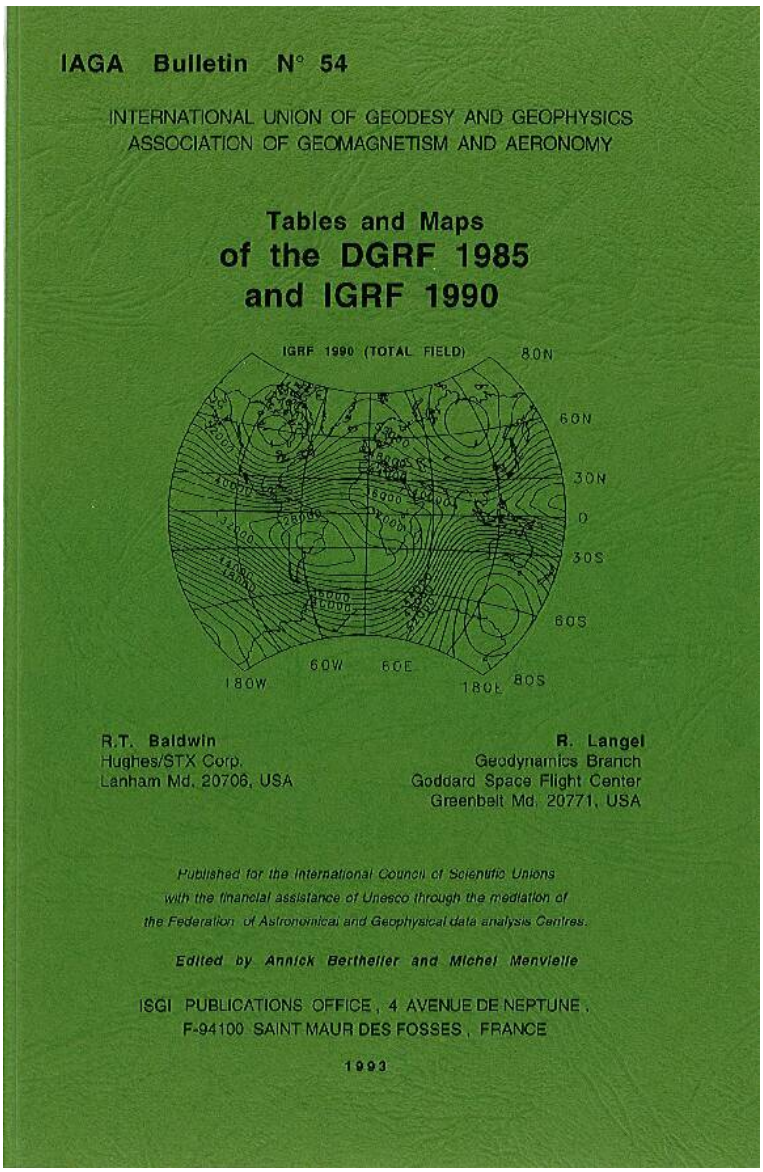

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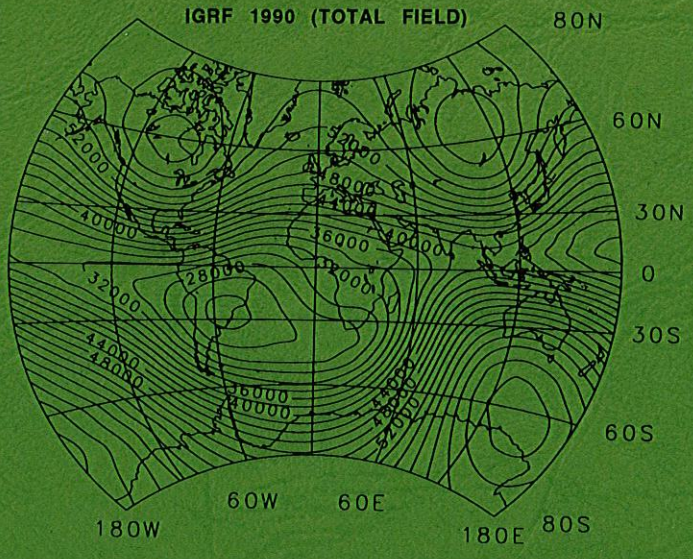
IAGA Bulletin N° 54

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
ASSOCIATION OF GEOMAGNETISM AND AERONOMY

Tables and Maps of the DGRF 1985 and IGRF 1990



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Edited by Annick Berthelier and Michel Menvielle

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FOREWORD

At request of IAGA General Secretary, Michael Gadsden, ISGI Publication Office has taken in charge the edition of the present IAGA Bulletin n° 54 containing DGRF 1985 and IGRF 1990 Tables and Plots which have been prepared by R.T. Baldwin and R.A. Langel.

This is the continuation of the former publications of IGRF 1985 (IAGA Bulletin n°52, Barraclough and Kerridge, 1986) and IGRF 1980 (IAGA Bulletin n° 47, Fabiano et al, 1983).

Following the rule we have now adopted for the IAGA Bulletin n° 32 series (IAGA geomagnetic indices and rapid variations), we have associated a diskette (PC compatible) to this Bulletin, in order to allow easy access for computer use of the data. Acknowledgements are due to the authors for having provided data sets of the spherical harmonic coefficients for all 10 models since 1945, and of a fortran program to test the models.

Also we wish to express our thanks to Caroline Huc for her help in editing procedures. The costs of printing and distribution are borne by IAGA with some recovery of the costs through sales. As always, the gratitude of the international community is due to the authors of this, and previous editions of the IGRF, for their unstinting voluntary efforts to provide a service to the community.

Annick Berthelier, Michel Menvielle

Saint Maur, April 1993

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EXPLANATION

In August 1991 at the 6th General Assembly of the IAGA held in Vienna, Austria, Working Group 8 (Analysis of the main field and secular variations) of Division V of IAGA made its 5th revision of the International Geomagnetic Reference Field (IGRF). This revision consists of a definitive model at 1985 (DGRF 1985) of degree and order 10 with no secular variation, and a "predictive" or intermediate model at 1990 with main field terms of degree and order 10 and secular variation terms of degree and order 8. These models were derived from a suite of candidate models (Table 1) which were evaluated, discussed and finally weighted to form the models herein (Langel, 1992; Langel et al., 1992; Barraclough et al., 1992; Quinn et al., 1992; Bondar and Golovkov, 1992; Peddie, 1992; and Langel and Baldwin, 1992). The Working Group recommended that the IGRF 1985 be replaced by the DGRF 1985 and that the IGRF be extended to 1995 by adopting an IGRF 1990 model with secular variation for adjusting the main field model between 1990 and 1995. The IGRF series of models now consists of 9 definitive models from 1945 - 1985 spaced at 5 year intervals. These models are definitive in that no further revisions, necessitated by additional data, are anticipated. For times between IGRF model epochs, the spherical harmonic coefficients should be linearly interpolated. The provisional model PGRF 1980 is superseded by the DGRF 1985, and a new PGRF 1985 represents the linear time variation from DGRF 1985 to IGRF 1990. Adoption of the DGRF 1990 and IGRF 1995 are planned for the 21st General Assembly of the IUGG to be held in 1995.

It is well known that the Earth's magnetic field, assuming it to be curl free, can be represented by a potential in the form of a spherical harmonic series :

$$(1) \qquad V = a \sum_{n=1}^{N} \sum_{m=0}^{n} (a/r)^{n+1} \left[g_n^m \cos m\phi + h_n^m \sin m\phi \right] P_n^m(\cos\theta)$$

where a is the Earth's mean radius equivalent to 6371.2 km, r is the radial distance from the Earth's center, ϕ is east longitude measured from 0 degrees (Greenwich), θ is geocentric colatitude, and $P_n^m(\cos\theta)$ are the associated Legendre functions of degree n and order m with Schmidt quasi-normalization (Langel, 1987; Chapman and Bartels, 1940). In principle, N should be infinity, representing all spherical harmonics of the field, however Working Group 8 has been of the opinion that in practice the available data for most epochs do not justify N greater than 10. Equation (1), then, represents the potential of a field originating from the Earth's core truncated to a resolvable level. The magnetic field can be represented as the gradient of a scalar potential from the equation :

$$(2) \qquad B = -\nabla V$$

Equation (1) gives the geomagnetic potential in geocentric spherical coordinates. In these coordinates B in equation (2) is represented by

$$B_\theta = - (1/r)\, \partial V / \partial \theta$$

$$B_\phi = - (1/r \sin\theta)\, \partial V / \partial \phi$$

$$B_r = - \partial V / \partial r$$

On the surface of the Earth, observations are often taken with respect to latitude (α), and longitude which are in geodetic, as opposed to geocentric, coordinates. Geodetic and geocentric longitude are identical; the corresponding latitudes are not. The Earth is better approximated by an ellipsoid of revolution than by a sphere. Suppose the ellipsoid has equatorial radius A and polar radius B, B<A. The eccentricity e of the ellipsoid is defined by

$$e^2 = \left(A^2 - B^2\right) / A^2 \tag{3}$$

and the flattening, f, by

$$f = (A - B) / A \tag{4}$$

Geodetic coordinates are usually specified by latitude, i.e. α (or colatitude, $u = 90° - \alpha$) and altitude above the geoid, h. These are transformed to the geocentric system by

$$\cot\theta = \frac{h\left(A^2\cos^2\alpha + B^2\sin^2\alpha\right)^{1/2} + B^2}{h\left(A^2\cos^2\alpha + B^2\sin^2\alpha\right)^{1/2} + A^2} \tan\alpha, \tag{5}$$

which reduces to

$$\cot\theta = \left(B^2 / A^2\right) \tan\alpha \tag{6}$$

at the surface of the ellipsoid where h = 0, and by

$$r^2 = h^2 + 2h(A^2\cos^2\alpha + B^2\sin^2\alpha)^{1/2} + \frac{A^4 - (A^4 - B^4)\sin^2\alpha}{A^2 - (A^2 - B^2)\sin^2\alpha} \tag{7}$$

which can be approximated by

$$r^2 = r_0^2 / \left(1 + e^2\cos^2 u\right) \tag{8}$$

where r_0 is the equatorial radius of the ellipsoid, equal to A at the surface of the Earth.

At and near the Earth's surface, measurements are typically made in the geodetic coordinate system. In particular the usual X, Y, and Z components are defined in the geodetic system where X is horizontal to the ellipsoid in the meridian towards the north, Y is horizontal towards the east, perpendicular to the meridian, and Z is downwards

perpendicular to the surface of the ellipsoid. If

$$\psi = \theta - u \tag{9}$$

the angle between geodetic and geocentric latitude or colatitude, then

$$\begin{aligned} X &= -B_\theta \cos\psi - B_r \sin\psi \\ Y &= B_\phi \\ Z &= B_\theta \sin\psi - B_r \cos\psi \end{aligned} \tag{10}$$

The angle ψ can be computed from

$$\sin\psi = \sin\alpha \sin\theta - \cos\alpha \cos\theta \tag{11}$$

When converting between geodetic and geocentric coordinates, use of the IAU ellipsoid (International Astronomical Union, 1966) is recommended; it has an equatorial radius of 6378.160 km and a flattening of 1/298.25.

The remaining geomagnetic elements H (horizontal intensity), F or B or T (total intensity), D (declination), and I (inclination) are defined as:

$$\begin{aligned} H &= (X^2 + Y^2)^{1/2} \\ F = B &= (H^2 + Z^2)^{1/2} \\ D &= \tan^{-1}(Y/X) \\ I &= \tan^{-1}(Z/H) \end{aligned} \tag{12}$$

When computing the field elements at some time other than the epoch of one of the IGRF models, the correct procedure is to first interpolate in time on the spherical harmonic coefficients and then compute the desired elements. Correct answers may also be obtained by interpolating on those elements (X, Y, and Z) which are linear in the coefficients. It is not proper to interpolate in time on the non-linear elements D, I, H or F.

Due to limited computer resources, it is often required that magnetic field work be done by using gridded tables. Such tables containing field values of D, I, H, X, Y, Z, and F for the DGRF 1985 and the IGRF 1990 are provided in the Appendix. The annual rate of change for D, I, H, X, Y, Z, and F are also included for the PGRF 1985 (1985-1990) and IGRF 1990 (1990-1995). The values within the tables are given in geodetic coordinates (latitude and longitude) with the field value (upper entry) and annual rate of change (lower entry) in 5° intervals. The field values for D and I are given to the nearest tenth of a degree, while all other values are given to the nearest nanotesla. The annual rate of change values for D and I are given to the nearest tenth of an arc minute per year, and all other elements are given to the nearest nanotesla per year. Following each component table is a contour map of field values and annual rates of change represented in a Van der Grinten projection from 80°N and 80°S. The zero and positive contours are shown as solid lines; negative contours are represented by dashed lines. The field value contour interval is 10° for D and I, 2000 nT for H, X, Y, and F, and 4000 nT for Z. The annual rate

of change contour interval is 2 minute/year for D and I and is 20 nT/year for H, X, Y, Z, and F.

Use of these tables for interpolation to common temporal and spatial observations, may be accomplished as follows:

temporally,

$$f(t) = f(t_e) + \left[\partial f(t_e)/\partial t\right] (t - t_e)$$

where f(t) is the field value at a desired time t, $f(t_e)$ is the field value at the epoch, and $\partial f(t_e)/\partial t$ is the annual rate of change. This will allow for field values to be adjusted to any time over the interval of interest.

It is recommended that all grid values be temporally interpolated before spatial interpolation; otherwise interpolation of both field values and annual rates of change would be required.

Spatially, linear interpolation between grid values nearest the desired location may be satisfactory for most instances where a fraction of the distance between the observation (x_p) and the grid point (x_0) and the grid interval (h=5°) is computed for latitude and longitude seperately (ie. $p = |(x_0 - x_p)/h|$ so that $0 \le p \le 1$) giving:

$$f_p = f_0 + p\,(f_1 - f_0)$$

Higher accuracy can be achieved through various second difference interpolation schemes. Newton's forward formula is given here as an example.

$$f_p = f_0 + \tfrac{1}{2}\, p\,(f_1 - f_{-1}) + \tfrac{1}{2}\, p^2\,(f_1 - 2f_0 + f_{-1})$$

where f_p is the interpolated field values at the desired postion, f_0 is the field value at the grid point nearest the desired position, f_1 and f_{-1} are field values at the adjoining grid positions of f_0. An estimate of the field at the position of interest may be then obtained by interpolating along equal longitudes and then the appropriate latitudes.

Error estimates for the coefficients can be derived from the covariance matrix of the least squares solution for those coefficients. Of the four candidate main field models contributing to the DGRF or IGRF at each epoch, only models from NASA were submitted with coefficient error estimates. These estimates, given in tabular form in Langel et al. (1992) and plotted along with the scatter in the coefficients of the candidate models in Langel and Baldwin (1992), may be taken as a lower bound for the error of the combined model. In general, the scatter in the coefficients of the candidate models is less than the corresponding error estimate (Langel and Baldwin, 1992).

From the solution covariance matrix, an error estimate can be made for the computed field at any location by using equation (173) from Langel (1987). Such errors were calculated on a 5° grid spacing for the NASA model at 1990, from which the maximum and minimum

values of Table 2 were computed. The maximum error listed in Table 2 for declination is misleading. In the polar regions, where the field is mainly vertical, the declination may vary considerably in a short distance and accuracy in representation is difficult to achieve. Away from these regions, the maximum error in D is on the order of 0.12°.

In the ideal situation a field model of a particular degree and order represents only, and all of, that field believed to originate in the core of the Earth. In practice this is not true. At the Earth's surface, for the degree and order 10 IGRF not all of the field from the core is represented by the model. The magnitude of the omitted field, at the Earth's surface, is estimated to have an rms of about 20-30 nT (Langel and Estes, 1982).

Another measure of the accuracy of the new IGRF models, in their representation of the first 10 degrees of the field, is the statistics of the differences between the candidate models. One might expect that the accuracy of the final model, which is a combination of the candidate models, would be of the same order of magnitude as these differences. Tables 3 and 4, reproduced from Langel and Baldwin (1992), summarize the rms differences between the candidate models at the Earth's surface. Langel and Baldwin (1992) also plot the model differences at the Earth's surface. For 1985, the maximum plotted difference is about 200 nT, and differences of 60-80 nT are not uncommon, but generally the differences are less than 50 nT. For 1990, the maximum plotted difference is about 300 nT, and differences of 100-200 nT are not uncommon, but generally the differences are less than 70-80 nT.

Data availability

The list of "DGRF and IGRF coefficients from 1945 to 1990" is given as Table 5. A diskette including those IGRF coefficients (Ascii codes) and the source of a fortran program for testing the models is associated to this Bulletin.

For further information about the availability of the IGRF coefficients in digital form and computer programs for evaluation of the field component values from the models, one of the following institutions may be contacted :

World Data Centre C1 for Geomagnetism
British Geological Survey
Murchison House, West Mains Road
Edinburgh EH9 3LA, United Kingdom

World Data Center A for Soild Earth Geophysics
National Geophysical Data Center
NOAA, Code E/GCI
325 Broadway
Boulder, CO 80303 USA

World Data Center A for Rockets and Satellites
National Space Science Data Center (Code 930.2)
NASA Goddard Space Flight Center
Greenbelt, MD 20771 USA.

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TABLE 1 : SIXTH GENERATION CANDIDATE IGRF MODELS

Model Designation	Submitting Institute	Submitting Authors
Main Field Candidates for DGRF 1985		
BN85	BGS/NOO	Barraclough et al. (1992)
G85	GSFC	Langel et al. (1992)
GD85	GSFC	Langel et al. (1992)
IZ85	IZMIRAN	Bondar and Golovkov (1992)
US85	USGS	Peddie (1992a)
Main Field Candidates for IGRF 1990		
BN90	BGS/NOO	Barraclough et al. (1992)
G90	GSFC	Langel et al. (1992)
GD90	GSFC	Langel et al. (1992)
IZ90	IZMIRAN	Bondar and Golovkov (1992)
US90	USGS	Peddie (1992a)
Secular Variation Candidates for IGRF 1990		
BNS90	BGS/NOO	Barraclough et al. (1992)
IZS90	IZMIRAN	Bondar and Golovkov (1992)
USS90	USGS	Peddie (1992a)

BGS/NOO: Joint submission by the British Geological Survey, Edinburgh, Scotland, and the U.S. Naval Oceanographic Office, Stennis Space Center, MS, USA

GSFC: Goddard Space Flight Center, Greenbelt Md., USA

IZMIRAN: Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, Moscow, USSR.

USGS: United States Geological Survey, Denver, Co.,USA.

TABLE 2 : MINIMUM AND MAXIMUM ESTIMATED ERROR BY ELEMENT in Degrees and nT

Element	MINIMUM	MAXIMUM
D	0.0422	4.2038
I	0.0261	0.1114
H	29.5	33.5
X	29.5	33.4
Y	29.5	33.6
Z	44.3	52.3
F	30.4	48.2

TABLE 3: RMS DIFFERENCES BETWEEN CANDIDATE IGRF 1985 MODELS
Units are nT

Model Pairs	X	Y	Z	F
G85-GD85	12.3	10.7	19.4	15.2
G85-US85	16.0	16.6	25.5	19.9
G85-BN85	22.9	21.7	33.0	29.9
G85-IZ85	22.6	26.2	40.0	28.6
BN85-US85	25.6	22.3	38.2	35.5
IZ85-US85	24.5	29.8	45.4	29.9
BN85-IZ85	29.0	33.5	48.0	33.9
GD85-US85	18.8	19.7	29.6	24.4
GD85-BN85	23.3	25.8	36.1	30.0
GD85-IZ85	24.2	25.3	41.2	28.4

TABLE 4: RMS DIFFERENCES BETWEEN CANDIDATE IGRF 1990 MODELS
Units are nT

Model Pairs	X	Y	Z	F
G90-GD90	18.5	21.1	33.5	24.3
G90-US90	34.8	29.9	52.1	45.3
G90-BN90	41.7	37.4	61.8	56.7
G90-IZ90	38.3	36.2	60.9	51.0
BN90-US90	35.6	31.1	55.9	50.4
IZ90-US90	39.0	39.2	62.0	52.8
BN90-IZ90	37.7	44.0	60.0	51.0
GD90-US90	35.6	32.9	52.0	46.9
GD90-BN90	40.1	40.5	60.1	54.3
GD90-IZ90	36.9	35.7	56.9	45.1

TABLE 5 : DGRF and IGRF coefficients from 1945 to 1990

			DGRF									IGRF	
	n	m	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1990 -1995
g	1	0	-30594	-30554	-30500	-30421	-30334	-30220	-30100	-29992	-29873	-29775	18.0
g	1	1	-2285	-2250	-2215	-2169	-2119	-2068	-2013	-1956	-1905	-1851	10.6
h	1	1	5810	5815	5820	5791	5776	5737	5675	5604	5500	5411	-16.1
g	2	0	-1244	-1341	-1440	-1555	-1662	-1781	-1902	-1997	-2072	-2136	-12.9
g	2	1	2990	2998	3003	3002	2997	3000	3010	3027	3044	3058	2.4
h	2	1	-1702	-1810	-1898	-1967	-2016	-2047	-2067	-2129	-2197	-2278	-15.8
g	2	2	1578	1576	1581	1590	1594	1611	1632	1663	1687	1693	0.0
h	2	2	477	381	291	206	114	25	-68	-200	-306	-380	-13.8
g	3	0	1282	1297	1302	1302	1297	1287	1276	1281	1296	1315	3.3
g	3	1	-1834	-1889	-1944	-1992	-2038	-2091	-2144	-2180	-2208	-2240	-6.7
h	3	1	-499	-476	-462	-414	-404	-366	-333	-336	-310	-287	4.4
g	3	2	1255	1274	1288	1289	1292	1278	1260	1251	1247	1246	0.1
h	3	2	186	206	216	224	240	251	262	271	284	293	1.6
g	3	3	913	896	882	878	856	838	830	833	829	807	-5.9
h	3	3	-11	-46	-83	-130	-165	-196	-223	-252	-297	-348	-10.6
g	4	0	944	954	958	957	957	952	946	938	936	939	0.5
g	4	1	776	792	796	800	804	800	791	782	780	782	0.6
h	4	1	144	136	133	135	148	167	191	212	232	248	2.6
g	4	2	544	528	510	504	479	461	438	398	361	324	-7.0
h	4	2	-276	-278	-274	-278	-269	-266	-265	-257	-249	-240	1.8
g	4	3	-421	-408	-397	-394	-390	-395	-405	-419	-424	-423	0.5
h	4	3	-55	-37	-23	3	13	26	39	53	69	87	3.1
g	4	4	304	303	290	269	252	234	216	199	170	142	-5.5
h	4	4	-178	-210	-230	-255	-269	-279	-288	-297	-297	-299	-1.4
g	5	0	-253	-240	-229	-222	-219	-216	-218	-218	-214	-211	0.6
g	5	1	346	349	360	362	358	359	356	357	355	353	-0.1
h	5	1	-12	3	15	16	19	26	31	46	47	47	-0.1
g	5	2	194	211	230	242	254	262	264	261	253	244	-1.6
h	5	2	95	103	110	125	128	139	148	150	150	153	0.5
g	5	3	-20	-20	-23	-26	-31	-42	-59	-74	-93	-111	-3.1
h	5	3	-67	-87	-98	-117	-126	-139	-152	-151	-154	-154	0.4
g	5	4	-142	-147	-152	-156	-157	-160	-159	-162	-164	-166	-0.1
h	5	4	-119	-122	-121	-114	-97	-91	-83	-78	-75	-69	1.7
g	5	5	-82	-76	-69	-63	-62	-56	-49	-48	-46	-37	2.3
h	5	5	82	80	78	81	81	83	88	92	95	98	0.4
g	6	0	59	54	47	46	45	43	45	48	53	61	1.3
g	6	1	57	57	57	58	61	64	66	66	65	64	-0.2
h	6	1	6	-1	-9	-10	-11	-12	-13	-15	-16	-16	0.2
g	6	2	6	4	3	1	8	15	28	42	51	60	1.8
h	6	2	100	99	96	99	100	100	99	93	88	83	-1.3
g	6	3	-246	-247	-247	-237	-228	-212	-198	-192	-185	-178	1.3
h	6	3	16	33	48	60	68	72	75	71	69	68	0.0
g	6	4	-25	-16	-8	-1	4	2	1	4	4	2	-0.2
h	6	4	-9	-12	-16	-20	-32	-37	-41	-43	-48	-52	-0.9
g	6	5	21	12	7	-2	1	3	6	14	16	17	0.1
h	6	5	-16	-12	-12	-11	-8	-6	-4	-2	-1	2	0.5
g	6	6	-104	-105	-107	-113	-111	-112	-111	-108	-102	-96	1.2
h	6	6	-39	-30	-24	-17	-7	1	11	17	21	27	1.2
g	7	0	70	65	65	67	75	72	71	72	74	77	0.6
g	7	1	-40	-55	-56	-56	-57	-57	-56	-59	-62	-64	-0.5
h	7	1	-45	-35	-50	-55	-61	-70	-77	-82	-83	-81	0.6
g	7	2	0	2	2	5	4	1	1	2	3	4	-0.3
h	7	2	-18	-17	-24	-28	-27	-27	-26	-27	-27	-27	0.2
g	7	3	0	1	10	15	13	14	16	21	24	28	0.6
h	7	3	2	0	-4	-6	-2	-4	-5	-5	-2	1	0.8
g	7	4	-29	-40	-32	-32	-26	-22	-14	-12	-6	1	1.6
h	7	4	6	10	8	7	6	8	10	16	20	20	-0.5
g	7	5	-10	-7	-11	-7	-6	-2	0	1	4	6	0.2
h	7	5	28	36	28	23	26	23	22	18	17	16	-0.2
g	7	6	15	5	9	17	13	13	12	11	10	10	0.2
h	7	6	-17	-18	-20	-18	-23	-23	-23	-23	-23	-23	0.0
g	7	7	29	19	18	8	1	-2	-5	-2	0	0	0.3
h	7	7	-22	-16	-18	-17	-12	-11	-12	-10	-7	-5	0.0

TABLE 5 : DGRF and IGRF coefficients from 1945 to 1990 (continued)

			DGRF									IGRF	
	n	m	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1990 -1995
g	8	0	13	22	11	15	13	14	14	18	21	22	0.2
g	8	1	7	15	9	6	5	6	6	6	6	5	-0.7
h	8	1	12	5	10	11	7	7	6	7	8	10	0.5
g	8	2	-8	-4	-6	-4	-4	-2	-1	0	0	-1	-0.2
h	8	2	-21	-22	-15	-14	-12	-15	-16	-18	-19	-20	-0.2
g	8	3	-5	-1	-14	-11	-14	-13	-12	-11	-11	-11	0.1
h	8	3	-12	0	5	7	9	6	4	4	5	7	0.3
g	8	4	9	11	6	2	0	-3	-8	-7	-9	-12	-1.1
h	8	4	-7	-21	-23	-18	-16	-17	-19	-22	-23	-22	0.3
g	8	5	7	15	10	10	8	5	4	4	4	4	0.0
h	8	5	2	-8	3	4	4	6	6	9	11	12	0.4
g	8	6	-10	-13	-7	-5	-1	0	0	3	4	4	-0.1
h	8	6	18	17	23	23	24	21	18	16	14	11	-0.5
g	8	7	7	5	6	10	11	11	10	6	4	3	-0.5
h	8	7	3	-4	-4	1	-3	-6	-10	-13	-15	-16	-0.3
g	8	8	2	-1	9	8	4	3	1	-1	-4	-6	-0.6
h	8	8	-11	-17	-13	-20	-17	-16	-17	-15	-11	-11	0.6
g	9	0	5	3	4	4	8	8	7	5	5	4	0.0
g	9	1	-21	-7	9	6	10	10	10	10	10	10	0.0
h	9	1	-27	-24	-11	-18	-22	-21	-21	-21	-21	-21	0.0
g	9	2	1	-1	-4	0	2	2	2	1	1	1	0.0
h	9	2	17	19	12	12	15	16	16	16	15	15	0.0
g	9	3	-11	-25	-5	-9	-13	-12	-12	-12	-12	-12	0.0
h	9	3	29	12	7	2	7	6	7	9	9	10	0.0
g	9	4	3	10	2	1	10	10	10	9	9	9	0.0
h	9	4	-9	2	6	0	-4	-4	-4	-5	-6	-6	0.0
g	9	5	16	5	4	4	-1	-1	-1	-3	-3	-4	0.0
h	9	5	4	2	-2	-3	-5	-5	-5	-6	-6	-6	0.0
g	9	6	-3	-5	1	-1	-1	0	-1	-1	-1	-1	0.0
h	9	6	9	8	10	9	10	10	10	9	9	9	0.0
g	9	7	-4	-2	2	-2	5	3	4	7	7	7	0.0
h	9	7	6	8	7	8	10	11	11	10	9	9	0.0
g	9	8	-3	3	2	3	1	1	1	2	1	2	0.0
h	9	8	1	-11	-6	0	-4	-2	-3	-6	-7	-7	0.0
g	9	9	-4	8	5	-1	-2	-1	-2	-5	-5	-6	0.0
h	9	9	8	-7	5	5	1	1	1	2	2	2	0.0
g	10	0	-3	-8	-3	1	-2	-3	-3	-4	-4	-4	0.0
g	10	1	11	4	-5	-3	-3	-3	-3	-4	-4	-4	0.0
h	10	1	5	13	-4	4	2	1	1	1	1	1	0.0
g	10	2	1	-1	-1	4	2	2	2	2	3	2	0.0
h	10	2	1	-2	0	1	1	1	1	0	0	0	0.0
g	10	3	2	13	2	0	-5	-5	-5	-5	-5	-5	0.0
h	10	3	-20	-10	-8	0	2	3	3	3	3	3	0.0
g	10	4	-5	-4	-3	-1	-2	-1	-2	-2	-2	-2	0.0
h	10	4	-1	2	-2	2	6	4	4	6	6	6	0.0
g	10	5	-1	4	7	4	4	6	5	5	5	4	0.0
h	10	5	-6	-3	-4	-5	-4	-4	-4	-4	-4	-4	0.0
g	10	6	8	12	4	6	4	4	4	3	3	3	0.0
h	10	6	6	6	1	1	0	0	-1	0	0	0	0.0
g	10	7	-1	3	-2	1	0	1	1	1	1	1	0.0
h	10	7	-4	-3	-3	-1	-2	-1	-1	-1	-1	-1	0.0
g	10	8	-3	2	6	-1	2	0	0	2	2	2	0.0
h	10	8	-2	6	7	6	3	3	3	4	4	4	0.0
g	10	9	5	10	-2	2	2	3	3	3	3	3	0.0
h	10	9	0	11	-1	0	0	1	1	0	0	0	0.0
g	10	10	-2	3	0	0	0	-1	-1	0	0	0	0.0
h	10	10	-2	8	-3	-7	-6	-4	-5	-6	-6	-6	0.0

Figures captions

Figure 1. Declination (D) at 1985. Solid lines are positive values, dashed lines negative values. Units are degrees; CI = 10°. Van der Grinten projection.

Figure 2. Annual change of declination ($\dot{D}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are minutes/yr; CI = 2 min/yr. Van der Grinten projection.

Figure 3. Inclination (I) at 1985. Solid lines are positive values, dashed lines negative values. Units are degrees ; CI = 10°. Van der Grinten projection.

Figure 4. Annual change of inclination ($\dot{I}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are minutes/yr; CI = 2 min/yr. Van der Grinten projection.

Figure 5. Horizontal intensity (H) at 1985. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 6. Annual change of horizontal intensity ($\dot{H}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 7. North component (X) at 1985. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 8. Annual change of north component ($\dot{X}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 9. East component (Y) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 10. Annual change of east component ($\dot{Y}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 11. Vertical intensity (Z) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT, CI = 4000 nT. Van der Grinten projection.

Figure 12. Annual change of vertical intensity ($\dot{Z}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 13. Total intensity (F) at 1985. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 14. Annual change of total intensity ($\dot{F}$) at 1985. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 15. Declination (D) at 1990. Solid lines are positive values, dashed lines negative values. Units are degrees; CI = 10°. Van der Grinten projection.

Figure 16. Annual change of declination ($\dot{D}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are minutes/yr; CI = 2 min/yr. Van der Grinten projection.

Figure 17. Inclination (I) at 1990. Solid lines are positive values, dashed lines negative values. Units are degrees; CI = 10°. Van der Grinten projection.

Figure 18. Annual change of inclination ($\dot{I}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are minutes/yr; CI = 2 min/yr. Van der Grinten projection.

Figure 19. Horizontal intensity (H) at 1990. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 20. Annual change of horizontal intensity ($\dot{H}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 21. North component (X) at 1990. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 22. Annual change of north component ($\dot{X}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 23. East component (Y) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 24. Annual change of east component ($\dot{Y}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 25. Vertical intensity (Z) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT, CI = 4000 nT. Van der Grinten projection.

Figure 26. Annual change of vertical intensity ($\dot{Z}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Figure 27. Total intensity (F) at 1990. Units are nT, CI = 2000 nT. Van der Grinten projection.

Figure 28. Annual change of total intensity ($\dot{F}$) at 1990. Solid lines are positive values, dashed lines negative values. Units are nT/yr; CI = 20 nT/yr. Van der Grinten projection.

