64 S |
| 66 S | -133.1 | -133.5 | -133.8 | -134.1 | -134.2 | -134.2 | -134.1 | -133.9 | -133.6 | -133.2 | -132.7 | -132.2 | -131.6 | -130.9 | -130.2 | 66 S |
| 68 S | -133.2 | -133.7 | -134.0 | -134.2 | -134.4 | -134.4 | -134.4 | -134.3 | -134.0 | -133.7 | -133.4 | -133.0 | -132.5 | -131.9 | -131.3 | 68 S |
| 70 S | -132.7 | -133.1 | -133.5 | -133.7 | -133.9 | -134.0 | -134.0 | -134.0 | -133.9 | -133.7 | -133.4 | -133.1 | -132.7 | -132.3 | -131.8 | 70 S |
| 72 S | -131.5 | -131.9 | -132.3 | -132.6 | -132.8 | -133.0 | -133.0 | -133.1 | -133.0 | -132.9 | -132.8 | -132.6 | -132.3 | -132.0 | -131.7 | 72 S |
| 74 S | -129.7 | -130.1 | -130.5 | -130.8 | -131.1 | -131.3 | -131.5 | -131.5 | -131.6 | -131.6 | -131.5 | -131.4 | -131.2 | -131.0 | -130.8 | 74 S |
| 76 S | -127.4 | -127.8 | -128.2 | -128.6 | -128.9 | -129.1 | -129.3 | -129.4 | -129.5 | -129.6 | -129.6 | -129.6 | -129.5 | -129.4 | -129.3 | 76 S |
| 78 S | -124.6 | -125.1 | -125.5 | -125.8 | -126.1 | -126.4 | -126.6 | -126.8 | -127.0 | -127.1 | -127.2 | -127.2 | -127.2 | -127.2 | -127.2 | 78 S |
| 80 S | -121.6 | -122.0 | -122.4 | -122.7 | -123.0 | -123.3 | -123.5 | -123.8 | -123.9 | -124.1 | -124.2 | -124.3 | -124.4 | -124.4 | -124.4 | 80 S |
| 82 S | -118.2 | -118.6 | -118.9 | -119.3 | -119.5 | -119.8 | -120.0 | -120.3 | -120.5 | -120.6 | -120.8 | -120.9 | -121.0 | -121.1 | -121.1 | 82 S |
| 84 S | -114.7 | -115.0 | -115.3 | -115.5 | -115.8 | -116.0 | -116.2 | -116.4 | -116.6 | -116.7 | -116.9 | -117.0 | -117.1 | -117.2 | -117.3 | 84 S |
| 86 S | -111.0 | -111.2 | -111.4 | -111.6 | -111.8 | -111.9 | -112.1 | -112.2 | -112.4 | -112.5 | -112.6 | -112.7 | -112.8 | -112.9 | -113.0 | 86 S |
| 88 S | -107.1 | -107.2 | -107.3 | -107.4 | -107.5 | -107.6 | -107.7 | -107.8 | -107.9 | -107.9 | -108.0 | -108.1 | -108.1 | -108.2 | -108.2 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -98.9 | -98.8 | -98.7 | -98.6 | -98.5 | -98.3 | -98.2 | -98.1 | -98.1 | -98.0 | -97.9 | -97.8 | -97.8 | -97.7 | -97.6 | LAT. |
| E.LONG. | 262 | 264 | 266 | 268 | 270 | 272 | 274 | 276 | 278 | 280 | 282 | 284 | 286 | 288 | 290 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 286 | 288 | 290 | 292 | 294 | 296 | 298 | 300 | 302 | 304 | 306 | 308 | 310 | 312 | 314 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 38.2 | 38.1 | 38.0 | 37.9 | 37.8 | 37.8 | 37.7 | 37.6 | 37.5 | 37.4 | 37.3 | 37.2 | 37.1 | 37.0 | 36.9 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 36.4 | 36.4 | 36.5 | 36.6 | 36.7 | 36.7 | 36.8 | 36.9 | 37.0 | 37.0 | 37.1 | 37.2 | 37.3 | 37.3 | 37.4 | 88 N |
| 86 N | 35.6 | 35.8 | 35.9 | 36.1 | 36.2 | 36.4 | 36.5 | 36.6 | 36.8 | 36.9 | 37.1 | 37.2 | 37.3 | 37.5 | 37.6 | 86 N |
| 84 N | 35.1 | 35.3 | 35.5 | 35.7 | 35.9 | 36.1 | 36.3 | 36.5 | 36.7 | 36.9 | 37.1 | 37.3 | 37.5 | 37.7 | 37.9 | 84 N |
| 82 N | 34.7 | 35.0 | 35.3 | 35.6 | 35.8 | 36.1 | 36.4 | 36.6 | 36.9 | 37.1 | 37.3 | 37.5 | 37.8 | 38.0 | 38.2 | 82 N |
| 80 N | 34.6 | 34.9 | 35.3 | 35.6 | 35.9 | 36.3 | 36.6 | 36.9 | 37.1 | 37.4 | 37.7 | 37.9 | 38.2 | 38.4 | 38.6 | 80 N |
| 78 N | 34.6 | 35.0 | 35.5 | 35.9 | 36.2 | 36.6 | 37.0 | 37.3 | 37.6 | 37.9 | 38.2 | 38.5 | 38.7 | 38.9 | 39.2 | 78 N |
| 76 N | 34.8 | 35.3 | 35.8 | 36.2 | 36.7 | 37.1 | 37.5 | 37.9 | 38.2 | 38.5 | 38.8 | 39.1 | 39.4 | 39.6 | 39.8 | 76 N |
| 74 N | 35.0 | 35.6 | 36.2 | 36.7 | 37.2 | 37.7 | 38.1 | 38.6 | 38.9 | 39.3 | 39.6 | 39.9 | 40.1 | 40.4 | 40.5 | 74 N |
| 72 N | 35.2 | 35.9 | 36.6 | 37.2 | 37.8 | 38.3 | 38.8 | 39.3 | 39.7 | 40.1 | 40.4 | 40.7 | 40.9 | 41.1 | 41.3 | 72 N |
| 70 N | 35.3 | 36.1 | 36.9 | 37.6 | 38.3 | 38.9 | 39.4 | 40.0 | 40.4 | 40.8 | 41.2 | 41.5 | 41.7 | 41.9 | 42.1 | 70 N |
| 68 N | 35.3 | 36.2 | 37.1 | 37.9 | 38.6 | 39.3 | 39.9 | 40.5 | 41.0 | 41.4 | 41.8 | 42.1 | 42.4 | 42.5 | 42.7 | 68 N |
| 66 N | 35.0 | 36.0 | 37.0 | 37.9 | 38.7 | 39.5 | 40.2 | 40.8 | 41.4 | 41.8 | 42.2 | 42.6 | 42.8 | 43.0 | 43.1 | 66 N |
| 64 N | 34.4 | 35.5 | 36.6 | 37.6 | 38.5 | 39.3 | 40.1 | 40.8 | 41.4 | 41.9 | 42.3 | 42.7 | 42.9 | 43.1 | 43.2 | 64 N |
| 62 N | 33.3 | 34.5 | 35.7 | 36.8 | 37.8 | 38.7 | 39.6 | 40.3 | 41.0 | 41.5 | 42.0 | 42.4 | 42.6 | 42.8 | 42.9 | 62 N |
| 60 N | 31.7 | 33.1 | 34.3 | 35.5 | 36.6 | 37.6 | 38.5 | 39.3 | 40.0 | 40.6 | 41.2 | 41.6 | 41.8 | 42.0 | 42.1 | 60 N |
| 58 N | 29.7 | 31.1 | 32.4 | 33.6 | 34.8 | 35.9 | 36.8 | 37.7 | 38.5 | 39.1 | 39.7 | 40.1 | 40.4 | 40.7 | 40.8 | 58 N |
| 56 N | 27.0 | 28.4 | 29.8 | 31.1 | 32.3 | 33.5 | 34.5 | 35.4 | 36.2 | 36.9 | 37.5 | 38.0 | 38.4 | 38.6 | 38.7 | 56 N |
| 54 N | 23.7 | 25.2 | 26.6 | 28.0 | 29.2 | 30.4 | 31.4 | 32.4 | 33.2 | 34.0 | 34.6 | 35.1 | 35.5 | 35.8 | 36.0 | 54 N |
| 52 N | 19.9 | 21.3 | 22.7 | 24.1 | 25.3 | 26.5 | 27.6 | 28.6 | 29.5 | 30.3 | 30.9 | 31.5 | 31.9 | 32.2 | 32.5 | 52 N |
| 50 N | 15.4 | 16.9 | 18.2 | 19.5 | 20.8 | 21.9 | 23.0 | 24.0 | 24.9 | 25.7 | 26.4 | 27.0 | 27.5 | 27.9 | 28.1 | 50 N |
| 48 N | 10.4 | 11.8 | 13.1 | 14.3 | 15.5 | 16.6 | 17.7 | 18.7 | 19.6 | 20.4 | 21.1 | 21.8 | 22.3 | 22.7 | 23.1 | 48 N |
| 46 N | 5.0 | 6.2 | 7.4 | 8.5 | 9.6 | 10.7 | 11.7 | 12.6 | 13.5 | 14.4 | 15.1 | 15.8 | 16.3 | 16.8 | 17.2 | 46 N |
| 44 N | -1.0 | 0.1 | 1.1 | 2.1 | 3.1 | 4.1 | 5.0 | 5.9 | 6.8 | 7.6 | 8.4 | 9.1 | 9.7 | 10.2 | 10.7 | 44 N |
| 42 N | -7.2 | -6.4 | -5.5 | -4.7 | -3.8 | -3.0 | -2.2 | -1.3 | -0.5 | 0.3 | 1.0 | 1.7 | 2.4 | 3.0 | 3.6 | 42 N |
| 40 N | -13.7 | -13.1 | -12.5 | -11.9 | -11.2 | -10.5 | -9.8 | -9.1 | -8.3 | -7.6 | -6.8 | -6.1 | -5.4 | -4.7 | -4.0 | 40 N |
| 38 N | -20.4 | -20.1 | -19.7 | -19.3 | -18.9 | -18.4 | -17.8 | -17.2 | -16.5 | -15.8 | -15.1 | -14.3 | -13.6 | -12.8 | -12.0 | 38 N |
| 36 N | -27.2 | -27.2 | -27.1 | -26.9 | -26.7 | -26.4 | -26.0 | -25.5 | -24.9 | -24.3 | -23.5 | -22.8 | -22.0 | -21.1 | -20.3 | 36 N |
| 34 N | -33.9 | -34.2 | -34.4 | -34.5 | -34.5 | -34.4 | -34.2 | -33.8 | -33.4 | -32.8 | -32.1 | -31.3 | -30.5 | -29.6 | -28.6 | 34 N |
| 32 N | -40.4 | -41.1 | -41.6 | -42.0 | -42.3 | -42.4 | -42.3 | -42.1 | -41.8 | -41.3 | -40.6 | -39.8 | -38.9 | -37.9 | -36.8 | 32 N |
| 30 N | -46.7 | -47.7 | -48.5 | -49.2 | -49.7 | -50.1 | -50.2 | -50.2 | -49.9 | -49.5 | -48.9 | -48.1 | -47.1 | -46.0 | -44.8 | 30 N |
| 28 N | -52.7 | -54.0 | -55.1 | -56.1 | -56.9 | -57.4 | -57.8 | -57.9 | -57.7 | -57.4 | -56.8 | -56.0 | -55.0 | -53.8 | -52.4 | 28 N |
| 26 N | -58.2 | -59.8 | -61.2 | -62.5 | -63.5 | -64.3 | -64.8 | -65.0 | -65.0 | -64.7 | -64.1 | -63.3 | -62.3 | -61.0 | -59.5 | 26 N |
| 24 N | -63.2 | -65.0 | -66.8 | -68.3 | -69.5 | -70.5 | -71.2 | -71.6 | -71.6 | -71.4 | -70.9 | -70.0 | -68.9 | -67.5 | -65.9 | 24 N |
| 22 N | -67.6 | -69.7 | -71.7 | -73.4 | -74.9 | -76.0 | -76.9 | -77.4 | -77.5 | -77.3 | -76.8 | -75.9 | -74.7 | -73.3 | -71.5 | 22 N |
| 20 N | -71.3 | -73.7 | -75.9 | -77.8 | -79.5 | -80.8 | -81.7 | -82.3 | -82.6 | -82.4 | -81.9 | -81.0 | -79.7 | -78.1 | -76.2 | 20 N |
| 18 N | -74.5 | -77.0 | -79.4 | -81.5 | -83.2 | -84.7 | -85.7 | -86.4 | -86.7 | -86.5 | -86.0 | -85.0 | -83.7 | -82.0 | -79.9 | 18 N |
| 16 N | -76.9 | -79.6 | -82.1 | -84.3 | -86.2 | -87.7 | -88.8 | -89.5 | -89.8 | -89.7 | -89.1 | -88.1 | -86.7 | -84.8 | -82.6 | 16 N |
| 14 N | -78.7 | -81.5 | -84.0 | -86.3 | -88.3 | -89.8 | -91.0 | -91.7 | -92.0 | -91.9 | -91.3 | -90.2 | -88.6 | -86.7 | -84.2 | 14 N |
| 12 N | -79.8 | -82.6 | -85.2 | -87.5 | -89.5 | -91.1 | -92.3 | -93.0 | -93.3 | -93.1 | -92.4 | -91.2 | -89.6 | -87.5 | -84.9 | 12 N |
| 10 N | -80.3 | -83.1 | -85.7 | -88.0 | -89.9 | -91.5 | -92.7 | -93.4 | -93.6 | -93.3 | -92.6 | -91.3 | -89.5 | -87.3 | -84.5 | 10 N |
| 8 N | -80.2 | -83.0 | -85.5 | -87.8 | -89.7 | -91.2 | -92.2 | -92.9 | -93.0 | -92.7 | -91.8 | -90.5 | -88.6 | -86.1 | -83.2 | 8 N |
| 6 N | -79.7 | -82.3 | -84.8 | -86.9 | -88.7 | -90.1 | -91.1 | -91.6 | -91.7 | -91.2 | -90.3 | -88.8 | -86.7 | -84.2 | -81.1 | 6 N |
| 4 N | -78.7 | -81.2 | -83.5 | -85.5 | -87.1 | -88.4 | -89.3 | -89.7 | -89.6 | -89.1 | -88.0 | -86.3 | -84.2 | -81.5 | -78.2 | 4 N |
| 2 N | -77.4 | -79.7 | -81.8 | -83.6 | -85.1 | -86.2 | -87.0 | -87.2 | -87.0 | -86.3 | -85.1 | -83.3 | -81.0 | -78.1 | -74.8 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -75.8 | -77.9 | -79.8 | -81.4 | -82.7 | -83.7 | -84.2 | -84.3 | -83.9 | -83.1 | -81.7 | -79.8 | -77.3 | -74.3 | -70.8 | 0 |
| 2 S | -74.1 | -76.0 | -77.6 | -79.0 | -80.1 | -80.8 | -81.1 | -81.0 | -80.5 | -79.5 | -77.9 | -75.9 | -73.3 | -70.2 | -66.5 | 2 S |
| 4 S | -72.3 | -73.9 | -75.3 | -76.4 | -77.3 | -77.7 | -77.9 | -77.6 | -76.8 | -75.6 | -73.9 | -71.7 | -69.0 | -65.8 | -62.1 | 4 S |
| 6 S | -70.6 | -71.9 | -73.0 | -73.8 | -74.4 | -74.6 | -74.5 | -74.0 | -73.1 | -71.7 | -69.9 | -67.5 | -64.7 | -61.4 | -57.6 | 6 S |
| 8 S | -68.9 | -70.0 | -70.8 | -71.3 | -71.6 | -71.6 | -71.2 | -70.5 | -69.4 | -67.8 | -65.8 | -63.4 | -60.5 | -57.1 | -53.3 | 8 S |
| 10 S | -67.4 | -68.2 | -68.7 | -69.0 | -69.0 | -68.7 | -68.1 | -67.1 | -65.8 | -64.1 | -62.0 | -59.4 | -56.4 | -53.0 | -49.2 | 10 S |
| 12 S | -66.2 | -66.6 | -66.8 | -66.8 | -66.5 | -66.0 | -65.2 | -64.0 | -62.5 | -60.6 | -58.3 | -55.7 | -52.7 | -49.3 | -45.5 | 12 S |
| 14 S | -65.2 | -65.3 | -65.3 | -65.0 | -64.4 | -63.6 | -62.5 | -61.2 | -59.5 | -57.4 | -55.1 | -52.4 | -49.3 | -46.0 | -42.3 | 14 S |
| 16 S | -64.5 | -64.3 | -64.0 | -63.4 | -62.7 | -61.6 | -60.3 | -58.7 | -56.9 | -54.7 | -52.3 | -49.5 | -46.5 | -43.2 | -39.6 | 16 S |
| 18 S | -64.1 | -63.7 | -63.1 | -62.3 | -61.3 | -60.0 | -58.5 | -56.7 | -54.7 | -52.5 | -50.0 | -47.2 | -44.2 | -41.0 | -37.5 | 18 S |
| 20 S | -64.1 | -63.5 | -62.7 | -61.6 | -60.3 | -58.9 | -57.2 | -55.3 | -53.1 | -50.8 | -48.2 | -45.5 | -42.5 | -39.4 | -36.2 | 20 S |
| 22 S | -64.4 | -63.6 | -62.6 | -61.3 | -59.9 | -58.2 | -56.4 | -54.3 | -52.1 | -49.7 | -47.1 | -44.4 | -41.5 | -38.6 | -35.5 | 22 S |
| 24 S | -65.2 | -64.2 | -62.9 | -61.5 | -59.9 | -58.1 | -56.1 | -53.9 | -51.6 | -49.2 | -46.6 | -44.0 | -41.2 | -38.4 | -35.5 | 24 S |
| 26 S | -66.3 | -65.1 | -63.7 | -62.1 | -60.4 | -58.4 | -56.3 | -54.1 | -51.8 | -49.3 | -46.8 | -44.2 | -41.6 | -38.9 | -36.3 | 26 S |