Plots and Tables of DGRF 1985

Declination

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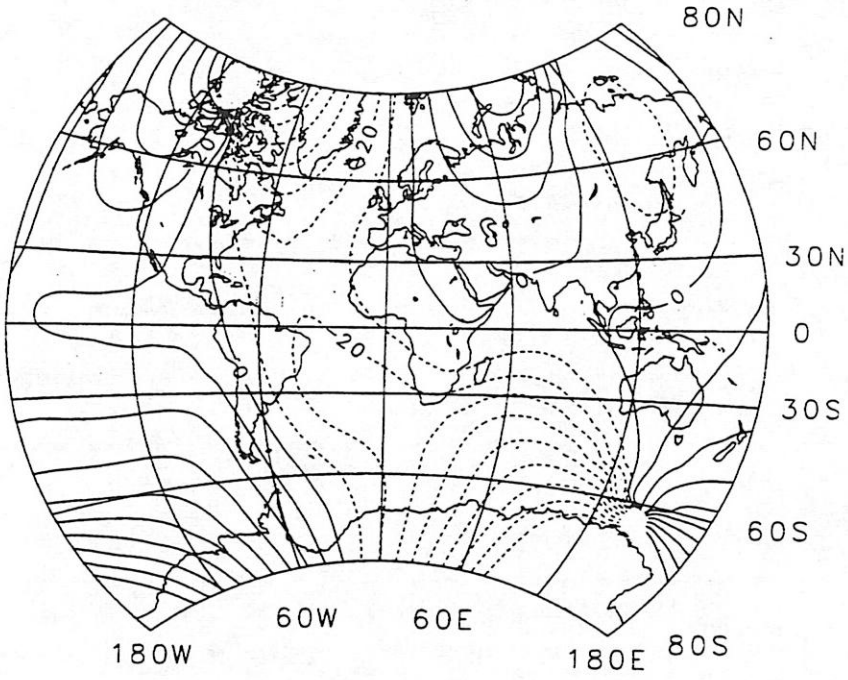
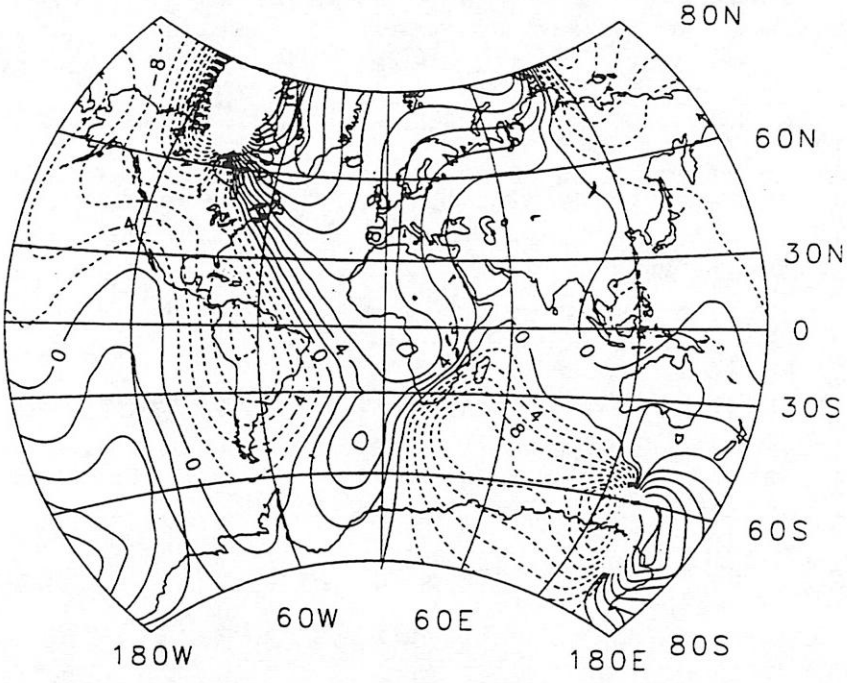
DGRF 1985 - DECLINATION

Figure 1 (**D**, top) Figure 2 ($\dot{\mathbf{D}}$, bottom)





DECLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	136.5	141.7	147.0	152.3	157.8	163.3	168.9	174.5	-179.8	-174.0	-168.3	-162.5	-156.7	-150.9	-145.1	-139.4	-133.6	-127.9	-122.3
	23.0	23.1	23.2	23.3	23.4	23.4	23.4	23.4	23.4	23.3	23.2	23.0	22.9	22.7	22.5	22.2	22.0	21.7	21.5
85	45.2	49.5	54.5	60.1	66.5	73.8	82.3	92.2	103.9	117.9	134.3	152.3	170.6	-172.5	-157.7	-145.1	-134.3	-124.9	-116.6
	-16.9	-17.1	-17.3	-17.4	-17.4	-17.2	-16.4	-14.5	-10.7	-3.8	6.5	18.8	29.1	34.6	35.6	34.1	31.6	28.9	26.4
80	14.9	19.0	23.3	27.7	32.3	37.0	41.8	46.9	52.1	57.7	63.7	70.6	79.3	92.4	120.8	-171.7	-130.1	-113.6	-103.8
	-8.4	-8.4	-8.6	-8.9	-9.4	-10.1	-11.1	-12.5	-14.3	-16.8	-20.4	-25.7	-33.9	-46.5	-45.7	95.1	82.2	54.5	40.2
75	9.4	13.4	17.4	21.6	25.7	29.8	33.9	37.9	41.7	45.4	48.9	52.0	54.5	55.7	54.2	43.4	-10.5	-62.8	-73.2
	-4.9	-4.9	-5.2	-5.5	-6.0	-6.7	-7.6	-8.8	-10.3	-12.2	-14.9	-18.6	-24.3	-33.7	-51.6	-91.6	-48.6	67.4	50.1
70	7.5	11.3	15.2	19.0	22.8	26.4	29.9	33.1	36.1	38.8	40.9	42.4	42.8	41.7	37.8	28.7	11.0	-14.4	-35.9
	-3.6	-3.8	-4.2	-4.7	-5.3	-6.0	-6.9	-8.0	-9.4	-11.0	-13.0	-15.7	-19.3	-24.1	-30.4	-36.8	-33.6	-6.8	18.4
65	6.7	10.3	13.9	17.4	20.8	24.0	26.9	29.5	31.8	33.6	34.8	35.3	34.8	32.9	29.0	22.2	11.8	-2.0	-16.4
	-3.2	-3.6	-4.0	-4.6	-5.3	-6.1	-7.0	-7.9	-9.0	-10.3	-11.7	-13.5	-15.5	-17.9	-20.3	-21.8	-20.0	-12.3	-0.4
60	6.5	9.8	13.1	16.3	19.3	22.0	24.4	26.4	28.1	29.3	29.9	29.8	28.9	26.9	23.5	18.3	11.1	2.1	-7.8
	-3.2	-3.6	-4.2	-4.8	-5.5	-6.3	-7.0	-7.8	-8.6	-9.4	-10.2	-11.2	-12.2	-13.2	-14.2	-14.6	-13.7	-10.6	-5.3
55	6.5	9.6	12.5	15.3	17.9	20.2	22.2	23.8	24.9	25.7	25.9	25.5	24.5	22.6	19.7	15.7	10.4	3.9	-3.4
	-3.3	-3.8	-4.4	-5.1	-5.7	-6.4	-6.9	-7.4	-7.9	-8.3	-8.6	-8.9	-9.3	-9.7	-10.1	-10.3	-10.1	-9.0	-6.5
50	6.7	9.5	12.1	14.5	16.7	18.6	20.2	21.4	22.2	22.7	22.7	22.2	21.2	19.5	17.2	13.9	9.8	4.8	-1.0
	-3.4	-4.0	-4.6	-5.2	-5.8	-6.2	-6.6	-6.8	-6.9	-7.0	-6.9	-6.8	-6.8	-7.0	-7.2	-7.6	-7.8	-7.7	-6.8
45	7.1	9.5	11.8	13.9	15.6	17.2	18.4	19.3	19.9	20.1	20.0	19.5	18.6	17.2	15.2	12.6	9.3	5.2	0.6
	-3.5	-4.1	-4.7	-5.2	-5.6	-5.9	-6.1	-6.0	-5.9	-5.6	-5.3	-5.0	-4.8	-4.9	-5.1	-5.6	-6.3	-6.8	-6.8
40	7.7	9.7	11.6	13.2	14.6	15.8	16.7	17.4	17.8	17.9	17.8	17.3	16.5	15.3	13.7	11.6	8.8	5.5	1.6
	-3.6	-4.1	-4.6	-5.0	-5.3	-5.4	-5.4	-5.1	-4.8	-4.3	-3.8	-3.4	-3.2	-3.2	-3.5	-4.2	-5.1	-6.1	-6.8
35	8.3	10.0	11.5	12.7	13.7	14.5	15.2	15.7	15.9	16.0	15.8	15.4	14.7	13.7	12.4	10.7	8.4	5.6	2.3
	-3.5	-4.0	-4.4	-4.7	-4.9	-4.8	-4.6	-4.2	-3.7	-3.1	-2.6	-2.1	-1.9	-1.9	-2.3	-3.1	-4.3	-5.5	-6.7
30	9.0	10.3	11.3	12.1	12.7	13.2	13.7	14.0	14.2	14.2	14.0	13.7	13.1	12.4	11.3	9.9	8.0	5.7	2.8
	-3.3	-3.8	-4.2	-4.3	-4.3	-4.1	-3.7	-3.2	-2.7	-2.1	-1.5	-1.1	-0.8	-0.9	-1.4	-2.3	-3.5	-5.0	-6.5
25	9.6	10.5	11.1	11.5	11.7	12.0	12.2	12.5	12.6	12.6	12.4	12.1	11.7	11.2	10.4	9.3	7.8	5.8	3.4
	-3.1	-3.5	-3.8	-3.9	-3.8	-3.4	-2.9	-2.4	-1.8	-1.2	-0.7	-0.3	0.0	-0.1	-0.6	-1.6	-2.9	-4.6	-6.3
20	10.1	10.6	10.8	10.9	10.9	10.9	11.0	11.1	11.2	11.2	11.0	10.8	10.5	10.2	9.6	8.8	7.6	6.0	3.9
	-2.8	-3.2	-3.5	-3.5	-3.2	-2.8	-2.2	-1.7	-1.1	-0.5	0.0	0.4	0.5	0.5	0.0	-1.0	-2.4	-4.1	-6.0
15	10.4	10.6	10.6	10.3	10.1	10.0	10.0	10.0	10.1	10.0	9.9	9.8	9.6	9.4	9.1	8.5	7.6	6.3	4.5
	-2.5	-2.9	-3.1	-3.1	-2.7	-2.2	-1.6	-1.0	-0.5	0.0	0.5	0.8	1.0	0.9	0.4	-0.5	-1.9	-3.7	-5.7
10	10.5	10.6	10.3	10.0	9.6	9.4	9.3	9.3	9.3	9.3	9.2	9.1	9.0	8.9	8.7	8.4	7.8	6.7	5.1
	-2.2	-2.6	-2.8	-2.7	-2.3	-1.8	-1.1	-0.5	0.0	0.5	0.9	1.2	1.3	1.2	0.8	-0.1	-1.5	-3.3	-5.4
5	10.7	10.6	10.3	9.8	9.4	9.2	9.0	9.0	9.0	8.9	8.8	8.7	8.7	8.7	8.7	8.5	8.1	7.2	5.8
	-1.9	-2.4	-2.5	-2.4	-1.9	-1.3	-0.7	-0.1	0.5	0.9	1.2	1.4	1.6	1.4	1.0	0.1	-1.2	-3.0	-5.1
0	10.9	10.7	10.4	9.9	9.5	9.3	9.1	9.1	9.1	9.0	8.9	8.8	8.8	8.8	8.9	8.8	8.5	7.8	6.5
	-1.7	-2.1	-2.2	-2.0	-1.6	-1.0	-0.3	0.3	0.8	1.2	1.5	1.7	1.7	1.6	1.1	0.3	-1.1	-2.8	-4.8

DECLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	10.9	10.7	10.4	9.9	9.5	9.3	9.1	9.1	9.1	9.0	8.9	8.8	8.8	8.8	8.9	8.8	8.5	7.8	6.5
	-1.7	-2.1	-2.2	-2.0	-1.6	-1.0	-0.3	0.3	0.8	1.2	1.5	1.7	1.7	1.6	1.1	0.3	-1.1	-2.8	-4.8
-5	11.2	11.1	10.7	10.3	10.0	9.8	9.6	9.6	9.5	9.4	9.3	9.2	9.2	9.2	9.3	9.4	9.1	8.5	7.4
	-1.4	-1.7	-1.8	-1.7	-1.2	-0.6	0.0	0.6	1.1	1.5	1.7	1.9	1.9	1.7	1.2	0.3	-1.0	-2.7	-4.7
-10	11.7	11.6	11.4	11.0	10.8	10.6	10.5	10.4	10.4	10.2	10.1	9.9	9.9	10.0	10.1	10.1	9.9	9.4	8.3
	-1.1	-1.4	-1.5	-1.3	-0.9	-0.3	0.3	0.9	1.4	1.7	1.9	2.0	2.0	1.7	1.1	0.2	-1.1	-2.7	-4.6
-15	12.4	12.4	12.3	12.1	11.8	11.7	11.6	11.6	11.5	11.4	11.2	11.0	11.0	11.0	11.1	11.1	11.0	10.5	9.5
	-0.7	-1.0	-1.1	-0.9	-0.5	0.0	0.6	1.2	1.7	2.0	2.2	2.2	2.0	1.7	1.0	0.1	-1.2	-2.8	-4.6
-20	13.5	13.6	13.5	13.4	13.2	13.1	13.0	13.0	12.9	12.8	12.6	12.4	12.4	12.4	12.5	12.5	12.4	12.0	11.0
	-0.3	-0.5	-0.6	-0.5	-0.2	0.3	0.9	1.4	1.9	2.2	2.4	2.3	2.1	1.7	1.0	0.0	-1.3	-2.9	-4.5
-25	14.9	15.1	15.0	15.0	14.8	14.7	14.7	14.6	14.5	14.4	14.3	14.1	14.1	14.1	14.2	14.3	14.2	13.8	12.9
	0.1	-0.1	-0.2	-0.1	0.2	0.6	1.1	1.7	2.1	2.5	2.6	2.6	2.3	1.8	1.0	-0.1	-1.4	-2.9	-4.4
-30	16.7	16.9	16.9	16.8	16.7	16.6	16.5	16.4	16.4	16.3	16.2	16.2	16.2	16.3	16.4	16.5	16.4	16.0	15.1
	0.6	0.4	0.3	0.4	0.6	1.0	1.4	2.0	2.4	2.7	2.9	2.8	2.5	1.9	1.1	0.0	-1.3	-2.7	-4.1
-35	18.8	19.0	19.1	19.0	18.9	18.8	18.6	18.6	18.5	18.5	18.5	18.6	18.7	18.9	19.1	19.1	19.0	18.5	17.5
	1.2	1.0	0.8	0.8	1.0	1.4	1.8	2.3	2.8	3.1	3.3	3.2	2.8	2.2	1.3	0.3	-1.0	-2.3	-3.7
-40	21.3	21.5	21.6	21.5	21.4	21.2	21.1	21.1	21.1	21.1	21.2	21.4	21.7	21.9	22.1	22.1	21.9	21.2	20.1
	1.9	1.6	1.4	1.4	1.6	1.9	2.3	2.8	3.2	3.6	3.7	3.6	3.2	2.6	1.7	0.6	-0.6	-1.9	-3.1
-45	24.4	24.6	24.7	24.6	24.4	24.3	24.2	24.1	24.2	24.3	24.6	24.8	25.1	25.3	25.4	25.2	24.8	23.9	22.6
	2.6	2.3	2.2	2.1	2.3	2.6	3.0	3.4	3.8	4.1	4.1	4.0	3.5	2.8	1.9	0.9	-0.2	-1.4	-2.5
-50	28.5	28.6	28.6	28.5	28.3	28.2	28.1	28.1	28.2	28.4	28.6	28.8	29.0	29.0	28.9	28.5	27.7	26.5	24.9
	3.6	3.3	3.1	3.1	3.2	3.4	3.8	4.1	4.4	4.5	4.5	4.2	3.7	3.0	2.1	1.1	0.0	-1.0	-2.0
-55	34.3	34.3	34.2	34.0	33.8	33.6	33.4	33.4	33.4	33.4	33.5	33.5	33.4	33.1	32.6	31.7	30.6	29.1	27.1
	5.0	4.6	4.4	4.3	4.3	4.5	4.7	4.8	4.9	4.9	4.7	4.2	3.6	2.9	2.0	1.0	0.1	-0.7	-1.5
-60	43.3	43.0	42.5	42.1	41.6	41.2	40.8	40.5	40.2	39.9	39.5	39.0	38.4	37.6	36.6	35.3	33.7	31.8	29.5
	7.0	6.4	6.0	5.8	5.6	5.5	5.5	5.4	5.3	5.0	4.5	4.0	3.3	2.5	1.7	0.9	0.1	-0.6	-1.2
-65	58.6	57.1	55.7	54.4	53.2	52.1	51.1	50.1	49.1	48.0	46.9	45.8	44.4	42.9	41.3	39.4	37.3	34.9	32.4
	9.5	8.5	7.7	7.1	6.7	6.3	5.9	5.6	5.1	4.6	4.1	3.4	2.8	2.1	1.4	0.7	0.1	-0.4	-0.8
-70	83.2	79.1	75.6	72.5	69.7	67.2	64.8	62.6	60.4	58.3	56.2	54.0	51.7	49.4	47.0	44.5	41.8	39.0	36.1
	9.9	8.8	8.0	7.2	6.6	6.0	5.4	4.9	4.3	3.8	3.2	2.7	2.1	1.6	1.1	0.6	0.2	-0.1	-0.4
-75	111.9	105.4	99.6	94.4	89.7	85.4	81.4	77.6	74.0	70.6	67.2	63.9	60.7	57.4	54.2	50.9	47.7	44.3	41.0
	5.4	5.3	5.1	4.8	4.5	4.1	3.7	3.3	2.9	2.6	2.2	1.8	1.4	1.1	0.8	0.6	0.3	0.2	0.1
-80	133.0	126.4	120.2	114.2	108.6	103.2	98.1	93.2	88.5	84.0	79.6	75.3	71.1	67.0	62.9	58.9	55.0	51.1	47.2
	1.2	1.4	1.6	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.1	1.0	0.9	0.7	0.6	0.5	0.4	0.4	0.3
-85	145.4	139.7	134.0	128.4	122.9	117.5	112.2	106.9	101.8	96.8	91.8	87.0	82.2	77.4	72.7	68.1	63.6	59.1	54.6
	-0.4	-0.3	-0.1	-0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
-90	152.6	147.5	142.6	137.5	132.5	127.6	122.5	117.5	112.6	107.5	102.5	97.6	92.5	87.5	82.6	77.5	72.5	67.6	62.5
	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6

DECLINATION

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	-122.3	-116.6	-111.1	-105.5	-100.0	-94.5	-89.1	-83.8	-78.5	-73.2	-67.9	-62.8	-57.6	-52.5	-47.4	-42.4	-37.4	-32.5	-27.6
	21.5	21.2	20.9	20.6	20.4	20.1	19.9	19.6	19.4	19.2	19.0	18.8	18.7	18.5	18.4	18.3	18.2	18.1	18.1
85	-116.6	-109.0	-102.0	-95.4	-89.2	-83.2	-77.5	-71.9	-66.5	-61.2	-56.0	-50.9	-45.9	-40.9	-36.0	-31.2	-26.5	-21.8	-17.2
	26.4	24.2	22.4	20.7	19.4	18.2	17.2	16.3	15.6	14.9	14.4	13.9	13.4	13.1	12.8	12.5	12.3	12.2	12.1
80	-103.8	-96.3	-90.0	-84.2	-78.8	-73.6	-68.6	-63.6	-58.8	-54.0	-49.3	-44.6	-40.0	-35.4	-30.8	-26.3	-21.8	-17.4	-13.1
	40.2	32.1	26.9	23.3	20.6	18.6	17.0	15.7	14.7	13.7	12.9	12.2	11.6	11.1	10.6	10.2	9.8	9.5	9.3
75	-73.2	-74.6	-73.2	-70.7	-67.5	-64.0	-60.3	-56.4	-52.4	-48.3	-44.2	-40.1	-35.9	-31.7	-27.6	-23.4	-19.3	-15.2	-11.2
	50.1	38.1	30.8	26.1	22.8	20.4	18.5	16.9	15.6	14.5	13.5	12.6	11.8	11.0	10.3	9.7	9.2	8.7	8.2
70	-35.9	-47.8	-53.3	-55.2	-55.0	-53.7	-51.6	-48.9	-45.9	-42.6	-39.2	-35.6	-32.0	-28.3	-24.6	-20.8	-17.1	-13.5	-9.8
	18.4	26.0	26.1	24.3	22.4	20.6	19.1	17.7	16.5	15.4	14.3	13.4	12.4	11.5	10.7	9.9	9.1	8.4	7.8
65	-16.4	-28.3	-36.3	-41.0	-43.2	-43.7	-43.1	-41.6	-39.5	-37.0	-34.2	-31.2	-28.1	-24.8	-21.5	-18.2	-14.9	-11.7	-8.5
	-0.4	9.7	15.3	17.7	18.4	18.3	17.8	17.1	16.3	15.5	14.6	13.7	12.8	11.8	10.9	10.0	9.2	8.3	7.6
60	-7.8	-17.1	-24.8	-30.3	-33.7	-35.4	-35.8	-35.2	-33.8	-32.0	-29.7	-27.1	-24.4	-21.6	-18.6	-15.7	-12.8	-9.9	-7.1
	-5.3	1.0	6.5	10.5	12.9	14.3	15.0	15.1	15.0	14.6	14.1	13.4	12.6	11.8	10.9	10.0	9.2	8.3	7.4
55	-3.4	-10.8	-17.5	-22.8	-26.6	-28.9	-30.0	-30.0	-29.2	-27.7	-25.9	-23.7	-21.3	-18.7	-16.1	-13.5	-10.9	-8.4	-5.9
	-6.5	-3.0	1.0	4.8	7.9	10.2	11.7	12.6	13.1	13.2	13.0	12.7	12.1	11.4	10.7	9.9	9.1	8.2	7.3
50	-1.0	-7.0	-12.7	-17.7	-21.5	-24.1	-25.6	-26.0	-25.5	-24.4	-22.8	-20.9	-18.7	-16.4	-14.1	-11.7	-9.3	-7.1	-4.9
	-6.8	-5.0	-2.3	0.8	3.9	6.5	8.6	10.1	11.0	11.6	11.8	11.7	11.4	10.9	10.3	9.6	8.9	8.1	7.3
45	0.6	-4.5	-9.5	-14.1	-17.8	-20.6	-22.3	-23.0	-22.8	-22.0	-20.6	-18.8	-16.8	-14.7	-12.5	-10.3	-8.2	-6.1	-4.1
	-6.8	-6.1	-4.4	-2.0	0.7	3.4	5.8	7.7	9.1	10.0	10.5	10.7	10.6	10.3	9.9	9.4	8.7	8.0	7.2
40	1.6	-2.8	-7.2	-11.5	-15.1	-17.9	-19.8	-20.8	-20.8	-20.2	-19.0	-17.4	-15.6	-13.6	-11.5	-9.4	-7.4	-5.5	-3.7
	-6.8	-6.8	-5.9	-4.2	-1.8	0.8	3.4	5.5	7.2	8.5	9.3	9.7	9.9	9.8	9.5	9.1	8.5	7.9	7.1
35	2.3	-1.5	-5.5	-9.4	-13.0	-15.9	-18.0	-19.1	-19.5	-19.0	-18.0	-16.6	-14.9	-12.9	-11.0	-9.0	-7.0	-5.2	-3.5
	-6.7	-7.3	-7.0	-5.9	-3.9	-1.4	1.2	3.5	5.5	7.0	8.1	8.8	9.1	9.2	9.1	8.8	8.3	7.7	7.0
30	2.8	-0.5	-4.1	-7.8	-11.3	-14.2	-16.5	-17.9	-18.5	-18.4	-17.6	-16.3	-14.7	-12.8	-10.9	-8.9	-6.9	-5.1	-3.5
	-6.5	-7.6	-7.9	-7.2	-5.6	-3.4	-0.9	1.6	3.8	5.6	6.9	7.8	8.4	8.7	8.7	8.5	8.1	7.5	6.8
25	3.4	0.4	-2.9	-6.4	-9.8	-12.9	-15.3	-17.1	-18.0	-18.1	-17.5	-16.4	-14.9	-13.1	-11.1	-9.1	-7.1	-5.3	-3.7
	-6.3	-7.7	-8.5	-8.3	-7.1	-5.2	-2.7	-0.2	2.2	4.2	5.8	6.9	7.7	8.1	8.3	8.2	7.8	7.3	6.7
20	3.9	1.3	-1.8	-5.1	-8.5	-11.7	-14.4	-16.4	-17.7	-18.1	-17.9	-17.0	-15.6	-13.8	-11.8	-9.7	-7.6	-5.8	-4.1
	-6.0	-7.7	-8.8	-9.1	-8.4	-6.7	-4.5	-1.9	0.5	2.7	4.6	6.0	7.0	7.6	7.9	7.9	7.6	7.2	6.6
15	4.5	2.1	-0.7	-4.0	-7.4	-10.7	-13.6	-16.0	-17.6	-18.4	-18.4	-17.8	-16.5	-14.8	-12.8	-10.6	-8.5	-6.5	-4.8
	-5.7	-7.6	-9.0	-9.7	-9.3	-8.0	-6.0	-3.6	-1.1	1.3	3.3	5.0	6.2	7.0	7.5	7.6	7.5	7.1	6.6
10	5.1	2.9	0.2	-2.9	-6.3	-9.8	-12.9	-15.6	-17.6	-18.7	-19.1	-18.8	-17.7	-16.1	-14.1	-11.9	-9.6	-7.6	-5.8
	-5.4	-7.4	-9.0	-10.0	-10.0	-9.1	-7.3	-5.1	-2.6	-0.2	2.0	3.9	5.3	6.4	7.1	7.4	7.4	7.1	6.7
5	5.8	3.8	1.2	-1.9	-5.3	-8.9	-12.3	-15.3	-17.6	-19.1	-19.9	-19.9	-19.1	-17.7	-15.7	-13.5	-11.2	-9.1	-7.2
	-5.1	-7.1	-8.9	-10.1	-10.4	-9.8	-8.4	-6.4	-4.0	-1.6	0.6	2.7	4.4	5.7	6.6	7.1	7.3	7.2	7.0
0	6.5	4.6	2.1	-0.9	-4.4	-8.1	-11.7	-14.9	-17.5	-19.5	-20.6	-20.9	-20.5	-19.3	-17.6	-15.5	-13.2	-11.1	-9.1
	-4.8	-6.9	-8.7	-10.0	-10.6	-10.3	-9.2	-7.4	-5.3	-3.0	-0.8	1.4	3.3	4.8	6.0	6.8	7.2	7.3	7.3

DECLINATION

LONGITUDE: / ATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	6.5	4.6	2.1	-0.9	-4.4	-8.1	-11.7	-14.9	-17.5	-19.5	-20.6	-20.9	-20.5	-19.3	-17.6	-15.5	-13.2	-11.1	-9.1
	-4.8	-6.9	-8.7	-10.0	-10.6	-10.3	-9.2	-7.4	-5.3	-3.0	-0.8	1.4	3.3	4.8	6.0	6.8	7.2	7.3	7.3
-5	7.4	5.6	3.1	0.1	-3.4	-7.2	-11.0	-14.5	-17.4	-19.7	-21.2	-21.9	-21.9	-21.1	-19.7	-17.8	-15.7	-13.6	-11.6
	-4.7	-6.7	-8.5	-9.9	-10.6	-10.5	-9.7	-8.3	-6.4	-4.3	-2.1	0.0	2.0	3.8	5.2	6.3	7.0	7.3	7.6
-10	8.3	6.6	4.3	1.2	-2.4	-6.3	-10.3	-14.0	-17.2	-19.8	-21.6	-22.7	-23.1	-22.7	-21.7	-20.2	-18.4	-16.5	-14.5
	-4.6	-6.5	-8.2	-9.6	-10.4	-10.5	-10.0	-8.8	-7.2	-5.4	-3.3	-1.3	0.8	2.6	4.2	5.5	6.5	7.2	7.6
-15	9.5	7.9	5.6	2.5	-1.1	-5.2	-9.3	-13.3	-16.8	-19.7	-21.8	-23.3	-24.0	-24.1	-23.6	-22.6	-21.3	-19.6	-17.8
	-4.6	-6.3	-8.0	-9.3	-10.1	-10.3	-10.0	-9.1	-7.8	-6.1	-4.3	-2.4	-0.4	1.5	3.1	4.6	5.7	6.6	7.3
-20	11.0	9.4	7.1	4.1	0.4	-3.8	-8.1	-12.3	-16.1	-19.2	-21.7	-23.5	-24.6	-25.1	-25.1	-24.6	-23.8	-22.5	-21.0
	-4.5	-6.2	-7.7	-8.9	-9.7	-10.0	-9.8	-9.1	-8.0	-6.6	-4.9	-3.1	-1.3	0.5	2.2	3.6	4.8	5.8	6.6
-25	12.9	11.3	9.0	5.9	2.2	-2.1	-6.6	-11.0	-15.0	-18.4	-21.2	-23.3	-24.7	-25.6	-26.0	-26.0	-25.6	-24.9	-23.7
	-4.4	-5.9	-7.3	-8.4	-9.2	-9.5	-9.4	-8.8	-7.9	-6.6	-5.1	-3.5	-1.7	0.0	1.6	3.0	4.1	5.0	5.6
-30	15.1	13.5	11.2	8.1	4.2	-0.1	-4.7	-9.3	-13.5	-17.1	-20.1	-22.5	-24.2	-25.3	-26.1	-26.4	-26.5	-26.1	-25.4
	-4.1	-5.5	-6.8	-7.8	-8.5	-8.8	-8.7	-8.3	-7.4	-6.3	-4.8	-3.2	-1.6	0.1	1.6	2.9	3.9	4.6	4.9
-35	17.5	15.9	13.5	10.3	6.5	2.2	-2.5	-7.1	-11.4	-15.2	-18.4	-20.9	-22.9	-24.3	-25.3	-25.9	-26.2	-26.2	-25.8
	-3.7	-4.9	-6.0	-6.9	-7.6	-7.9	-7.8	-7.4	-6.5	-5.4	-4.0	-2.4	-0.8	0.9	2.4	3.6	4.5	4.9	4.7
-40	20.1	18.3	15.8	12.7	8.9	4.6	0.1	-4.4	-8.7	-12.6	-15.8	-18.5	-20.7	-22.3	-23.5	-24.3	-24.8	-25.1	-25.1
	-3.1	-4.2	-5.2	-6.0	-6.5	-6.7	-6.6	-6.1	-5.3	-4.2	-2.8	-1.2	0.5	2.2	3.7	4.8	5.4	5.5	4.8
-45	22.6	20.6	18.0	14.9	11.2	7.1	2.9	-1.4	-5.5	-9.3	-12.6	-15.3	-17.6	-19.4	-20.8	-21.8	-22.6	-23.2	-23.7
	-2.5	-3.5	-4.3	-4.9	-5.3	-5.4	-5.2	-4.7	-3.8	-2.7	-1.3	0.3	2.0	3.6	4.9	5.9	6.3	5.9	4.7
-50	24.9	22.7	20.1	17.0	13.4	9.6	5.7	1.7	-2.1	-5.7	-8.9	-11.6	-13.9	-15.9	-17.5	-18.9	-20.0	-21.1	-22.2
	-2.0	-2.8	-3.4	-3.9	-4.2	-4.1	-3.8	-3.2	-2.4	-1.2	0.2	1.7	3.2	4.6	5.7	6.4	6.4	5.7	4.3
-55	27.1	24.8	22.1	19.0	15.6	12.1	8.4	4.8	1.3	-2.0	-5.0	-7.8	-10.2	-12.3	-14.2	-15.9	-17.5	-19.1	-20.8
	-1.5	-2.2	-2.7	-3.0	-3.1	-2.9	-2.6	-1.9	-1.1	0.0	1.2	2.5	3.8	4.9	5.6	6.0	5.8	5.0	3.6
-60	29.5	27.0	24.2	21.2	18.0	14.6	11.2	7.9	4.6	1.5	-1.4	-4.2	-6.7	-9.1	-11.3	-13.4	-15.4	-17.6	-19.7
	-1.2	-1.6	-2.0	-2.1	-2.1	-1.9	-1.4	-0.8	-0.1	0.8	1.8	2.8	3.7	4.5	4.9	5.0	4.7	3.9	2.7
-65	32.4	29.7	26.8	23.7	20.6	17.4	14.2	11.0	7.8	4.8	1.8	-1.0	-3.7	-6.3	-8.9	-11.4	-13.9	-16.5	-19.1
	-0.8	-1.1	-1.3	-1.3	-1.2	-0.9	-0.6	-0.1	0.6	1.2	2.0	2.6	3.2	3.7	3.9	3.8	3.5	2.8	1.9
-70	36.1	33.1	30.1	26.9	23.7	20.5	17.3	14.1	10.9	7.8	4.7	1.7	-1.3	-4.2	-7.1	-10.0	-13.0	-16.0	-19.1
	-0.4	-0.5	-0.6	-0.6	-0.4	-0.2	0.1	0.5	0.9	1.3	1.8	2.2	2.5	2.7	2.7	2.6	2.3	1.8	1.2
-75	41.0	37.7	34.3	30.9	27.5	24.1	20.7	17.3	13.9	10.6	7.3	3.9	0.6	-2.7	-6.0	-9.3	-12.7	-16.1	-19.6
	0.1	0.0	0.0	0.0	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.5	1.6	1.7	1.6	1.5	1.3	1.0	0.5
-80	47.2	43.4	39.5	35.7	31.9	28.2	24.4	20.6	16.9	13.2	9.4	5.7	2.0	-1.8	-5.5	-9.3	-13.1	-17.0	-20.9
	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.4	0.2	0.0
-85	54.6	50.1	45.7	41.4	37.0	32.7	28.4	24.1	19.8	15.5	11.2	7.0	2.7	-1.6	-5.9	-10.2	-14.6	-18.9	-23.3
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	-0.1	-0.1	-0.2	-0.3	-0.4
-90	62.5	57.5	52.5	47.6	42.6	37.5	32.6	27.6	22.5	17.6	12.6	7.5	2.6	-2.4	-7.4	-12.4	-17.4	-22.4	-27.4
	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6

DECLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	-27.6	-22.7	-17.9	-13.1	-8.3	-3.6	1.1	5.7	10.3	14.9	19.5	24.0	28.5	32.9	37.3	41.7	46.1	50.5	54.8
	18.1	18.1	18.1	18.1	18.1	18.1	18.2	18.3	18.3	18.4	18.6	18.7	18.8	19.0	19.2	19.4	19.5	19.7	19.9
85	-17.2	-12.6	-8.1	-3.6	0.7	5.0	9.2	13.3	17.3	21.2	25.0	28.6	32.1	35.4	38.4	41.2	43.7	45.8	47.5
	12.1	12.0	12.0	12.0	12.0	12.1	12.3	12.5	12.7	13.0	13.3	13.7	14.1	14.5	15.0	15.5	16.0	16.4	16.7
80	-13.1	-8.8	-4.6	-0.4	3.6	7.6	11.5	15.2	18.8	22.2	25.5	28.5	31.2	33.6	35.5	36.9	37.6	37.4	36.2
	9.3	9.1	8.9	8.9	8.8	8.8	8.9	9.0	9.2	9.4	9.7	10.0	10.4	10.8	11.1	11.5	11.7	11.6	11.1
75	-11.2	-7.3	-3.4	0.4	4.1	7.7	11.2	14.5	17.7	20.6	23.3	25.8	27.8	29.4	30.5	30.8	30.3	28.6	25.6
	8.2	7.8	7.5	7.3	7.1	6.9	6.9	6.9	6.9	7.0	7.1	7.2	7.4	7.6	7.7	7.7	7.5	7.0	5.8
70	-9.8	-6.3	-2.8	0.6	3.8	7.0	10.0	12.9	15.5	18.0	20.2	22.1	23.6	24.6	25.0	24.6	23.4	21.1	17.7
	7.8	7.2	6.7	6.3	5.9	5.6	5.4	5.2	5.1	5.0	5.0	5.0	5.0	5.0	4.9	4.8	4.5	3.8	2.8
65	-8.5	-5.4	-2.4	0.6	3.4	6.0	8.6	10.9	13.1	15.1	16.8	18.2	19.3	19.8	19.9	19.2	17.8	15.5	12.3
	7.6	6.9	6.2	5.6	5.1	4.7	4.3	4.0	3.7	3.5	3.3	3.2	3.1	3.1	3.0	2.9	2.7	2.3	1.7
60	-7.1	-4.4	-1.9	0.6	2.9	5.1	7.1	9.0	10.7	12.3	13.6	14.6	15.3	15.6	15.4	14.7	13.3	11.3	8.6
	7.4	6.6	5.9	5.2	4.5	4.0	3.4	3.0	2.6	2.3	2.1	1.9	1.9	1.9	1.9	1.9	1.8	1.7	1.4
55	-5.9	-3.6	-1.4	0.7	2.6	4.3	5.9	7.3	8.6	9.7	10.6	11.4	11.8	11.9	11.7	11.0	9.8	8.1	5.9
	7.3	6.5	5.7	4.9	4.1	3.4	2.8	2.2	1.8	1.4	1.2	1.1	1.1	1.2	1.3	1.5	1.6	1.6	1.6
50	-4.9	-2.8	-1.0	0.7	2.3	3.6	4.8	5.9	6.8	7.6	8.2	8.6	8.9	8.8	8.6	7.9	7.0	5.6	3.9
	7.3	6.4	5.5	4.7	3.8	3.0	2.3	1.7	1.2	0.8	0.6	0.5	0.6	0.8	1.1	1.4	1.6	1.8	1.8
45	-4.1	-2.3	-0.7	0.7	2.0	3.1	4.0	4.7	5.3	5.8	6.2	6.4	6.4	6.3	6.0	5.5	4.7	3.7	2.5
	7.2	6.3	5.4	4.5	3.6	2.8	2.0	1.3	0.8	0.4	0.2	0.2	0.4	0.7	1.1	1.4	1.7	1.9	1.9
40	-3.7	-2.1	-0.6	0.6	1.7	2.5	3.2	3.8	4.2	4.5	4.6	4.6	4.5	4.3	3.9	3.5	2.9	2.2	1.3
	7.1	6.2	5.4	4.5	3.6	2.7	1.9	1.2	0.7	0.3	0.1	0.1	0.4	0.7	1.1	1.5	1.8	1.9	1.9
35	-3.5	-2.0	-0.7	0.4	1.3	2.1	2.7	3.1	3.4	3.5	3.4	3.3	3.0	2.6	2.3	1.9	1.5	1.0	0.5
	7.0	6.2	5.3	4.5	3.6	2.8	2.0	1.3	0.7	0.3	0.1	0.2	0.4	0.8	1.2	1.6	1.9	1.9	1.8
30	-3.5	-2.1	-0.9	0.1	0.9	1.6	2.1	2.5	2.7	2.7	2.5	2.2	1.8	1.3	0.9	0.6	0.3	0.1	-0.2
	6.8	6.1	5.3	4.5	3.8	3.0	2.3	1.6	1.0	0.5	0.3	0.3	0.5	0.9	1.3	1.7	1.9	1.8	1.6
25	-3.7	-2.3	-1.2	-0.3	0.5	1.2	1.7	2.1	2.2	2.1	1.8	1.4	0.8	0.3	-0.1	-0.4	-0.6	-0.6	-0.6
	6.7	6.0	5.4	4.7	4.0	3.3	2.6	2.0	1.3	0.8	0.5	0.4	0.6	1.0	1.4	1.7	1.8	1.7	1.3
20	-4.1	-2.8	-1.7	-0.8	0.0	0.7	1.3	1.7	1.8	1.6	1.2	0.7	0.0	-0.6	-1.0	-1.3	-1.3	-1.2	-1.0
	6.6	6.0	5.5	4.9	4.4	3.8	3.1	2.4	1.7	1.1	0.7	0.6	0.7	1.0	1.4	1.7	1.7	1.5	1.0
15	-4.8	-3.4	-2.3	-1.4	-0.5	0.2	0.9	1.3	1.4	1.2	0.7	0.0	-0.8	-1.4	-1.9	-2.1	-2.0	-1.7	-1.3
	6.6	6.1	5.7	5.3	4.8	4.3	3.6	2.9	2.1	1.3	0.8	0.6	0.7	1.0	1.3	1.6	1.6	1.3	0.7
10	-5.8	-4.4	-3.2	-2.2	-1.2	-0.3	0.4	0.9	1.0	0.7	0.0	-0.8	-1.6	-2.3	-2.7	-2.9	-2.7	-2.3	-1.7
	6.7	6.4	6.1	5.8	5.4	4.9	4.2	3.3	2.3	1.4	0.8	0.5	0.5	0.8	1.2	1.5	1.5	1.1	0.5
5	-7.2	-5.7	-4.4	-3.2	-2.1	-1.0	-0.2	0.3	0.4	0.0	-0.8	-1.7	-2.6	-3.4	-3.8	-3.8	-3.5	-2.9	-2.2
	7.0	6.7	6.5	6.3	6.0	5.5	4.7	3.6	2.5	1.4	0.5	0.2	0.2	0.6	1.0	1.3	1.3	1.0	0.3
0	-9.1	-7.5	-6.0	-4.5	-3.2	-1.9	-0.9	-0.4	-0.4	-1.0	-1.9	-3.0	-4.0	-4.8	-5.2	-5.1	-4.7	-3.9	-2.9
	7.3	7.2	7.1	7.0	6.7	6.1	5.1	3.8	2.3	1.0	0.0	-0.4	-0.3	0.2	0.8	1.2	1.2	0.9	0.3

DECLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-9.1	-7.5	-6.0	-4.5	-3.2	-1.9	-0.9	-0.4	-0.4	-1.0	-1.9	-3.0	-4.0	-4.8	-5.2	-5.1	-4.7	-3.9	-2.9
	7.3	7.2	7.1	7.0	6.7	6.1	5.1	3.8	2.3	1.0	0.0	-0.4	-0.3	0.2	0.8	1.2	1.2	0.9	0.3
-5	-11.6	-9.7	-8.0	-6.3	-4.6	-3.1	-2.0	-1.5	-1.7	-2.5	-3.6	-4.9	-6.0	-6.8	-7.1	-6.9	-6.2	-5.2	-3.9
	7.6	7.7	7.8	7.7	7.4	6.6	5.3	3.7	1.9	0.3	-0.8	-1.1	-0.9	-0.3	0.5	1.0	1.2	1.0	0.4
-10	-14.5	-12.5	-10.5	-8.5	-6.5	-4.8	-3.7	-3.3	-3.7	-4.8	-6.3	-7.7	-8.9	-9.6	-9.7	-9.3	-8.4	-7.1	-5.5
	7.6	8.0	8.2	8.3	7.8	6.8	5.1	3.0	0.9	-0.9	-1.9	-2.1	-1.7	-0.8	0.2	0.9	1.2	1.1	0.6
-15	-17.8	-15.7	-13.5	-11.2	-9.0	-7.3	-6.2	-6.1	-6.9	-8.4	-10.1	-11.6	-12.8	-13.4	-13.3	-12.7	-11.5	-9.8	-7.8
	7.3	7.9	8.3	8.3	7.7	6.3	4.1	1.6	-0.8	-2.5	-3.4	-3.3	-2.5	-1.3	-0.1	0.8	1.3	1.3	1.0
-20	-21.0	-19.1	-16.9	-14.5	-12.3	-10.7	-9.9	-10.3	-11.6	-13.4	-15.3	-16.9	-18.0	-18.3	-18.0	-17.1	-15.5	-13.4	-10.9
	6.6	7.2	7.6	7.5	6.5	4.6	2.0	-0.8	-3.2	-4.6	-5.0	-4.5	-3.3	-1.9	-0.5	0.7	1.3	1.5	1.3
-25	-23.7	-22.1	-20.2	-18.1	-16.2	-15.0	-14.9	-15.8	-17.6	-19.7	-21.6	-23.2	-24.1	-24.3	-23.7	-22.5	-20.5	-18.0	-15.0
	5.6	6.1	6.1	5.5	4.0	1.6	-1.3	-4.0	-6.0	-6.8	-6.7	-5.7	-4.3	-2.7	-1.1	0.2	1.0	1.5	1.5
-30	-25.4	-24.3	-22.8	-21.3	-20.2	-19.8	-20.4	-22.0	-24.1	-26.3	-28.3	-29.8	-30.6	-30.7	-30.0	-28.6	-26.5	-23.7	-20.3
	4.9	4.8	4.2	2.8	0.5	-2.3	-5.1	-7.4	-8.6	-8.9	-8.2	-7.1	-5.5	-3.9	-2.3	-0.9	0.1	0.8	1.1
-35	-25.8	-25.2	-24.4	-23.8	-23.6	-24.1	-25.5	-27.5	-29.9	-32.3	-34.3	-35.8	-36.8	-37.0	-36.5	-35.3	-33.2	-30.4	-26.8
	4.7	3.9	2.3	0.0	-2.8	-5.8	-8.3	-9.9	-10.6	-10.5	-9.7	-8.5	-7.1	-5.6	-4.1	-2.7	-1.5	-0.6	0.0
-40	-25.1	-25.1	-25.0	-25.3	-26.0	-27.4	-29.3	-31.8	-34.4	-36.9	-39.1	-40.9	-42.1	-42.7	-42.7	-41.9	-40.3	-37.8	-34.4
	4.8	3.3	1.0	-1.9	-5.0	-7.9	-10.0	-11.4	-11.8	-11.6	-10.9	-9.8	-8.7	-7.4	-6.2	-4.9	-3.8	-2.8	-2.0
-45	-23.7	-24.3	-25.0	-26.1	-27.6	-29.6	-32.0	-34.7	-37.6	-40.3	-42.8	-44.9	-46.6	-47.8	-48.3	-48.2	-47.4	-45.7	-43.0
	4.7	2.7	0.1	-2.9	-5.9	-8.5	-10.5	-11.7	-12.2	-12.1	-11.6	-10.9	-10.0	-9.1	-8.1	-7.2	-6.3	-5.5	-4.7
-50	-22.2	-23.4	-24.8	-26.5	-28.6	-31.1	-33.9	-36.9	-39.9	-42.9	-45.7	-48.2	-50.4	-52.2	-53.5	-54.3	-54.4	-53.8	-52.2
	4.3	2.2	-0.4	-3.2	-5.9	-8.2	-10.0	-11.2	-11.8	-12.0	-11.8	-11.4	-10.9	-10.3	-9.6	-9.0	-8.4	-7.9	-7.4
-55	-20.8	-22.6	-24.6	-26.9	-29.5	-32.3	-35.4	-38.6	-41.8	-45.0	-48.1	-51.1	-53.7	-56.1	-58.2	-59.9	-61.1	-61.8	-61.7
	3.6	1.6	-0.6	-3.0	-5.2	-7.2	-8.9	-10.1	-10.8	-11.2	-11.4	-11.3	-11.0	-10.7	-10.4	-10.1	-9.8	-9.6	-9.6
-60	-19.7	-22.1	-24.6	-27.3	-30.3	-33.4	-36.7	-40.1	-43.5	-47.0	-50.4	-53.7	-56.8	-59.8	-62.6	-65.2	-67.5	-69.5	-71.1
	2.7	1.2	-0.6	-2.5	-4.3	-5.9	-7.4	-8.5	-9.3	-9.9	-10.2	-10.4	-10.4	-10.4	-10.3	-10.2	-10.2	-10.3	-10.5
-65	-19.1	-21.9	-24.8	-27.9	-31.2	-34.5	-38.0	-41.6	-45.3	-48.9	-52.6	-56.3	-59.9	-63.4	-66.9	-70.2	-73.5	-76.7	-79.7
	1.9	0.7	-0.6	-1.9	-3.3	-4.6	-5.7	-6.7	-7.5	-8.1	-8.6	-8.9	-9.1	-9.3	-9.4	-9.5	-9.7	-9.9	-10.2
-70	-19.1	-22.2	-25.5	-28.9	-32.4	-36.0	-39.7	-43.5	-47.3	-51.2	-55.2	-59.2	-63.2	-67.2	-71.2	-75.2	-79.3	-83.4	-87.6
	1.2	0.4	-0.5	-1.4	-2.4	-3.3	-4.2	-4.9	-5.6	-6.2	-6.7	-7.1	-7.4	-7.6	-7.9	-8.1	-8.3	-8.5	-8.8
-75	-19.6	-23.1	-26.7	-30.4	-34.2	-38.0	-42.0	-46.0	-50.1	-54.2	-58.4	-62.7	-67.1	-71.5	-75.9	-80.5	-85.2	-90.0	-94.9
	0.5	0.1	-0.5	-1.1	-1.7	-2.3	-2.8	-3.4	-3.9	-4.4	-4.8	-5.1	-5.4	-5.7	-6.0	-6.2	-6.4	-6.5	-6.7
-80	-20.9	-24.8	-28.8	-32.8	-36.9	-41.1	-45.3	-49.6	-53.9	-58.4	-62.9	-67.4	-72.1	-76.8	-81.6	-86.6	-91.6	-96.8	-102.1
	0.0	-0.3	-0.6	-0.9	-1.2	-1.5	-1.9	-2.2	-2.5	-2.8	-3.1	-3.3	-3.6	-3.8	-3.9	-4.1	-4.2	-4.3	-4.4
-85	-23.3	-27.7	-32.1	-36.6	-41.1	-45.6	-50.2	-54.8	-59.5	-64.3	-69.0	-73.9	-78.8	-83.7	-88.8	-93.8	-99.0	-104.2	-109.5
	-0.4	-0.5	-0.7	-0.8	-0.9	-1.0	-1.2	-1.3	-1.4	-1.6	-1.7	-1.8	-1.9	-2.0	-2.1	-2.1	-2.2	-2.2	-2.3
-90	-27.4	-32.5	-37.4	-42.4	-47.5	-52.4	-57.5	-62.5	-67.4	-72.5	-77.5	-82.4	-87.5	-92.5	-97.4	-102.5	-107.5	-112.4	-117.5
	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6

DECLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	54.8	59.1	63.4	67.7	72.0	76.4	80.7	85.0	89.4	93.8	98.3	102.8	107.4	112.0	116.7	121.5	126.4	131.4	136.5
	19.9	20.1	20.3	20.5	20.7	20.9	21.1	21.3	21.5	21.7	21.8	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.0
85	47.5	48.7	49.3	49.2	48.5	47.0	44.9	42.4	39.7	37.1	35.0	33.6	32.9	33.1	34.1	35.9	38.3	41.5	45.2
	16.7	16.9	16.7	16.1	14.8	12.6	9.6	5.8	1.5	-2.8	-6.7	-9.9	-12.3	-13.9	-15.1	-15.8	-16.3	-16.6	-16.9
80	36.2	33.5	29.4	23.8	17.2	10.3	4.2	-0.6	-3.8	-5.5	-5.9	-5.3	-3.8	-1.7	0.9	3.9	7.3	11.0	14.9
	11.1	9.7	7.1	3.2	-1.7	-6.6	-10.4	-12.5	-13.3	-13.2	-12.7	-11.9	-11.1	-10.4	-9.8	-9.2	-8.8	-8.6	-8.4
75	25.6	21.1	15.3	8.6	1.7	-4.3	-9.0	-12.2	-13.9	-14.4	-13.9	-12.5	-10.5	-8.0	-5.1	-1.8	1.7	5.5	9.4
	5.8	3.8	0.9	-2.5	-5.7	-8.1	-9.3	-9.6	-9.3	-8.8	-8.1	-7.4	-6.7	-6.2	-5.7	-5.3	-5.0	-4.9	-4.9
70	17.7	13.1	7.7	1.8	-3.9	-8.7	-12.4	-14.8	-16.0	-16.2	-15.5	-14.1	-12.0	-9.5	-6.6	-3.4	0.1	3.7	7.5
	2.8	1.3	-0.6	-2.7	-4.4	-5.7	-6.3	-6.5	-6.3	-6.0	-5.5	-5.0	-4.6	-4.2	-3.9	-3.6	-3.5	-3.5	-3.6
65	12.3	8.3	3.7	-1.1	-5.7	-9.6	-12.7	-14.7	-15.7	-15.9	-15.2	-13.9	-12.0	-9.6	-6.8	-3.7	-0.4	3.1	6.7
	1.7	0.8	-0.3	-1.5	-2.6	-3.5	-4.1	-4.3	-4.3	-4.2	-3.9	-3.7	-3.4	-3.1	-2.9	-2.8	-2.8	-3.0	-3.2
60	8.6	5.3	1.5	-2.3	-6.1	-9.3	-11.9	-13.7	-14.6	-14.8	-14.2	-13.0	-11.2	-9.0	-6.3	-3.4	-0.2	3.1	6.5
	1.4	1.0	0.3	-0.5	-1.2	-1.9	-2.5	-2.8	-3.0	-3.0	-2.9	-2.8	-2.7	-2.5	-2.4	-2.5	-2.6	-2.8	-3.2
55	5.9	3.3	0.3	-2.8	-5.8	-8.5	-10.7	-12.3	-13.2	-13.4	-12.9	-11.8	-10.1	-8.0	-5.5	-2.8	0.2	3.3	6.5
	1.6	1.3	0.9	0.3	-0.3	-0.9	-1.4	-1.8	-2.1	-2.3	-2.3	-2.3	-2.2	-2.2	-2.2	-2.3	-2.5	-2.8	-3.3
50	3.9	1.9	-0.4	-2.9	-5.3	-7.5	-9.4	-10.8	-11.7	-11.8	-11.4	-10.4	-8.8	-6.8	-4.5	-1.9	0.9	3.8	6.7
	1.8	1.6	1.3	0.8	0.2	-0.3	-0.8	-1.3	-1.6	-1.8	-1.9	-1.9	-2.0	-2.0	-2.1	-2.3	-2.5	-2.9	-3.4
45	2.5	0.9	-0.8	-2.7	-4.6	-6.5	-8.1	-9.3	-10.0	-10.2	-9.8	-8.8	-7.4	-5.5	-3.2	-0.7	1.9	4.5	7.1
	1.9	1.7	1.4	0.9	0.4	-0.1	-0.6	-1.0	-1.3	-1.5	-1.7	-1.7	-1.8	-1.9	-2.0	-2.3	-2.6	-3.0	-3.5
40	1.3	0.3	-1.0	-2.4	-3.9	-5.4	-6.7	-7.8	-8.4	-8.5	-8.1	-7.2	-5.7	-3.9	-1.8	0.6	3.0	5.4	7.7
	1.9	1.7	1.3	0.8	0.3	-0.2	-0.7	-1.0	-1.3	-1.4	-1.5	-1.6	-1.7	-1.8	-2.0	-2.2	-2.6	-3.0	-3.6
35	0.5	-0.2	-1.1	-2.1	-3.2	-4.4	-5.4	-6.3	-6.7	-6.8	-6.3	-5.4	-4.0	-2.2	-0.2	2.0	4.2	6.4	8.3
	1.8	1.4	1.0	0.5	-0.1	-0.5	-0.9	-1.2	-1.3	-1.4	-1.5	-1.5	-1.5	-1.6	-1.8	-2.1	-2.5	-3.0	-3.5
30	-0.2	-0.5	-1.0	-1.7	-2.5	-3.3	-4.2	-4.8	-5.1	-5.1	-4.6	-3.6	-2.2	-0.5	1.4	3.5	5.5	7.4	9.0
	1.6	1.1	0.6	0.0	-0.5	-1.0	-1.3	-1.4	-1.5	-1.5	-1.4	-1.3	-1.3	-1.4	-1.6	-1.8	-2.3	-2.8	-3.3
25	-0.6	-0.7	-0.9	-1.3	-1.8	-2.4	-3.0	-3.4	-3.6	-3.4	-2.8	-1.8	-0.5	1.2	3.0	5.0	6.8	8.3	9.6
	1.3	0.7	0.1	-0.5	-1.1	-1.5	-1.7	-1.7	-1.6	-1.5	-1.3	-1.1	-1.0	-1.0	-1.2	-1.5	-2.0	-2.5	-3.1
20	-1.0	-0.8	-0.8	-0.8	-1.1	-1.5	-1.9	-2.1	-2.1	-1.8	-1.2	-0.1	1.2	2.8	4.5	6.2	7.8	9.1	10.1
	1.0	0.4	-0.4	-1.1	-1.6	-1.9	-2.0	-2.0	-1.7	-1.4	-1.1	-0.9	-0.7	-0.6	-0.8	-1.1	-1.6	-2.2	-2.8
15	-1.3	-0.9	-0.6	-0.5	-0.5	-0.7	-0.9	-1.0	-0.8	-0.4	0.3	1.4	2.7	4.2	5.8	7.3	8.7	9.7	10.4
	0.7	0.0	-0.8	-1.5	-2.0	-2.3	-2.3	-2.1	-1.7	-1.3	-0.9	-0.5	-0.3	-0.2	-0.3	-0.7	-1.2	-1.8	-2.5
10	-1.7	-1.1	-0.5	-0.1	0.0	0.0	0.0	0.1	0.3	0.8	1.6	2.7	4.0	5.3	6.8	8.1	9.3	10.1	10.5
	0.5	-0.3	-1.1	-1.8	-2.3	-2.5	-2.3	-2.0	-1.6	-1.1	-0.6	-0.2	0.1	0.2	0.0	-0.3	-0.9	-1.6	-2.2
5	-2.2	-1.3	-0.5	0.1	0.4	0.6	0.7	0.9	1.3	1.9	2.7	3.8	5.0	6.3	7.6	8.7	9.7	10.4	10.7
	0.3	-0.5	-1.3	-2.0	-2.4	-2.4	-2.2	-1.8	-1.3	-0.7	-0.2	0.2	0.4	0.5	0.3	-0.1	-0.6	-1.3	-1.9
0	-2.9	-1.8	-0.7	0.1	0.7	1.0	1.3	1.6	2.1	2.7	3.6	4.7	5.9	7.0	8.2	9.3	10.1	10.6	10.9
	0.3	-0.5	-1.3	-1.9	-2.2	-2.2	-1.9	-1.4	-0.8	-0.3	0.2	0.5	0.7	0.7	0.5	0.1	-0.4	-1.1	-1.7

DECLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-2.9	-1.8	-0.7	0.1	0.7	1.0	1.3	1.6	2.1	2.7	3.6	4.7	5.9	7.0	8.2	9.3	10.1	10.6	10.9
	0.3	-0.5	-1.3	-1.9	-2.2	-2.2	-1.9	-1.4	-0.8	-0.3	0.2	0.5	0.7	0.7	0.5	0.1	-0.4	-1.1	-1.7
-5	-3.9	-2.5	-1.2	-0.1	0.7	1.3	1.7	2.1	2.7	3.4	4.4	5.4	6.6	7.7	8.8	9.7	10.5	11.0	11.2
	0.4	-0.4	-1.1	-1.6	-1.8	-1.7	-1.3	-0.8	-0.3	0.2	0.5	0.8	0.9	0.9	0.6	0.3	-0.3	-0.9	-1.4
-10	-5.5	-3.8	-2.1	-0.7	0.4	1.2	1.9	2.5	3.1	4.0	5.0	6.1	7.2	8.4	9.4	10.3	11.0	11.5	11.7
	0.6	-0.1	-0.7	-1.1	-1.2	-1.0	-0.6	-0.2	0.3	0.6	0.9	1.0	1.0	0.9	0.7	0.4	-0.1	-0.6	-1.1
-15	-7.8	-5.6	-3.6	-1.7	-0.3	0.9	1.8	2.6	3.5	4.5	5.6	6.7	7.9	9.1	10.1	11.0	11.7	12.2	12.4
	1.0	0.4	-0.1	-0.4	-0.5	-0.3	0.1	0.5	0.8	1.0	1.1	1.2	1.1	1.0	0.8	0.5	0.1	-0.3	-0.7
-20	-10.9	-8.3	-5.7	-3.3	-1.4	0.2	1.5	2.6	3.7	4.9	6.1	7.4	8.7	9.9	11.0	12.0	12.7	13.2	13.5
	1.3	0.9	0.5	0.3	0.3	0.5	0.8	1.1	1.3	1.4	1.4	1.3	1.2	1.1	0.9	0.7	0.4	0.0	-0.3
-25	-15.0	-11.8	-8.6	-5.7	-3.1	-1.0	0.8	2.4	3.9	5.3	6.8	8.2	9.7	11.0	12.2	13.2	14.0	14.6	14.9
	1.5	1.3	1.1	0.9	1.0	1.1	1.4	1.6	1.7	1.7	1.6	1.5	1.4	1.3	1.1	0.9	0.7	0.4	0.1
-30	-20.3	-16.6	-12.7	-9.0	-5.6	-2.7	-0.3	1.9	3.9	5.7	7.5	9.2	10.9	12.3	13.6	14.7	15.6	16.2	16.7
	1.1	1.2	1.2	1.2	1.4	1.6	1.8	1.9	2.0	1.9	1.8	1.7	1.6	1.5	1.5	1.3	1.2	0.9	0.6
-35	-26.8	-22.6	-18.1	-13.6	-9.3	-5.4	-2.0	1.0	3.7	6.1	8.4	10.5	12.4	14.0	15.5	16.7	17.6	18.3	18.8
	0.0	0.4	0.8	1.0	1.3	1.6	1.9	2.1	2.2	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.7	1.5	1.2
-40	-34.4	-30.2	-25.2	-19.9	-14.5	-9.4	-4.7	-0.5	3.2	6.5	9.4	12.0	14.2	16.2	17.8	19.1	20.1	20.9	21.3
	-2.0	-1.3	-0.6	0.0	0.6	1.2	1.7	2.0	2.2	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.4	2.1	1.9
-45	-43.0	-39.2	-34.3	-28.5	-22.1	-15.5	-9.1	-3.3	2.0	6.6	10.5	13.8	16.6	18.9	20.8	22.2	23.3	24.0	24.4
	-4.7	-3.9	-3.1	-2.2	-1.2	-0.1	0.8	1.6	2.3	2.7	3.1	3.3	3.5	3.6	3.6	3.5	3.2	2.9	2.6
-50	-52.2	-49.6	-45.7	-40.3	-33.5	-25.6	-17.0	-8.5	-0.7	6.1	11.7	16.3	19.9	22.6	24.8	26.3	27.4	28.1	28.5
	-7.4	-7.0	-6.4	-5.7	-4.7	-3.2	-1.4	0.4	2.0	3.2	4.1	4.6	4.9	5.0	4.9	4.7	4.4	4.0	3.6
-55	-61.7	-60.9	-58.9	-55.4	-50.0	-42.3	-32.0	-19.8	-7.2	4.1	13.2	20.0	24.9	28.4	30.8	32.4	33.4	34.0	34.3
	-9.6	-9.6	-9.8	-10.0	-9.9	-9.2	-7.2	-3.7	0.5	4.0	6.2	7.3	7.6	7.5	7.1	6.6	6.1	5.5	5.0
-60	-71.1	-72.2	-72.7	-72.3	-70.7	-67.2	-60.4	-48.3	-28.5	-4.3	15.5	27.9	35.1	39.2	41.6	42.8	43.4	43.5	43.3
	-10.5	-11.0	-11.7	-12.8	-14.4	-16.4	-18.7	-19.1	-12.3	2.7	12.7	15.0	14.2	12.7	11.2	9.9	8.7	7.8	7.0
-65	-79.7	-82.7	-85.5	-88.2	-90.9	-93.4	-95.7	-97.8	-99.5	-99.5	57.5	69.2	68.4	66.9	65.2	63.5	61.8	60.2	58.6
	-10.2	-10.7	-11.5	-12.6	-14.3	-16.8	-20.8	-28.0	-43.4	-97.3	354.6	65.1	35.7	24.5	18.7	15.0	12.5	10.8	9.5
-70	-87.6	-91.9	-96.4	-101.1	-106.3	-112.0	-118.6	-126.6	-136.8	-150.5	-169.1	167.7	144.2	125.3	111.5	101.5	93.9	88.0	83.2
	-8.8	-9.2	-9.6	-10.2	-11.0	-12.0	-13.1	-14.4	-15.4	-14.9	-10.4	-0.1	10.4	15.1	15.4	14.1	12.5	11.1	9.9
-75	-94.9	-100.0	-105.4	-111.0	-117.1	-123.6	-130.7	-138.5	-147.1	-156.6	-167.1	-178.3	170.0	158.3	147.1	136.8	127.5	119.2	111.9
	-6.7	-6.9	-7.1	-7.2	-7.4	-7.5	-7.5	-7.4	-7.0	-6.2	-5.0	-3.3	-1.2	0.8	2.6	4.0	4.8	5.2	5.4
-80	-102.1	-107.5	-113.1	-119.0	-125.0	-131.3	-137.8	-144.6	-151.7	-159.0	-166.5	-174.2	177.9	170.1	162.3	154.6	147.1	139.9	133.0
	-4.4	-4.5	-4.5	-4.5	-4.4	-4.3	-4.2	-4.0	-3.7	-3.3	-2.8	-2.3	-1.8	-1.2	-0.6	0.0	0.5	0.9	1.2
-85	-109.5	-114.9	-120.4	-125.9	-131.5	-137.2	-143.0	-148.8	-154.7	-160.7	-166.7	-172.7	-178.8	175.2	169.2	163.2	157.2	151.3	145.4
	-2.3	-2.3	-2.3	-2.2	-2.2	-2.1	-2.0	-2.0	-1.8	-1.7	-1.6	-1.4	-1.3	-1.1	-1.0	-0.8	-0.6	-0.5	-0.4
-90	-117.5	-122.5	-127.4	-132.5	-137.5	-142.4	-147.5	-152.5	-157.4	-162.5	-167.5	-172.4	-177.5	177.5	172.6	167.6	162.5	157.6	152.6
	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6

Plots and Tables of DGRF 1985

Inclination

Figures	33
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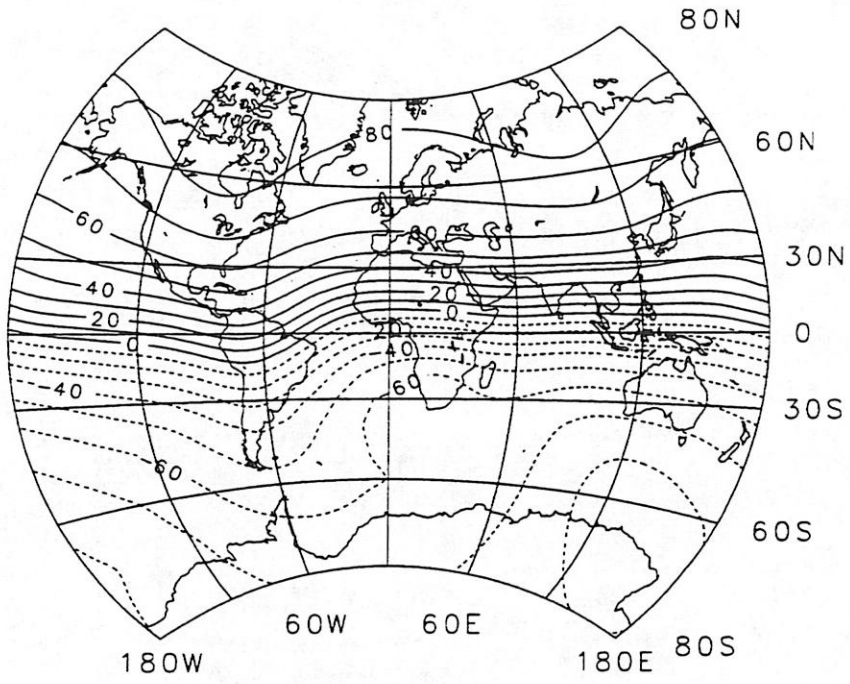
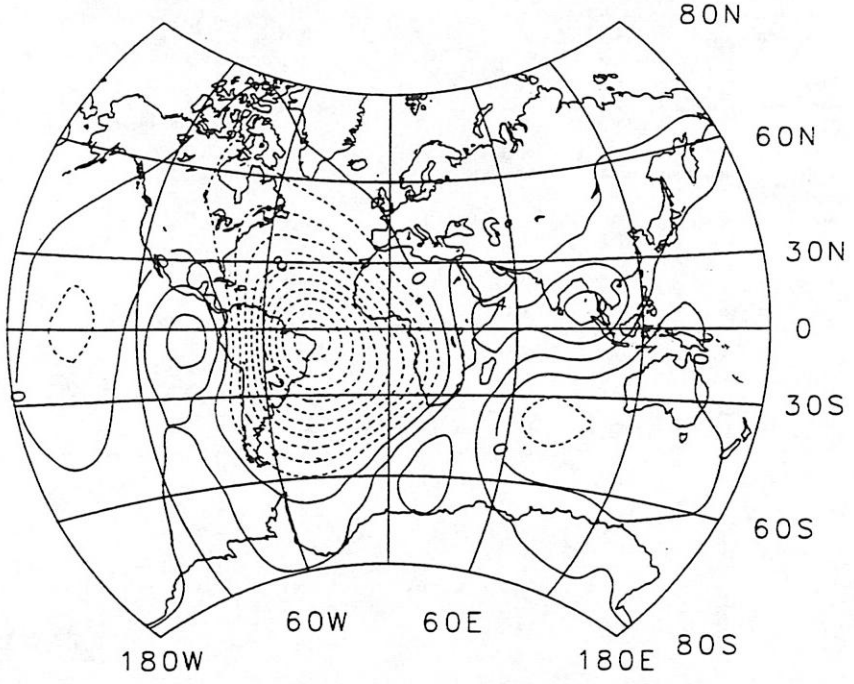
DGRF 1985 - INCLINATION

Figure 3 (**I**, top) Figure 4 ($\dot{\mathbf{I}}$, bottom)





INCLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	88.2	88.2	88.2	88.2	88.2	88.2	88.2	88.1	88.1	88.1	88.1	88.0	88.0	88.0	87.9	87.9	87.9	87.8	87.8
	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
85	88.3	88.4	88.4	88.5	88.6	88.6	88.7	88.8	88.9	89.0	89.1	89.1	89.0	88.9	88.8	88.6	88.4	88.2	88.0
	1.0	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.6
80	85.3	85.3	85.4	85.6	85.8	86.0	86.3	86.6	87.0	87.3	87.7	88.2	88.6	89.1	89.5	89.6	89.2	88.8	88.3
	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.9	1.1	0.9	0.4	0.3	0.2
75	81.6	81.7	81.9	82.1	82.5	82.8	83.3	83.8	84.3	84.9	85.6	86.2	86.9	87.7	88.4	89.1	89.5	89.1	88.4
	1.5	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.5	0.2	-0.3	-1.4	-1.1	-0.7
70	77.8	77.9	78.2	78.5	78.9	79.4	80.0	80.7	81.4	82.2	83.1	83.9	84.8	85.7	86.6	87.4	87.9	88.0	87.6
	1.9	1.8	1.8	1.7	1.7	1.6	1.5	1.3	1.2	1.1	0.9	0.7	0.5	0.2	-0.2	-0.7	-1.4	-1.9	-1.8
65	73.7	73.9	74.2	74.7	75.2	75.9	76.6	77.4	78.3	79.3	80.2	81.3	82.3	83.3	84.2	85.1	85.7	86.0	85.9
	2.0	2.0	1.9	1.8	1.7	1.6	1.4	1.2	1.1	0.9	0.6	0.4	0.1	-0.2	-0.6	-1.1	-1.6	-2.1	-2.4
60	69.6	69.9	70.3	70.8	71.4	72.2	73.0	73.9	74.9	76.0	77.1	78.2	79.3	80.4	81.4	82.2	82.9	83.3	83.4
	2.1	2.0	1.9	1.7	1.6	1.4	1.2	1.0	0.7	0.5	0.3	0.0	-0.3	-0.6	-0.9	-1.3	-1.7	-2.2	-2.6
55	65.4	65.8	66.3	66.9	67.6	68.4	69.3	70.3	71.4	72.5	73.6	74.8	75.9	77.0	78.0	79.0	79.7	80.2	80.4
	1.9	1.8	1.7	1.5	1.2	1.0	0.8	0.5	0.3	0.0	-0.2	-0.4	-0.6	-0.8	-1.1	-1.4	-1.7	-2.2	-2.6
50	61.2	61.7	62.3	63.0	63.7	64.6	65.6	66.6	67.7	68.8	69.9	71.1	72.2	73.3	74.4	75.3	76.1	76.7	77.1
	1.7	1.5	1.3	1.1	0.8	0.5	0.2	0.0	-0.3	-0.5	-0.6	-0.8	-0.9	-1.0	-1.1	-1.3	-1.6	-2.0	-2.5
45	57.0	57.6	58.3	59.1	59.9	60.8	61.8	62.8	63.8	64.9	66.0	67.2	68.3	69.4	70.4	71.4	72.3	73.0	73.4
	1.4	1.2	0.9	0.6	0.3	0.0	-0.3	-0.6	-0.8	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.1	-1.3	-1.7	-2.2
40	52.8	53.5	54.4	55.2	56.1	57.0	57.9	58.9	59.9	60.9	62.0	63.0	64.1	65.2	66.3	67.3	68.2	68.9	69.4
	1.1	0.8	0.5	0.2	-0.2	-0.5	-0.8	-1.0	-1.2	-1.3	-1.2	-1.2	-1.0	-0.8	-0.7	-0.7	-0.8	-1.2	-1.8
35	48.3	49.3	50.3	51.2	52.1	53.0	53.9	54.8	55.7	56.7	57.7	58.7	59.7	60.7	61.8	62.8	63.8	64.6	65.2
	0.9	0.6	0.2	-0.2	-0.6	-0.9	-1.2	-1.4	-1.5	-1.5	-1.4	-1.2	-0.9	-0.6	-0.3	-0.2	-0.2	-0.6	-1.2
30	43.4	44.6	45.8	46.9	47.8	48.7	49.5	50.3	51.2	52.0	53.0	53.9	54.9	55.9	56.9	57.9	58.9	59.8	60.6
	0.8	0.4	0.0	-0.5	-0.9	-1.3	-1.5	-1.6	-1.7	-1.6	-1.4	-1.1	-0.7	-0.3	0.1	0.4	0.4	0.1	-0.5
25	37.8	39.4	40.8	41.9	42.9	43.7	44.5	45.2	46.0	46.8	47.6	48.5	49.4	50.4	51.4	52.5	53.6	54.6	55.5
	0.9	0.4	-0.2	-0.7	-1.2	-1.5	-1.8	-1.8	-1.8	-1.6	-1.3	-0.9	-0.4	0.1	0.6	1.0	1.2	0.9	0.3
20	31.4	33.2	34.8	36.0	37.0	37.8	38.5	39.2	40.0	40.7	41.5	42.3	43.2	44.1	45.2	46.3	47.6	48.7	49.8
	1.0	0.5	-0.2	-0.9	-1.4	-1.8	-2.0	-2.0	-1.8	-1.6	-1.2	-0.7	-0.1	0.5	1.2	1.7	2.0	1.8	1.2
15	23.8	25.9	27.6	29.0	30.0	30.8	31.5	32.2	32.9	33.6	34.4	35.2	36.0	37.0	38.1	39.4	40.7	42.1	43.5
	1.2	0.5	-0.2	-1.0	-1.6	-2.0	-2.2	-2.1	-1.9	-1.6	-1.1	-0.6	0.1	0.9	1.7	2.4	2.8	2.7	2.1
10	15.2	17.4	19.2	20.7	21.8	22.6	23.3	24.0	24.7	25.5	26.3	27.0	27.9	28.9	30.0	31.4	33.0	34.7	36.3
	1.3	0.6	-0.3	-1.1	-1.8	-2.2	-2.4	-2.3	-2.0	-1.5	-1.0	-0.4	0.4	1.3	2.2	3.0	3.6	3.6	3.0
5	5.6	7.8	9.7	11.2	12.3	13.2	14.0	14.8	15.6	16.4	17.2	18.0	18.8	19.9	21.1	22.7	24.5	26.4	28.3
	1.3	0.5	-0.4	-1.3	-2.0	-2.4	-2.5	-2.4	-2.0	-1.5	-0.9	-0.2	0.7	1.6	2.7	3.6	4.3	4.4	3.9
0	-4.6	-2.5	-0.6	0.9	2.1	3.0	3.9	4.8	5.6	6.5	7.4	8.3	9.1	10.2	11.5	13.2	15.1	17.3	19.5
	1.2	0.4	-0.5	-1.4	-2.1	-2.5	-2.6	-2.4	-2.0	-1.4	-0.7	0.0	0.9	1.9	3.0	4.1	4.8	5.0	4.5

INCLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	-4.6	-2.5	-0.6	0.9	2.1	3.0	3.9	4.8	5.6	6.5	7.4	8.3	9.1	10.2	11.5	13.2	15.1	17.3	19.5
	1.2	0.4	-0.5	-1.4	-2.1	-2.5	-2.6	-2.4	-2.0	-1.4	-0.7	0.0	0.9	1.9	3.0	4.1	4.8	5.0	4.5
-5	-14.9	-12.9	-11.1	-9.7	-8.5	-7.5	-6.5	-5.5	-4.5	-3.6	-2.6	-1.7	-0.8	0.3	1.6	3.3	5.3	7.6	10.0
	0.9	0.2	-0.6	-1.4	-2.1	-2.5	-2.5	-2.3	-1.8	-1.2	-0.5	0.2	1.1	2.2	3.2	4.3	5.0	5.2	4.7
-10	-24.7	-22.9	-21.3	-19.9	-18.7	-17.7	-16.6	-15.6	-14.5	-13.5	-12.5	-11.5	-10.6	-9.5	-8.2	-6.5	-4.5	-2.2	0.2
	0.7	0.1	-0.6	-1.3	-1.9	-2.3	-2.3	-2.1	-1.6	-1.0	-0.3	0.4	1.3	2.3	3.3	4.2	4.9	5.0	4.6
-15	-33.8	-32.2	-30.7	-29.4	-28.2	-27.1	-26.1	-25.0	-23.8	-22.7	-21.7	-20.7	-19.8	-18.7	-17.5	-15.9	-14.1	-11.9	-9.5
	0.4	0.0	-0.6	-1.2	-1.7	-2.0	-2.0	-1.8	-1.3	-0.8	-0.1	0.6	1.4	2.2	3.1	3.9	4.4	4.5	4.0
-20	-41.8	-40.4	-39.0	-37.8	-36.7	-35.6	-34.5	-33.4	-32.3	-31.2	-30.1	-29.1	-28.2	-27.2	-26.0	-24.6	-22.8	-20.8	-18.6
	0.2	-0.1	-0.6	-1.0	-1.4	-1.6	-1.6	-1.4	-1.1	-0.5	0.1	0.7	1.4	2.1	2.8	3.4	3.7	3.6	3.1
-25	-48.8	-47.5	-46.3	-45.1	-44.0	-42.9	-41.9	-40.8	-39.7	-38.6	-37.6	-36.6	-35.6	-34.6	-33.5	-32.2	-30.6	-28.7	-26.7
	0.1	-0.1	-0.5	-0.8	-1.1	-1.3	-1.3	-1.1	-0.8	-0.3	0.2	0.8	1.4	2.0	2.5	2.8	3.0	2.8	2.2
-30	-54.8	-53.6	-52.5	-51.4	-50.3	-49.3	-48.2	-47.2	-46.1	-45.1	-44.1	-43.2	-42.2	-41.2	-40.1	-38.8	-37.3	-35.5	-33.6
	0.1	-0.1	-0.3	-0.6	-0.8	-0.9	-1.0	-0.8	-0.5	-0.2	0.3	0.8	1.3	1.8	2.2	2.4	2.4	2.1	1.4
-35	-60.0	-58.9	-57.8	-56.7	-55.7	-54.7	-53.7	-52.7	-51.8	-50.8	-49.8	-48.9	-47.9	-46.8	-45.7	-44.4	-42.9	-41.2	-39.4
	0.1	0.0	-0.2	-0.4	-0.6	-0.7	-0.7	-0.6	-0.3	0.0	0.4	0.9	1.4	1.7	2.0	2.1	2.0	1.6	0.9
-40	-64.4	-63.4	-62.3	-61.3	-60.3	-59.4	-58.5	-57.6	-56.6	-55.7	-54.8	-53.8	-52.8	-51.7	-50.4	-49.0	-47.5	-45.8	-44.0
	0.1	0.0	-0.1	-0.2	-0.4	-0.4	-0.4	-0.3	-0.1	0.2	0.6	1.0	1.4	1.8	2.0	2.0	1.9	1.5	0.9
-45	-68.3	-67.3	-66.3	-65.4	-64.4	-63.6	-62.7	-61.8	-60.9	-60.0	-59.0	-58.0	-56.9	-55.7	-54.4	-53.0	-51.4	-49.7	-48.0
	0.1	0.1	0.0	-0.1	-0.2	-0.2	-0.2	-0.1	0.2	0.5	0.8	1.2	1.6	1.9	2.1	2.1	2.0	1.6	1.0
-50	-71.9	-70.9	-69.9	-69.0	-68.1	-67.3	-66.4	-65.5	-64.7	-63.7	-62.7	-61.7	-60.5	-59.2	-57.8	-56.3	-54.7	-53.1	-51.4
	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.5	0.8	1.1	1.5	1.8	2.1	2.3	2.3	2.2	1.9	1.4
-55	-75.2	-74.2	-73.3	-72.4	-71.5	-70.6	-69.8	-68.9	-68.0	-67.0	-65.9	-64.8	-63.6	-62.3	-60.8	-59.4	-57.8	-56.3	-54.8
	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.7	2.0	2.2	2.4	2.4	2.3	2.1	1.7
-60	-78.2	-77.3	-76.3	-75.4	-74.5	-73.6	-72.7	-71.8	-70.8	-69.8	-68.7	-67.5	-66.3	-65.0	-63.6	-62.2	-60.8	-59.4	-58.1
	0.3	0.4	0.4	0.5	0.5	0.6	0.8	1.0	1.2	1.4	1.7	1.9	2.2	2.3	2.4	2.5	2.4	2.2	1.9
-65	-80.8	-79.8	-78.9	-78.0	-77.0	-76.1	-75.2	-74.2	-73.2	-72.2	-71.1	-69.9	-68.7	-67.5	-66.3	-65.0	-63.8	-62.6	-61.4
	0.6	0.7	0.8	0.8	0.9	1.1	1.2	1.4	1.5	1.7	1.9	2.1	2.2	2.3	2.4	2.4	2.3	2.2	2.0
-70	-82.3	-81.4	-80.5	-79.6	-78.7	-77.8	-76.9	-75.9	-75.0	-74.0	-72.9	-71.9	-70.8	-69.8	-68.7	-67.6	-66.6	-65.6	-64.6
	1.2	1.3	1.3	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.3	2.3	2.2	2.1	2.0
-75	-81.9	-81.2	-80.6	-79.9	-79.1	-78.4	-77.6	-76.8	-75.9	-75.1	-74.2	-73.4	-72.5	-71.6	-70.8	-70.0	-69.1	-68.4	-67.6
	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.0
-80	-79.7	-79.4	-79.0	-78.6	-78.1	-77.6	-77.1	-76.5	-76.0	-75.4	-74.8	-74.2	-73.6	-73.0	-72.4	-71.8	-71.2	-70.7	-70.2
	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
-85	-76.7	-76.6	-76.5	-76.3	-76.1	-75.8	-75.6	-75.3	-75.1	-74.8	-74.5	-74.2	-73.9	-73.6	-73.3	-73.0	-72.7	-72.4	-72.1
	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
-90	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

INCLINATION

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	87.8	87.7	87.7	87.6	87.6	87.6	87.5	87.5	87.4	87.4	87.4	87.3	87.3	87.3	87.3	87.2	87.2	87.2	87.2
	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9
85	88.0	87.8	87.5	87.3	87.1	86.8	86.6	86.4	86.2	86.0	85.9	85.7	85.6	85.5	85.4	85.3	85.2	85.1	85.1
	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1
80	88.3	87.8	87.3	86.8	86.4	85.9	85.5	85.1	84.7	84.4	84.1	83.8	83.5	83.3	83.1	82.9	82.8	82.7	82.6
	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.3	1.4
75	88.4	87.7	86.9	86.2	85.5	84.9	84.3	83.7	83.2	82.7	82.2	81.8	81.5	81.1	80.9	80.7	80.5	80.3	80.2
	-0.7	-0.4	-0.2	-0.1	0.1	0.2	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.5
70	87.6	87.0	86.2	85.3	84.5	83.6	82.9	82.1	81.4	80.8	80.2	79.7	79.3	78.9	78.6	78.3	78.1	78.0	77.8
	-1.8	-1.5	-1.2	-0.9	-0.7	-0.4	-0.2	0.0	0.2	0.3	0.5	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.4
65	85.9	85.4	84.7	83.8	82.9	82.0	81.1	80.2	79.4	78.6	77.9	77.3	76.8	76.4	76.0	75.8	75.5	75.4	75.3
	-2.4	-2.3	-2.1	-1.9	-1.6	-1.3	-1.1	-0.8	-0.6	-0.3	-0.1	0.1	0.3	0.5	0.7	0.8	1.0	1.1	1.2
60	83.4	83.1	82.6	81.8	80.8	79.8	78.8	77.8	76.9	76.0	75.2	74.6	74.0	73.5	73.1	72.8	72.6	72.5	72.4
	-2.6	-2.8	-2.8	-2.7	-2.5	-2.3	-2.0	-1.8	-1.5	-1.2	-0.9	-0.7	-0.4	-0.2	0.1	0.3	0.5	0.8	0.9
55	80.4	80.3	79.9	79.1	78.2	77.2	76.1	75.0	73.9	73.0	72.1	71.3	70.7	70.2	69.7	69.4	69.2	69.1	69.1
	-2.6	-3.0	-3.3	-3.4	-3.4	-3.2	-3.1	-2.8	-2.5	-2.2	-1.9	-1.6	-1.3	-0.9	-0.6	-0.3	0.0	0.3	0.6
50	77.1	77.1	76.7	76.1	75.2	74.1	73.0	71.8	70.6	69.5	68.5	67.6	66.9	66.3	65.9	65.5	65.3	65.2	65.2
	-2.5	-3.0	-3.5	-3.8	-4.0	-4.1	-4.1	-3.9	-3.7	-3.4	-3.0	-2.6	-2.2	-1.8	-1.4	-0.9	-0.5	-0.1	0.3
45	73.4	73.5	73.3	72.7	71.9	70.8	69.5	68.2	66.9	65.6	64.5	63.5	62.6	61.9	61.4	61.0	60.7	60.6	60.6
	-2.2	-2.8	-3.5	-4.1	-4.6	-4.9	-5.0	-5.0	-4.8	-4.6	-4.2	-3.8	-3.4	-2.8	-2.3	-1.7	-1.1	-0.5	0.0
40	69.4	69.7	69.5	69.1	68.2	67.1	65.8	64.3	62.9	61.4	60.0	58.8	57.8	56.9	56.2	55.7	55.3	55.2	55.2
	-1.8	-2.5	-3.4	-4.3	-5.1	-5.6	-6.0	-6.2	-6.1	-5.9	-5.6	-5.2	-4.6	-4.0	-3.3	-2.5	-1.8	-1.1	-0.4
35	65.2	65.5	65.5	65.1	64.4	63.2	61.8	60.2	58.5	56.8	55.1	53.6	52.2	51.0	50.1	49.4	48.9	48.7	48.7
	-1.2	-2.1	-3.2	-4.3	-5.4	-6.3	-7.0	-7.4	-7.5	-7.4	-7.2	-6.7	-6.1	-5.3	-4.5	-3.5	-2.6	-1.7	-0.8
30	60.6	61.0	61.2	60.9	60.2	59.0	57.5	55.7	53.7	51.7	49.6	47.6	45.8	44.2	42.9	42.0	41.3	41.0	41.0
	-0.5	-1.5	-2.8	-4.2	-5.7	-6.9	-7.9	-8.6	-9.0	-9.1	-8.9	-8.5	-7.8	-6.9	-5.9	-4.7	-3.6	-2.5	-1.5
25	55.5	56.1	56.4	56.3	55.7	54.5	52.9	50.9	48.6	46.0	43.4	40.9	38.5	36.3	34.6	33.3	32.4	32.0	31.9
	0.3	-0.8	-2.3	-4.0	-5.8	-7.4	-8.9	-9.9	-10.7	-11.0	-11.0	-10.6	-9.8	-8.8	-7.5	-6.2	-4.8	-3.5	-2.3
20	49.8	50.7	51.2	51.2	50.7	49.6	47.9	45.6	42.8	39.8	36.5	33.2	30.1	27.3	25.0	23.3	22.1	21.5	21.4
	1.2	0.0	-1.6	-3.6	-5.8	-7.9	-9.7	-11.3	-12.4	-13.0	-13.2	-12.9	-12.1	-10.9	-9.4	-7.8	-6.2	-4.7	-3.4
15	43.5	44.6	45.3	45.5	45.2	44.0	42.2	39.7	36.5	32.8	28.9	24.8	20.9	17.4	14.4	12.2	10.7	9.9	9.7
	2.1	0.9	-0.9	-3.2	-5.7	-8.2	-10.5	-12.6	-14.1	-15.1	-15.6	-15.3	-14.5	-13.2	-11.5	-9.6	-7.8	-6.1	-4.6
10	36.3	37.7	38.7	39.2	38.9	37.8	35.9	33.0	29.4	25.2	20.5	15.7	11.0	6.8	3.2	0.5	-1.3	-2.3	-2.7
	3.0	1.8	-0.2	-2.6	-5.5	-8.4	-11.2	-13.7	-15.8	-17.2	-17.8	-17.7	-16.9	-15.4	-13.4	-11.4	-9.4	-7.6	-6.0
5	28.3	30.0	31.3	32.0	31.9	30.8	28.8	25.7	21.7	16.9	11.7	6.2	0.9	-3.9	-7.9	-11.0	-13.1	-14.4	-15.1
	3.9	2.6	0.5	-2.1	-5.2	-8.5	-11.8	-14.7	-17.2	-18.9	-19.8	-19.7	-18.8	-17.1	-15.1	-12.9	-10.7	-8.9	-7.2
0	19.5	21.5	23.0	24.0	24.0	23.0	20.9	17.7	13.4	8.3	2.6	-3.2	-8.9	-14.0	-18.3	-21.7	-24.1	-25.7	-26.6
	4.5	3.2	1.1	-1.7	-5.0	-8.6	-12.2	-15.4	-18.2	-20.1	-21.1	-21.1	-20.1	-18.3	-16.2	-14.0	-11.8	-9.9	-8.3

INCLINATION

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	19.5	21.5	23.0	24.0	24.0	23.0	20.9	17.7	13.4	8.3	2.6	-3.2	-8.9	-14.0	-18.3	-21.7	-24.1	-25.7	-26.6
	4.5	3.2	1.1	-1.7	-5.0	-8.6	-12.2	-15.4	-18.2	-20.1	-21.1	-21.1	-20.1	-18.3	-16.2	-14.0	-11.8	-9.9	-8.3
-5	10.0	12.2	14.0	15.2	15.4	14.5	12.4	9.1	4.6	-0.6	-6.4	-12.3	-18.0	-23.2	-27.6	-31.1	-33.7	-35.5	-36.8
	4.7	3.5	1.3	-1.5	-4.9	-8.6	-12.3	-15.7	-18.6	-20.6	-21.6	-21.5	-20.5	-18.9	-16.8	-14.7	-12.6	-10.8	-9.1
-10	0.2	2.5	4.5	5.8	6.2	5.5	3.5	0.2	-4.2	-9.3	-14.9	-20.6	-26.1	-31.0	-35.4	-38.9	-41.7	-43.7	-45.3
	4.6	3.3	1.2	-1.5	-4.9	-8.5	-12.2	-15.6	-18.3	-20.3	-21.2	-21.1	-20.3	-18.8	-16.9	-15.0	-13.1	-11.4	-9.8
-15	-9.5	-7.2	-5.1	-3.7	-3.1	-3.7	-5.5	-8.6	-12.7	-17.5	-22.7	-28.0	-33.0	-37.6	-41.7	-45.1	-48.0	-50.2	-52.0
	4.0	2.7	0.8	-1.8	-5.0	-8.4	-11.8	-15.0	-17.5	-19.2	-20.1	-20.1	-19.4	-18.2	-16.6	-15.0	-13.3	-11.7	-10.1
-20	-18.6	-16.3	-14.3	-12.8	-12.1	-12.5	-14.1	-16.8	-20.6	-24.9	-29.6	-34.3	-38.9	-43.0	-46.8	-50.0	-52.8	-55.2	-57.2
	3.1	1.9	0.1	-2.3	-5.1	-8.2	-11.3	-14.1	-16.3	-17.8	-18.6	-18.6	-18.1	-17.2	-15.9	-14.5	-13.1	-11.6	-10.1
-25	-26.7	-24.6	-22.7	-21.2	-20.4	-20.6	-21.9	-24.3	-27.5	-31.4	-35.5	-39.7	-43.7	-47.4	-50.7	-53.8	-56.4	-58.8	-60.8
	2.2	1.0	-0.6	-2.7	-5.2	-7.9	-10.6	-13.0	-14.9	-16.1	-16.8	-16.9	-16.6	-15.8	-14.8	-13.6	-12.3	-10.9	-9.5
-30	-33.6	-31.7	-29.8	-28.4	-27.6	-27.6	-28.6	-30.6	-33.4	-36.7	-40.3	-43.9	-47.5	-50.7	-53.8	-56.5	-59.0	-61.1	-63.0
	1.4	0.3	-1.2	-3.1	-5.2	-7.5	-9.8	-11.7	-13.3	-14.4	-15.0	-15.1	-14.8	-14.2	-13.4	-12.3	-11.1	-9.7	-8.3
-35	-39.4	-37.5	-35.8	-34.4	-33.5	-33.5	-34.2	-35.9	-38.2	-41.0	-44.1	-47.3	-50.3	-53.2	-55.9	-58.3	-60.5	-62.4	-64.0
	0.9	-0.1	-1.4	-3.0	-4.9	-6.8	-8.7	-10.4	-11.7	-12.6	-13.1	-13.2	-12.9	-12.4	-11.6	-10.5	-9.3	-7.9	-6.5
-40	-44.0	-42.3	-40.6	-39.3	-38.5	-38.3	-38.9	-40.1	-42.0	-44.4	-47.0	-49.7	-52.3	-54.8	-57.1	-59.2	-61.1	-62.6	-63.9
	0.9	-0.1	-1.2	-2.6	-4.2	-5.8	-7.4	-8.8	-9.9	-10.6	-11.0	-11.1	-10.8	-10.2	-9.4	-8.3	-7.1	-5.6	-4.1
-45	-48.0	-46.3	-44.8	-43.5	-42.7	-42.5	-42.8	-43.8	-45.2	-47.1	-49.2	-51.4	-53.6	-55.7	-57.7	-59.4	-60.9	-62.1	-63.0
	1.0	0.3	-0.7	-1.9	-3.2	-4.5	-5.8	-6.9	-7.8	-8.4	-8.7	-8.7	-8.4	-7.8	-6.9	-5.8	-4.5	-3.0	-1.6
-50	-51.4	-49.9	-48.5	-47.3	-46.6	-46.2	-46.4	-47.0	-48.1	-49.5	-51.1	-52.8	-54.5	-56.2	-57.7	-59.0	-60.1	-61.0	-61.7
	1.4	0.7	-0.1	-1.0	-2.0	-3.1	-4.1	-5.0	-5.7	-6.1	-6.3	-6.2	-5.8	-5.1	-4.2	-3.1	-1.9	-0.6	0.7
-55	-54.8	-53.3	-52.1	-51.1	-50.3	-49.9	-49.9	-50.3	-50.9	-51.8	-52.9	-54.2	-55.4	-56.6	-57.7	-58.7	-59.5	-60.1	-60.6
	1.7	1.2	0.6	-0.2	-0.9	-1.7	-2.4	-3.1	-3.5	-3.8	-3.9	-3.7	-3.3	-2.7	-1.8	-0.8	0.2	1.4	2.4
-60	-58.1	-56.8	-55.7	-54.8	-54.1	-53.7	-53.5	-53.6	-53.9	-54.4	-55.1	-55.8	-56.6	-57.4	-58.1	-58.8	-59.4	-59.8	-60.1
	1.9	1.5	1.1	0.5	0.0	-0.5	-1.0	-1.4	-1.7	-1.8	-1.8	-1.6	-1.2	-0.6	0.1	0.9	1.7	2.5	3.3
-65	-61.4	-60.3	-59.4	-58.6	-58.0	-57.5	-57.2	-57.1	-57.2	-57.4	-57.7	-58.0	-58.4	-58.9	-59.3	-59.7	-60.1	-60.4	-60.7
	2.0	1.7	1.4	1.1	0.7	0.4	0.1	-0.1	-0.2	-0.2	-0.2	0.1	0.4	0.8	1.3	1.9	2.5	3.1	3.6
-70	-64.6	-63.8	-63.0	-62.3	-61.7	-61.3	-60.9	-60.7	-60.6	-60.5	-60.6	-60.7	-60.8	-61.0	-61.2	-61.4	-61.6	-61.9	-62.1
	2.0	1.8	1.7	1.5	1.3	1.1	1.0	0.9	0.9	0.9	1.0	1.2	1.4	1.7	2.1	2.4	2.8	3.2	3.5
-75	-67.6	-66.9	-66.3	-65.7	-65.2	-64.8	-64.5	-64.2	-64.0	-63.8	-63.7	-63.6	-63.6	-63.7	-63.7	-63.8	-63.9	-64.1	-64.3
	2.0	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.8	3.0	3.2
-80	-70.2	-69.7	-69.2	-68.8	-68.4	-68.1	-67.8	-67.5	-67.3	-67.1	-66.9	-66.8	-66.8	-66.7	-66.7	-66.7	-66.8	-66.9	-67.0
	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.9
-85	-72.1	-71.8	-71.6	-71.4	-71.1	-70.9	-70.7	-70.6	-70.4	-70.3	-70.2	-70.1	-70.1	-70.0	-70.0	-70.0	-70.0	-70.1	-70.1
	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.6
-90	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

LONGITUDE: / LATITUDE	INCLINATION 0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	87.2 0.9	87.2 0.9	87.2 0.9	87.2 0.9	87.2 0.9	87.2 0.9	87.2 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.4 0.9	87.4 0.9	87.4 0.9	87.5 0.9	87.5 0.9	87.6 0.9	87.6 0.9	87.7 0.9
85	85.1 1.1	85.1 1.1	85.1 1.1	85.1 1.1	85.2 1.1	85.2 1.2	85.3 1.2	85.4 1.2	85.5 1.2	85.6 1.2	85.8 1.2	85.9 1.2	86.1 1.2	86.3 1.2	86.5 1.2	86.7 1.2	86.9 1.2	87.1 1.2	87.3 1.2
80	82.6 1.4	82.6 1.4	82.6 1.4	82.6 1.5	82.7 1.5	82.8 1.5	82.9 1.5	83.1 1.5	83.3 1.5	83.5 1.5	83.7 1.5	84.0 1.5	84.3 1.5	84.7 1.5	85.0 1.5	85.4 1.5	85.8 1.5	86.1 1.5	86.5 1.5
75	80.2 1.5	80.2 1.6	80.2 1.6	80.2 1.6	80.3 1.7	80.4 1.7	80.6 1.7	80.7 1.7	81.0 1.7	81.3 1.7	81.6 1.7	82.0 1.7	82.4 1.7	82.8 1.7	83.3 1.7	83.7 1.7	84.2 1.7	84.7 1.8	85.1 1.8
70	77.8 1.4	77.8 1.5	77.8 1.6	77.8 1.6	77.9 1.7	78.0 1.7	78.2 1.7	78.4 1.7	78.6 1.7	78.9 1.7	79.3 1.7	79.7 1.7	80.1 1.7	80.6 1.8	81.1 1.8	81.7 1.8	82.2 1.8	82.7 1.9	83.1 1.9
65	75.3 1.2	75.2 1.3	75.3 1.4	75.3 1.5	75.4 1.6	75.5 1.6	75.7 1.6	75.9 1.6	76.2 1.6	76.5 1.6	76.8 1.6	77.2 1.6	77.6 1.6	78.1 1.6	78.6 1.6	79.1 1.7	79.6 1.7	80.1 1.8	80.5 1.8
60	72.4 0.9	72.4 1.1	72.4 1.2	72.5 1.4	72.7 1.4	72.8 1.5	73.0 1.5	73.2 1.5	73.5 1.5	73.8 1.5	74.1 1.4	74.4 1.4	74.8 1.4	75.2 1.3	75.7 1.3	76.1 1.4	76.6 1.4	77.0 1.5	77.3 1.6
55	69.1 0.6	69.1 0.9	69.2 1.1	69.4 1.2	69.5 1.3	69.7 1.4	70.0 1.4	70.2 1.4	70.4 1.4	70.7 1.3	71.0 1.2	71.3 1.1	71.6 1.0	71.9 1.0	72.3 1.0	72.7 1.1	73.0 1.1	73.3 1.3	73.6 1.4
50	65.2 0.3	65.3 0.7	65.4 0.9	65.6 1.2	65.8 1.3	66.1 1.4	66.4 1.4	66.6 1.4	66.9 1.3	67.1 1.2	67.4 1.0	67.6 0.9	67.9 0.8	68.2 0.7	68.4 0.7	68.7 0.8	68.9 0.9	69.2 1.1	69.3 1.3
45	60.6 0.0	60.7 0.5	60.9 0.8	61.1 1.2	61.4 1.4	61.7 1.5	62.1 1.5	62.4 1.5	62.7 1.3	63.0 1.2	63.2 1.0	63.4 0.8	63.6 0.7	63.8 0.6	64.0 0.6	64.1 0.7	64.2 0.9	64.4 1.1	64.4 1.4
40	55.2 -0.4	55.3 0.2	55.5 0.7	55.8 1.1	56.1 1.4	56.5 1.6	56.9 1.7	57.3 1.6	57.6 1.5	58.0 1.3	58.2 1.1	58.5 0.9	58.6 0.8	58.7 0.7	58.8 0.7	58.8 0.9	58.8 1.1	58.8 1.4	58.8 1.7
35	48.7 -0.8	48.8 -0.1	49.1 0.5	49.4 1.0	49.8 1.4	50.2 1.7	50.7 1.8	51.1 1.9	51.6 1.8	52.0 1.6	52.3 1.4	52.6 1.2	52.7 1.0	52.7 1.0	52.7 1.1	52.6 1.3	52.5 1.6	52.4 2.0	52.3 2.4
30	41.0 -1.5	41.1 -0.6	41.4 0.2	41.8 0.8	42.2 1.3	42.7 1.7	43.2 2.0	43.8 2.2	44.3 2.2	44.9 2.1	45.3 1.9	45.6 1.7	45.7 1.5	45.7 1.5	45.5 1.7	45.3 2.0	45.0 2.4	44.8 2.9	44.7 3.3
25	31.9 -2.3	32.0 -1.3	32.3 -0.4	32.7 0.4	33.2 1.1	33.7 1.7	34.3 2.2	35.1 2.5	35.8 2.6	36.5 2.6	37.0 2.4	37.4 2.3	37.5 2.1	37.4 2.2	37.2 2.4	36.8 2.8	36.4 3.4	36.1 3.9	35.8 4.3
20	21.4 -3.4	21.5 -2.2	21.8 -1.2	22.2 -0.2	22.7 0.7	23.3 1.5	24.0 2.3	24.9 2.8	25.8 3.1	26.7 3.2	27.4 3.1	27.9 3.0	28.0 2.8	27.8 2.9	27.5 3.2	27.0 3.7	26.4 4.4	26.0 5.0	25.7 5.5
15	9.7 -4.6	9.7 -3.3	10.0 -2.2	10.4 -1.0	10.9 0.1	11.5 1.3	12.4 2.3	13.4 3.1	14.6 3.6	15.7 3.9	16.5 3.8	17.1 3.6	17.2 3.5	17.0 3.6	16.5 3.9	15.9 4.5	15.3 5.2	14.8 5.9	14.5 6.4
10	-2.7 -6.0	-2.8 -4.6	-2.6 -3.3	-2.3 -1.9	-1.9 -0.5	-1.2 0.9	-0.2 2.2	1.0 3.3	2.3 4.1	3.6 4.4	4.6 4.4	5.2 4.2	5.4 4.0	5.2 4.0	4.6 4.4	3.9 5.0	3.2 5.7	2.7 6.4	2.4 6.8
5	-15.1 -7.2	-15.3 -5.7	-15.3 -4.3	-15.2 -2.8	-14.8 -1.3	-14.1 0.4	-13.1 2.0	-11.8 3.3	-10.3 4.3	-8.9 4.7	-7.7 4.8	-7.0 4.5	-6.8 4.2	-7.1 4.2	-7.6 4.4	-8.3 5.0	-9.0 5.7	-9.5 6.3	-9.8 6.7
0	-26.6 -8.3	-27.1 -6.8	-27.3 -5.3	-27.4 -3.7	-27.1 -1.9	-26.5 -0.1	-25.4 1.7	-24.0 3.2	-22.5 4.2	-21.0 4.8	-19.8 4.8	-19.1 4.5	-18.8 4.1	-19.0 3.9	-19.5 4.1	-20.2 4.5	-20.8 5.1	-21.3 5.6	-21.4 5.9

INCLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-26.6	-27.1	-27.3	-27.4	-27.1	-26.5	-25.4	-24.0	-22.5	-21.0	-19.8	-19.1	-18.8	-19.0	-19.5	-20.2	-20.8	-21.3	-21.4
	-8.3	-6.8	-5.3	-3.7	-1.9	-0.1	1.7	3.2	4.2	4.8	4.8	4.5	4.1	3.9	4.1	4.5	5.1	5.6	5.9
-5	-36.8	-37.6	-38.1	-38.3	-38.2	-37.6	-36.6	-35.2	-33.6	-32.1	-30.9	-30.1	-29.9	-30.0	-30.4	-31.0	-31.5	-31.9	-32.0
	-9.1	-7.6	-6.0	-4.3	-2.5	-0.6	1.3	2.9	4.0	4.6	4.5	4.2	3.7	3.4	3.4	3.7	4.1	4.5	4.6
-10	-45.3	-46.4	-47.2	-47.6	-47.6	-47.1	-46.2	-44.8	-43.2	-41.7	-40.5	-39.8	-39.4	-39.5	-39.9	-40.4	-40.9	-41.2	-41.3
	-9.8	-8.2	-6.6	-4.8	-2.9	-0.9	1.0	2.6	3.7	4.2	4.1	3.7	3.1	2.6	2.5	2.6	2.8	3.1	3.2
-15	-52.0	-53.4	-54.5	-55.1	-55.2	-54.8	-53.9	-52.5	-51.0	-49.5	-48.4	-47.6	-47.3	-47.4	-47.7	-48.2	-48.7	-49.0	-49.2
	-10.1	-8.5	-6.9	-5.1	-3.1	-1.1	0.7	2.3	3.3	3.8	3.6	3.0	2.3	1.7	1.4	1.4	1.5	1.7	1.8
-20	-57.2	-58.8	-60.0	-60.7	-60.9	-60.5	-59.6	-58.2	-56.8	-55.3	-54.2	-53.6	-53.3	-53.5	-53.9	-54.5	-55.0	-55.5	-55.7
	-10.1	-8.5	-6.8	-5.0	-3.1	-1.1	0.7	2.2	3.1	3.4	3.1	2.3	1.5	0.8	0.3	0.1	0.2	0.3	0.4
-25	-60.8	-62.4	-63.7	-64.4	-64.5	-64.1	-63.2	-61.8	-60.4	-59.1	-58.1	-57.7	-57.6	-58.0	-58.6	-59.3	-60.0	-60.6	-61.1
	-9.5	-7.9	-6.3	-4.4	-2.5	-0.7	1.0	2.3	3.0	3.1	2.5	1.6	0.6	-0.3	-0.8	-1.0	-1.0	-0.9	-0.8
-30	-63.0	-64.5	-65.6	-66.2	-66.2	-65.7	-64.7	-63.4	-62.1	-61.0	-60.3	-60.1	-60.4	-61.0	-61.9	-62.8	-63.8	-64.7	-65.3
	-8.3	-6.7	-5.0	-3.3	-1.4	0.3	1.7	2.7	3.1	2.7	1.9	0.8	-0.3	-1.2	-1.7	-2.0	-2.0	-1.9	-1.7
-35	-64.0	-65.3	-66.1	-66.4	-66.2	-65.5	-64.5	-63.4	-62.3	-61.6	-61.3	-61.5	-62.1	-63.0	-64.1	-65.4	-66.6	-67.7	-68.7
	-6.5	-4.9	-3.2	-1.5	0.2	1.6	2.6	3.2	3.0	2.4	1.3	0.1	-0.9	-1.8	-2.3	-2.6	-2.6	-2.5	-2.3
-40	-63.9	-64.8	-65.3	-65.4	-65.0	-64.3	-63.4	-62.5	-61.8	-61.5	-61.6	-62.1	-63.1	-64.2	-65.6	-67.1	-68.6	-70.0	-71.2
	-4.1	-2.5	-0.9	0.6	1.9	2.9	3.5	3.5	3.0	2.0	0.9	-0.3	-1.3	-2.0	-2.5	-2.8	-2.8	-2.7	-2.5
-45	-63.0	-63.5	-63.8	-63.7	-63.3	-62.7	-62.1	-61.6	-61.3	-61.4	-61.8	-62.6	-63.8	-65.1	-66.7	-68.3	-69.9	-71.6	-73.1
	-1.6	-0.1	1.3	2.5	3.4	3.9	4.0	3.6	2.9	1.9	0.8	-0.3	-1.1	-1.8	-2.2	-2.4	-2.5	-2.4	-2.3
-50	-61.7	-62.0	-62.1	-62.0	-61.8	-61.4	-61.2	-61.0	-61.1	-61.5	-62.2	-63.2	-64.5	-65.9	-67.5	-69.2	-70.9	-72.6	-74.3
	0.7	2.0	3.1	3.9	4.4	4.5	4.3	3.7	2.9	2.0	1.0	0.1	-0.6	-1.2	-1.5	-1.8	-1.8	-1.8	-1.7
-55	-60.6	-60.8	-60.9	-60.9	-60.9	-60.8	-60.9	-61.1	-61.4	-62.1	-62.9	-64.0	-65.2	-66.6	-68.2	-69.9	-71.6	-73.3	-75.1
	2.4	3.3	4.1	4.6	4.8	4.7	4.4	3.8	3.1	2.3	1.5	0.8	0.2	-0.3	-0.6	-0.8	-0.9	-0.9	-0.9
-60	-60.1	-60.4	-60.6	-60.7	-60.9	-61.0	-61.3	-61.7	-62.2	-63.0	-63.8	-64.9	-66.1	-67.4	-68.9	-70.5	-72.1	-73.7	-75.4
	3.3	4.0	4.4	4.7	4.8	4.6	4.3	3.9	3.3	2.7	2.1	1.6	1.1	0.7	0.4	0.2	0.1	0.0	0.0
-65	-60.7	-60.9	-61.1	-61.4	-61.7	-62.0	-62.4	-62.9	-63.5	-64.2	-65.1	-66.1	-67.2	-68.4	-69.6	-71.0	-72.5	-73.9	-75.5
	3.6	4.0	4.3	4.5	4.5	4.4	4.2	3.8	3.5	3.1	2.6	2.3	1.9	1.6	1.4	1.2	1.1	1.0	0.9
-70	-62.1	-62.3	-62.6	-62.9	-63.2	-63.6	-64.0	-64.5	-65.1	-65.8	-66.6	-67.4	-68.4	-69.4	-70.5	-71.6	-72.8	-74.1	-75.3
	3.5	3.7	3.9	4.0	4.0	4.0	3.9	3.7	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.6
-75	-64.3	-64.5	-64.7	-65.0	-65.3	-65.6	-66.1	-66.5	-67.0	-67.6	-68.3	-69.0	-69.7	-70.5	-71.4	-72.2	-73.2	-74.1	-75.1
	3.2	3.4	3.5	3.5	3.6	3.6	3.5	3.4	3.3	3.2	3.1	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2
-80	-67.0	-67.2	-67.4	-67.6	-67.8	-68.1	-68.4	-68.8	-69.2	-69.6	-70.1	-70.6	-71.1	-71.7	-72.3	-72.9	-73.5	-74.1	-74.8
	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.5
-85	-70.1	-70.2	-70.3	-70.5	-70.6	-70.8	-71.0	-71.2	-71.4	-71.6	-71.9	-72.2	-72.4	-72.7	-73.0	-73.3	-73.6	-74.0	-74.3
	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
-90	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

INCLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	87.7 0.9	87.7 0.9	87.7 0.9	87.8 0.9	87.8 0.9	87.9 0.9	87.9 0.9	87.9 0.9	88.0 0.9	88.0 0.9	88.0 0.9	88.1 0.9	88.1 0.9	88.1 0.9	88.1 0.9	88.2 0.9	88.2 0.9	88.2 0.9	88.2 0.9
85	87.3 1.2	87.5 1.2	87.7 1.2	87.9 1.2	88.0 1.2	88.1 1.2	88.3 1.3	88.3 1.3	88.4 1.2	88.4 1.2	88.4 1.2	88.4 1.2	88.4 1.1	88.4 1.1	88.3 1.1	88.3 1.0	88.3 1.0	88.3 1.0	88.3 1.0
80	86.5 1.5	86.8 1.6	87.1 1.6	87.3 1.6	87.4 1.6	87.4 1.5	87.3 1.4	87.1 1.3	86.9 1.3	86.6 1.2	86.4 1.2	86.1 1.1	85.9 1.1	85.7 1.1	85.5 1.1	85.4 1.1	85.3 1.1	85.3 1.1	85.3 1.1
75	85.1 1.8	85.5 1.8	85.7 1.8	85.8 1.8	85.7 1.7	85.5 1.7	85.2 1.6	84.8 1.5	84.4 1.5	83.9 1.4	83.5 1.4	83.0 1.4	82.6 1.4	82.3 1.5	82.0 1.5	81.8 1.5	81.7 1.5	81.6 1.5	81.6 1.5
70	83.1 1.9	83.4 1.9	83.6 1.9	83.6 1.9	83.4 1.9	83.1 1.8	82.6 1.8	82.0 1.7	81.4 1.7	80.8 1.7	80.1 1.7	79.5 1.7	79.0 1.7	78.6 1.8	78.2 1.8	78.0 1.8	77.8 1.9	77.7 1.9	77.8 1.9
65	80.5 1.8	80.7 1.9	80.8 1.9	80.8 1.9	80.5 2.0	80.1 1.9	79.5 1.9	78.8 1.9	78.0 1.9	77.3 1.9	76.5 1.9	75.8 2.0	75.2 2.0	74.6 2.0	74.2 2.0	73.9 2.1	73.7 2.1	73.7 2.1	73.7 2.0
60	77.3 1.6	77.5 1.7	77.5 1.8	77.4 1.9	77.1 2.0	76.6 2.0	75.9 2.1	75.2 2.1	74.3 2.1	73.4 2.1	72.6 2.1	71.8 2.1	71.1 2.1	70.5 2.2	70.0 2.2	69.7 2.2	69.5 2.2	69.5 2.1	69.6 2.1
55	73.6 1.4	73.7 1.6	73.7 1.7	73.6 1.9	73.2 2.0	72.7 2.1	72.0 2.1	71.2 2.2	70.3 2.2	69.3 2.2	68.4 2.2	67.5 2.2	66.8 2.2	66.1 2.2	65.7 2.2	65.4 2.1	65.2 2.1	65.2 2.0	65.4 1.9
50	69.3 1.3	69.4 1.5	69.4 1.7	69.2 1.9	68.9 2.1	68.3 2.2	67.6 2.2	66.8 2.3	65.9 2.3	64.9 2.2	63.9 2.2	63.0 2.2	62.2 2.2	61.6 2.1	61.1 2.1	60.9 2.0	60.8 1.9	61.0 1.8	61.2 1.7
45	64.4 1.4	64.5 1.6	64.4 1.9	64.2 2.1	63.9 2.2	63.4 2.3	62.8 2.3	61.9 2.3	61.0 2.3	60.0 2.2	59.0 2.2	58.1 2.1	57.4 2.0	56.8 2.0	56.4 1.9	56.2 1.8	56.3 1.7	56.6 1.6	57.0 1.4
40	58.8 1.7	58.8 2.0	58.7 2.2	58.6 2.4	58.3 2.5	57.8 2.5	57.2 2.5	56.5 2.4	55.6 2.3	54.6 2.2	53.6 2.0	52.8 1.9	52.1 1.9	51.6 1.8	51.3 1.7	51.3 1.6	51.6 1.5	52.1 1.3	52.8 1.1
35	52.3 2.4	52.2 2.6	52.2 2.8	52.0 2.9	51.8 2.9	51.5 2.8	50.9 2.6	50.2 2.4	49.4 2.2	48.4 2.0	47.6 1.8	46.8 1.7	46.2 1.6	45.8 1.6	45.8 1.5	46.0 1.5	46.6 1.4	47.3 1.2	48.3 0.9
30	44.7 3.3	44.6 3.5	44.5 3.7	44.5 3.6	44.4 3.4	44.1 3.1	43.6 2.7	43.0 2.4	42.3 2.0	41.4 1.8	40.6 1.6	40.0 1.4	39.5 1.4	39.4 1.4	39.6 1.4	40.1 1.4	41.0 1.3	42.1 1.1	43.4 0.8
25	35.8 4.3	35.7 4.6	35.7 4.6	35.8 4.4	35.7 4.0	35.6 3.4	35.3 2.8	34.8 2.3	34.1 1.8	33.4 1.4	32.8 1.2	32.3 1.1	32.0 1.1	32.1 1.2	32.6 1.3	33.5 1.4	34.8 1.4	36.2 1.2	37.8 0.9
20	25.7 5.5	25.6 5.7	25.7 5.5	25.8 5.1	26.0 4.4	26.0 3.6	25.8 2.8	25.4 2.0	24.9 1.4	24.3 1.0	23.9 0.7	23.6 0.7	23.6 0.8	24.0 1.0	24.8 1.3	26.0 1.5	27.6 1.6	29.5 1.4	31.4 1.0
15	14.5 6.4	14.4 6.5	14.6 6.2	14.8 5.6	15.1 4.7	15.3 3.6	15.3 2.6	15.0 1.7	14.7 1.0	14.3 0.5	14.1 0.3	14.0 0.3	14.3 0.5	15.0 0.9	16.1 1.3	17.6 1.6	19.5 1.8	21.7 1.6	23.8 1.2
10	2.4 6.8	2.4 6.9	2.7 6.5	3.1 5.6	3.5 4.5	3.9 3.3	4.1 2.2	4.0 1.2	3.9 0.5	3.7 0.0	3.7 -0.1	3.9 0.0	4.4 0.3	5.3 0.8	6.7 1.3	8.4 1.7	10.5 1.9	12.8 1.8	15.2 1.3
5	-9.8 6.7	-9.7 6.6	-9.4 6.1	-8.8 5.2	-8.2 4.0	-7.7 2.8	-7.3 1.6	-7.2 0.7	-7.1 0.0	-7.1 -0.4	-6.9 -0.4	-6.5 -0.2	-5.8 0.2	-4.7 0.7	-3.2 1.3	-1.4 1.7	0.8 1.9	3.2 1.8	5.6 1.3
0	-21.4 5.9	-21.3 5.7	-20.9 5.2	-20.2 4.3	-19.5 3.1	-18.8 2.0	-18.3 1.0	-18.0 0.1	-17.8 -0.4	-17.6 -0.6	-17.2 -0.6	-16.7 -0.3	-15.8 0.1	-14.6 0.6	-13.2 1.2	-11.3 1.6	-9.2 1.8	-7.0 1.6	-4.6 1.2

INCLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-21.4	-21.3	-20.9	-20.2	-19.5	-18.8	-18.3	-18.0	-17.8	-17.6	-17.2	-16.7	-15.8	-14.6	-13.2	-11.3	-9.2	-7.0	-4.6
	5.9	5.7	5.2	4.3	3.1	2.0	1.0	0.1	-0.4	-0.6	-0.6	-0.3	0.1	0.6	1.2	1.6	1.8	1.6	1.2
-5	-32.0	-31.8	-31.4	-30.7	-29.9	-29.1	-28.5	-28.1	-27.7	-27.4	-26.9	-26.3	-25.4	-24.2	-22.8	-21.1	-19.1	-17.0	-14.9
	4.6	4.5	3.9	3.1	2.1	1.2	0.4	-0.2	-0.6	-0.7	-0.6	-0.3	0.1	0.6	1.0	1.4	1.5	1.4	0.9
-10	-41.3	-41.1	-40.6	-39.9	-39.1	-38.4	-37.7	-37.2	-36.7	-36.3	-35.8	-35.1	-34.2	-33.1	-31.8	-30.2	-28.5	-26.6	-24.7
	3.2	3.0	2.6	1.9	1.2	0.5	-0.1	-0.5	-0.7	-0.7	-0.5	-0.2	0.1	0.5	0.8	1.1	1.2	1.0	0.7
-15	-49.2	-49.0	-48.6	-48.0	-47.2	-46.5	-45.8	-45.2	-44.7	-44.3	-43.7	-43.0	-42.2	-41.2	-40.0	-38.6	-37.1	-35.4	-33.8
	1.8	1.6	1.3	0.8	0.3	-0.1	-0.5	-0.7	-0.7	-0.6	-0.4	-0.1	0.1	0.4	0.6	0.8	0.8	0.7	0.4
-20	-55.7	-55.7	-55.4	-54.9	-54.2	-53.5	-52.9	-52.3	-51.8	-51.3	-50.7	-50.1	-49.3	-48.4	-47.3	-46.0	-44.7	-43.3	-41.8
	0.4	0.4	0.2	-0.1	-0.4	-0.6	-0.7	-0.7	-0.6	-0.5	-0.3	-0.1	0.1	0.3	0.5	0.6	0.6	0.5	0.2
-25	-61.1	-61.2	-61.1	-60.8	-60.3	-59.7	-59.1	-58.5	-58.0	-57.5	-56.9	-56.3	-55.6	-54.7	-53.7	-52.6	-51.4	-50.1	-48.8
	-0.8	-0.7	-0.7	-0.8	-0.9	-0.9	-0.9	-0.8	-0.6	-0.4	-0.2	-0.1	0.1	0.2	0.3	0.4	0.4	0.3	0.1
-30	-65.3	-65.8	-65.9	-65.8	-65.4	-65.0	-64.5	-64.0	-63.5	-63.0	-62.4	-61.8	-61.0	-60.2	-59.3	-58.3	-57.2	-56.0	-54.8
	-1.7	-1.5	-1.4	-1.3	-1.3	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	-0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.1
-35	-68.7	-69.4	-69.8	-70.0	-69.9	-69.6	-69.2	-68.8	-68.3	-67.8	-67.2	-66.6	-65.9	-65.0	-64.2	-63.2	-62.2	-61.1	-60.0
	-2.3	-2.0	-1.8	-1.7	-1.5	-1.3	-1.1	-0.9	-0.7	-0.5	-0.3	-0.2	-0.1	0.0	0.1	0.1	0.2	0.2	0.1
-40	-71.2	-72.3	-73.0	-73.5	-73.7	-73.7	-73.5	-73.1	-72.6	-72.1	-71.5	-70.9	-70.1	-69.3	-68.4	-67.5	-66.5	-65.5	-64.4
	-2.5	-2.3	-2.0	-1.8	-1.6	-1.4	-1.2	-1.0	-0.8	-0.6	-0.5	-0.3	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1
-45	-73.1	-74.4	-75.5	-76.4	-77.0	-77.2	-77.2	-77.0	-76.6	-76.1	-75.5	-74.8	-74.0	-73.1	-72.2	-71.3	-70.3	-69.3	-68.3
	-2.3	-2.1	-2.0	-1.8	-1.7	-1.5	-1.3	-1.2	-1.0	-0.8	-0.7	-0.5	-0.4	-0.3	-0.1	0.0	0.1	0.1	0.1
-50	-74.3	-75.9	-77.4	-78.6	-79.6	-80.2	-80.5	-80.5	-80.3	-79.8	-79.2	-78.4	-77.6	-76.7	-75.8	-74.8	-73.8	-72.8	-71.9
	-1.7	-1.7	-1.6	-1.5	-1.5	-1.5	-1.4	-1.4	-1.2	-1.1	-0.9	-0.7	-0.5	-0.4	-0.2	-0.1	0.0	0.1	0.1
-55	-75.1	-76.8	-78.5	-80.0	-81.4	-82.5	-83.3	-83.7	-83.7	-83.4	-82.8	-82.0	-81.1	-80.1	-79.1	-78.1	-77.1	-76.1	-75.2
	-0.9	-0.9	-0.9	-1.0	-1.1	-1.2	-1.4	-1.5	-1.5	-1.3	-1.1	-0.9	-0.7	-0.5	-0.3	-0.1	0.0	0.1	0.2
-60	-75.4	-77.1	-78.8	-80.5	-82.1	-83.6	-85.0	-86.1	-86.8	-86.8	-86.3	-85.4	-84.4	-83.4	-82.3	-81.2	-80.2	-79.2	-78.2
	0.0	-0.1	-0.1	-0.2	-0.3	-0.5	-0.7	-1.1	-1.5	-1.6	-1.3	-1.0	-0.7	-0.4	-0.2	0.0	0.1	0.2	0.3
-65	-75.5	-77.0	-78.6	-80.1	-81.7	-83.2	-84.7	-86.2	-87.6	-88.9	-89.7	-88.5	-87.3	-86.1	-84.9	-83.8	-82.8	-81.8	-80.8
	0.9	0.8	0.8	0.7	0.7	0.6	0.5	0.4	0.3	0.1	-0.6	-0.1	0.0	0.2	0.3	0.4	0.5	0.6	0.6
-70	-75.3	-76.6	-77.9	-79.2	-80.5	-81.8	-83.0	-84.1	-85.2	-86.1	-86.7	-87.0	-86.9	-86.4	-85.7	-84.9	-84.0	-83.1	-82.3
	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.7	1.9	1.9	1.8	1.6	1.4	1.3	1.3	1.2	1.2
-75	-75.1	-76.1	-77.0	-78.0	-78.9	-79.9	-80.7	-81.5	-82.2	-82.8	-83.3	-83.6	-83.8	-83.8	-83.6	-83.3	-82.9	-82.4	-81.9
	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.8
-80	-74.8	-75.4	-76.0	-76.7	-77.3	-77.8	-78.4	-78.8	-79.3	-79.7	-80.0	-80.2	-80.4	-80.5	-80.5	-80.4	-80.2	-80.0	-79.7
	2.5	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1
-85	-74.3	-74.6	-74.9	-75.2	-75.4	-75.7	-76.0	-76.2	-76.4	-76.5	-76.7	-76.8	-76.9	-76.9	-77.0	-77.0	-76.9	-76.9	-76.7
	2.6	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
-90	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4	-73.4
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

Plots and Tables of DGRF 1985

H Component

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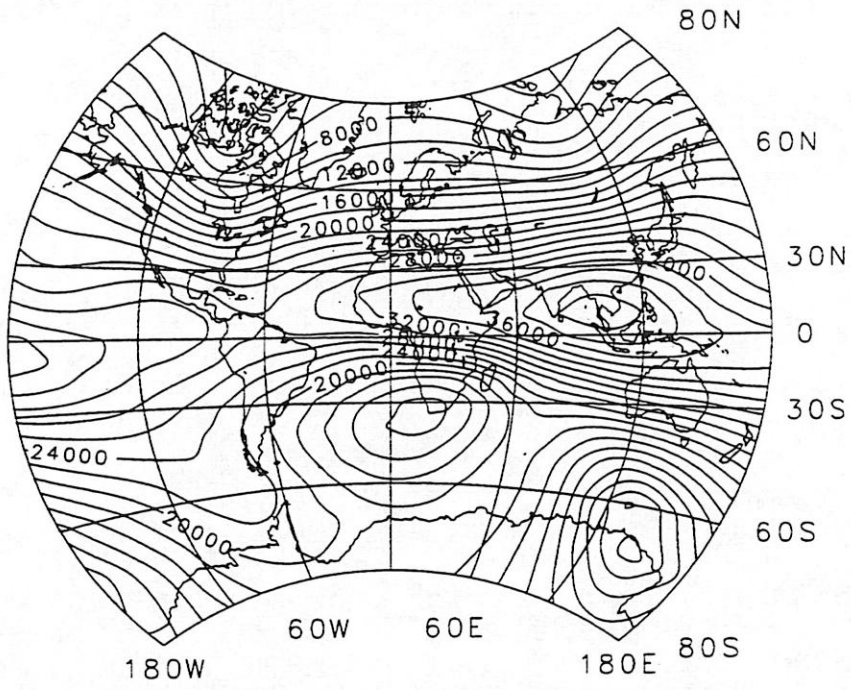
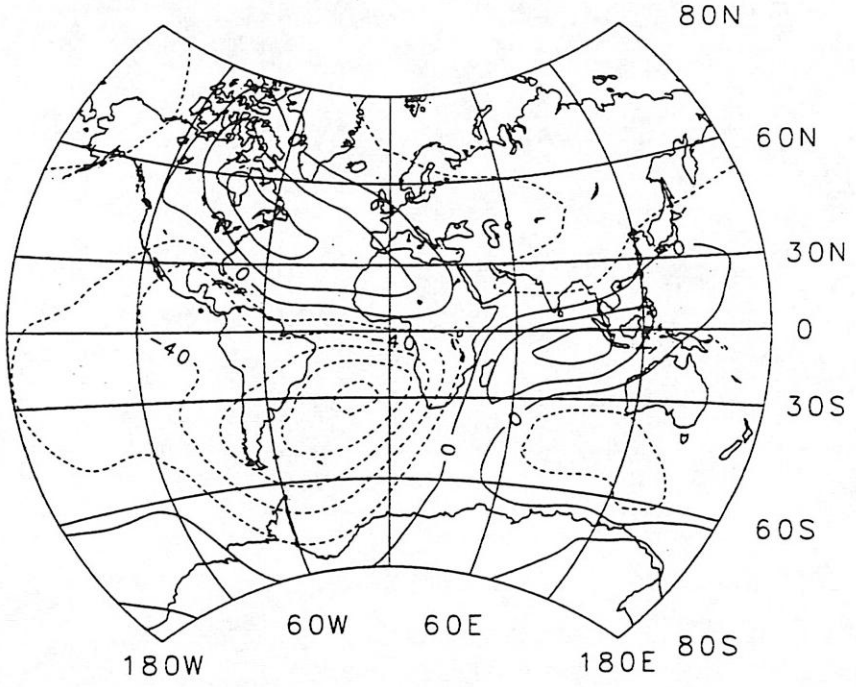
DGRF 1985 - H - COMPONENT

Figure 5 (**H**, top) Figure 6 ($\dot{\mathbf{H}}$, bottom)





H-COMPONENT

LATITUDE \ LONGITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	1790	1786	1784	1787	1793	1802	1815	1832	1852	1875	1901	1930	1962	1996	2033	2071	2111	2153	2195
	-15.7	-15.6	-15.5	-15.4	-15.3	-15.2	-15.1	-15.0	-14.9	-14.8	-14.7	-14.7	-14.6	-14.5	-14.5	-14.5	-14.5	-14.5	-14.5
85	1675	1641	1592	1527	1448	1357	1257	1155	1056	972	917	906	949	1044	1184	1357	1553	1764	1984
	-17.4	-17.1	-17.0	-16.8	-16.8	-16.8	-16.9	-17.1	-17.3	-17.5	-17.4	-16.8	-15.6	-14.1	-12.8	-11.9	-11.3	-11.0	-11.1
80	4757	4698	4593	4442	4248	4010	3732	3415	3063	2679	2266	1831	1380	928	524	429	780	1245	1729
	-22.0	-21.7	-21.4	-21.0	-20.4	-19.8	-19.0	-18.2	-17.3	-16.4	-15.6	-14.9	-14.6	-15.3	-18.4	-15.8	-7.3	-5.1	-5.2
75	8332	8233	8066	7833	7535	7173	6750	6268	5730	5141	4504	3827	3116	2382	1639	927	504	938	1643
	-29.9	-29.5	-29.0	-28.3	-27.5	-26.4	-25.2	-23.8	-22.1	-20.3	-18.2	-15.9	-13.1	-9.7	-4.9	4.2	24.2	17.8	10.5
70	11947	11805	11586	11289	10914	10462	9933	9328	8650	7903	7095	6236	5340	4429	3538	2737	2168	2050	2440
	-34.5	-33.9	-33.1	-32.1	-31.0	-29.6	-28.0	-26.2	-24.1	-21.6	-18.7	-15.2	-11.0	-5.7	1.4	11.1	23.4	31.7	30.0
65	15348	15172	14921	14594	14188	13699	13127	12467	11723	10898	10000	9042	8046	7040	6072	5210	4558	4241	4336
	-34.2	-33.3	-32.3	-31.1	-29.8	-28.3	-26.5	-24.4	-22.0	-19.1	-15.8	-11.8	-6.9	-1.0	6.3	15.2	25.2	34.0	38.1
60	18340	18140	17880	17559	17170	16706	16161	15527	14805	13994	13103	12146	11143	10127	9143	8255	7545	7105	7004
	-29.6	-28.5	-27.3	-26.1	-24.7	-23.2	-21.4	-19.4	-17.0	-14.2	-10.9	-7.2	-2.8	2.5	8.8	16.2	24.6	32.9	39.3
55	20802	20580	20327	20040	19708	19319	18863	18327	17706	16998	16205	15338	14416	13465	12525	11652	10914	10389	10145
	-22.2	-21.0	-19.8	-18.7	-17.5	-16.3	-14.8	-13.0	-11.1	-8.8	-6.4	-3.6	-0.6	3.1	7.6	13.1	19.9	27.6	35.1
50	22702	22455	22213	21971	21716	21434	21106	20717	20254	19710	19082	18375	17600	16776	15935	15122	14395	13825	13481
	-14.1	-13.1	-12.1	-11.3	-10.5	-9.6	-8.7	-7.6	-6.4	-5.1	-3.9	-2.7	-1.4	0.1	2.4	5.9	11.1	18.0	26.1
45	24105	23822	23583	23383	23208	23039	22854	22631	22352	22002	21575	21066	20480	19828	19129	18418	17745	17173	16770
	-7.5	-6.7	-6.1	-5.7	-5.3	-5.0	-4.7	-4.5	-4.3	-4.2	-4.4	-4.8	-5.4	-5.9	-5.8	-4.4	-0.9	5.0	13.2
40	25149	24821	24573	24401	24292	24225	24174	24110	24010	23855	23632	23332	22951	22491	21960	21382	20796	20257	19829
	-3.6	-3.2	-2.9	-2.8	-2.9	-3.2	-3.6	-4.2	-5.1	-6.2	-7.6	-9.5	-11.7	-13.9	-15.7	-16.2	-14.5	-9.8	-1.9
35	26016	25641	25373	25213	25150	25162	25217	25286	25338	25353	25313	25206	25020	24748	24389	23954	23470	22981	22548
	-2.6	-2.7	-2.6	-2.8	-3.1	-3.9	-5.0	-6.4	-8.2	-10.3	-12.7	-15.6	-18.9	-22.5	-25.7	-27.9	-27.8	-24.6	-17.6
30	26893	26476	26184	26022	25981	26039	26165	26324	26487	26629	26733	26782	26760	26651	26444	26138	25749	25311	24875
	-4.2	-4.5	-4.6	-4.8	-5.3	-6.4	-8.0	-10.1	-12.6	-15.3	-18.4	-21.9	-25.8	-30.2	-34.4	-37.9	-39.4	-37.9	-32.4
25	27923	27480	27165	26988	26945	27015	27167	27367	27587	27803	27997	28152	28247	28259	28166	27958	27640	27237	26794
	-7.1	-7.7	-7.8	-8.0	-8.5	-9.8	-11.7	-14.2	-17.2	-20.4	-23.8	-27.5	-31.6	-36.2	-41.0	-45.3	-48.2	-48.4	-44.8
20	29171	28724	28392	28191	28120	28163	28294	28481	28699	28927	29151	29352	29507	29587	29564	29417	29142	28757	28299
	-10.3	-11.1	-11.3	-11.4	-12.0	-13.2	-15.3	-18.1	-21.3	-24.7	-28.2	-31.8	-35.7	-40.1	-45.0	-49.8	-53.7	-55.5	-53.9
15	30610	30179	29837	29602	29480	29461	29523	29642	29800	29980	30170	30355	30510	30605	30606	30487	30234	29856	29385
	-12.9	-14.0	-14.4	-14.7	-15.2	-16.5	-18.6	-21.4	-24.7	-28.0	-31.4	-34.7	-38.2	-42.1	-46.6	-51.4	-55.8	-58.9	-59.2
10	32122	31722	31376	31101	30909	30796	30751	30758	30805	30883	30984	31095	31197	31261	31250	31133	30891	30523	30051
	-14.7	-16.2	-17.1	-17.6	-18.3	-19.6	-21.7	-24.3	-27.4	-30.5	-33.6	-36.5	-39.4	-42.5	-46.2	-50.4	-54.9	-58.6	-60.5
5	33524	33164	32817	32501	32229	32007	31834	31703	31609	31549	31521	31518	31526	31522	31473	31345	31111	30760	30304
	-15.7	-17.8	-19.3	-20.4	-21.5	-22.8	-24.7	-27.0	-29.6	-32.4	-35.0	-37.3	-39.5	-41.7	-44.4	-47.7	-51.6	-55.5	-58.3
0	34607	34290	33949	33597	33251	32926	32628	32360	32122	31916	31744	31608	31502	31410	31306	31156	30928	30600	30171
	-16.3	-19.2	-21.5	-23.3	-24.7	-26.1	-27.7	-29.5	-31.6	-33.8	-35.8	-37.5	-39.0	-40.2	-41.7	-43.9	-46.9	-50.4	-53.7

H-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	34607	34290	33949	33597	33251	32926	32628	32360	32122	31916	31744	31608	31502	31410	31306	31156	30928	30600	30171
	-16.3	-19.2	-21.5	-23.3	-24.7	-26.1	-27.7	-29.5	-31.6	-33.8	-35.8	-37.5	-39.0	-40.2	-41.7	-43.9	-46.9	-50.4	-53.7
-5	35180	34909	34583	34213	33817	33416	33024	32649	32295	31965	31665	31403	31181	30995	30826	30644	30413	30102	29695
	-17.0	-20.6	-23.7	-26.1	-28.0	-29.4	-30.6	-31.8	-33.2	-34.7	-36.1	-37.2	-38.0	-38.4	-39.0	-40.0	-42.0	-44.9	-48.2
-10	35112	34894	34600	34240	33833	33404	32969	32541	32121	31714	31327	30969	30651	30377	30138	29910	29657	29343	28942
	-17.8	-21.9	-25.7	-28.7	-30.9	-32.2	-33.0	-33.6	-34.3	-35.1	-35.9	-36.5	-36.8	-36.7	-36.6	-36.9	-38.0	-40.3	-43.4
-15	34358	34205	33968	33654	33284	32882	32466	32047	31626	31202	30781	30372	29989	29644	29336	29049	28752	28410	27991
	-18.6	-23.1	-27.3	-30.6	-32.9	-34.1	-34.6	-34.7	-34.7	-34.9	-35.2	-35.6	-35.6	-35.4	-35.1	-35.1	-35.9	-37.8	-40.7
-20	32969	32900	32746	32516	32229	31907	31566	31214	30849	30466	30065	29652	29243	28851	28484	28135	27781	27391	26934
	-19.3	-23.8	-28.0	-31.4	-33.7	-34.8	-35.1	-34.8	-34.4	-34.2	-34.2	-34.4	-34.5	-34.5	-34.5	-34.9	-35.9	-38.0	-41.0
-25	31072	31106	31063	30949	30780	30576	30349	30104	29836	29534	29195	28821	28423	28018	27616	27219	26814	26377	25881
	-19.3	-23.6	-27.7	-31.0	-33.2	-34.3	-34.5	-34.0	-33.4	-33.0	-32.9	-33.1	-33.5	-34.1	-34.8	-36.0	-37.8	-40.5	-43.9
-30	28835	28990	29075	29095	29064	28996	28900	28779	28625	28428	28178	27875	27527	27148	26751	26343	25918	25460	24946
	-18.5	-22.5	-26.2	-29.4	-31.6	-32.8	-33.0	-32.6	-32.0	-31.5	-31.4	-31.7	-32.4	-33.6	-35.3	-37.6	-40.5	-44.2	-48.3
-35	26416	26700	26920	27080	27189	27257	27291	27292	27254	27167	27022	26816	26555	26250	25912	25547	25155	24721	24231
	-17.1	-20.5	-23.9	-26.9	-29.1	-30.5	-30.9	-30.7	-30.1	-29.6	-29.4	-29.7	-30.8	-32.5	-35.1	-38.5	-42.6	-47.4	-52.4
-40	23918	24329	24681	24974	25213	25406	25559	25674	25748	25774	25747	25664	25528	25346	25123	24864	24563	24210	23789
	-15.1	-18.1	-21.1	-23.9	-26.1	-27.5	-28.1	-28.1	-27.6	-27.0	-26.6	-26.9	-28.0	-30.1	-33.3	-37.6	-42.8	-48.6	-54.5
-45	21363	21896	22369	22783	23141	23448	23713	23938	24125	24274	24382	24448	24472	24455	24397	24293	24134	23908	23600
	-13.0	-15.4	-18.0	-20.5	-22.6	-24.0	-24.6	-24.5	-23.9	-23.2	-22.6	-22.7	-23.7	-26.0	-29.6	-34.4	-40.3	-46.8	-53.4
-50	18709	19357	19945	20472	20942	21362	21741	22085	22399	22688	22952	23189	23398	23572	23704	23782	23793	23721	23553
	-10.7	-12.5	-14.6	-16.6	-18.3	-19.4	-19.8	-19.6	-18.8	-17.8	-17.1	-17.0	-17.9	-20.2	-23.9	-29.0	-35.1	-41.9	-48.8
-55	15909	16672	17372	18013	18600	19143	19650	20130	20591	21038	21472	21891	22287	22650	22968	23225	23404	23489	23470
	-8.1	-9.2	-10.5	-11.9	-12.9	-13.5	-13.5	-12.9	-12.0	-10.9	-10.2	-10.1	-11.1	-13.4	-17.1	-22.0	-28.0	-34.6	-41.4
-60	13019	13895	14710	15471	16185	16861	17510	18139	18756	19362	19959	20541	21099	21621	22091	22494	22814	23038	23156
	-3.9	-4.3	-4.9	-5.5	-5.9	-5.9	-5.5	-4.7	-3.8	-3.0	-2.6	-2.9	-4.1	-6.5	-10.1	-14.7	-20.1	-26.2	-32.5
-65	10363	11327	12238	13104	13932	14731	15506	16265	17010	17743	18459	19154	19817	20437	21002	21498	21914	22239	22465
	3.8	3.6	3.3	3.2	3.2	3.3	3.7	4.2	4.6	4.8	4.5	3.7	2.0	-0.4	-3.8	-7.9	-12.6	-17.8	-23.1
-70	8748	9670	10570	11447	12304	13143	13966	14773	15563	16336	17085	17806	18491	19132	19718	20242	20695	21072	21366
	15.7	14.8	14.0	13.5	13.1	12.8	12.5	12.2	11.8	11.1	10.1	8.7	6.8	4.3	1.3	-2.2	-6.0	-10.0	-14.2
-75	9111	9758	10437	11135	11845	12559	13273	13982	14681	15365	16030	16669	17277	17848	18376	18857	19284	19656	19968
	25.3	23.9	22.6	21.5	20.5	19.5	18.5	17.5	16.4	15.1	13.6	11.9	9.9	7.7	5.3	2.7	-0.1	-2.9	-5.8
-80	11169	11493	11860	12262	12693	13144	13610	14084	14561	15036	15504	15960	16399	16817	17212	17579	17917	18222	18493
	26.3	25.4	24.5	23.5	22.5	21.4	20.3	19.1	17.9	16.6	15.2	13.8	12.3	10.6	9.0	7.3	5.6	3.9	2.2
-85	13801	13913	14047	14200	14369	14554	14750	14956	15169	15386	15606	15825	16042	16254	16460	16658	16846	17024	17190
	22.4	21.9	21.4	20.9	20.3	19.7	19.0	18.3	17.6	16.8	16.0	15.2	14.5	13.7	12.9	12.1	11.3	10.6	9.9
-90	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221
	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6