| 28 S | -67.8 | -66.5 | -65.0 | -63.3 | -61.4 | -59.3 | -57.2 | -54.9 | -52.5 | -50.1 | -47.6 | -45.1 | -42.6 | -40.1 | -37.7 | 28 S |
| 30 S | -69.7 | -68.3 | -66.7 | -64.8 | -62.9 | -60.8 | -58.5 | -56.2 | -53.9 | -51.4 | -49.0 | -46.6 | -44.3 | -42.0 | -39.8 | 30 S |
| 32 S | -71.9 | -70.5 | -68.8 | -66.9 | -64.9 | -62.7 | -60.5 | -58.2 | -55.8 | -53.5 | -51.1 | -48.8 | -46.7 | -44.6 | -42.6 | 32 S |
| 34 S | -74.6 | -73.1 | -71.3 | -69.4 | -67.4 | -65.2 | -62.9 | -60.6 | -58.3 | -56.0 | -53.8 | -51.7 | -49.6 | -47.7 | -46.0 | 34 S |
| 36 S | -77.6 | -76.1 | -74.3 | -72.4 | -70.3 | -68.1 | -65.9 | -63.7 | -61.4 | -59.2 | -57.1 | -55.0 | -53.1 | -51.4 | -49.9 | 36 S |
| 38 S | -81.0 | -79.4 | -77.7 | -75.7 | -73.7 | -71.5 | -69.4 | -67.1 | -65.0 | -62.8 | -60.8 | -58.9 | -57.2 | -55.6 | -54.3 | 38 S |
| 40 S | -84.7 | -83.2 | -81.4 | -79.5 | -77.4 | -75.3 | -73.2 | -71.1 | -69.0 | -66.9 | -65.0 | -63.3 | -61.6 | -60.2 | -59.1 | 40 S |
| 42 S | -88.7 | -87.1 | -85.4 | -83.5 | -81.5 | -79.5 | -77.4 | -75.4 | -73.4 | -71.4 | -69.6 | -68.0 | -66.5 | -65.2 | -64.2 | 42 S |
| 44 S | -92.9 | -91.4 | -89.6 | -87.8 | -85.9 | -83.9 | -81.9 | -80.0 | -78.0 | -76.2 | -74.5 | -73.0 | -71.6 | -70.4 | -69.5 | 44 S |
| 46 S | -97.3 | -95.7 | -94.1 | -92.3 | -90.4 | -88.5 | -86.6 | -84.8 | -82.9 | -81.2 | -79.6 | -78.2 | -76.9 | -75.8 | -75.0 | 46 S |
| 48 S | -101.7 | -100.2 | -98.6 | -96.9 | -95.1 | -93.3 | -91.5 | -89.7 | -88.0 | -86.4 | -84.9 | -83.5 | -82.3 | -81.4 | -80.6 | 48 S |
| 50 S | -106.1 | -104.7 | -103.1 | -101.5 | -99.8 | -98.1 | -96.4 | -94.7 | -93.1 | -91.5 | -90.1 | -88.9 | -87.8 | -86.9 | -86.2 | 50 S |
| 52 S | -110.5 | -109.1 | -107.6 | -106.1 | -104.5 | -102.9 | -101.2 | -99.7 | -98.1 | -96.7 | -95.4 | -94.2 | -93.2 | -92.3 | -91.7 | 52 S |
| 54 S | -114.6 | -113.3 | -111.9 | -110.5 | -109.0 | -107.5 | -106.0 | -104.5 | -103.1 | -101.7 | -100.5 | -99.4 | -98.4 | -97.6 | -97.0 | 54 S |
| 56 S | -118.5 | -117.3 | -116.0 | -114.7 | -113.3 | -111.9 | -110.5 | -109.1 | -107.8 | -106.6 | -105.4 | -104.4 | -103.5 | -102.7 | -102.1 | 56 S |
| 58 S | -122.1 | -121.0 | -119.8 | -118.6 | -117.3 | -116.0 | -114.7 | -113.4 | -112.2 | -111.1 | -110.0 | -109.1 | -108.2 | -107.5 | -106.9 | 58 S |
| 60 S | -125.3 | -124.3 | -123.2 | -122.0 | -120.9 | -119.7 | -118.5 | -117.4 | -116.3 | -115.2 | -114.3 | -113.4 | -112.6 | -111.9 | -111.3 | 60 S |
| 62 S | -127.9 | -127.0 | -126.1 | -125.1 | -124.0 | -123.0 | -121.9 | -120.9 | -119.9 | -119.0 | -118.1 | -117.2 | -116.5 | -115.8 | -115.3 | 62 S |
| 64 S | -130.1 | -129.3 | -128.4 | -127.5 | -126.6 | -125.7 | -124.8 | -123.9 | -123.0 | -122.2 | -121.3 | -120.6 | -119.9 | -119.3 | -118.7 | 64 S |
| 66 S | -131.6 | -130.9 | -130.2 | -129.5 | -128.7 | -127.9 | -127.1 | -126.3 | -125.5 | -124.8 | -124.1 | -123.4 | -122.7 | -122.2 | -121.6 | 66 S |
| 68 S | -132.5 | -131.9 | -131.3 | -130.7 | -130.1 | -129.4 | -128.8 | -128.1 | -127.4 | -126.8 | -126.1 | -125.5 | -125.0 | -124.4 | -123.9 | 68 S |
| 70 S | -132.7 | -132.3 | -131.8 | -131.4 | -130.8 | -130.3 | -129.8 | -129.2 | -128.6 | -128.1 | -127.6 | -127.0 | -126.5 | -126.0 | -125.6 | 70 S |
| 72 S | -132.3 | -132.0 | -131.7 | -131.3 | -130.9 | -130.5 | -130.1 | -129.6 | -129.2 | -128.7 | -128.3 | -127.8 | -127.4 | -126.9 | -126.5 | 72 S |
| 74 S | -131.2 | -131.0 | -130.8 | -130.6 | -130.3 | -130.0 | -129.7 | -129.3 | -129.0 | -128.6 | -128.2 | -127.9 | -127.5 | -127.1 | -126.8 | 74 S |
| 76 S | -129.5 | -129.4 | -129.3 | -129.2 | -129.0 | -128.8 | -128.5 | -128.3 | -128.0 | -127.8 | -127.5 | -127.2 | -126.9 | -126.6 | -126.2 | 76 S |
| 78 S | -127.2 | -127.2 | -127.2 | -127.1 | -127.0 | -126.9 | -126.7 | -126.6 | -126.4 | -126.2 | -126.0 | -125.7 | -125.5 | -125.3 | -125.0 | 78 S |
| 80 S | -124.4 | -124.4 | -124.4 | -124.4 | -124.4 | -124.3 | -124.2 | -124.1 | -124.0 | -123.9 | -123.7 | -123.6 | -123.4 | -123.2 | -123.0 | 80 S |
| 82 S | -121.0 | -121.1 | -121.1 | -121.1 | -121.1 | -121.1 | -121.1 | -121.1 | -121.0 | -120.9 | -120.8 | -120.7 | -120.6 | -120.4 | -120.3 | 82 S |
| 84 S | -117.1 | -117.2 | -117.3 | -117.3 | -117.4 | -117.4 | -117.4 | -117.4 | -117.3 | -117.3 | -117.2 | -117.2 | -117.1 | -117.0 | -116.9 | 84 S |
| 86 S | -112.8 | -112.9 | -113.0 | -113.0 | -113.1 | -113.1 | -113.1 | -113.1 | -113.1 | -113.1 | -113.1 | -113.0 | -113.0 | -112.9 | -112.8 | 86 S |
| 88 S | -108.1 | -108.2 | -108.2 | -108.2 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.3 | -108.2 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -97.8 | -97.7 | -97.6 | -97.6 | -97.6 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | -97.5 | LAT. |
| E.LONG. | 286 | 288 | 290 | 292 | 294 | 296 | 298 | 300 | 302 | 304 | 306 | 308 | 310 | 312 | 314 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 310 | 312 | 314 | 316 | 318 | 320 | 322 | 324 | 326 | 328 | 330 | 332 | 334 | 336 | 338 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 37.1 | 37.0 | 36.9 | 36.9 | 36.8 | 36.7 | 36.6 | 36.5 | 36.4 | 36.3 | 36.2 | 36.2 | 36.1 | 36.0 | 35.9 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 37.3 | 37.3 | 37.4 | 37.5 | 37.6 | 37.6 | 37.7 | 37.8 | 37.9 | 37.9 | 38.0 | 38.1 | 38.1 | 38.2 | 38.3 | 88 N |
| 86 N | 37.3 | 37.5 | 37.6 | 37.8 | 37.9 | 38.0 | 38.1 | 38.3 | 38.4 | 38.5 | 38.6 | 38.8 | 38.9 | 39.0 | 39.1 | 86 N |
| 84 N | 37.5 | 37.7 | 37.9 | 38.0 | 38.2 | 38.4 | 38.5 | 38.7 | 38.9 | 39.0 | 39.2 | 39.3 | 39.5 | 39.6 | 39.8 | 84 N |
| 82 N | 37.8 | 38.0 | 38.2 | 38.4 | 38.6 | 38.8 | 38.9 | 39.1 | 39.3 | 39.5 | 39.6 | 39.8 | 40.0 | 40.1 | 40.3 | 82 N |
| 80 N | 38.2 | 38.4 | 38.6 | 38.8 | 39.0 | 39.2 | 39.4 | 39.6 | 39.7 | 39.9 | 40.1 | 40.2 | 40.4 | 40.5 | 40.7 | 80 N |
| 78 N | 38.7 | 38.9 | 39.2 | 39.4 | 39.6 | 39.7 | 39.9 | 40.1 | 40.2 | 40.3 | 40.5 | 40.6 | 40.7 | 40.9 | 41.0 | 78 N |
| 76 N | 39.4 | 39.6 | 39.8 | 40.0 | 40.2 | 40.3 | 40.5 | 40.6 | 40.7 | 40.8 | 40.9 | 41.0 | 41.1 | 41.1 | 41.2 | 76 N |
| 74 N | 40.1 | 40.4 | 40.5 | 40.7 | 40.9 | 41.0 | 41.1 | 41.1 | 41.2 | 41.2 | 41.3 | 41.3 | 41.3 | 41.4 | 41.4 | 74 N |
| 72 N | 40.9 | 41.1 | 41.3 | 41.5 | 41.6 | 41.6 | 41.7 | 41.7 | 41.7 | 41.7 | 41.7 | 41.6 | 41.6 | 41.5 | 41.5 | 72 N |
| 70 N | 41.7 | 41.9 | 42.1 | 42.2 | 42.2 | 42.2 | 42.2 | 42.2 | 42.1 | 42.1 | 42.0 | 41.8 | 41.7 | 41.6 | 41.5 | 70 N |
| 68 N | 42.4 | 42.5 | 42.7 | 42.8 | 42.8 | 42.8 | 42.7 | 42.6 | 42.5 | 42.3 | 42.1 | 41.9 | 41.8 | 41.6 | 41.4 | 68 N |
| 66 N | 42.8 | 43.0 | 43.1 | 43.1 | 43.1 | 43.1 | 43.0 | 42.8 | 42.6 | 42.4 | 42.1 | 41.9 | 41.6 | 41.3 | 41.1 | 66 N |
| 64 N | 42.9 | 43.1 | 43.2 | 43.2 | 43.2 | 43.1 | 42.9 | 42.7 | 42.5 | 42.2 | 41.9 | 41.6 | 41.2 | 40.9 | 40.6 | 64 N |
| 62 N | 42.6 | 42.8 | 42.9 | 42.9 | 42.9 | 42.7 | 42.6 | 42.3 | 42.0 | 41.7 | 41.3 | 41.0 | 40.6 | 40.2 | 39.8 | 62 N |
| 60 N | 41.8 | 42.0 | 42.1 | 42.2 | 42.1 | 41.9 | 41.7 | 41.4 | 41.1 | 40.8 | 40.4 | 40.0 | 39.6 | 39.2 | 38.8 | 60 N |
| 58 N | 40.4 | 40.7 | 40.8 | 40.8 | 40.7 | 40.6 | 40.3 | 40.1 | 39.7 | 39.3 | 38.9 | 38.5 | 38.1 | 37.7 | 37.3 | 58 N |
| 56 N | 38.4 | 38.6 | 38.7 | 38.8 | 38.7 | 38.6 | 38.4 | 38.1 | 37.7 | 37.4 | 37.0 | 36.6 | 36.2 | 35.8 | 35.5 | 56 N |
| 54 N | 35.5 | 35.8 | 36.0 | 36.0 | 36.0 | 35.9 | 35.7 | 35.5 | 35.2 | 34.8 | 34.5 | 34.1 | 33.7 | 33.4 | 33.1 | 54 N |
| 52 N | 31.9 | 32.2 | 32.5 | 32.6 | 32.6 | 32.5 | 32.4 | 32.2 | 31.9 | 31.6 | 31.3 | 31.0 | 30.8 | 30.5 | 30.3 | 52 N |
| 50 N | 27.5 | 27.9 | 28.1 | 28.3 | 28.4 | 28.4 | 28.3 | 28.2 | 28.0 | 27.8 | 27.6 | 27.4 | 27.2 | 27.1 | 27.1 | 50 N |
| 48 N | 22.3 | 22.7 | 23.1 | 23.3 | 23.5 | 23.5 | 23.5 | 23.5 | 23.4 | 23.3 | 23.3 | 23.2 | 23.2 | 23.2 | 23.3 | 48 N |
| 46 N | 16.3 | 16.8 | 17.2 | 17.6 | 17.8 | 18.0 | 18.1 | 18.2 | 18.2 | 18.3 | 18.4 | 18.5 | 18.6 | 18.9 | 19.2 | 46 N |
| 44 N | 9.7 | 10.2 | 10.7 | 11.1 | 11.5 | 11.8 | 12.0 | 12.3 | 12.5 | 12.7 | 13.0 | 13.3 | 13.7 | 14.1 | 14.7 | 44 N |
| 42 N | 2.4 | 3.0 | 3.6 | 4.1 | 4.6 | 5.0 | 5.4 | 5.8 | 6.2 | 6.7 | 7.1 | 7.7 | 8.3 | 9.0 | 9.9 | 42 N |
| 40 N | -5.4 | -4.7 | -4.0 | -3.4 | -2.8 | -2.2 | -1.6 | -1.0 | -0.4 | 0.3 | 1.0 | 1.8 | 2.7 | 3.7 | 4.8 | 40 N |
| 38 N | -13.6 | -12.8 | -12.0 | -11.3 | -10.5 | -9.7 | -9.0 | -8.2 | -7.3 | -6.4 | -5.4 | -4.3 | -3.1 | -1.8 | -0.3 | 38 N |
| 36 N | -22.0 | -21.1 | -20.3 | -19.4 | -18.4 | -17.5 | -16.5 | -15.5 | -14.4 | -13.2 | -11.9 | -10.5 | -9.0 | -7.3 | -5.5 | 36 N |
| 34 N | -30.5 | -29.6 | -28.6 | -27.5 | -26.4 | -25.3 | -24.1 | -22.8 | -21.4 | -19.9 | -18.3 | -16.6 | -14.7 | -12.7 | -10.5 | 34 N |
| 32 N | -38.9 | -37.9 | -36.8 | -35.6 | -34.3 | -33.0 | -31.5 | -29.9 | -28.3 | -26.5 | -24.6 | -22.5 | -20.3 | -17.9 | -15.3 | 32 N |
| 30 N | -47.1 | -46.0 | -44.8 | -43.5 | -42.0 | -40.4 | -38.7 | -36.8 | -34.9 | -32.7 | -30.5 | -28.0 | -25.5 | -22.7 | -19.8 | 30 N |
| 28 N | -55.0 | -53.8 | -52.4 | -50.9 | -49.2 | -47.4 | -45.4 | -43.3 | -41.0 | -38.5 | -35.9 | -33.1 | -30.2 | -27.0 | -23.8 | 28 N |
| 26 N | -62.3 | -61.0 | -59.5 | -57.8 | -55.9 | -53.8 | -51.6 | -49.2 | -46.5 | -43.7 | -40.8 | -37.6 | -34.3 | -30.8 | -27.2 | 26 N |
| 24 N | -68.9 | -67.5 | -65.9 | -64.0 | -61.9 | -59.6 | -57.1 | -54.3 | -51.4 | -48.2 | -44.9 | -41.4 | -37.7 | -33.9 | -29.9 | 24 N |
| 22 N | -74.7 | -73.3 | -71.5 | -69.4 | -67.1 | -64.5 | -61.7 | -58.6 | -55.4 | -51.9 | -48.2 | -44.3 | -40.3 | -36.1 | -31.9 | 22 N |
| 20 N | -79.7 | -78.1 | -76.2 | -73.9 | -71.4 | -68.5 | -65.4 | -62.1 | -58.5 | -54.6 | -50.6 | -46.4 | -42.0 | -37.6 | -33.0 | 20 N |
| 18 N | -83.7 | -82.0 | -79.9 | -77.4 | -74.7 | -71.6 | -68.2 | -64.5 | -60.6 | -56.4 | -52.1 | -47.5 | -42.9 | -38.1 | -33.4 | 18 N |
| 16 N | -86.7 | -84.8 | -82.6 | -80.0 | -77.0 | -73.6 | -69.9 | -66.0 | -61.7 | -57.2 | -52.6 | -47.7 | -42.8 | -37.8 | -32.8 | 16 N |
| 14 N | -88.6 | -86.7 | -84.2 | -81.4 | -78.2 | -74.6 | -70.6 | -66.4 | -61.8 | -57.0 | -52.1 | -47.0 | -41.8 | -36.6 | -31.5 | 14 N |