H-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	2195	2239	2282	2325	2368	2411	2452	2491	2529	2565	2598	2629	2656	2681	2703	2721	2735	2746	2754
	-14.5	-14.5	-14.6	-14.6	-14.7	-14.8	-14.8	-14.9	-15.0	-15.1	-15.2	-15.3	-15.4	-15.5	-15.6	-15.7	-15.8	-15.9	-16.0
85	1984	2209	2435	2660	2879	3093	3298	3493	3678	3850	4010	4155	4286	4401	4501	4585	4653	4704	4738
	-11.1	-11.3	-11.6	-12.1	-12.7	-13.3	-13.9	-14.5	-15.2	-15.8	-16.5	-17.1	-17.6	-18.2	-18.7	-19.2	-19.6	-20.0	-20.4
80	1729	2213	2688	3147	3589	4009	4405	4775	5118	5433	5719	5977	6206	6407	6580	6725	6843	6934	6998
	-5.2	-6.0	-7.2	-8.5	-9.9	-11.3	-12.8	-14.1	-15.4	-16.7	-17.9	-19.0	-20.0	-20.9	-21.8	-22.6	-23.3	-23.9	-24.5
75	1643	2372	3086	3774	4428	5041	5610	6134	6611	7040	7423	7761	8056	8310	8525	8704	8850	8963	9045
	10.5	5.9	2.3	-0.8	-3.6	-6.2	-8.5	-10.7	-12.7	-14.5	-16.1	-17.6	-18.9	-20.1	-21.2	-22.2	-23.2	-24.0	-24.8
70	2440	3130	3936	4766	5577	6346	7059	7709	8292	8809	9260	9649	9980	10257	10486	10672	10819	10930	11011
	30.0	23.9	17.8	12.4	7.8	3.8	0.2	-3.0	-5.8	-8.2	-10.3	-12.2	-13.9	-15.4	-16.7	-18.0	-19.2	-20.3	-21.3
65	4336	4801	5511	6346	7219	8075	8881	9618	10274	10846	11336	11747	12086	12361	12579	12748	12875	12965	13025
	38.1	37.0	32.8	27.5	22.1	17.1	12.5	8.4	4.8	1.7	-1.0	-3.4	-5.4	-7.3	-9.0	-10.7	-12.3	-13.9	-15.4
60	7004	7255	7800	8544	9391	10264	11107	11884	12574	13168	13667	14075	14401	14655	14848	14987	15083	15143	15173
	39.3	42.4	42.1	39.3	35.1	30.3	25.5	21.0	17.0	13.4	10.2	7.5	5.0	2.7	0.5	-1.8	-4.0	-6.2	-8.4
55	10145	10219	10594	11208	11975	12809	13640	14415	15104	15692	16177	16565	16868	17096	17261	17375	17446	17482	17489
	35.1	41.1	44.7	45.4	43.8	40.6	36.7	32.5	28.5	24.8	21.5	18.5	15.7	13.0	10.3	7.4	4.4	1.4	-1.6
50	13481	13413	13633	14106	14764	15522	16303	17044	17706	18269	18731	19098	19382	19596	19752	19859	19926	19958	19963
	26.1	34.2	41.1	45.5	47.1	46.4	44.1	40.9	37.5	34.2	31.1	28.2	25.3	22.3	19.1	15.6	12.0	8.2	4.4
45	16770	16594	16677	17009	17540	18197	18901	19586	20207	20742	21187	21549	21838	22067	22245	22377	22470	22528	22557
	13.2	22.9	32.4	40.1	45.2	47.4	47.2	45.6	43.2	40.6	38.0	35.4	32.6	29.6	26.2	22.4	18.4	14.1	9.8
40	19829	19574	19537	19730	20124	20661	21271	21889	22469	22986	23436	23823	24155	24438	24675	24868	25017	25127	25204
	-1.9	8.5	19.9	30.5	38.6	43.8	46.0	46.2	45.1	43.5	41.6	39.5	37.2	34.4	31.2	27.5	23.4	19.2	14.8
35	22548	22232	22087	22143	22393	22802	23310	23860	24407	24926	25409	25855	26266	26638	26966	27245	27472	27652	27793
	-17.6	-7.3	5.1	17.7	28.5	36.3	40.9	43.0	43.4	42.8	41.8	40.4	38.6	36.4	33.7	30.6	27.1	23.4	19.5
30	24875	24505	24259	24183	24292	24570	24978	25466	25993	26530	27064	27589	28094	28569	28999	29371	29683	29939	30152
	-32.4	-22.9	-10.5	3.1	15.7	25.8	32.5	36.4	38.2	38.6	38.4	37.7	36.6	35.2	33.4	31.4	29.1	26.5	23.6
25	26794	26371	26031	25832	25809	25967	26282	26715	27225	27781	28362	28953	29535	30089	30597	31044	31428	31757	32046
	-44.8	-37.0	-25.5	-11.9	1.6	13.1	21.6	27.0	29.9	31.2	31.6	31.5	31.2	30.7	30.1	29.4	28.7	27.6	26.0
20	28299	27826	27405	27101	26964	27015	27246	27623	28106	28658	29250	29857	30456	31028	31555	32031	32457	32845	33209
	-53.9	-48.2	-38.5	-25.9	-12.6	-0.5	9.0	15.3	19.0	20.8	21.6	21.9	22.2	22.6	23.3	24.2	25.1	25.7	25.5
15	29385	28875	28392	28007	27777	27737	27886	28196	28624	29126	29663	30207	30735	31233	31698	32136	32559	32981	33411
	-59.2	-55.8	-48.4	-37.8	-25.6	-13.9	-4.3	2.3	6.3	8.2	8.9	9.3	9.9	11.0	12.8	15.1	17.6	19.6	20.7
10	30051	29523	29003	28560	28258	28136	28199	28420	28751	29142	29550	29942	30304	30635	30953	31281	31647	32065	32535
	-60.5	-59.4	-54.5	-46.4	-36.2	-25.9	-17.2	-11.0	-7.4	-6.0	-5.6	-5.6	-5.1	-3.6	-1.1	2.2	5.7	8.7	10.6
5	30304	29780	29243	28762	28400	28198	28162	28267	28460	28686	28899	29070	29193	29288	29391	29550	29804	30167	30627
	-58.3	-59.0	-56.7	-51.4	-43.9	-35.7	-28.6	-23.7	-21.1	-20.5	-21.0	-21.6	-21.6	-20.4	-17.8	-14.2	-10.3	-6.8	-4.5
0	30171	29662	29122	28612	28192	27904	27757	27722	27748	27776	27760	27678	27536	27367	27228	27182	27276	27526	27907
	-53.7	-55.8	-55.7	-53.0	-48.3	-42.8	-38.0	-34.8	-33.7	-34.3	-35.9	-37.6	-38.5	-38.1	-36.1	-32.9	-29.3	-26.0	-23.6

H-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	30171	29662	29122	28612	28192	27904	27757	27722	27748	27776	27760	27678	27536	27367	27228	27182	27276	27526	27907
	-53.7	-55.8	-55.7	-53.0	-48.3	-42.8	-38.0	-34.8	-33.7	-34.3	-35.9	-37.6	-38.5	-38.1	-36.1	-32.9	-29.3	-26.0	-23.6
-5	29695	29203	28659	28118	27636	27257	26989	26806	26656	26484	26246	25925	25537	25126	24758	24503	24410	24491	24718
	-48.2	-51.1	-52.6	-52.3	-50.3	-47.5	-45.0	-43.9	-44.5	-46.5	-49.4	-52.4	-54.5	-55.2	-54.4	-52.3	-49.6	-46.9	-44.6
-10	28942	28452	27894	27314	26766	26292	25905	25582	25274	24929	24508	23999	23422	22826	22276	21837	21551	21428	21441
	-43.4	-46.7	-49.3	-50.7	-50.9	-50.4	-50.2	-51.0	-53.2	-56.7	-60.9	-65.1	-68.5	-70.6	-71.3	-70.6	-69.0	-67.0	-64.8
-15	27991	27482	26897	26273	25658	25095	24602	24161	23729	23257	22710	22078	21385	20673	20001	19419	18961	18631	18409
	-40.7	-44.2	-47.4	-50.0	-51.6	-52.8	-54.2	-56.5	-60.1	-64.7	-70.0	-75.3	-79.9	-83.3	-85.3	-85.9	-85.4	-83.9	-81.4
-20	26934	26394	25774	25105	24432	23796	23218	22688	22169	21616	20997	20305	19558	18793	18053	17376	16784	16278	15851
	-41.0	-44.5	-48.1	-51.1	-53.6	-55.7	-58.0	-61.2	-65.5	-70.9	-77.0	-83.1	-88.5	-92.9	-95.8	-97.2	-97.2	-95.6	-92.3
-25	25881	25309	24660	23958	23242	22553	21914	21321	20743	20143	19491	18779	18019	17240	16474	15745	15067	14446	13883
	-43.9	-47.7	-51.4	-54.6	-57.3	-59.6	-62.3	-65.7	-70.3	-75.9	-82.2	-88.6	-94.4	-99.1	-102.3	-103.8	-103.5	-101.1	-96.5
-30	24946	24362	23703	22989	22252	21530	20849	20209	19588	18955	18285	17569	16814	16042	15275	14530	13821	13155	12548
	-48.3	-52.5	-56.4	-59.7	-62.4	-64.7	-67.2	-70.4	-74.7	-80.0	-86.0	-92.1	-97.7	-102.1	-104.8	-105.6	-104.2	-100.5	-94.3
-35	24231	23668	23029	22330	21597	20864	20155	19476	18815	18148	17458	16736	15989	15232	14481	13752	13060	12420	11856
	-52.4	-57.3	-61.6	-65.1	-67.7	-69.9	-72.1	-75.0	-78.7	-83.3	-88.5	-93.8	-98.4	-101.8	-103.4	-102.8	-99.9	-94.5	-86.7
-40	23789	23288	22705	22051	21348	20624	19902	19192	18492	17788	17072	16340	15598	14859	14139	13455	12823	12263	11801
	-54.5	-60.1	-65.0	-68.8	-71.7	-74.0	-76.1	-78.6	-81.6	-85.3	-89.4	-93.3	-96.4	-98.2	-98.1	-95.9	-91.4	-84.5	-75.5
-45	23600	23200	22706	22126	21480	20790	20077	19354	18626	17894	17156	16416	15685	14974	14301	13683	13137	12685	12349
	-53.4	-59.6	-65.1	-69.5	-72.9	-75.6	-77.8	-80.0	-82.5	-85.2	-87.8	-90.1	-91.4	-91.3	-89.4	-85.6	-79.6	-71.8	-62.4
-50	23553	23281	22903	22426	21866	21240	20567	19863	19140	18407	17672	16947	16244	15579	14968	14429	13978	13633	13410
	-48.8	-55.4	-61.3	-66.3	-70.3	-73.5	-76.0	-78.2	-80.1	-81.8	-83.1	-83.7	-83.3	-81.5	-78.0	-72.9	-66.2	-58.2	-49.2
-55	23470	23339	23094	22742	22295	21766	21174	20535	19865	19179	18491	17818	17175	16579	16046	15590	15227	14968	14824
	-41.4	-48.1	-54.1	-59.4	-63.8	-67.4	-70.2	-72.3	-73.9	-74.8	-75.0	-74.2	-72.4	-69.3	-64.9	-59.2	-52.5	-45.0	-37.1
-60	23156	23162	23055	22841	22528	22129	21659	21134	20570	19985	19396	18820	18273	17772	17330	16959	16671	16472	16368
	-32.5	-38.6	-44.4	-49.6	-54.0	-57.7	-60.5	-62.5	-63.7	-64.1	-63.5	-62.0	-59.4	-55.8	-51.2	-45.7	-39.6	-33.2	-26.6
-65	22465	22590	22612	22536	22369	22120	21803	21430	21016	20579	20132	19692	19272	18887	18546	18261	18037	17880	17791
	-23.1	-28.4	-33.4	-38.0	-42.0	-45.3	-47.8	-49.5	-50.4	-50.5	-49.6	-47.8	-45.2	-41.8	-37.7	-33.0	-28.0	-22.8	-17.7
-70	21366	21578	21705	21752	21724	21627	21471	21266	21024	20755	20473	20188	19911	19652	19419	19219	19055	18930	18846
	-14.2	-18.3	-22.2	-25.7	-28.8	-31.4	-33.4	-34.7	-35.3	-35.2	-34.4	-32.9	-30.7	-28.0	-24.8	-21.3	-17.6	-13.8	-10.1
-75	19968	20221	20415	20550	20631	20662	20647	20595	20510	20401	20274	20137	19997	19858	19726	19604	19496	19403	19324
	-5.8	-8.6	-11.2	-13.6	-15.7	-17.4	-18.7	-19.5	-19.9	-19.8	-19.2	-18.2	-16.7	-14.9	-12.9	-10.6	-8.1	-5.6	-3.1
-80	18493	18731	18933	19101	19237	19341	19417	19466	19491	19497	19485	19459	19422	19376	19324	19267	19207	19144	19078
	2.2	0.6	-0.8	-2.1	-3.2	-4.2	-4.9	-5.3	-5.5	-5.5	-5.2	-4.6	-3.9	-2.9	-1.8	-0.6	0.7	2.1	3.6
-85	17190	17343	17483	17610	17723	17822	17907	17980	18039	18086	18121	18145	18158	18161	18154	18138	18112	18078	18035
	9.9	9.3	8.7	8.2	7.8	7.4	7.1	6.9	6.8	6.8	6.9	7.1	7.3	7.7	8.1	8.5	9.0	9.6	10.2
-90	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221
	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6

H-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	2754	2757	2757	2753	2745	2733	2718	2699	2677	2652	2624	2593	2560	2525	2487	2448	2408	2367	2325
	-16.0	-16.1	-16.1	-16.2	-16.3	-16.3	-16.4	-16.4	-16.4	-16.5	-16.5	-16.5	-16.5	-16.5	-16.5	-16.5	-16.5	-16.5	-16.5
85	4738	4755	4755	4738	4703	4652	4583	4498	4396	4278	4145	3998	3838	3666	3484	3294	3099	2900	2702
	-20.4	-20.7	-20.9	-21.1	-21.3	-21.5	-21.6	-21.6	-21.7	-21.7	-21.6	-21.6	-21.5	-21.5	-21.4	-21.3	-21.3	-21.3	-21.4
80	6998	7036	7047	7031	6988	6917	6817	6688	6529	6339	6120	5870	5592	5288	4960	4616	4260	3904	3561
	-24.5	-25.1	-25.5	-25.9	-26.3	-26.6	-26.8	-27.0	-27.1	-27.2	-27.3	-27.3	-27.3	-27.4	-27.4	-27.5	-27.7	-27.9	-28.2
75	9045	9098	9122	9118	9084	9019	8922	8792	8624	8418	8171	7881	7550	7178	6771	6338	5892	5454	5049
	-24.8	-25.5	-26.2	-26.8	-27.4	-27.9	-28.4	-28.8	-29.2	-29.5	-29.9	-30.2	-30.5	-30.9	-31.3	-31.7	-32.3	-32.9	-33.6
70	11011	11063	11090	11091	11068	11020	10944	10839	10700	10522	10302	10035	9719	9356	8949	8511	8059	7622	7237
	-21.3	-22.4	-23.3	-24.2	-25.0	-25.8	-26.5	-27.1	-27.7	-28.2	-28.8	-29.3	-29.9	-30.6	-31.4	-32.2	-33.2	-34.3	-35.3
65	13025	13059	13072	13066	13045	13008	12956	12886	12793	12673	12519	12324	12084	11797	11465	11100	10722	10359	10051
	-15.4	-16.8	-18.2	-19.5	-20.6	-21.6	-22.4	-23.1	-23.7	-24.2	-24.7	-25.2	-25.8	-26.6	-27.5	-28.6	-30.0	-31.5	-33.1
60	15173	15180	15170	15148	15118	15085	15049	15011	14967	14913	14842	14746	14619	14454	14252	14020	13773	13535	13343
	-8.4	-10.5	-12.5	-14.2	-15.7	-16.9	-17.8	-18.4	-18.8	-19.0	-19.1	-19.3	-19.6	-20.2	-21.0	-22.3	-23.9	-26.0	-28.2
55	17489	17475	17446	17409	17370	17336	17310	17296	17292	17297	17307	17313	17309	17286	17241	17174	17091	17009	16951
	-1.6	-4.5	-7.2	-9.5	-11.4	-12.9	-13.9	-14.4	-14.5	-14.3	-13.9	-13.6	-13.4	-13.7	-14.4	-15.7	-17.6	-20.1	-23.0
50	19963	19947	19917	19880	19843	19813	19797	19799	19823	19872	19945	20039	20147	20262	20375	20478	20569	20648	20726
	4.4	0.8	-2.6	-5.6	-8.1	-10.0	-11.2	-11.7	-11.7	-11.3	-10.6	-9.9	-9.4	-9.4	-10.0	-11.4	-13.6	-16.4	-19.7
45	22557	22564	22557	22542	22525	22513	22513	22530	22572	22648	22763	22920	23118	23350	23603	23863	24113	24341	24540
	9.8	5.6	1.6	-2.0	-5.1	-7.6	-9.4	-10.4	-10.7	-10.5	-9.9	-9.2	-8.7	-8.8	-9.6	-11.2	-13.7	-16.7	-19.9
40	25204	25257	25294	25323	25347	25369	25395	25430	25486	25576	25715	25914	26177	26499	26865	27252	27633	27980	28271
	14.8	10.4	6.1	2.0	-1.8	-5.1	-7.7	-9.7	-10.9	-11.5	-11.5	-11.3	-11.4	-11.9	-13.2	-15.2	-17.9	-20.8	-23.6
35	27793	27907	28006	28095	28176	28248	28311	28371	28441	28541	28695	28921	29230	29617	30065	30544	31016	31441	31788
	19.5	15.4	11.1	6.8	2.4	-1.8	-5.7	-9.1	-11.7	-13.5	-14.6	-15.4	-16.2	-17.4	-19.3	-21.7	-24.5	-27.1	-29.0
30	30152	30338	30509	30671	30822	30954	31064	31155	31245	31359	31528	31777	32121	32555	33057	33592	34114	34578	34943
	23.6	20.2	16.3	11.9	7.0	1.8	-3.4	-8.2	-12.3	-15.6	-17.9	-19.6	-21.2	-23.0	-25.2	-27.8	-30.3	-32.3	-33.1
25	32046	32312	32566	32811	33039	33238	33401	33532	33651	33789	33983	34261	34639	35110	35647	36209	36749	37217	37571
	26.0	23.7	20.5	16.2	11.0	5.0	-1.2	-7.3	-12.6	-16.9	-20.0	-22.3	-24.1	-26.0	-28.1	-30.4	-32.3	-33.3	-32.8
20	33209	33562	33908	34243	34552	34821	35041	35220	35381	35560	35796	36119	36540	37048	37612	38188	38727	39183	39517
	25.5	24.3	21.8	17.9	12.6	6.4	-0.3	-6.8	-12.6	-17.1	-20.1	-22.1	-23.4	-24.6	-25.9	-27.2	-28.0	-27.7	-26.1
15	33411	33850	34289	34713	35100	35435	35714	35949	36168	36409	36711	37101	37585	38143	38741	39334	39877	40328	40652
	20.7	20.4	18.6	15.2	10.5	4.7	-1.5	-7.4	-12.4	-15.9	-17.8	-18.4	-18.2	-17.9	-17.7	-17.5	-16.8	-15.3	-12.7
10	32535	33039	33553	34046	34494	34883	35217	35515	35810	36139	36537	37024	37596	38229	38882	39514	40083	40555	40902
	10.6	11.1	10.0	7.4	3.8	-0.6	-5.1	-9.1	-12.0	-13.4	-13.1	-11.5	-9.2	-6.8	-4.6	-2.5	-0.4	2.2	5.3
5	30627	31149	31690	32208	32680	33100	33480	33847	34235	34679	35204	35819	36512	37248	37987	38687	39315	39846	40259
	-4.5	-3.5	-3.9	-5.2	-7.1	-9.1	-10.7	-11.7	-11.5	-9.8	-6.6	-2.3	2.5	7.0	11.1	14.7	18.2	21.5	24.5
0	27907	28372	28864	29342	29786	30202	30614	31053	31550	32131	32810	33582	34422	35287	36136	36931	37647	38267	38782
	-23.6	-22.2	-21.6	-21.2	-20.5	-19.3	-17.3	-14.4	-10.5	-5.4	0.9	7.8	14.6	20.8	26.1	30.7	34.8	38.2	40.6

H-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	27907	28372	28864	29342	29786	30202	30614	31053	31550	32131	32810	33582	34422	35287	36136	36931	37647	38267	38782
	-23.6	-22.2	-21.6	-21.2	-20.5	-19.3	-17.3	-14.4	-10.5	-5.4	0.9	7.8	14.6	20.8	26.1	30.7	34.8	38.2	40.6
-5	24718	25038	25397	25758	26118	26497	26926	27436	28050	28782	29630	30574	31572	32576	33541	34438	35249	35969	36597
	-44.6	-42.7	-40.7	-38.0	-34.3	-29.3	-23.2	-16.4	-8.8	-0.4	8.5	17.3	25.2	31.8	37.3	41.9	45.7	48.7	50.2
-10	21441	21545	21699	21886	22123	22441	22876	23454	24185	25068	26083	27189	28332	29455	30515	31489	32369	33164	33884
	-64.8	-62.1	-58.4	-53.1	-46.0	-37.2	-27.4	-16.9	-6.1	4.8	15.4	24.8	32.4	38.2	42.5	45.9	48.7	50.6	51.1
-15	18409	18268	18190	18187	18293	18550	18992	19635	20475	21494	22651	23885	25128	26318	27416	28407	29296	30104	30856
	-81.4	-77.6	-71.9	-63.9	-53.7	-41.7	-28.8	-15.6	-2.6	9.8	20.7	29.3	35.3	38.8	40.8	42.0	43.1	43.7	43.2
-20	15851	15494	15219	15061	15070	15293	15758	16466	17403	18528	19782	21083	22353	23531	24583	25505	26315	27047	27742
	-92.3	-87.0	-79.3	-68.9	-56.2	-42.0	-27.2	-12.5	1.6	14.0	23.9	30.4	33.4	33.6	32.5	31.2	30.2	29.5	28.3
-25	13883	13392	13005	12775	12758	12997	13510	14289	15303	16494	17780	19069	20279	21354	22268	23027	23661	24218	24753
	-96.5	-89.5	-79.8	-67.7	-53.5	-38.3	-22.7	-7.7	6.0	17.1	24.6	27.9	27.3	24.0	19.7	15.7	12.8	11.0	9.6
-30	12548	12028	11639	11437	11473	11780	12367	13215	14275	15475	16721	17919	18989	19883	20585	21107	21487	21782	22059
	-94.3	-85.5	-74.3	-61.0	-46.4	-31.3	-16.2	-2.2	9.7	18.3	22.5	22.3	18.3	11.9	5.0	-1.1	-5.4	-7.9	-9.2
-35	11856	11402	11103	11007	11153	11560	12224	13115	14173	15319	16458	17502	18381	19052	19505	19754	19839	19820	19771
	-86.7	-76.5	-64.4	-51.0	-37.0	-22.9	-9.5	2.4	11.5	16.9	17.9	14.7	8.3	0.0	-8.4	-15.6	-20.7	-23.6	-24.7
-40	11801	11472	11310	11352	11618	12114	12824	13708	14706	15738	16721	17576	18243	18686	18894	18879	18675	18335	17934
	-75.5	-64.7	-52.7	-40.0	-27.4	-15.2	-4.2	4.7	10.8	13.2	11.7	6.8	-0.8	-9.6	-18.1	-25.4	-30.5	-33.4	-34.4
-45	12349	12156	12130	12288	12640	13177	13875	14694	15574	16447	17242	17895	18355	18590	18585	18346	17896	17276	16548
	-62.4	-51.9	-40.9	-29.8	-19.2	-9.5	-1.3	4.8	8.2	8.4	5.6	0.1	-7.2	-15.2	-22.8	-29.0	-33.5	-36.0	-36.9
-50	13410	13326	13392	13615	13990	14504	15129	15825	16544	17230	17825	18278	18548	18604	18429	18022	17392	16565	15585
	-49.2	-39.8	-30.3	-21.2	-12.9	-5.7	0.0	3.7	5.1	4.2	1.1	-3.9	-9.9	-16.3	-22.1	-26.8	-30.0	-31.8	-32.4
-55	14824	14800	14902	15125	15462	15893	16393	16930	17463	17949	18345	18610	18712	18621	18322	17804	17069	16127	15005
	-37.1	-29.1	-21.4	-14.4	-8.2	-3.1	0.6	2.7	3.1	1.9	-0.7	-4.4	-8.7	-13.0	-16.8	-19.8	-21.7	-22.5	-22.6
-60	16368	16360	16446	16620	16870	17180	17528	17887	18228	18519	18728	18824	18782	18577	18193	17619	16850	15889	14748
	-26.6	-20.2	-14.3	-9.0	-4.5	-1.0	1.5	2.8	3.0	2.2	0.5	-1.7	-4.2	-6.6	-8.5	-9.9	-10.5	-10.5	-10.1
-65	17791	17769	17810	17907	18049	18224	18414	18600	18761	18875	18919	18872	18714	18426	17996	17414	16674	15776	14725
	-17.7	-12.9	-8.4	-4.5	-1.2	1.4	3.2	4.3	4.7	4.6	4.0	3.1	2.2	1.4	0.8	0.7	0.9	1.6	2.5
-70	18846	18799	18788	18805	18843	18893	18942	18979	18988	18957	18869	18712	18472	18138	17700	17153	16493	15719	14837
	-10.1	-6.5	-3.3	-0.4	2.1	4.1	5.7	6.9	7.7	8.2	8.5	8.7	8.9	9.1	9.4	10.0	10.8	11.7	12.9
-75	19324	19259	19205	19159	19115	19069	19012	18938	18840	18708	18535	18314	18038	17700	17298	16827	16288	15681	15011
	-3.1	-0.7	1.5	3.6	5.5	7.2	8.7	9.9	11.0	11.9	12.8	13.5	14.3	15.0	15.8	16.6	17.6	18.6	19.7
-80	19078	19008	18935	18855	18767	18669	18557	18429	18281	18111	17915	17690	17436	17149	16830	16478	16095	15682	15243
	3.6	5.0	6.4	7.8	9.1	10.4	11.5	12.6	13.7	14.7	15.6	16.5	17.4	18.2	19.1	19.9	20.7	21.6	22.4
-85	18035	17983	17922	17852	17773	17683	17584	17475	17355	17224	17082	16929	16766	16593	16410	16218	16019	15814	15605
	10.2	10.8	11.5	12.1	12.8	13.5	14.2	14.8	15.5	16.1	16.8	17.4	18.0	18.6	19.1	19.7	20.2	20.7	21.2
-90	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221
	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6

H-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	2325	2283	2241	2199	2158	2118	2079	2041	2006	1972	1941	1912	1885	1862	1841	1824	1809	1798	1790
	-16.5	-16.5	-16.5	-16.4	-16.4	-16.4	-16.4	-16.3	-16.3	-16.3	-16.2	-16.2	-16.1	-16.1	-16.0	-15.9	-15.8	-15.8	-15.7
85	2702	2508	2321	2148	1991	1856	1746	1665	1612	1586	1583	1596	1619	1645	1670	1689	1697	1693	1675
	-21.4	-21.4	-21.6	-21.8	-22.0	-22.2	-22.3	-22.3	-22.1	-21.7	-21.2	-20.6	-20.0	-19.4	-18.8	-18.4	-18.0	-17.6	-17.4
80	3561	3247	2983	2792	2694	2697	2794	2968	3192	3443	3700	3948	4175	4373	4535	4657	4735	4769	4757
	-28.2	-28.6	-29.0	-29.0	-28.6	-27.7	-26.4	-25.1	-23.9	-23.1	-22.5	-22.2	-22.1	-22.0	-22.1	-22.1	-22.1	-22.1	-22.0
75	5049	4713	4483	4392	4454	4662	4987	5391	5837	6292	6733	7140	7499	7803	8044	8219	8325	8363	8332
	-33.6	-34.1	-34.2	-33.9	-32.9	-31.7	-30.4	-29.4	-28.7	-28.5	-28.5	-28.7	-29.0	-29.4	-29.7	-30.0	-30.1	-30.1	-29.9
70	7237	6947	6794	6811	7007	7363	7842	8401	8994	9584	10142	10645	11078	11432	11703	11889	11990	12009	11947
	-35.3	-36.1	-36.6	-36.5	-36.1	-35.3	-34.6	-34.1	-33.8	-33.8	-33.9	-34.2	-34.6	-34.9	-35.1	-35.2	-35.1	-34.9	-34.5
65	10051	9842	9775	9878	10159	10599	11160	11796	12459	13106	13704	14229	14666	15008	15253	15405	15468	15448	15348
	-33.1	-34.6	-35.8	-36.7	-37.1	-37.2	-37.1	-36.9	-36.8	-36.7	-36.7	-36.7	-36.7	-36.7	-36.5	-36.1	-35.6	-35.0	-34.2
60	13343	13234	13248	13410	13729	14190	14760	15394	16044	16664	17222	17692	18061	18327	18493	18567	18560	18482	18340
	-28.2	-30.6	-32.8	-34.6	-36.0	-36.8	-37.1	-37.1	-36.9	-36.6	-36.1	-35.6	-35.1	-34.4	-33.6	-32.7	-31.7	-30.7	-29.6
55	16951	16947	17030	17221	17533	17957	18468	19024	19582	20099	20540	20885	21123	21256	21294	21252	21147	20993	20802
	-23.0	-26.0	-29.0	-31.5	-33.4	-34.5	-35.0	-34.8	-34.3	-33.4	-32.4	-31.3	-30.1	-28.8	-27.5	-26.1	-24.8	-23.4	-22.2
50	20726	20821	20953	21145	21409	21745	22136	22551	22951	23299	23563	23726	23783	23741	23615	23428	23201	22954	22702
	-19.7	-23.0	-26.1	-28.7	-30.4	-31.2	-31.2	-30.5	-29.3	-27.7	-26.1	-24.4	-22.8	-21.2	-19.6	-18.1	-16.7	-15.3	-14.1
45	24540	24714	24874	25038	25220	25429	25657	25884	26079	26212	26256	26200	26044	25800	25491	25142	24780	24428	24105
	-19.9	-23.0	-25.5	-27.2	-27.9	-27.6	-26.4	-24.6	-22.5	-20.3	-18.2	-16.3	-14.6	-13.1	-11.8	-10.6	-9.4	-8.4	-7.5
40	28271	28497	28660	28772	28851	28910	28952	28966	28931	28824	28628	28336	27957	27507	27014	26505	26008	25549	25149
	-23.6	-25.8	-27.0	-27.0	-25.9	-23.8	-21.0	-17.8	-14.7	-12.0	-9.7	-8.0	-6.8	-5.9	-5.3	-4.8	-4.4	-4.0	-3.6
35	31788	32036	32177	32222	32188	32092	31946	31746	31480	31135	30703	30184	29595	28958	28302	27654	27042	26489	26016
	-29.0	-29.8	-29.1	-27.0	-23.7	-19.4	-14.8	-10.4	-6.6	-3.6	-1.6	-0.5	-0.3	-0.5	-1.0	-1.6	-2.1	-2.5	-2.6
30	34943	35182	35284	35255	35111	34874	34558	34168	33698	33143	32504	31794	31033	30251	29474	28729	28038	27420	26893
	-33.1	-32.3	-29.7	-25.5	-20.0	-14.0	-8.0	-2.7	1.4	4.1	5.4	5.4	4.4	2.9	1.0	-0.8	-2.3	-3.5	-4.2
25	37571	37783	37838	37741	37507	37157	36709	36171	35545	34833	34045	33201	32330	31461	30624	29838	29117	28474	27923
	-32.8	-30.5	-26.4	-20.6	-13.9	-6.9	-0.4	4.8	8.4	10.3	10.4	9.2	7.0	4.2	1.3	-1.6	-4.1	-5.9	-7.1
20	39517	39699	39717	39573	39280	38859	38330	37704	36988	36190	35327	34425	33516	32633	31801	31034	30337	29714	29171
	-26.1	-22.7	-17.8	-11.6	-4.9	1.7	7.4	11.6	13.9	14.3	13.2	10.8	7.7	4.0	0.3	-3.2	-6.3	-8.7	-10.3
15	40652	40825	40835	40680	40374	39936	39385	38738	38006	37200	36343	35462	34592	33763	32997	32302	31676	31113	30610
	-12.7	-9.0	-4.3	1.0	6.4	11.2	14.8	16.8	17.1	15.9	13.5	10.3	6.6	2.7	-1.1	-4.8	-8.2	-11.0	-12.9
10	40902	41105	41151	41037	40773	40377	39869	39268	38589	37850	37072	36284	35516	34797	34144	33560	33038	32562	32122
	5.3	8.7	12.2	15.5	18.2	20.0	20.6	19.9	17.9	15.0	11.5	7.9	4.3	0.8	-2.7	-6.1	-9.4	-12.3	-14.7
5	40259	40539	40674	40658	40496	40202	39795	39299	38732	38116	37473	36829	36209	35636	35122	34670	34265	33890	33524
	24.5	26.9	28.4	28.9	28.3	26.7	24.0	20.3	16.2	11.9	7.8	4.3	1.2	-1.5	-4.1	-6.9	-9.9	-12.9	-15.7
0	38782	39180	39450	39583	39575	39434	39178	38830	38415	37958	37482	37008	36556	36143	35778	35459	35173	34897	34607
	40.6	41.6	40.9	38.5	34.7	29.8	24.2	18.2	12.5	7.4	3.3	0.2	-2.0	-3.7	-5.3	-7.4	-10.0	-13.1	-16.3

H-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	38782	39180	39450	39583	39575	39434	39178	38830	38415	37958	37482	37008	36556	36143	35778	35459	35173	34897	34607
	40.6	41.6	40.9	38.5	34.7	29.8	24.2	18.2	12.5	7.4	3.3	0.2	-2.0	-3.7	-5.3	-7.4	-10.0	-13.1	-16.3
-5	36597	37131	37561	37871	38050	38096	38020	37846	37602	37315	37012	36712	36429	36173	35951	35759	35583	35399	35180
	50.2	49.7	47.0	42.2	35.9	28.7	21.2	14.0	7.6	2.5	-1.2	-3.5	-4.8	-5.5	-6.4	-7.8	-10.1	-13.3	-17.0
-10	33884	34536	35114	35600	35970	36210	36322	36326	36251	36128	35987	35846	35717	35606	35515	35438	35361	35261	35112
	51.1	49.3	45.3	39.1	31.6	23.5	15.6	8.4	2.5	-2.0	-4.8	-6.3	-6.8	-6.9	-7.2	-8.3	-10.5	-13.8	-17.8
-15	30856	31572	32250	32870	33401	33814	34099	34266	34344	34366	34365	34361	34366	34382	34407	34435	34451	34434	34358
	43.2	40.8	36.3	30.1	22.8	15.3	8.3	2.4	-2.2	-5.3	-7.1	-7.8	-7.8	-7.6	-7.8	-8.8	-11.0	-14.4	-18.6
-20	27742	28433	29128	29811	30441	30978	31398	31700	31907	32052	32167	32278	32396	32523	32655	32782	32891	32960	32969
	28.3	25.9	22.1	16.9	11.1	5.5	0.6	-3.2	-5.8	-7.4	-8.0	-8.1	-7.9	-7.8	-8.2	-9.4	-11.6	-15.0	-19.3
-25	24753	25313	25923	26570	27214	27806	28309	28709	29018	29265	29480	29691	29908	30136	30368	30593	30798	30964	31072
	9.6	7.9	5.3	2.1	-1.3	-4.4	-6.7	-8.1	-8.6	-8.6	-8.2	-7.9	-7.6	-7.7	-8.3	-9.7	-12.0	-15.3	-19.3
-30	22059	22384	22795	23297	23856	24422	24947	25403	25789	26123	26431	26736	27049	27375	27706	28034	28342	28615	28835
	-9.2	-10.0	-10.9	-11.9	-12.9	-13.3	-13.1	-12.2	-10.9	-9.6	-8.4	-7.7	-7.4	-7.6	-8.4	-9.8	-12.0	-14.9	-18.5
-35	19771	19771	19880	20126	20496	20945	21422	21889	22328	22742	23143	23548	23964	24394	24831	25267	25687	26075	26416
	-24.7	-24.7	-24.2	-23.3	-22.2	-20.6	-18.5	-16.0	-13.5	-11.2	-9.4	-8.3	-7.8	-7.9	-8.5	-9.6	-11.5	-14.0	-17.1
-40	17934	17556	17283	17173	17244	17476	17827	18250	18712	19195	19695	20212	20746	21295	21851	22405	22944	23453	23918
	-34.4	-34.0	-32.7	-30.9	-28.7	-26.1	-23.0	-19.8	-16.7	-13.9	-11.7	-10.2	-9.2	-8.7	-8.8	-9.4	-10.7	-12.6	-15.1
-45	16548	15791	15097	14552	14217	14117	14238	14541	14978	15510	16106	16746	17416	18103	18794	19479	20144	20776	21363
	-36.9	-36.5	-35.4	-33.9	-32.0	-29.7	-27.0	-23.9	-20.9	-17.9	-15.3	-13.2	-11.5	-10.2	-9.5	-9.3	-9.8	-11.0	-13.0
-50	15585	14512	13427	12423	11597	11031	10774	10827	11150	11681	12356	13122	13940	14781	15622	16449	17246	18003	18709
	-32.4	-32.3	-31.9	-31.5	-31.2	-30.7	-29.8	-28.1	-25.7	-22.8	-19.8	-16.9	-14.2	-12.0	-10.3	-9.2	-9.0	-9.5	-10.7
-55	15005	13739	12382	11005	9695	8562	7724	7291	7306	7721	8427	9309	10283	11290	12292	13268	14203	15085	15909
	-22.6	-22.4	-22.3	-22.7	-24.1	-26.4	-29.0	-30.7	-30.4	-28.1	-24.4	-20.4	-16.5	-13.2	-10.5	-8.7	-7.7	-7.5	-8.1
-60	14748	13445	12009	10475	8891	7316	5834	4584	3800	3735	4353	5358	6515	7707	8879	10006	11074	12080	13019
	-10.1	-9.4	-8.8	-8.8	-9.9	-12.4	-16.9	-23.8	-31.1	-33.0	-28.1	-21.6	-16.0	-11.5	-8.2	-6.0	-4.6	-3.9	-3.9
-65	14725	13531	12210	10781	9265	7690	6077	4452	2836	1249	313	1795	3224	4587	5880	7103	8255	9341	10363
	2.5	3.7	4.8	5.8	6.6	6.9	6.7	6.0	4.6	2.0	-12.8	-3.2	-0.9	0.8	2.1	3.0	3.6	3.8	3.8
-70	14837	13852	12777	11625	10417	9173	7921	6696	5544	4539	3799	3474	3642	4208	5005	5910	6855	7807	8748
	12.9	14.2	15.6	17.0	18.5	20.1	21.8	24.0	26.6	30.0	33.4	34.8	32.3	27.9	23.8	20.8	18.6	17.0	15.7
-75	15011	14284	13508	12695	11860	11019	10193	9405	8681	8053	7550	7201	7025	7030	7206	7530	7974	8510	9111
	19.7	20.8	22.0	23.3	24.5	25.9	27.2	28.5	29.9	31.1	32.2	32.8	32.9	32.4	31.3	29.9	28.3	26.7	25.3
-80	15243	14782	14305	13818	13330	12850	12387	11951	11554	11204	10913	10687	10534	10457	10457	10534	10682	10896	11169
	22.4	23.2	24.0	24.9	25.6	26.4	27.1	27.7	28.3	28.8	29.1	29.3	29.3	29.2	28.9	28.4	27.8	27.1	26.3
-85	15605	15393	15182	14974	14770	14575	14390	14219	14064	13928	13813	13721	13654	13612	13597	13609	13648	13712	13801
	21.2	21.6	22.0	22.4	22.8	23.1	23.4	23.6	23.8	23.9	24.0	24.0	23.9	23.8	23.7	23.4	23.1	22.8	22.4
-90	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221	16221
	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6