| 12 N | -89.6 | -87.5 | -84.9 | -81.9 | -78.4 | -74.6 | -70.4 | -65.8 | -61.0 | -55.9 | -50.7 | -45.3 | -40.0 | -34.6 | -29.4 | 12 N |
| 10 N | -89.5 | -87.3 | -84.5 | -81.3 | -77.6 | -73.6 | -69.1 | -64.3 | -59.2 | -53.9 | -48.4 | -42.9 | -37.3 | -31.9 | -26.6 | 10 N |
| 8 N | -88.6 | -86.1 | -83.2 | -79.8 | -76.0 | -71.7 | -67.0 | -61.9 | -56.6 | -51.1 | -45.4 | -39.7 | -34.1 | -28.5 | -23.2 | 8 N |
| 6 N | -86.7 | -84.2 | -81.1 | -77.5 | -73.5 | -68.9 | -64.0 | -58.8 | -53.3 | -47.6 | -41.8 | -36.0 | -30.3 | -24.7 | -19.5 | 6 N |
| 4 N | -84.2 | -81.5 | -78.2 | -74.5 | -70.2 | -65.6 | -60.5 | -55.1 | -49.4 | -43.6 | -37.7 | -31.8 | -26.1 | -20.6 | -15.4 | 4 N |
| 2 N | -81.0 | -78.1 | -74.8 | -70.9 | -66.5 | -61.6 | -56.4 | -50.9 | -45.1 | -39.2 | -33.3 | -27.4 | -21.8 | -16.4 | -11.4 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -77.3 | -74.3 | -70.8 | -66.8 | -62.3 | -57.3 | -52.0 | -46.4 | -40.6 | -34.7 | -28.8 | -23.0 | -17.4 | -12.2 | -7.4 | 0 |
| 2 S | -73.3 | -70.2 | -66.5 | -62.4 | -57.8 | -52.8 | -47.4 | -41.8 | -36.0 | -30.2 | -24.3 | -18.7 | -13.3 | -8.3 | -3.7 | 2 S |
| 4 S | -69.0 | -65.8 | -62.1 | -57.9 | -53.3 | -48.2 | -42.9 | -37.3 | -31.6 | -25.8 | -20.1 | -14.7 | -9.5 | -4.7 | -0.4 | 4 S |
| 6 S | -64.7 | -61.4 | -57.6 | -53.4 | -48.8 | -43.8 | -38.5 | -33.0 | -27.4 | -21.8 | -16.4 | -11.1 | -6.2 | -1.8 | 2.2 | 6 S |
| 8 S | -60.5 | -57.1 | -53.3 | -49.1 | -44.5 | -39.5 | -34.4 | -29.1 | -23.7 | -18.3 | -13.1 | -8.2 | -3.6 | 0.5 | 4.1 | 8 S |
| 10 S | -56.4 | -53.0 | -49.2 | -45.0 | -40.5 | -35.7 | -30.7 | -25.6 | -20.5 | -15.4 | -10.6 | -6.0 | -1.7 | 2.0 | 5.3 | 10 S |
| 12 S | -52.7 | -49.3 | -45.5 | -41.4 | -37.0 | -32.4 | -27.6 | -22.8 | -18.0 | -13.3 | -8.7 | -4.5 | -0.7 | 2.6 | 5.5 | 12 S |
| 14 S | -49.3 | -46.0 | -42.3 | -38.3 | -34.1 | -29.7 | -25.2 | -20.7 | -16.2 | -11.9 | -7.8 | -4.0 | -0.6 | 2.4 | 4.8 | 14 S |
| 16 S | -46.5 | -43.2 | -39.6 | -35.8 | -31.8 | -27.7 | -23.5 | -19.3 | -15.2 | -11.3 | -7.6 | -4.3 | -1.4 | 1.1 | 3.1 | 16 S |
| 18 S | -44.2 | -41.0 | -37.5 | -33.9 | -30.2 | -26.4 | -22.5 | -18.8 | -15.1 | -11.6 | -8.4 | -5.5 | -3.1 | -1.0 | 0.5 | 18 S |
| 20 S | -42.5 | -39.4 | -36.2 | -32.8 | -29.3 | -25.8 | -22.4 | -19.0 | -15.8 | -12.8 | -10.0 | -7.6 | -5.6 | -4.1 | -3.0 | 20 S |
| 22 S | -41.5 | -38.6 | -35.5 | -32.3 | -29.2 | -26.0 | -23.0 | -20.0 | -17.3 | -14.7 | -12.5 | -10.6 | -9.1 | -8.0 | -7.4 | 22 S |
| 24 S | -41.2 | -38.4 | -35.5 | -32.6 | -29.8 | -27.0 | -24.4 | -21.8 | -19.5 | -17.5 | -15.7 | -14.3 | -13.3 | -12.7 | -12.5 | 24 S |
| 26 S | -41.6 | -38.9 | -36.3 | -33.7 | -31.1 | -28.7 | -26.5 | -24.4 | -22.5 | -20.9 | -19.7 | -18.7 | -18.2 | -18.0 | -18.3 | 26 S |
| 28 S | -42.6 | -40.1 | -37.7 | -35.4 | -33.2 | -31.1 | -29.3 | -27.6 | -26.2 | -25.1 | -24.2 | -23.8 | -23.7 | -24.0 | -24.6 | 28 S |
| 30 S | -44.3 | -42.0 | -39.8 | -37.8 | -35.9 | -34.2 | -32.7 | -31.4 | -30.4 | -29.7 | -29.4 | -29.3 | -29.7 | -30.4 | -31.4 | 30 S |
| 32 S | -46.7 | -44.6 | -42.6 | -40.8 | -39.2 | -37.9 | -36.7 | -35.8 | -35.2 | -34.9 | -34.9 | -35.3 | -36.0 | -37.1 | -38.5 | 32 S |
| 34 S | -49.6 | -47.7 | -46.0 | -44.4 | -43.1 | -42.0 | -41.2 | -40.7 | -40.4 | -40.5 | -40.9 | -41.6 | -42.6 | -44.0 | -45.8 | 34 S |
| 36 S | -53.1 | -51.4 | -49.9 | -48.6 | -47.5 | -46.7 | -46.1 | -45.9 | -46.0 | -46.3 | -47.0 | -48.0 | -49.4 | -51.1 | -53.1 | 36 S |
| 38 S | -57.2 | -55.6 | -54.3 | -53.2 | -52.3 | -51.7 | -51.4 | -51.4 | -51.7 | -52.4 | -53.3 | -54.6 | -56.1 | -58.0 | -60.2 | 38 S |
| 40 S | -61.6 | -60.2 | -59.1 | -58.1 | -57.5 | -57.1 | -57.0 | -57.2 | -57.7 | -58.5 | -59.6 | -61.1 | -62.8 | -64.9 | -67.2 | 40 S |
| 42 S | -66.5 | -65.2 | -64.2 | -63.4 | -62.9 | -62.6 | -62.7 | -63.0 | -63.7 | -64.7 | -65.9 | -67.5 | -69.3 | -71.5 | -73.9 | 42 S |
| 44 S | -71.6 | -70.4 | -69.5 | -68.8 | -68.4 | -68.3 | -68.5 | -68.9 | -69.7 | -70.8 | -72.1 | -73.7 | -75.6 | -77.8 | -80.2 | 44 S |
| 46 S | -76.9 | -75.8 | -75.0 | -74.4 | -74.1 | -74.1 | -74.3 | -74.8 | -75.6 | -76.7 | -78.1 | -79.7 | -81.6 | -83.7 | -86.0 | 46 S |
| 48 S | -82.3 | -81.4 | -80.6 | -80.1 | -79.8 | -79.8 | -80.1 | -80.6 | -81.4 | -82.5 | -83.8 | -85.4 | -87.2 | -89.2 | -91.4 | 48 S |
| 50 S | -87.8 | -86.9 | -86.2 | -85.7 | -85.5 | -85.5 | -85.7 | -86.3 | -87.0 | -88.0 | -89.3 | -90.7 | -92.4 | -94.3 | -96.4 | 50 S |
| 52 S | -93.2 | -92.3 | -91.7 | -91.2 | -91.0 | -91.0 | -91.2 | -91.7 | -92.4 | -93.3 | -94.4 | -95.7 | -97.3 | -99.0 | -100.8 | 52 S |
| 54 S | -98.4 | -97.6 | -97.0 | -96.6 | -96.3 | -96.3 | -96.5 | -96.9 | -97.4 | -98.2 | -99.2 | -100.4 | -101.7 | -103.2 | -104.8 | 54 S |
| 56 S | -103.5 | -102.7 | -102.1 | -101.7 | -101.4 | -101.3 | -101.4 | -101.7 | -102.2 | -102.9 | -103.7 | -104.6 | -105.8 | -107.0 | -108.4 | 56 S |
| 58 S | -108.2 | -107.5 | -106.9 | -106.4 | -106.2 | -106.0 | -106.1 | -106.2 | -106.6 | -107.1 | -107.7 | -108.5 | -109.4 | -110.4 | -111.5 | 58 S |
| 60 S | -112.6 | -111.9 | -111.3 | -110.8 | -110.5 | -110.3 | -110.3 | -110.4 | -110.6 | -111.0 | -111.4 | -112.0 | -112.7 | -113.4 | -114.3 | 60 S |
| 62 S | -116.5 | -115.8 | -115.3 | -114.8 | -114.5 | -114.2 | -114.1 | -114.1 | -114.2 | -114.4 | -114.7 | -115.1 | -115.5 | -116.1 | -116.7 | 62 S |
| 64 S | -119.9 | -119.3 | -118.7 | -118.3 | -117.9 | -117.6 | -117.4 | -117.3 | -117.3 | -117.4 | -117.5 | -117.7 | -118.0 | -118.3 | -118.7 | 64 S |
| 66 S | -122.7 | -122.2 | -121.6 | -121.2 | -120.8 | -120.5 | -120.2 | -120.0 | -119.9 | -119.9 | -119.9 | -119.9 | -120.0 | -120.2 | -120.3 | 66 S |
| 68 S | -125.0 | -124.4 | -123.9 | -123.5 | -123.1 | -122.8 | -122.5 | -122.2 | -122.0 | -121.9 | -121.7 | -121.7 | -121.6 | -121.6 | -121.6 | 68 S |
| 70 S | -126.5 | -126.0 | -125.6 | -125.2 | -124.8 | -124.4 | -124.1 | -123.8 | -123.5 | -123.3 | -123.1 | -122.9 | -122.7 | -122.6 | -122.4 | 70 S |
| 72 S | -127.4 | -126.9 | -126.5 | -126.1 | -125.8 | -125.4 | -125.1 | -124.7 | -124.4 | -124.1 | -123.9 | -123.6 | -123.3 | -123.1 | -122.8 | 72 S |
| 74 S | -127.5 | -127.1 | -126.8 | -126.4 | -126.0 | -125.7 | -125.4 | -125.0 | -124.7 | -124.4 | -124.0 | -123.7 | -123.4 | -123.1 | -122.7 | 74 S |
| 76 S | -126.9 | -126.6 | -126.2 | -125.9 | -125.6 | -125.3 | -125.0 | -124.6 | -124.3 | -124.0 | -123.6 | -123.3 | -122.9 | -122.5 | -122.2 | 76 S |
| 78 S | -125.5 | -125.3 | -125.0 | -124.7 | -124.4 | -124.1 | -123.8 | -123.5 | -123.2 | -122.9 | -122.5 | -122.2 | -121.8 | -121.5 | -121.1 | 78 S |
| 80 S | -123.4 | -123.2 | -123.0 | -122.8 | -122.5 | -122.3 | -122.0 | -121.7 | -121.5 | -121.1 | -120.8 | -120.5 | -120.2 | -119.8 | -119.4 | 80 S |
| 82 S | -120.6 | -120.4 | -120.3 | -120.1 | -119.9 | -119.7 | -119.5 | -119.3 | -119.0 | -118.8 | -118.5 | -118.2 | -117.9 | -117.6 | -117.2 | 82 S |
| 84 S | -117.1 | -117.0 | -116.9 | -116.8 | -116.6 | -116.5 | -116.3 | -116.1 | -115.9 | -115.7 | -115.5 | -115.3 | -115.0 | -114.8 | -114.5 | 84 S |
| 86 S | -113.0 | -112.9 | -112.8 | -112.8 | -112.7 | -112.6 | -112.5 | -112.3 | -112.2 | -112.1 | -111.9 | -111.7 | -111.6 | -111.4 | -111.2 | 86 S |
| 88 S | -108.3 | -108.3 | -108.2 | -108.2 | -108.1 | -108.1 | -108.0 | -108.0 | -107.9 | -107.8 | -107.8 | -107.7 | -107.6 | -107.5 | -107.4 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -97.5 | -97.5 | -97.5 | -97.6 | -97.6 | -97.7 | -97.7 | -97.8 | -97.8 | -97.9 | -98.0 | -98.1 | -98.2 | -98.3 | -98.4 | LAT. |
| E.LONG. | 310 | 312 | 314 | 316 | 318 | 320 | 322 | 324 | 326 | 328 | 330 | 332 | 334 | 336 | 338 | E.LONG. |

TABLE 7 B IGRF TOTAL FIELD (T) GRID-POINT VALUES OF SECULAR CHANGE IN GAMMAS PER YEAR

| E.LONG. | 334 | 336 | 338 | 340 | 342 | 344 | 346 | 348 | 350 | 352 | 354 | 356 | 358 | 360 | 362 | E.LONG. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAT. | 36.1 | 36.0 | 35.9 | 35.8 | 35.8 | 35.7 | 35.6 | 35.5 | 35.5 | 35.4 | 35.3 | 35.3 | 35.2 | 35.2 | 35.1 | LAT. |
| 90 N | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 90 N |
| 88 N | 38.1 | 38.2 | 38.3 | 38.3 | 38.4 | 38.5 | 38.5 | 38.6 | 38.7 | 38.7 | 38.8 | 38.8 | 38.9 | 38.9 | 39.0 | 88 N |
| 86 N | 38.9 | 39.0 | 39.1 | 39.2 | 39.3 | 39.5 | 39.6 | 39.7 | 39.8 | 39.9 | 40.0 | 40.1 | 40.2 | 40.3 | 40.4 | 86 N |
| 84 N | 39.5 | 39.6 | 39.8 | 39.9 | 40.1 | 40.2 | 40.4 | 40.5 | 40.6 | 40.8 | 40.9 | 41.0 | 41.2 | 41.3 | 41.4 | 84 N |
| 82 N | 40.0 | 40.1 | 40.3 | 40.4 | 40.6 | 40.8 | 40.9 | 41.1 | 41.2 | 41.4 | 41.5 | 41.7 | 41.8 | 42.0 | 42.1 | 82 N |
| 80 N | 40.4 | 40.5 | 40.7 | 40.8 | 41.0 | 41.1 | 41.3 | 41.4 | 41.6 | 41.7 | 41.9 | 42.0 | 42.2 | 42.4 | 42.5 | 80 N |
| 78 N | 40.7 | 40.9 | 41.0 | 41.1 | 41.2 | 41.3 | 41.5 | 41.6 | 41.7 | 41.9 | 42.0 | 42.2 | 42.3 | 42.5 | 42.7 | 78 N |
| 76 N | 41.1 | 41.1 | 41.2 | 41.3 | 41.4 | 41.5 | 41.5 | 41.6 | 41.7 | 41.9 | 42.0 | 42.1 | 42.3 | 42.4 | 42.6 | 76 N |
| 74 N | 41.3 | 41.4 | 41.4 | 41.4 | 41.4 | 41.5 | 41.5 | 41.5 | 41.6 | 41.7 | 41.8 | 41.9 | 42.0 | 42.2 | 42.3 | 74 N |
| 72 N | 41.6 | 41.5 | 41.5 | 41.4 | 41.4 | 41.4 | 41.3 | 41.3 | 41.4 | 41.4 | 41.4 | 41.5 | 41.6 | 41.7 | 41.9 | 72 N |
| 70 N | 41.7 | 41.6 | 41.5 | 41.4 | 41.3 | 41.2 | 41.1 | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 | 41.1 | 41.2 | 41.3 | 70 N |
| 68 N | 41.8 | 41.6 | 41.4 | 41.2 | 41.0 | 40.8 | 40.7 | 40.6 | 40.5 | 40.5 | 40.4 | 40.4 | 40.5 | 40.6 | 40.7 | 68 N |
| 66 N | 41.6 | 41.3 | 41.1 | 40.8 | 40.6 | 40.4 | 40.2 | 40.0 | 39.9 | 39.8 | 39.8 | 39.8 | 39.8 | 39.8 | 39.9 | 66 N |
| 64 N | 41.2 | 40.9 | 40.6 | 40.3 | 40.0 | 39.8 | 39.5 | 39.3 | 39.2 | 39.1 | 39.0 | 39.0 | 39.0 | 39.1 | 39.1 | 64 N |
| 62 N | 40.6 | 40.2 | 39.8 | 39.5 | 39.2 | 38.9 | 38.7 | 38.5 | 38.3 | 38.2 | 38.1 | 38.1 | 38.1 | 38.2 | 38.3 | 62 N |
| 60 N | 39.6 | 39.2 | 38.8 | 38.4 | 38.1 | 37.8 | 37.6 | 37.4 | 37.2 | 37.1 | 37.1 | 37.1 | 37.2 | 37.3 | 37.4 | 60 N |
| 58 N | 38.1 | 37.7 | 37.3 | 37.0 | 36.7 | 36.4 | 36.2 | 36.0 | 35.9 | 35.9 | 35.9 | 36.0 | 36.1 | 36.3 | 36.5 | 58 N |
| 56 N | 36.2 | 35.8 | 35.5 | 35.1 | 34.9 | 34.7 | 34.5 | 34.4 | 34.4 | 34.5 | 34.6 | 34.7 | 34.9 | 35.2 | 35.5 | 56 N |