Plots and Tables of DGRF 1985

X Component

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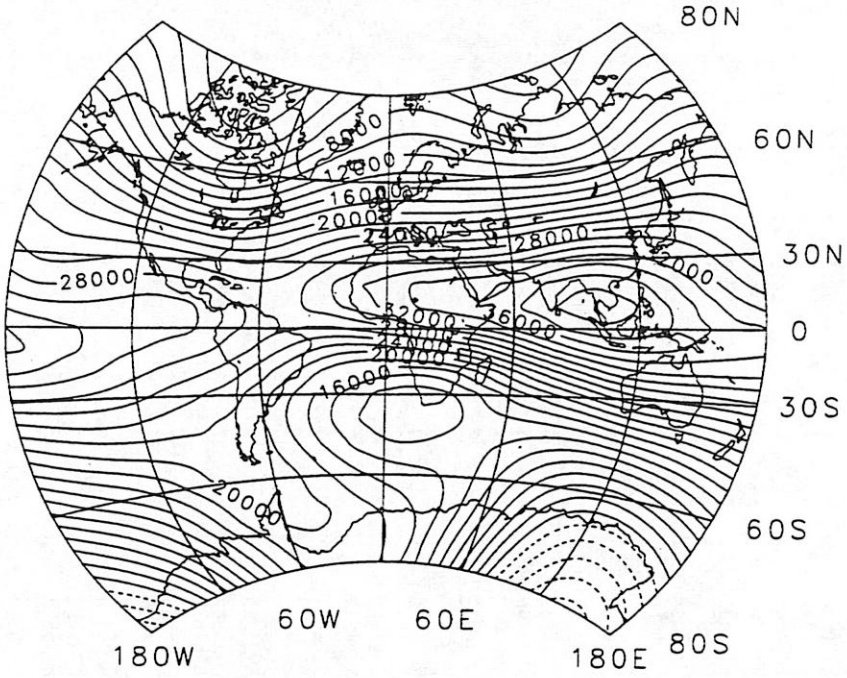
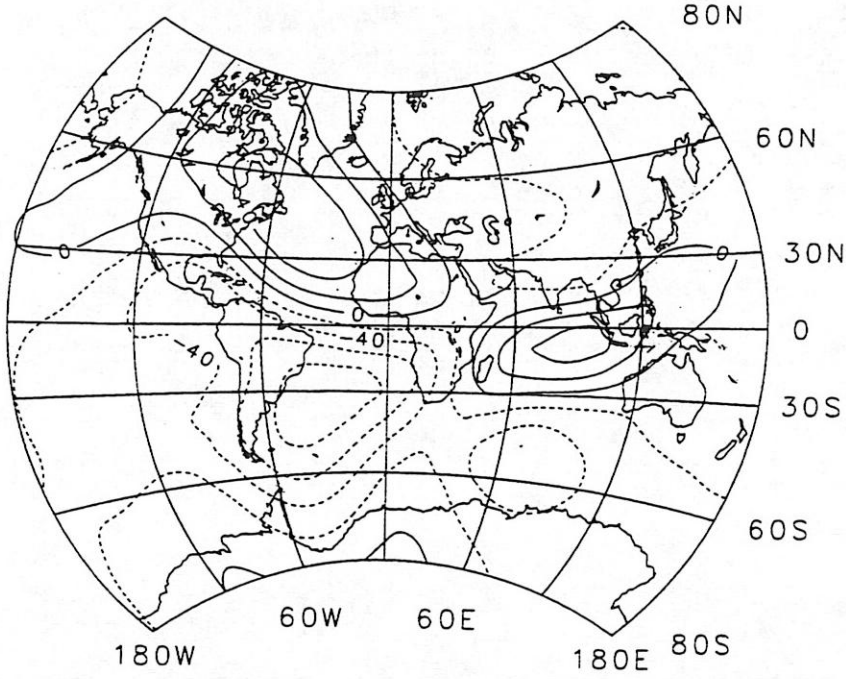
DGRF 1985 - X - COMPONENT

Figure 7 (**X**, top) Figure 8 ($\dot{\mathbf{X}}$, bottom)





X-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	-1299	-1401	-1496	-1583	-1660	-1726	-1781	-1823	-1851	-1864	-1861	-1840	-1801	-1744	-1668	-1572	-1457	-1324	-1172
	3.1	4.8	6.4	8.0	9.5	11.0	12.4	13.7	14.9	16.1	17.0	17.9	18.6	19.1	19.5	19.7	19.8	19.6	19.3
85	1180	1065	924	760	576	377	168	-44	-254	-455	-640	-802	-936	-1035	-1095	-1113	-1085	-1010	-887
	-6.4	-4.9	-3.3	-1.7	0.1	1.8	3.7	5.5	7.4	9.2	10.9	12.5	14.0	15.4	16.5	17.4	18.1	18.5	18.6
80	4596	4441	4218	3932	3591	3203	2780	2335	1882	1433	1004	607	256	-39	-268	-425	-502	-498	-412
	-18.2	-16.8	-15.1	-13.2	-11.1	-8.7	-6.1	-3.4	-0.6	2.3	5.2	8.0	10.7	13.2	15.4	17.4	19.0	20.1	20.9
75	8221	8010	7695	7284	6789	6224	5604	4949	4277	3608	2962	2357	1811	1340	957	673	495	429	474
	-27.6	-26.0	-24.1	-21.7	-19.0	-15.9	-12.6	-8.9	-5.1	-1.2	2.7	6.6	10.3	13.9	17.1	20.0	22.5	24.5	26.0
70	11845	11576	11182	10673	10064	9370	8612	7810	6986	6163	5362	4606	3915	3306	2797	2401	2128	1986	1977
	-32.5	-30.6	-28.2	-25.4	-22.1	-18.4	-14.3	-10.0	-5.5	-1.0	3.5	8.0	12.3	16.4	20.3	23.8	27.0	29.7	32.0
65	15243	14926	14482	13922	13262	12516	11705	10847	9964	9077	8208	7377	6605	5910	5311	4824	4463	4239	4160
	-32.3	-30.0	-27.1	-23.8	-20.1	-16.0	-11.6	-7.0	-2.4	2.1	6.6	10.9	15.0	19.0	22.9	26.6	30.1	33.5	36.5
60	18224	17874	17413	16854	16210	15493	14719	13902	13059	12206	11359	10537	9755	9032	8388	7839	7404	7100	6940
	-27.5	-24.8	-21.6	-18.1	-14.2	-10.1	-5.9	-1.6	2.5	6.4	10.0	13.4	16.6	19.8	23.0	26.4	30.0	33.7	37.5
55	20669	20294	19843	19326	18753	18132	17470	16775	16055	15319	14576	13838	13118	12429	11789	11217	10735	10365	10127
	-19.8	-16.9	-13.7	-10.2	-6.6	-2.9	0.7	4.0	7.1	9.7	12.0	13.9	15.6	17.4	19.5	22.1	25.4	29.4	33.9
50	22548	22149	21719	21267	20799	20314	19811	19290	18748	18187	17607	17013	16411	15811	15227	14677	14186	13778	13479
	-11.4	-8.6	-5.6	-2.6	0.4	3.3	5.8	8.0	9.6	10.6	11.2	11.3	11.3	11.5	12.2	13.8	16.5	20.5	25.6
45	23921	23493	23084	22703	22348	22013	21687	21358	21018	20656	20270	19854	19410	18942	18458	17974	17513	17102	16769
	-4.4	-1.9	0.6	3.0	5.1	6.9	8.2	8.9	9.0	8.4	7.3	5.7	4.1	2.6	1.9	2.3	4.3	8.0	13.5
40	24925	24463	24070	23752	23503	23309	23149	23005	22858	22694	22503	22275	22005	21691	21335	20949	20550	20165	19821
	-0.1	1.9	3.8	5.4	6.7	7.4	7.4	6.7	5.4	3.4	0.8	-2.1	-5.1	-7.9	-9.9	-10.7	-9.6	-6.3	-0.9
35	25743	25250	24868	24600	24437	24359	24338	24348	24365	24373	24356	24302	24199	24040	23818	23540	23217	22872	22530
	1.2	2.6	3.9	4.9	5.3	5.0	3.9	2.1	-0.4	-3.5	-7.0	-10.9	-14.8	-18.6	-21.6	-23.4	-23.3	-20.9	-15.9
30	26563	26051	25677	25446	25345	25348	25424	25543	25681	25817	25936	26023	26060	26034	25931	25749	25495	25186	24845
	-0.1	0.8	1.7	2.2	2.0	0.9	-1.1	-3.8	-7.1	-10.9	-15.0	-19.3	-23.7	-28.0	-31.7	-34.4	-35.3	-34.0	-30.0
25	27532	27021	26659	26450	26381	26424	26549	26724	26926	27137	27342	27522	27656	27724	27707	27594	27387	27097	26748
	-2.9	-2.4	-1.9	-1.7	-2.4	-3.9	-6.5	-9.8	-13.6	-17.8	-22.0	-26.4	-30.9	-35.3	-39.4	-42.7	-44.6	-44.5	-41.9
20	28723	28234	27887	27685	27616	27656	27775	27948	28155	28381	28612	28829	29008	29123	29150	29072	28885	28599	28234
	-6.1	-5.9	-5.7	-5.9	-6.8	-8.7	-11.5	-15.1	-19.2	-23.4	-27.6	-31.8	-36.0	-40.2	-44.3	-47.9	-50.6	-51.6	-50.5
15	30112	29663	29332	29121	29021	29013	29075	29190	29342	29522	29718	29912	30081	30194	30225	30152	29967	29676	29296
	-8.8	-9.0	-9.2	-9.7	-10.8	-12.9	-15.9	-19.6	-23.6	-27.7	-31.6	-35.4	-39.1	-42.9	-46.6	-50.1	-53.1	-55.0	-55.2
10	31581	31182	30865	30631	30473	30382	30345	30353	30399	30480	30587	30706	30814	30884	30886	30799	30608	30315	29933
	-10.7	-11.5	-12.1	-13.1	-14.6	-16.8	-19.8	-23.3	-27.1	-30.8	-34.4	-37.7	-40.7	-43.7	-46.7	-49.7	-52.5	-54.8	-56.1
5	32944	32597	32291	32024	31794	31599	31439	31313	31222	31169	31148	31152	31164	31159	31112	30999	30803	30519	30151
	-11.9	-13.4	-14.8	-16.3	-18.2	-20.6	-23.4	-26.6	-29.9	-33.2	-36.2	-38.9	-41.2	-43.3	-45.2	-47.3	-49.5	-51.6	-53.5
0	33988	33689	33392	33092	32791	32495	32212	31952	31722	31526	31366	31239	31135	31039	30930	30786	30587	30318	29975
	-12.9	-15.0	-17.3	-19.5	-21.9	-24.3	-26.9	-29.6	-32.4	-35.1	-37.5	-39.4	-40.9	-42.0	-42.8	-43.7	-44.9	-46.5	-48.6

X-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	33988	33689	33392	33092	32791	32495	32212	31952	31722	31526	31366	31239	31135	31039	30930	30786	30587	30318	29975
	-12.9	-15.0	-17.3	-19.5	-21.9	-24.3	-26.9	-29.6	-32.4	-35.1	-37.5	-39.4	-40.9	-42.0	-42.8	-43.7	-44.9	-46.5	-48.6
-5	34514	34261	33977	33657	33304	32933	32558	32193	31849	31533	31250	31001	30784	30594	30418	30236	30027	29770	29451
	-13.9	-16.8	-19.8	-22.8	-25.5	-27.9	-30.2	-32.4	-34.5	-36.5	-38.2	-39.5	-40.2	-40.4	-40.1	-39.9	-40.0	-40.8	-42.6
-10	34386	34180	33921	33605	33238	32836	32419	32002	31597	31209	30843	30503	30195	29920	29675	29445	29211	28948	28636
	-15.2	-18.7	-22.3	-25.7	-28.7	-31.1	-33.1	-34.7	-36.1	-37.4	-38.5	-39.1	-39.3	-38.7	-37.7	-36.6	-35.8	-35.9	-37.3
-15	33552	33402	33190	32912	32576	32199	31800	31394	30990	30590	30194	29809	29442	29100	28789	28501	28223	27932	27604
	-16.7	-20.5	-24.4	-28.1	-31.1	-33.4	-35.0	-36.2	-37.0	-37.8	-38.3	-38.6	-38.3	-37.5	-36.1	-34.5	-33.3	-32.9	-34.0
-20	32057	31979	31840	31637	31377	31077	30753	30416	30071	29713	29341	28955	28565	28181	27814	27467	27133	26796	26438
	-18.0	-21.9	-25.9	-29.5	-32.4	-34.6	-36.0	-36.8	-37.3	-37.6	-37.9	-37.9	-37.6	-36.8	-35.5	-34.0	-32.8	-32.4	-33.4
-25	30026	30039	29998	29900	29753	29569	29359	29131	28883	28607	28296	27947	27568	27170	26769	26377	25995	25618	25232
	-19.0	-22.6	-26.3	-29.7	-32.6	-34.6	-35.9	-36.6	-37.0	-37.2	-37.3	-37.3	-37.1	-36.6	-35.7	-34.7	-34.0	-34.1	-35.4
-30	27625	27744	27820	27849	27834	27785	27707	27602	27466	27289	27059	26773	26435	26058	25659	25257	24861	24474	24089
	-19.3	-22.5	-25.9	-29.0	-31.7	-33.7	-35.1	-35.9	-36.4	-36.6	-36.7	-36.8	-36.8	-36.6	-36.3	-36.0	-36.2	-37.0	-38.8
-35	25011	25245	25444	25605	25726	25810	25859	25873	25846	25766	25626	25420	25153	24837	24491	24134	23781	23440	23106
	-19.2	-21.9	-24.8	-27.6	-30.2	-32.3	-33.9	-34.9	-35.5	-35.9	-36.0	-36.1	-36.2	-36.3	-36.5	-37.0	-37.9	-39.6	-42.2
-40	22282	22630	22949	23233	23477	23680	23842	23960	24029	24044	23998	23890	23726	23518	23281	23036	22795	22565	22342
	-18.8	-21.0	-23.4	-26.0	-28.5	-30.7	-32.4	-33.7	-34.4	-34.8	-34.8	-34.8	-34.8	-35.0	-35.4	-36.4	-38.1	-40.5	-43.9
-45	19450	19903	20330	20721	21071	21376	21633	21843	22004	22115	22177	22191	22166	22112	22043	21972	21908	21851	21794
	-18.6	-20.2	-22.2	-24.5	-26.9	-29.0	-30.8	-32.0	-32.7	-32.9	-32.8	-32.4	-32.1	-32.1	-32.6	-33.8	-35.8	-38.8	-42.8
-50	16443	16989	17508	17991	18432	18827	19175	19478	19739	19963	20155	20322	20472	20614	20758	20908	21065	21223	21367
	-18.9	-20.0	-21.5	-23.4	-25.3	-27.2	-28.7	-29.7	-30.1	-30.0	-29.4	-28.6	-27.9	-27.5	-27.8	-28.9	-31.1	-34.4	-38.7
-55	13147	13773	14373	14939	15466	15951	16398	16809	17193	17556	17908	18258	18613	18979	19358	19750	20146	20532	20889
	-19.8	-20.3	-21.2	-22.4	-23.7	-25.0	-25.9	-26.4	-26.3	-25.6	-24.6	-23.4	-22.2	-21.5	-21.5	-22.5	-24.5	-27.8	-32.1
-60	9469	10164	10837	11484	12102	12690	13253	13797	14330	14862	15400	15954	16528	17123	17738	18364	18988	19590	20149
	-21.1	-20.9	-21.1	-21.5	-21.9	-22.3	-22.5	-22.2	-21.4	-20.3	-18.8	-17.2	-15.8	-14.9	-14.7	-15.4	-17.3	-20.3	-24.4
-65	5398	6148	6890	7621	8338	9045	9744	10442	11146	11864	12601	13363	14150	14961	15788	16620	17441	18231	18967
	-22.4	-21.5	-20.8	-20.3	-19.8	-19.3	-18.5	-17.5	-16.1	-14.5	-12.8	-11.1	-9.7	-8.7	-8.4	-9.0	-10.6	-13.2	-16.8
-70	1040	1828	2630	3442	4265	5097	5941	6802	7682	8586	9515	10471	11449	12444	13449	14448	15429	16371	17258
	-23.0	-21.6	-20.2	-18.9	-17.5	-16.2	-14.6	-13.0	-11.3	-9.4	-7.6	-6.0	-4.7	-3.8	-3.6	-4.0	-5.3	-7.3	-10.1
-75	-3392	-2588	-1743	-860	56	1006	1987	2999	4041	5111	6208	7327	8463	9608	10753	11884	12990	14056	15066
	-22.6	-20.8	-19.0	-17.1	-15.2	-13.3	-11.4	-9.5	-7.6	-5.7	-4.1	-2.6	-1.5	-0.7	-0.4	-0.7	-1.5	-2.8	-4.6
-80	-7621	-6827	-5963	-5035	-4049	-3009	-1921	-790	379	1581	2810	4058	5316	6578	7831	9067	10275	11443	12560
	-20.8	-18.9	-17.0	-15.1	-13.1	-11.1	-9.2	-7.3	-5.4	-3.8	-2.2	-0.9	0.1	0.9	1.3	1.5	1.3	0.9	0.1
-85	-11365	-10605	-9753	-8816	-7800	-6713	-5563	-4358	-3106	-1817	-498	840	2190	3540	4881	6204	7498	8753	9962
	-17.6	-16.1	-14.5	-12.8	-11.1	-9.4	-7.7	-6.0	-4.5	-2.9	-1.5	-0.3	0.9	1.9	2.8	3.5	4.1	4.6	4.9
-90	-14395	-13688	-12878	-11969	-10969	-9886	-8727	-7502	-6220	-4891	-3524	-2131	-721	693	2103	3497	4864	6194	7477
	-13.4	-12.4	-11.4	-10.2	-9.0	-7.7	-6.4	-5.0	-3.6	-2.1	-0.7	0.8	2.3	3.7	5.2	6.5	7.9	9.1	10.3

X-COMPONENT

LATITUDE \ LONGITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	-1172	-1004	-820	-621	-411	-191	36	270	506	742	975	1203	1423	1632	1828	2008	2172	2316	2440
	19.3	18.8	18.2	17.4	16.4	15.2	13.9	12.5	11.0	9.3	7.6	5.8	3.9	2.0	0.1	-1.8	-3.7	-5.6	-7.5
85	-887	-718	-505	-251	40	364	714	1083	1466	1854	2241	2620	2984	3325	3639	3921	4165	4368	4527
	18.6	18.4	17.9	17.1	16.0	14.7	13.1	11.3	9.2	7.0	4.7	2.2	-0.2	-2.8	-5.3	-7.7	-10.1	-12.4	-14.5
80	-412	-244	0	316	696	1130	1608	2119	2651	3192	3731	4256	4757	5225	5651	6029	6352	6615	6817
	20.9	21.2	21.0	20.4	19.2	17.7	15.7	13.3	10.7	7.8	4.7	1.4	-1.8	-5.1	-8.3	-11.4	-14.3	-17.1	-19.6
75	474	630	891	1249	1692	2207	2779	3393	4032	4679	5320	5940	6526	7068	7558	7987	8352	8647	8872
	26.0	26.9	27.2	26.8	25.8	24.2	22.0	19.3	16.1	12.6	8.8	4.9	0.9	-3.1	-6.9	-10.6	-14.1	-17.2	-20.1
70	1977	2101	2353	2723	3197	3759	4389	5066	5770	6480	7176	7843	8465	9033	9538	9974	10339	10630	10849
	32.0	33.6	34.6	34.8	34.3	32.9	30.8	28.0	24.6	20.7	16.4	11.9	7.3	2.7	-1.7	-5.9	-9.9	-13.5	-16.8
65	4160	4228	4441	4790	5261	5834	6486	7192	7925	8659	9372	10047	10666	11220	11702	12109	12440	12696	12882
	36.5	39.0	41.0	42.2	42.6	42.0	40.4	38.0	34.7	30.7	26.2	21.4	16.3	11.3	6.3	1.5	-3.0	-7.2	-11.0
60	6940	6933	7081	7380	7816	8368	9011	9713	10444	11172	11873	12526	13115	13631	14069	14427	14708	14916	15055
	37.5	41.1	44.4	47.0	48.8	49.5	49.0	47.4	44.6	41.0	36.6	31.7	26.4	21.0	15.5	10.2	5.0	0.2	-4.3
55	10127	10038	10106	10332	10707	11211	11815	12486	13188	13888	14557	15173	15721	16192	16584	16896	17132	17296	17396
	33.9	38.7	43.6	47.9	51.5	53.9	54.9	54.6	52.9	50.0	46.1	41.5	36.2	30.6	24.7	18.8	13.0	7.4	2.2
50	13479	13314	13298	13440	13734	14164	14705	15321	15975	16633	17262	17842	18356	18796	19160	19448	19662	19807	19891
	25.6	31.6	38.1	44.4	49.9	54.4	57.3	58.7	58.4	56.6	53.6	49.5	44.6	39.0	32.9	26.6	20.2	13.9	8.0
45	16769	16543	16448	16498	16696	17033	17488	18030	18625	19237	19835	20396	20902	21344	21716	22015	22242	22400	22498
	13.5	20.5	28.4	36.5	44.1	50.7	55.8	59.0	60.5	60.1	58.3	55.1	50.7	45.5	39.5	33.0	26.3	19.6	13.2
40	19821	19551	19382	19337	19428	19656	20009	20466	20998	21572	22158	22731	23270	23757	24180	24532	24808	25011	25151
	-0.9	6.6	15.5	25.1	34.6	43.2	50.3	55.6	58.9	60.3	59.9	57.8	54.4	49.7	44.1	37.9	31.3	24.6	18.1
35	22530	22224	21986	21844	21821	21931	22174	22542	23013	23563	24161	24779	25388	25961	26475	26913	27267	27539	27741
	-15.9	-8.5	0.8	11.3	22.1	32.3	41.3	48.6	53.8	57.0	58.2	57.5	55.2	51.4	46.6	41.0	35.0	28.9	22.9
30	24845	24504	24198	23960	23825	23816	23949	24228	24644	25178	25801	26481	27179	27857	28480	29021	29466	29819	30096
	-30.0	-23.4	-14.4	-3.8	7.7	19.0	29.4	38.3	45.3	50.2	53.0	53.8	52.8	50.3	46.6	42.1	37.3	32.2	27.2
25	26748	26370	25998	25673	25434	25315	25345	25538	25896	26406	27043	27768	28539	29304	30020	30652	31185	31621	31979
	-41.9	-36.5	-28.6	-18.7	-7.5	4.1	15.3	25.3	33.7	40.1	44.5	46.7	47.2	46.0	43.8	40.7	37.3	33.7	30.0
20	28234	27819	27392	26994	26668	26455	26390	26494	26778	27234	27839	28557	29338	30131	30888	31573	32169	32679	33123
	-50.5	-46.8	-40.6	-32.2	-22.1	-11.2	-0.1	10.3	19.5	26.9	32.5	36.1	37.9	38.3	37.6	36.2	34.4	32.4	30.0
15	29296	28856	28390	27940	27549	27258	27103	27109	27289	27640	28142	28765	29464	30194	30911	31587	32205	32770	33293
	-55.2	-53.4	-49.4	-43.1	-35.0	-25.6	-15.6	-5.8	3.3	11.2	17.5	22.1	25.2	27.0	27.8	28.0	27.8	27.1	26.0
10	29933	29484	29002	28523	28086	27729	27484	27374	27412	27598	27918	28350	28865	29430	30019	30612	31201	31785	32367
	-56.1	-56.0	-54.2	-50.5	-45.1	-38.1	-30.2	-21.8	-13.7	-6.2	0.3	5.5	9.5	12.4	14.5	16.0	16.9	17.3	17.0
5	30151	29715	29237	28746	28276	27857	27516	27271	27132	27103	27176	27343	27590	27908	28291	28733	29235	29788	30383
	-53.5	-54.8	-55.1	-54.2	-51.7	-47.8	-42.6	-36.6	-30.2	-23.8	-17.9	-12.7	-8.3	-4.7	-1.8	0.5	2.2	3.2	3.4
0	29975	29565	29102	28608	28108	27626	27182	26789	26456	26188	25985	25851	25793	25822	25952	26194	26551	27013	27552
	-48.6	-50.8	-52.8	-54.3	-54.9	-54.2	-52.2	-49.1	-45.1	-40.5	-35.8	-31.2	-26.9	-23.2	-19.9	-17.3	-15.4	-14.3	-13.9

X-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	29975	29565	29102	28608	28108	27626	27182	26789	26456	26188	25985	25851	25793	25822	25952	26194	26551	27013	27552
	-48.6	-50.8	-52.8	-54.3	-54.9	-54.2	-52.2	-49.1	-45.1	-40.5	-35.8	-31.2	-26.9	-23.2	-19.9	-17.3	-15.4	-14.3	-13.9
-5	29451	29064	28616	28118	27587	27039	26491	25952	25430	24933	24468	24049	23699	23445	23315	23332	23501	23807	24215
	-42.6	-45.3	-48.6	-52.1	-55.3	-57.6	-58.8	-58.7	-57.3	-55.0	-51.9	-48.5	-45.0	-41.6	-38.6	-36.1	-34.3	-33.3	-32.8
-10	28636	28261	27817	27308	26743	26134	25491	24824	24143	23457	22780	22133	21546	21054	20693	20488	20444	20546	20757
	-37.3	-40.1	-44.2	-49.1	-54.2	-59.0	-62.8	-65.4	-66.6	-66.5	-65.3	-63.4	-61.0	-58.4	-56.0	-54.0	-52.6	-51.6	-50.8
-15	27604	27221	26771	26247	25653	24993	24278	23516	22720	21902	21080	20279	19530	18868	18325	17925	17672	17550	17531
	-34.0	-36.8	-41.2	-46.8	-53.1	-59.4	-65.1	-69.7	-73.0	-74.9	-75.6	-75.2	-74.0	-72.5	-70.9	-69.4	-68.1	-67.0	-65.5
-20	26438	26036	25575	25042	24431	23744	22986	22167	21302	20409	19507	18622	17782	17016	16348	15796	15361	15034	14798
	-33.4	-36.1	-40.6	-46.4	-53.1	-60.1	-66.8	-72.6	-77.3	-80.6	-82.7	-83.6	-83.6	-82.9	-82.0	-80.8	-79.4	-77.7	-75.3
-25	25232	24818	24356	23830	23226	22538	21769	20929	20035	19108	18172	17252	16372	15552	14810	14154	13588	13108	12712
	-35.4	-38.2	-42.6	-48.3	-54.9	-61.9	-68.8	-75.0	-80.2	-84.3	-87.2	-88.9	-89.5	-89.4	-88.7	-87.4	-85.5	-82.9	-79.2
-30	24089	23690	23255	22762	22191	21530	20779	19945	19048	18113	17167	16236	15341	14499	13720	13010	12372	11810	11336
	-38.8	-41.9	-46.3	-51.9	-58.1	-64.8	-71.3	-77.3	-82.5	-86.6	-89.6	-91.5	-92.2	-92.0	-90.9	-89.0	-86.2	-82.5	-77.5
-35	23106	22765	22394	21966	21457	20849	20136	19328	18444	17513	16567	15632	14733	13884	13095	12371	11718	11146	10671
	-42.2	-45.8	-50.4	-55.9	-61.9	-68.0	-74.0	-79.5	-84.2	-87.9	-90.5	-91.9	-92.1	-91.2	-89.2	-86.2	-82.1	-77.1	-71.0
-40	22342	22110	21844	21514	21092	20557	19902	19135	18279	17363	16423	15492	14594	13750	12970	12263	11637	11105	10683
	-43.9	-48.1	-53.1	-58.7	-64.6	-70.5	-76.1	-81.0	-85.0	-88.0	-89.7	-90.2	-89.4	-87.3	-84.0	-79.7	-74.4	-68.2	-61.4
-45	21794	21716	21590	21384	21071	20629	20052	19348	18539	17659	16744	15832	14951	14126	13373	12703	12127	11657	11304
	-42.8	-47.6	-53.1	-59.0	-65.1	-70.9	-76.2	-80.7	-84.1	-86.3	-87.1	-86.5	-84.4	-81.0	-76.4	-70.7	-64.3	-57.4	-50.3
-50	21367	21472	21511	21452	21268	20941	20467	19855	19127	18317	17462	16600	15765	14983	14275	13655	13134	12720	12419
	-38.7	-43.9	-49.7	-56.0	-62.2	-68.2	-73.4	-77.6	-80.6	-82.1	-82.0	-80.4	-77.2	-72.7	-66.9	-60.4	-53.3	-46.1	-39.2
-55	20889	21189	21403	21505	21470	21284	20945	20463	19860	19167	18420	17654	16904	16197	15555	14993	14520	14143	13860
	-32.1	-37.4	-43.4	-49.8	-56.1	-62.0	-67.1	-71.1	-73.7	-74.7	-74.1	-71.8	-67.9	-62.7	-56.4	-49.5	-42.3	-35.4	-29.2
-60	20149	20638	21029	21300	21431	21412	21243	20933	20503	19978	19390	18770	18148	17550	16996	16499	16068	15705	15406
	-24.4	-29.4	-35.1	-41.2	-47.2	-52.8	-57.5	-61.2	-63.5	-64.2	-63.2	-60.7	-56.7	-51.4	-45.3	-38.7	-32.1	-26.0	-20.7
-65	18967	19627	20188	20631	20940	21110	21140	21039	20821	20508	20122	19689	19232	18772	18324	17901	17508	17145	16806
	-16.8	-21.1	-26.1	-31.3	-36.6	-41.4	-45.5	-48.6	-50.4	-50.9	-49.9	-47.6	-44.0	-39.3	-34.0	-28.4	-22.8	-17.7	-13.5
-70	17258	18068	18786	19397	19889	20258	20503	20628	20644	20564	20404	20179	19907	19600	19270	18925	18568	18199	17813
	-10.1	-13.5	-17.3	-21.3	-25.3	-29.0	-32.1	-34.4	-35.7	-36.0	-35.1	-33.2	-30.4	-26.8	-22.8	-18.5	-14.3	-10.5	-7.4
-75	15066	16008	16868	17636	18303	18864	19317	19663	19907	20054	20112	20090	19995	19836	19618	19346	19021	18643	18209
	-4.6	-6.8	-9.2	-11.8	-14.3	-16.6	-18.5	-19.9	-20.6	-20.7	-20.1	-18.7	-16.8	-14.5	-11.8	-9.0	-6.3	-3.9	-1.9
-80	12560	13615	14600	15506	16325	17052	17683	18216	18649	18984	19221	19362	19410	19367	19234	19014	18706	18311	17828
	0.1	-0.8	-1.8	-2.9	-4.0	-4.9	-5.7	-6.2	-6.4	-6.3	-5.8	-5.1	-4.0	-2.8	-1.4	-0.1	1.3	2.4	3.3
-85	9962	11114	12202	13216	14151	15000	15756	16415	16974	17427	17774	18011	18138	18154	18058	17850	17531	17103	16567
	4.9	5.1	5.3	5.4	5.5	5.6	5.8	5.9	6.1	6.3	6.6	7.0	7.3	7.7	8.0	8.3	8.5	8.5	8.5
-90	7477	8703	9863	10948	11950	12860	13673	14382	14981	15466	15833	16080	16205	16206	16084	15840	15475	14992	14395
	10.3	11.5	12.5	13.5	14.3	15.0	15.6	16.1	16.5	16.8	16.9	16.9	16.8	16.5	16.1	15.6	15.0	14.2	13.4