| 54 N | 33.7 | 33.4 | 33.1 | 32.9 | 32.7 | 32.6 | 32.5 | 32.6 | 32.7 | 32.8 | 33.0 | 33.3 | 33.7 | 34.0 | 34.4 | 54 N |
| 52 N | 30.8 | 30.5 | 30.3 | 30.2 | 30.1 | 30.2 | 30.2 | 30.4 | 30.7 | 31.0 | 31.3 | 31.8 | 32.3 | 32.8 | 33.3 | 52 N |
| 50 N | 27.2 | 27.1 | 27.1 | 27.1 | 27.2 | 27.4 | 27.6 | 28.0 | 28.4 | 28.9 | 29.5 | 30.1 | 30.8 | 31.4 | 32.2 | 50 N |
| 48 N | 23.2 | 23.2 | 23.3 | 23.5 | 23.8 | 24.2 | 24.7 | 25.2 | 25.9 | 26.6 | 27.4 | 28.3 | 29.1 | 30.0 | 30.9 | 48 N |
| 46 N | 18.6 | 18.9 | 19.2 | 19.6 | 20.1 | 20.7 | 21.5 | 22.3 | 23.2 | 24.2 | 25.2 | 26.3 | 27.4 | 28.5 | 29.7 | 46 N |
| 44 N | 13.7 | 14.1 | 14.7 | 15.3 | 16.1 | 17.0 | 18.0 | 19.1 | 20.3 | 21.6 | 22.9 | 24.3 | 25.6 | 27.0 | 28.3 | 44 N |
| 42 N | 8.3 | 9.0 | 9.9 | 10.8 | 11.9 | 13.1 | 14.4 | 15.8 | 17.3 | 18.9 | 20.5 | 22.2 | 23.8 | 25.4 | 27.0 | 42 N |
| 40 N | 2.7 | 3.7 | 4.8 | 6.1 | 7.5 | 9.0 | 10.6 | 12.4 | 14.2 | 16.1 | 18.1 | 20.0 | 21.9 | 23.8 | 25.6 | 40 N |
| 38 N | -3.1 | -1.8 | -0.3 | 1.3 | 3.0 | 4.9 | 6.9 | 9.0 | 11.1 | 13.4 | 15.6 | 17.9 | 20.1 | 22.2 | 24.3 | 38 N |
| 36 N | -9.0 | -7.3 | -5.5 | -3.5 | -1.4 | 0.8 | 3.2 | 5.6 | 8.1 | 10.7 | 13.2 | 15.8 | 18.3 | 20.6 | 22.9 | 36 N |
| 34 N | -14.7 | -12.7 | -10.5 | -8.2 | -5.7 | -3.1 | -0.4 | 2.4 | 5.2 | 8.1 | 10.9 | 13.8 | 16.5 | 19.1 | 21.6 | 34 N |
| 32 N | -20.3 | -17.9 | -15.3 | -12.6 | -9.8 | -6.9 | -3.8 | -0.7 | 2.5 | 5.7 | 8.8 | 11.9 | 14.8 | 17.7 | 20.3 | 32 N |
| 30 N | -25.5 | -22.7 | -19.8 | -16.7 | -13.5 | -10.2 | -6.8 | -3.4 | 0.0 | 3.5 | 6.9 | 10.2 | 13.3 | 16.3 | 19.1 | 30 N |
| 28 N | -30.2 | -27.0 | -23.8 | -20.4 | -16.8 | -13.2 | -9.5 | -5.8 | -2.1 | 1.6 | 5.2 | 8.6 | 11.9 | 15.1 | 18.0 | 28 N |
| 26 N | -34.3 | -30.8 | -27.2 | -23.4 | -19.6 | -15.6 | -11.7 | -7.7 | -3.8 | 0.0 | 3.8 | 7.4 | 10.8 | 13.9 | 16.9 | 26 N |
| 24 N | -37.7 | -33.9 | -29.9 | -25.8 | -21.7 | -17.5 | -13.3 | -9.2 | -5.1 | -1.2 | 2.7 | 6.3 | 9.8 | 13.0 | 15.9 | 24 N |
| 22 N | -40.3 | -36.1 | -31.9 | -27.5 | -23.1 | -18.8 | -14.4 | -10.1 | -6.0 | -1.9 | 1.9 | 5.6 | 9.0 | 12.2 | 15.1 | 22 N |
| 20 N | -42.0 | -37.6 | -33.0 | -28.5 | -23.9 | -19.3 | -14.9 | -10.5 | -6.3 | -2.3 | 1.6 | 5.2 | 8.5 | 11.6 | 14.4 | 20 N |
| 18 N | -42.9 | -38.1 | -33.4 | -28.6 | -23.8 | -19.2 | -14.7 | -10.3 | -6.1 | -2.2 | 1.6 | 5.0 | 8.3 | 11.2 | 13.8 | 18 N |
| 16 N | -42.8 | -37.8 | -32.8 | -27.9 | -23.1 | -18.4 | -13.8 | -9.5 | -5.5 | -1.6 | 1.9 | 5.2 | 8.3 | 11.0 | 13.4 | 16 N |
| 14 N | -41.8 | -36.6 | -31.5 | -26.4 | -21.6 | -16.9 | -12.4 | -8.2 | -4.3 | -0.7 | 2.7 | 5.7 | 8.5 | 11.0 | 13.2 | 14 N |
| 12 N | -40.0 | -34.6 | -29.4 | -24.3 | -19.4 | -14.8 | -10.4 | -6.4 | -2.7 | 0.7 | 3.8 | 6.5 | 9.0 | 11.2 | 13.1 | 12 N |
| 10 N | -37.3 | -31.9 | -26.6 | -21.5 | -16.7 | -12.2 | -8.0 | -4.2 | -0.8 | 2.3 | 5.1 | 7.5 | 9.7 | 11.5 | 13.1 | 10 N |
| 8 N | -34.1 | -28.5 | -23.2 | -18.2 | -13.5 | -9.2 | -5.2 | -1.7 | 1.5 | 4.2 | 6.6 | 8.7 | 10.5 | 12.0 | 13.2 | 8 N |
| 6 N | -30.3 | -24.7 | -19.5 | -14.5 | -10.0 | -5.9 | -2.2 | 1.0 | 3.8 | 6.2 | 8.3 | 10.0 | 11.4 | 12.5 | 13.4 | 6 N |
| 4 N | -26.1 | -20.6 | -15.4 | -10.7 | -6.3 | -2.5 | 0.9 | 3.8 | 6.3 | 8.3 | 9.9 | 11.2 | 12.2 | 13.0 | 13.5 | 4 N |
| 2 N | -21.8 | -16.4 | -11.4 | -6.8 | -2.9 | 0.9 | 3.9 | 6.5 | 8.6 | 10.2 | 11.4 | 12.3 | 12.9 | 13.3 | 13.4 | 2 N |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -17.4 | -12.2 | -7.4 | -3.0 | 0.8 | 4.0 | 6.7 | 8.9 | 10.6 | 11.9 | 12.7 | 13.2 | 13.4 | 13.4 | 13.2 | 0 |
| 2 S | -13.3 | -8.3 | -3.7 | 0.4 | 3.9 | 6.8 | 9.2 | 11.0 | 12.3 | 13.1 | 13.6 | 13.7 | 13.5 | 13.1 | 12.5 | 2 S |
| 4 S | -9.5 | -4.7 | -0.4 | 3.3 | 6.5 | 9.1 | 11.1 | 12.5 | 13.4 | 13.9 | 14.0 | 13.7 | 13.1 | 12.3 | 11.4 | 4 S |
| 6 S | -6.2 | -1.8 | 2.2 | 5.6 | 8.4 | 10.7 | 12.3 | 13.4 | 13.9 | 14.0 | 13.7 | 13.0 | 12.1 | 11.0 | 9.7 | 6 S |
| 8 S | -3.6 | 0.5 | 4.1 | 7.2 | 9.6 | 11.5 | 12.8 | 13.5 | 13.7 | 13.4 | 12.7 | 11.7 | 10.4 | 8.9 | 7.3 | 8 S |
| 10 S | -1.7 | 2.0 | 5.3 | 7.9 | 10.0 | 11.5 | 12.4 | 12.7 | 12.5 | 11.9 | 10.9 | 9.5 | 7.9 | 6.1 | 4.1 | 10 S |
| 12 S | -0.7 | 2.6 | 5.5 | 7.8 | 9.4 | 10.5 | 11.1 | 11.1 | 10.5 | 9.6 | 8.2 | 6.5 | 4.6 | 2.4 | 0.1 | 12 S |
| 14 S | -0.6 | 2.4 | 4.8 | 6.6 | 7.9 | 8.6 | 8.8 | 8.4 | 7.6 | 6.3 | 4.6 | 2.6 | 0.3 | -2.1 | -4.7 | 14 S |
| 16 S | -1.4 | 1.1 | 3.1 | 4.6 | 5.4 | 5.8 | 5.6 | 4.8 | 3.7 | 2.0 | 0.0 | -2.3 | -4.8 | -7.6 | -10.5 | 16 S |
| 18 S | -3.1 | -1.0 | 0.5 | 1.5 | 2.0 | 2.0 | 1.4 | 0.3 | -1.2 | -3.1 | -5.4 | -8.0 | -10.8 | -13.9 | -17.0 | 18 S |
| 20 S | -5.6 | -4.1 | -3.0 | -2.4 | -2.3 | -2.8 | -3.7 | -5.1 | -7.0 | -9.2 | -11.8 | -14.6 | -17.7 | -20.9 | -24.3 | 20 S |
| 22 S | -9.1 | -8.0 | -7.4 | -7.2 | -7.5 | -8.4 | -9.7 | -11.4 | -13.5 | -16.0 | -18.9 | -22.0 | -25.3 | -28.7 | -32.3 | 22 S |
| 24 S | -13.3 | -12.7 | -12.5 | -12.8 | -13.5 | -14.7 | -16.3 | -18.4 | -20.8 | -23.6 | -26.7 | -30.0 | -33.5 | -37.1 | -40.8 | 24 S |
| 26 S | -18.2 | -18.0 | -18.3 | -19.0 | -20.1 | -21.7 | -23.6 | -26.0 | -28.7 | -31.7 | -35.0 | -38.5 | -42.1 | -45.9 | -49.7 | 26 S |
| 28 S | -23.7 | -24.0 | -24.6 | -25.7 | -27.2 | -29.1 | -31.4 | -34.0 | -37.0 | -40.2 | -43.7 | -47.3 | -51.1 | -54.9 | -58.8 | 28 S |
| 30 S | -29.7 | -30.4 | -31.4 | -32.9 | -34.7 | -36.9 | -39.5 | -42.4 | -45.5 | -48.9 | -52.5 | -56.3 | -60.1 | -64.0 | -67.9 | 30 S |
| 32 S | -36.0 | -37.1 | -38.5 | -40.3 | -42.5 | -44.9 | -47.7 | -50.8 | -54.1 | -57.7 | -61.4 | -65.2 | -69.1 | -73.0 | -76.8 | 32 S |
| 34 S | -42.6 | -44.0 | -45.8 | -47.8 | -50.2 | -52.9 | -55.9 | -59.2 | -62.6 | -66.3 | -70.0 | -73.9 | -77.7 | -81.6 | -85.3 | 34 S |
| 36 S | -49.4 | -51.1 | -53.1 | -55.4 | -58.0 | -60.8 | -64.0 | -67.3 | -70.8 | -74.5 | -78.3 | -82.1 | -85.9 | -89.6 | -93.3 | 36 S |
| 38 S | -56.1 | -58.0 | -60.2 | -62.7 | -65.5 | -68.5 | -71.7 | -75.1 | -78.6 | -82.3 | -86.0 | -89.7 | -93.4 | -97.0 | -100.4 | 38 S |
| 40 S | -62.8 | -64.9 | -67.2 | -69.8 | -72.6 | -75.7 | -78.9 | -82.3 | -85.8 | -89.4 | -93.0 | -96.6 | -100.1 | -103.5 | -106.7 | 40 S |
| 42 S | -69.3 | -71.5 | -73.9 | -76.5 | -79.4 | -82.4 | -85.6 | -88.9 | -92.3 | -95.8 | -99.2 | -102.6 | -105.9 | -109.0 | -112.0 | 42 S |
| 44 S | -75.6 | -77.8 | -80.2 | -82.8 | -85.6 | -88.5 | -91.6 | -94.8 | -98.1 | -101.3 | -104.6 | -107.7 | -110.8 | -113.6 | -116.2 | 44 S |
| 46 S | -81.6 | -83.7 | -86.0 | -88.5 | -91.2 | -94.1 | -97.0 | -100.0 | -103.1 | -106.1 | -109.1 | -112.0 | -114.7 | -117.2 | -119.5 | 46 S |
| 48 S | -87.2 | -89.2 | -91.4 | -93.8 | -96.3 | -99.0 | -101.7 | -104.5 | -107.3 | -110.0 | -112.7 | -115.3 | -117.7 | -119.9 | -121.8 | 48 S |
| 50 S | -92.4 | -94.3 | -96.4 | -98.5 | -100.9 | -103.3 | -105.8 | -108.3 | -110.8 | -113.2 | -115.6 | -117.8 | -119.8 | -121.7 | -123.2 | 50 S |
| 52 S | -97.3 | -99.0 | -100.8 | -102.8 | -104.9 | -107.0 | -109.2 | -111.4 | -113.6 | -115.7 | -117.7 | -119.6 | -121.3 | -122.8 | -124.0 | 52 S |
| 54 S | -101.7 | -103.2 | -104.8 | -106.5 | -108.3 | -110.2 | -112.1 | -113.9 | -115.8 | -117.6 | -119.2 | -120.8 | -122.1 | -123.2 | -124.1 | 54 S |
| 56 S | -105.8 | -107.0 | -108.4 | -109.8 | -111.3 | -112.9 | -114.4 | -116.0 | -117.5 | -118.9 | -120.3 | -121.4 | -122.5 | -123.3 | -123.8 | 56 S |
| 58 S | -109.4 | -110.4 | -111.5 | -112.7 | -113.9 | -115.2 | -116.4 | -117.6 | -118.8 | -119.9 | -120.9 | -121.8 | -122.4 | -123.0 | -123.2 | 58 S |
| 60 S | -112.7 | -113.4 | -114.3 | -115.2 | -116.1 | -117.1 | -118.0 | -118.9 | -119.8 | -120.5 | -121.2 | -121.8 | -122.2 | -122.4 | -122.5 | 60 S |
| 62 S | -115.5 | -116.1 | -116.7 | -117.3 | -118.0 | -118.6 | -119.3 | -119.9 | -120.5 | -120.9 | -121.3 | -121.6 | -121.8 | -121.8 | -121.6 | 62 S |
| 64 S | -118.0 | -118.3 | -118.7 | -119.1 | -119.5 | -119.9 | -120.3 | -120.6 | -120.9 | -121.2 | -121.3 | -121.4 | -121.3 | -121.1 | -120.8 | 64 S |
| 66 S | -120.0 | -120.2 | -120.3 | -120.5 | -120.7 | -120.8 | -121.0 | -121.1 | -121.2 | -121.2 | -121.2 | -121.0 | -120.8 | -120.4 | -119.9 | 66 S |
| 68 S | -121.6 | -121.6 | -121.6 | -121.6 | -121.6 | -121.5 | -121.5 | -121.4 | -121.3 | -121.1 | -120.9 | -120.6 | -120.2 | -119.7 | -119.1 | 68 S |
| 70 S | -122.7 | -122.6 | -122.4 | -122.2 | -122.1 | -121.9 | -121.7 | -121.5 | -121.2 | -120.9 | -120.5 | -120.1 | -119.6 | -119.0 | -118.4 | 70 S |
| 72 S | -123.3 | -123.1 | -122.8 | -122.5 | -122.3 | -122.0 | -121.6 | -121.3 | -120.9 | -120.5 | -120.0 | -119.5 | -118.9 | -118.3 | -117.6 | 72 S |
| 74 S | -123.4 | -123.1 | -122.7 | -122.4 | -122.0 | -121.7 | -121.3 | -120.8 | -120.4 | -119.9 | -119.4 | -118.8 | -118.2 | -117.5 | -116.8 | 74 S |
| 76 S | -122.9 | -122.5 | -122.2 | -121.8 | -121.4 | -121.0 | -120.5 | -120.0 | -119.5 | -119.0 | -118.5 | -117.9 | -117.3 | -116.6 | -115.9 | 76 S |
| 78 S | -121.8 | -121.5 | -121.1 | -120.7 | -120.3 | -119.8 | -119.4 | -118.9 | -118.4 | -117.9 | -117.3 | -116.8 | -116.2 | -115.5 | -114.9 | 78 S |
| 80 S | -120.2 | -119.8 | -119.4 | -119.1 | -118.7 | -118.2 | -117.8 | -117.3 | -116.9 | -116.4 | -115.9 | -115.3 | -114.8 | -114.2 | -113.6 | 80 S |
| 82 S | -117.9 | -117.6 | -117.2 | -116.9 | -116.5 | -116.2 | -115.8 | -115.4 | -115.0 | -114.5 | -114.1 | -113.6 | -113.1 | -112.6 | -112.1 | 82 S |
| 84 S | -115.0 | -114.8 | -114.5 | -114.2 | -113.9 | -113.6 | -113.3 | -113.0 | -112.6 | -112.3 | -111.9 | -111.5 | -111.1 | -110.7 | -110.3 | 84 S |
| 86 S | -111.6 | -111.4 | -111.2 | -111.0 | -110.8 | -110.6 | -110.3 | -110.1 | -109.9 | -109.6 | -109.3 | -109.1 | -108.8 | -108.5 | -108.2 | 86 S |
| 88 S | -107.6 | -107.5 | -107.4 | -107.3 | -107.2 | -107.0 | -106.9 | -106.8 | -106.7 | -106.5 | -106.4 | -106.3 | -106.1 | -106.0 | -105.8 | 88 S |
| 90 S | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | -103.1 | 90 S |
| LAT. | -98.2 | -98.3 | -98.4 | -98.5 | -98.6 | -98.8 | -98.9 | -99.0 | -99.2 | -99.3 | -99.5 | -99.6 | -99.8 | -99.9 | -100.1 | LAT. |
| E.LONG. | 334 | 336 | 338 | 340 | 342 | 344 | 346 | 348 | 350 | 352 | 354 | 356 | 358 | 360 | 362 | E.LONG. |