X-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	2440	2543	2623	2681	2716	2728	2717	2686	2634	2563	2474	2370	2251	2119	1978	1827	1669	1507	1340
	-7.5	-9.2	-10.9	-12.5	-14.0	-15.4	-16.6	-17.8	-18.7	-19.6	-20.3	-20.8	-21.2	-21.5	-21.6	-21.5	-21.3	-21.0	-20.5
85	4527	4641	4708	4728	4703	4634	4524	4376	4196	3987	3756	3509	3251	2989	2729	2478	2240	2022	1826
	-14.5	-16.6	-18.4	-20.1	-21.5	-22.8	-23.9	-24.8	-25.5	-26.1	-26.4	-26.6	-26.6	-26.5	-26.2	-25.8	-25.4	-24.8	-24.1
80	6817	6953	7025	7031	6974	6856	6681	6453	6180	5867	5524	5159	4783	4405	4037	3690	3374	3100	2875
	-19.6	-21.9	-24.0	-25.8	-27.3	-28.7	-29.8	-30.6	-31.3	-31.8	-32.0	-32.2	-32.1	-31.9	-31.6	-31.2	-30.8	-30.2	-29.6
75	8872	9025	9106	9117	9060	8938	8753	8511	8218	7879	7503	7099	6678	6252	5836	5444	5090	4789	4554
	-20.1	-22.7	-25.0	-27.0	-28.7	-30.1	-31.3	-32.3	-33.0	-33.6	-34.1	-34.4	-34.6	-34.7	-34.6	-34.6	-34.4	-34.2	-33.9
70	10849	10997	11076	11091	11043	10938	10778	10567	10309	10007	9668	9299	8909	8509	8113	7736	7396	7109	6894
	-16.8	-19.7	-22.2	-24.4	-26.3	-27.8	-29.1	-30.1	-30.9	-31.6	-32.2	-32.6	-33.1	-33.5	-33.9	-34.2	-34.6	-35.0	-35.4
65	12882	13001	13061	13066	13023	12936	12812	12652	12460	12236	11984	11706	11407	11096	10783	10482	10209	9982	9820
	-11.0	-14.3	-17.2	-19.7	-21.7	-23.3	-24.6	-25.5	-26.2	-26.7	-27.1	-27.6	-28.0	-28.6	-29.3	-30.1	-31.1	-32.2	-33.4
60	15055	15134	15162	15147	15099	15025	14932	14825	14705	14573	14428	14271	14101	13922	13739	13562	13402	13274	13194
	-4.3	-8.2	-11.6	-14.5	-16.7	-18.4	-19.5	-20.2	-20.5	-20.7	-20.7	-20.8	-21.0	-21.5	-22.3	-23.5	-25.0	-26.8	-28.8
55	17396	17441	17441	17408	17353	17287	17219	17155	17098	17050	17009	16974	16943	16913	16885	16860	16842	16839	16861
	2.2	-2.5	-6.5	-9.8	-12.4	-14.2	-15.2	-15.7	-15.6	-15.3	-14.8	-14.4	-14.3	-14.6	-15.4	-16.8	-18.7	-21.0	-23.7
50	19891	19923	19914	19878	19827	19773	19726	19695	19685	19700	19743	19813	19907	20021	20148	20282	20416	20548	20677
	8.0	2.6	-2.1	-6.0	-9.0	-11.0	-12.2	-12.7	-12.5	-11.8	-11.0	-10.2	-9.8	-10.0	-10.9	-12.4	-14.7	-17.4	-20.4
45	22498	22546	22555	22540	22511	22481	22459	22453	22474	22531	22631	22778	22973	23208	23474	23754	24031	24289	24517
	13.2	7.2	2.0	-2.4	-5.9	-8.6	-10.2	-11.1	-11.2	-10.7	-10.0	-9.3	-8.9	-9.2	-10.3	-12.1	-14.6	-17.5	-20.5
40	25151	25240	25293	25321	25336	25344	25354	25374	25417	25498	25632	25830	26097	26426	26802	27202	27597	27959	28263
	18.1	12.0	6.5	1.6	-2.5	-5.9	-8.5	-10.3	-11.3	-11.6	-11.5	-11.4	-11.5	-12.3	-13.7	-15.9	-18.6	-21.4	-24.0
35	27741	27890	28004	28094	28169	28230	28281	28330	28392	28489	28643	28874	29190	29586	30042	30527	31005	31436	31787
	22.9	17.1	11.7	6.5	1.7	-2.7	-6.5	-9.7	-12.0	-13.6	-14.7	-15.4	-16.3	-17.7	-19.7	-22.2	-24.9	-27.4	-29.1
30	30096	30318	30506	30671	30818	30942	31042	31125	31210	31324	31497	31754	32105	32546	33053	33590	34113	34578	34943
	27.2	22.2	17.1	11.9	6.5	1.1	-4.1	-8.8	-12.8	-15.8	-18.0	-19.7	-21.3	-23.2	-25.4	-28.0	-30.4	-32.3	-33.0
25	31979	32285	32559	32810	33037	33231	33386	33510	33626	33766	33965	34251	34635	35109	35647	36208	36747	37214	37569
	30.0	26.0	21.6	16.4	10.7	4.4	-2.0	-8.0	-13.1	-17.2	-20.2	-22.4	-24.2	-26.1	-28.1	-30.3	-32.1	-33.1	-32.6
20	33123	33522	33893	34239	34552	34818	35032	35205	35364	35545	35787	36116	36540	37046	37606	38178	38717	39175	39511
	30.0	27.1	23.4	18.5	12.6	5.9	-1.0	-7.6	-13.1	-17.4	-20.3	-22.1	-23.4	-24.5	-25.6	-26.7	-27.5	-27.4	-25.9
15	33293	33789	34261	34702	35098	35435	35710	35940	36157	36401	36709	37101	37581	38131	38721	39309	39853	40309	40641
	26.0	24.0	20.9	16.5	10.9	4.5	-2.0	-8.1	-12.9	-16.2	-17.9	-18.4	-18.1	-17.7	-17.2	-16.8	-16.1	-14.9	-12.5
10	32367	32942	33500	34021	34486	34883	35216	35511	35805	36136	36537	37020	37581	38198	38838	39464	40039	40523	40885
	17.0	15.8	13.3	9.6	4.9	-0.3	-5.4	-9.6	-12.4	-13.6	-13.1	-11.4	-9.0	-6.4	-3.9	-1.7	0.5	2.8	5.5
5	30383	30995	31597	32158	32659	33094	33480	33847	34234	34679	35200	35803	36473	37184	37904	38600	39240	39793	40230
	3.4	2.6	0.8	-1.9	-5.0	-8.1	-10.6	-11.9	-11.7	-9.8	-6.5	-2.2	2.6	7.4	11.8	15.7	19.1	22.0	24.6
0	27552	28131	28709	29251	29741	30185	30610	31052	31549	32126	32791	33536	34336	35164	35989	36784	37522	38180	38733
	-13.9	-14.3	-15.2	-16.4	-17.3	-17.5	-16.5	-14.2	-10.4	-5.2	0.9	7.6	14.4	20.8	26.7	31.7	35.8	38.8	40.7

X-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	27552	28131	28709	29251	29741	30185	30610	31052	31549	32126	32791	33536	34336	35164	35989	36784	37522	38180	38733
	-13.9	-14.3	-15.2	-16.4	-17.3	-17.5	-16.5	-14.2	-10.4	-5.2	0.9	7.6	14.4	20.8	26.7	31.7	35.8	38.8	40.7
-5	24215	24678	25151	25605	26035	26458	26909	27426	28038	28755	29570	30461	31397	32348	33286	34190	35040	35820	36511
	-32.8	-32.6	-32.3	-31.5	-29.7	-26.5	-21.8	-15.6	-8.3	-0.3	8.1	16.4	24.2	31.3	37.6	42.8	46.8	49.4	50.3
-10	20757	21032	21334	21648	21980	22362	22829	23415	24134	24979	25928	26944	27994	29045	30076	31071	32018	32908	33727
	-50.8	-49.7	-47.9	-44.8	-40.0	-33.4	-25.1	-15.7	-5.7	4.3	13.7	22.3	29.9	36.6	42.2	46.7	49.9	51.6	51.4
-15	17531	17582	17684	17838	18065	18402	18881	19524	20327	21265	22302	23393	24503	25603	26676	27713	28711	29666	30573
	-65.5	-63.3	-59.6	-54.1	-46.6	-37.1	-26.1	-14.6	-3.1	7.4	16.5	24.1	30.4	35.4	39.4	42.5	44.5	45.1	43.9
-20	14798	14641	14562	14579	14723	15030	15522	16202	17050	18026	19082	20173	21265	22336	23375	24382	25360	26313	27241
	-75.3	-71.6	-66.1	-58.5	-48.8	-37.5	-25.2	-12.9	-1.7	7.9	15.5	21.1	25.0	27.8	29.8	31.2	31.8	31.5	29.8
-25	12712	12406	12208	12145	12251	12552	13056	13747	14589	15533	16526	17529	18513	19466	20387	21281	22160	23032	23904
	-79.2	-74.0	-67.0	-58.0	-47.2	-35.4	-23.3	-12.0	-2.3	5.1	10.1	13.1	14.5	15.0	15.0	14.9	14.5	13.6	12.1
-30	11336	10966	10728	10653	10768	11082	11588	12254	13033	13871	14722	15552	16344	17098	17819	18523	19226	19943	20685
	-77.5	-71.0	-63.0	-53.5	-43.0	-32.1	-21.7	-12.7	-5.8	-1.3	0.8	1.1	0.1	-1.3	-2.6	-3.7	-4.5	-5.2	-6.1
-35	10671	10316	10109	10073	10221	10550	11033	11629	12287	12955	13596	14187	14724	15215	15677	16131	16598	17099	17647
	-71.0	-63.8	-55.6	-46.6	-37.5	-28.8	-21.2	-15.5	-11.9	-10.6	-11.3	-13.3	-16.0	-18.5	-20.5	-21.7	-22.2	-22.3	-22.1
-40	10683	10391	10248	10266	10442	10758	11178	11655	12139	12589	12975	13287	13531	13724	13890	14056	14249	14490	14798
	-61.4	-54.0	-46.4	-38.9	-32.0	-26.2	-22.1	-19.8	-19.6	-21.2	-24.2	-27.8	-31.4	-34.4	-36.2	-37.0	-36.7	-35.7	-34.3
-45	11304	11080	10992	11038	11204	11459	11765	12074	12345	12544	12653	12670	12610	12494	12353	12217	12114	12072	12109
	-50.3	-43.3	-36.9	-31.3	-27.1	-24.4	-23.6	-24.5	-27.2	-31.1	-35.6	-40.1	-43.9	-46.6	-48.0	-47.9	-46.8	-44.8	-42.3
-50	12419	12233	12158	12181	12278	12416	12556	12659	12689	12623	12451	12178	11822	11407	10965	10529	10129	9794	9548
	-39.2	-33.1	-28.1	-24.6	-22.8	-22.8	-24.6	-28.0	-32.6	-37.9	-43.2	-48.0	-51.6	-53.9	-54.6	-54.0	-52.1	-49.5	-46.5
-55	13860	13666	13549	13489	13461	13432	13368	13238	13016	12685	12243	11697	11065	10373	9651	8932	8248	7630	7103
	-29.2	-24.1	-20.6	-18.7	-18.7	-20.6	-24.0	-28.8	-34.4	-40.2	-45.6	-50.2	-53.6	-55.9	-55.0	-53.1	-50.5	-47.5	
-60	15406	15160	14954	14766	14572	14346	14059	13689	13218	12637	11945	11151	10273	9334	8364	7393	6454	5576	4788
	-20.7	-16.6	-14.2	-13.5	-14.5	-17.2	-21.2	-26.3	-31.8	-37.4	-42.6	-46.9	-50.0	-51.8	-52.3	-51.7	-50.3	-48.3	-46.1
-65	16806	16483	16161	15822	15446	15014	14506	13906	13204	12396	11483	10475	9387	8243	7067	5888	4735	3639	2628
	-13.5	-10.5	-8.8	-8.6	-9.9	-12.6	-16.3	-20.8	-25.7	-30.6	-35.1	-39.0	-41.9	-43.9	-44.9	-45.1	-44.6	-43.7	-42.6
-70	17813	17403	16959	16467	15914	15288	14577	13773	12869	11867	10770	9589	8338	7036	5706	4373	3064	1805	622
	-7.4	-5.3	-4.1	-4.1	-5.2	-7.3	-10.2	-13.7	-17.6	-21.5	-25.2	-28.6	-31.4	-33.7	-35.3	-36.4	-37.0	-37.3	-37.4
-75	18209	17716	17156	16525	15815	15020	14136	13160	12093	10938	9701	8394	7030	5626	4200	2774	1371	12	-1278
	-1.9	-0.6	0.2	0.1	-0.6	-2.1	-4.1	-6.5	-9.3	-12.3	-15.2	-18.1	-20.8	-23.1	-25.2	-27.0	-28.6	-29.9	-30.9
-80	17828	17257	16597	15847	15005	14074	13054	11947	10760	9498	8171	6789	5364	3912	2447	988	-448	-1844	-3182
	3.3	3.9	4.1	4.0	3.4	2.4	1.0	-0.7	-2.7	-4.8	-7.1	-9.4	-11.8	-14.1	-16.3	-18.4	-20.3	-22.2	-23.8
-85	16567	15925	15180	14335	13396	12366	11252	10061	8801	7481	6111	4702	3265	1812	357	-1085	-2505	-3887	-5218
	8.5	8.3	7.9	7.3	6.5	5.6	4.4	3.1	1.6	-0.1	-1.9	-3.7	-5.6	-7.6	-9.5	-11.4	-13.3	-15.1	-16.7
-90	14395	13688	12878	11969	10969	9886	8727	7502	6220	4891	3524	2131	721	-693	-2103	-3497	-4864	-6194	-7477
	13.4	12.4	11.4	10.2	9.0	7.7	6.4	5.0	3.6	2.1	0.7	-0.8	-2.3	-3.7	-5.2	-6.5	-7.9	-9.1	-10.3

X-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	1340	1171	1002	833	665	499	336	177	21	-131	-279	-423	-562	-697	-828	-954	-1074	-1190	-1299
	-20.5	-19.9	-19.2	-18.4	-17.4	-16.4	-15.3	-14.0	-12.7	-11.3	-9.9	-8.4	-6.8	-5.2	-3.6	-1.9	-0.2	1.5	3.1
85	1826	1656	1515	1403	1320	1266	1237	1230	1241	1265	1296	1330	1359	1378	1383	1368	1331	1269	1180
	-24.1	-23.4	-22.6	-21.8	-21.0	-20.1	-19.3	-18.4	-17.4	-16.5	-15.6	-14.6	-13.6	-12.6	-11.5	-10.3	-9.1	-7.8	-6.4
80	2875	2706	2598	2554	2573	2653	2787	2968	3185	3427	3680	3931	4166	4371	4534	4646	4697	4681	4596
	-29.6	-28.9	-28.3	-27.6	-26.9	-26.3	-25.7	-25.2	-24.7	-24.2	-23.8	-23.4	-22.9	-22.4	-21.9	-21.2	-20.4	-19.4	-18.2
75	4554	4396	4324	4343	4452	4649	4925	5269	5665	6094	6536	6969	7373	7727	8012	8215	8322	8325	8221
	-33.9	-33.7	-33.3	-33.0	-32.7	-32.4	-32.1	-31.9	-31.7	-31.6	-31.4	-31.3	-31.2	-31.1	-30.8	-30.3	-29.7	-28.8	-27.6
70	6894	6765	6734	6808	6991	7277	7660	8122	8644	9203	9773	10325	10834	11274	11625	11868	11990	11984	11845
	-35.4	-35.8	-36.1	-36.4	-36.6	-36.8	-36.9	-37.0	-37.0	-37.0	-37.0	-37.0	-36.9	-36.7	-36.4	-35.9	-35.1	-34.0	-32.5
65	9820	9739	9755	9876	10109	10449	10888	11410	11991	12605	13223	13813	14347	14799	15147	15373	15468	15425	15243
	-33.4	-34.6	-35.7	-36.8	-37.7	-38.5	-39.1	-39.4	-39.6	-39.7	-39.5	-39.3	-38.9	-38.4	-37.7	-36.9	-35.7	-34.2	-32.3
60	13194	13179	13243	13399	13652	14003	14443	14957	15523	16112	16694	17238	17716	18103	18380	18535	18560	18455	18224
	-28.8	-30.8	-32.8	-34.7	-36.3	-37.6	-38.5	-39.1	-39.2	-39.1	-38.7	-38.0	-37.1	-36.1	-34.8	-33.4	-31.8	-29.8	-27.5
55	16861	16920	17029	17201	17443	17759	18144	18585	19063	19552	20022	20444	20793	21048	21195	21228	21146	20957	20669
	-23.7	-26.4	-29.0	-31.4	-33.3	-34.8	-35.8	-36.2	-36.1	-35.6	-34.6	-33.4	-32.0	-30.4	-28.7	-26.8	-24.7	-22.4	-19.8
50	20677	20809	20953	21119	21318	21556	21836	22148	22478	22802	23098	23337	23501	23571	23543	23415	23198	22903	22548
	-20.4	-23.4	-26.1	-28.4	-30.1	-31.2	-31.7	-31.5	-30.8	-29.6	-28.2	-26.5	-24.6	-22.7	-20.7	-18.6	-16.4	-14.0	-11.4
45	24517	24711	24872	25010	25138	25266	25402	25543	25680	25797	25873	25889	25829	25683	25451	25140	24767	24353	23921
	-20.5	-23.2	-25.4	-26.8	-27.5	-27.5	-26.8	-25.6	-23.9	-22.1	-20.1	-18.2	-16.3	-14.4	-12.6	-10.8	-8.8	-6.7	-4.4
40	28263	28497	28656	28747	28783	28781	28751	28699	28621	28506	28342	28115	27816	27443	27001	26503	25973	25437	24925
	-24.0	-25.8	-26.8	-26.7	-25.7	-23.8	-21.5	-18.8	-16.1	-13.6	-11.4	-9.6	-8.1	-6.9	-5.8	-4.7	-3.4	-1.8	-0.1
35	31787	32035	32172	32201	32138	31999	31802	31556	31262	30917	30515	30050	29523	28936	28302	27637	26968	26325	25743
	-29.1	-29.7	-29.0	-26.9	-23.7	-19.8	-15.6	-11.5	-8.0	-5.1	-3.0	-1.8	-1.2	-1.0	-1.1	-1.0	-0.7	0.1	1.2
30	34943	35180	35278	35240	35079	34815	34467	34048	33562	33013	32401	31731	31010	30249	29465	28675	27907	27192	26563
	-33.0	-32.1	-29.6	-25.5	-20.3	-14.5	-8.9	-3.9	0.1	2.8	4.3	4.6	4.0	2.8	1.4	0.2	-0.5	-0.6	-0.1
25	37569	37780	37834	37732	37489	37125	36660	36107	35475	34772	34004	33184	32329	31455	30581	29726	28915	28173	27532
	-32.6	-30.4	-26.3	-20.8	-14.3	-7.6	-1.4	3.7	7.4	9.4	9.8	8.9	6.9	4.4	1.8	-0.5	-2.1	-2.9	-2.9
20	39511	39695	39714	39568	39272	38846	38310	37678	36962	36172	35320	34425	33509	32595	31702	30850	30055	29338	28723
	-25.9	-22.7	-17.8	-11.8	-5.2	1.2	6.7	10.8	13.2	13.9	13.0	10.8	7.8	4.3	0.9	-2.1	-4.3	-5.6	-6.1
15	40641	40820	40832	40679	40372	39933	39381	38733	38002	37199	36342	35452	34554	33673	32830	32040	31315	30668	30112
	-12.5	-9.0	-4.4	0.9	6.2	10.9	14.4	16.4	16.9	15.8	13.6	10.4	6.7	2.9	-0.8	-4.0	-6.4	-8.0	-8.8
10	40885	41098	41149	41037	40773	40377	39869	39268	38589	37846	37057	36244	35432	34646	33906	33224	32607	32057	31581
	5.5	8.6	12.0	15.4	18.2	20.1	20.6	19.9	18.0	15.1	11.7	8.0	4.2	0.6	-2.7	-5.6	-7.9	-9.6	-10.7
5	40230	40528	40672	40658	40495	40199	39792	39294	38723	38096	37431	36749	36071	35422	34817	34267	33774	33335	32944
	24.6	26.7	28.2	28.9	28.6	27.0	24.3	20.7	16.5	12.1	7.9	4.1	0.8	-2.0	-4.5	-6.7	-8.7	-10.4	-11.9
0	38733	39161	39447	39583	39572	39427	39167	38814	38390	37915	37406	36884	36365	35870	35411	34998	34629	34296	33988
	40.7	41.4	40.7	38.5	35.0	30.2	24.6	18.6	12.8	7.5	3.2	-0.2	-2.7	-4.6	-6.1	-7.5	-9.1	-10.9	-12.9

X-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	38733	39161	39447	39583	39572	39427	39167	38814	38390	37915	37406	36884	36365	35870	35411	34998	34629	34296	33988
	40.7	41.4	40.7	38.5	35.0	30.2	24.6	18.6	12.8	7.5	3.2	-0.2	-2.7	-4.6	-6.1	-7.5	-9.1	-10.9	-12.9
-5	36511	37094	37552	37871	38047	38087	38003	37820	37560	37249	36905	36546	36189	35846	35529	35243	34987	34750	34514
	50.3	49.4	46.7	42.1	36.1	29.1	21.6	14.3	7.7	2.4	-1.6	-4.3	-5.8	-6.7	-7.3	-8.1	-9.4	-11.4	-13.9
-10	33727	34461	35090	35597	35969	36201	36303	36293	36196	36041	35851	35643	35432	35228	35038	34866	34709	34555	34386
	51.4	49.2	45.0	39.0	31.7	23.7	15.8	8.5	2.3	-2.4	-5.6	-7.3	-8.1	-8.2	-8.3	-8.8	-10.1	-12.2	-15.2
-15	30573	31419	32188	32855	33401	33810	34081	34230	34280	34262	34203	34124	34037	33952	33873	33801	33732	33655	33552
	43.9	41.0	36.2	29.9	22.8	15.4	8.3	2.2	-2.6	-6.1	-8.1	-9.1	-9.3	-9.1	-9.1	-9.6	-11.0	-13.4	-16.7
-20	27241	28138	28986	29760	30432	30978	31387	31667	31840	31935	31983	32007	32022	32037	32053	32072	32086	32087	32057
	29.8	26.8	22.4	17.0	11.2	5.5	0.4	-3.6	-6.6	-8.5	-9.4	-9.7	-9.6	-9.5	-9.7	-10.5	-12.1	-14.7	-18.0
-25	23904	24775	25628	26439	27174	27803	28306	28684	28953	29139	29274	29383	29483	29583	29685	29788	29887	29971	30026
	12.1	9.6	6.4	2.8	-0.9	-4.3	-6.9	-8.6	-9.5	-9.9	-9.8	-9.6	-9.5	-9.7	-10.2	-11.4	-13.2	-15.8	-19.0
-30	20685	21453	22237	23010	23741	24394	24947	25389	25730	25993	26204	26388	26565	26743	26925	27112	27297	27472	27625
	-6.1	-7.3	-8.9	-10.5	-11.9	-12.8	-13.0	-12.7	-11.9	-11.0	-10.2	-9.7	-9.7	-10.1	-10.9	-12.2	-14.1	-16.5	-19.3
-35	17647	18248	18894	19564	20228	20852	21410	21886	22282	22611	22895	23156	23409	23666	23931	24203	24480	24753	25011
	-22.1	-21.8	-21.6	-21.2	-20.6	-19.5	-18.0	-16.2	-14.3	-12.6	-11.4	-10.7	-10.6	-11.1	-11.9	-13.2	-14.8	-16.8	-19.2
-40	14798	15181	15637	16149	16695	17243	17767	18250	18683	19073	19431	19773	20110	20453	20806	21170	21543	21917	22282
	-34.3	-32.6	-30.9	-29.0	-27.0	-24.7	-22.3	-19.7	-17.3	-15.3	-13.9	-13.0	-12.7	-12.9	-13.5	-14.4	-15.5	-16.9	-18.8
-45	12109	12241	12468	12783	13168	13601	14057	14517	14969	15408	15837	16262	16690	17126	17575	18036	18507	18981	19450
	-42.3	-39.6	-36.9	-34.2	-31.5	-28.8	-26.1	-23.5	-21.2	-19.2	-17.7	-16.7	-16.0	-15.8	-15.8	-16.0	-16.5	-17.3	-18.6
-50	9548	9409	9384	9473	9667	9951	10305	10709	11149	11614	12098	12597	13112	13641	14186	14744	15311	15880	16443
	-46.5	-43.3	-40.2	-37.3	-34.7	-32.1	-29.8	-27.6	-25.6	-23.9	-22.4	-21.2	-20.2	-19.4	-18.7	-18.3	-18.1	-18.2	-18.9
-55	7103	6689	6403	6251	6231	6336	6551	6861	7249	7701	8204	8749	9327	9932	10559	11200	11851	12503	13147
	-47.5	-44.5	-41.7	-39.2	-36.9	-34.9	-33.2	-31.6	-30.1	-28.7	-27.3	-25.9	-24.6	-23.3	-22.1	-21.0	-20.2	-19.8	-19.8
-60	4788	4114	3574	3178	2932	2835	2878	3051	3338	3724	4194	4734	5329	5968	6641	7337	8047	8760	9469
	-46.1	-43.8	-41.7	-39.9	-38.3	-37.0	-35.9	-34.8	-33.8	-32.7	-31.4	-30.1	-28.6	-27.0	-25.4	-23.9	-22.7	-21.7	-21.1
-65	2628	1726	954	329	-140	-450	-603	-606	-469	-205	168	637	1187	1801	2467	3171	3901	4646	5398
	-42.6	-41.4	-40.3	-39.3	-38.5	-37.9	-37.3	-36.7	-36.1	-35.2	-34.2	-32.9	-31.4	-29.8	-28.1	-26.4	-24.9	-23.5	-22.4
-70	622	-459	-1420	-2244	-2918	-3435	-3793	-3993	-4043	-3952	-3731	-3394	-2956	-2430	-1832	-1174	-469	271	1040
	-37.4	-37.3	-37.3	-37.2	-37.2	-37.1	-37.0	-36.8	-36.4	-35.8	-35.0	-34.0	-32.7	-31.2	-29.6	-27.9	-26.2	-24.6	-23.0
-75	-1278	-2482	-3580	-4556	-5396	-6094	-6642	-7039	-7288	-7392	-7359	-7197	-6918	-6533	-6052	-5487	-4849	-4148	-3392
	-30.9	-31.9	-32.7	-33.3	-33.9	-34.3	-34.6	-34.8	-34.7	-34.3	-33.8	-33.0	-32.0	-30.7	-29.3	-27.8	-26.1	-24.4	-22.6
-80	-3182	-4446	-5621	-6692	-7647	-8479	-9179	-9744	-10171	-10459	-10612	-10633	-10527	-10301	-9961	-9516	-8972	-8338	-7621
	-23.8	-25.3	-26.7	-27.8	-28.8	-29.6	-30.2	-30.6	-30.8	-30.7	-30.4	-29.9	-29.1	-28.1	-27.0	-25.6	-24.1	-22.5	-20.8
-85	-5218	-6485	-7678	-8784	-9794	-10700	-11492	-12167	-12719	-13144	-13441	-13610	-13650	-13565	-13355	-13026	-12581	-12025	-11365
	-16.7	-18.3	-19.7	-21.0	-22.1	-23.1	-23.8	-24.4	-24.7	-24.9	-24.8	-24.5	-24.1	-23.4	-22.5	-21.5	-20.3	-19.0	-17.6
-90	-7477	-8703	-9863	-10948	-11950	-12860	-13673	-14382	-14981	-15466	-15833	-16080	-16205	-16206	-16084	-15840	-15475	-14992	-14395
	-10.3	-11.5	-12.5	-13.5	-14.3	-15.0	-15.6	-16.1	-16.5	-16.8	-16.9	-16.9	-16.8	-16.5	-16.1	-15.6	-15.0	-14.2	-13.4

Plots and Tables of DGRF 1985

Y Component

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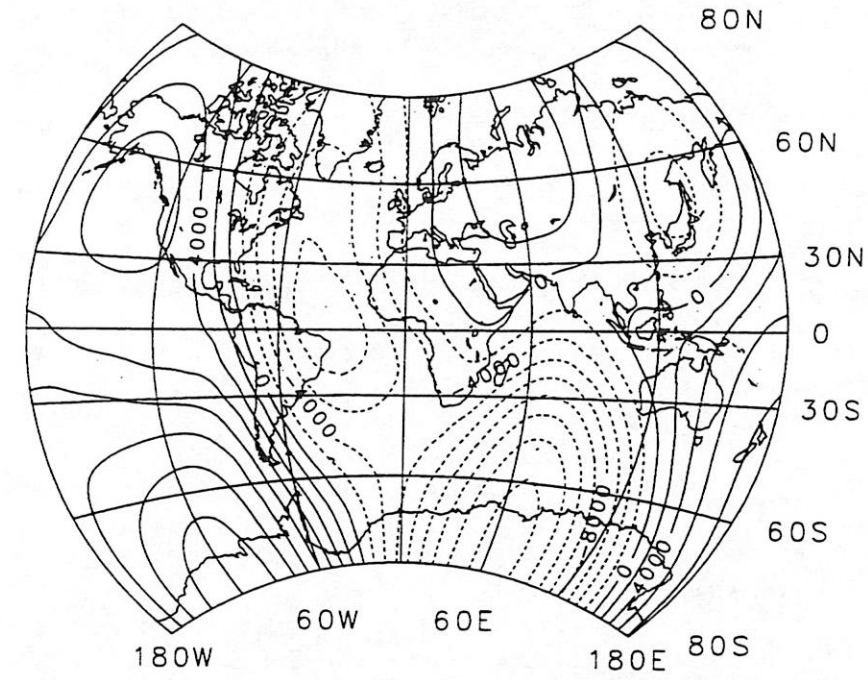
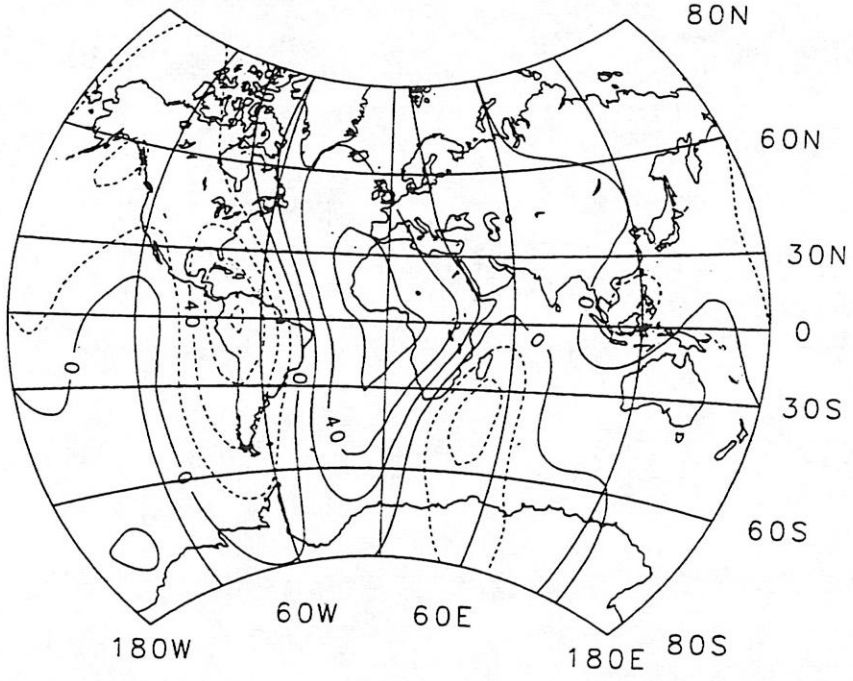
DGRF 1985 - Y - COMPONENT

Figure 9 (**Y**, top) Figure 10 ($\dot{\mathbf{Y}}$, bottom)





Y-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	1232	1106	972	829	678	517	349	174	-7	-195	-386	-581	-776	-970	-1162	-1348	-1528	-1698	-1856
	-19.5	-19.1	-18.6	-17.9	-17.1	-16.1	-15.0	-13.8	-12.5	-11.1	-9.6	-7.9	-6.2	-4.4	-2.6	-0.7	1.2	3.1	4.9
85	1188	1249	1296	1324	1328	1303	1246	1154	1025	859	657	421	155	-136	-449	-776	-1111	-1446	-1775
	-18.1	-18.3	-18.5	-18.5	-18.3	-18.0	-17.6	-16.9	-16.0	-15.0	-13.7	-12.2	-10.5	-8.6	-6.5	-4.3	-1.9	0.6	3.1
80	1225	1531	1817	2067	2269	2413	2489	2492	2417	2263	2032	1727	1356	927	450	-61	-597	-1141	-1679
	-16.9	-17.9	-19.0	-19.9	-20.7	-21.3	-21.7	-21.8	-21.5	-20.9	-19.9	-18.6	-16.8	-14.7	-12.3	-9.5	-6.5	-3.2	0.2
75	1354	1903	2418	2880	3268	3567	3763	3847	3814	3662	3393	3014	2535	1969	1330	637	-91	-835	-1573
	-16.5	-18.3	-20.3	-22.1	-23.8	-25.3	-26.5	-27.2	-27.5	-27.3	-26.6	-25.3	-23.5	-21.2	-18.3	-15.1	-11.4	-7.4	-3.2
70	1554	2316	3033	3676	4223	4652	4948	5100	5100	4948	4646	4203	3631	2946	2167	1315	414	-509	-1429
	-16.9	-19.6	-22.3	-25.0	-27.4	-29.6	-31.3	-32.6	-33.2	-33.2	-32.6	-31.3	-29.4	-27.0	-23.9	-20.4	-16.3	-11.8	-7.0
65	1797	2725	3594	4376	5041	5569	5941	6146	6176	6030	5711	5228	4594	3826	2943	1968	929	-144	-1223
	-18.2	-21.4	-24.8	-28.1	-31.1	-33.7	-35.7	-37.1	-37.8	-37.7	-37.0	-35.7	-33.8	-31.3	-28.3	-24.9	-20.9	-16.3	-11.2
60	2061	3095	4059	4924	5661	6249	6672	6916	6974	6845	6531	6041	5385	4578	3639	2588	1453	263	-946
	-20.0	-23.7	-27.4	-31.0	-34.3	-37.0	-39.0	-40.2	-40.6	-40.3	-39.3	-37.8	-35.9	-33.7	-31.1	-28.2	-24.8	-20.8	-16.0
55	2342	3416	4411	5300	6058	6668	7113	7382	7467	7365	7080	6614	5977	5178	4232	3154	1968	702	-606
	-22.1	-25.9	-29.8	-33.4	-36.6	-39.2	-40.8	-41.6	-41.5	-40.6	-39.2	-37.5	-35.6	-33.8	-32.0	-30.2	-28.0	-25.1	-21.4
50	2642	3694	4658	5514	6245	6837	7278	7556	7664	7598	7357	6943	6358	5608	4699	3640	2448	1146	-227
	-24.0	-27.8	-31.6	-35.0	-37.9	-40.0	-41.0	-41.1	-40.3	-38.8	-36.8	-34.9	-33.2	-32.0	-31.3	-30.9	-30.4	-29.4	-27.2
45	2975	3949	4826	5597	6257	6797	7208	7481	7606	7576	7389	7041	6533	5861	5023	4020	2861	1564	161
	-25.4	-29.1	-32.6	-35.6	-38.0	-39.4	-39.7	-39.0	-37.4	-35.2	-32.7	-30.5	-29.0	-28.5	-29.0	-30.4	-32.0	-33.2	-33.2
40	3348	4198	4943	5589	6141	6600	6962	7215	7348	7351	7218	6943	6521	5943	5200	4282	3189	1932	538
	-26.3	-29.7	-32.9	-35.4	-37.0	-37.6	-37.1	-35.6	-33.2	-30.4	-27.5	-25.1	-23.7	-23.9	-25.7	-28.9	-32.9	-36.6	-39.0
35	3760	4455	5037	5526	5945	6303	6600	6822	6954	6981	6896	6689	6355	5878	5243	4431	3431	2244	893
	-26.5	-29.8	-32.6	-34.4	-35.2	-34.9	-33.6	-31.3	-28.3	-25.0	-21.7	-19.2	-18.0	-18.7	-21.6	-26.5	-32.8	-39.2	-44.3
30	4202	4725	5125	5442	5713	5960	6182	6364	6486	6527	6478	6332	6079	5705	5184	4491	3603	2512	1233
	-26.2	-29.6	-32.0	-33.1	-33.0	-31.7	-29.5	-26.6	-23.1	-19.4	-16.0	-13.3	-12.2	-13.3	-17.1	-23.4	-31.8	-40.7	-48.6
25	4652	5002	5220	5363	5486	5618	5762	5900	6002	6046	6022	5923	5745	5468	5065	4499	3736	2759	1570
	-25.6	-29.1	-31.2	-31.6	-30.6	-28.3	-25.3	-21.7	-17.9	-14.1	-10.6	-7.9	-6.8	-8.0	-12.4	-19.8	-29.9	-41.1	-51.6
20	5091	5280	5330	5314	5298	5323	5393	5482	5558	5594	5580	5516	5401	5217	4930	4493	3862	3006	1920
	-24.8	-28.5	-30.4	-30.2	-28.2	-24.9	-21.0	-16.9	-12.9	-9.1	-5.7	-3.0	-1.9	-3.2	-7.8	-16.0	-27.2	-40.3	-53.1
15	5501	5556	5466	5315	5183	5116	5118	5161	5204	5221	5205	5163	5098	4995	4816	4504	4003	3270	2286
	-23.9	-27.8	-29.5	-28.7	-25.9	-21.7	-17.0	-12.5	-8.3	-4.6	-1.3	1.2	2.2	1.0	-3.6	-12.1	-24.2	-38.6	-53.3
10	5873	5828	5636	5388	5170	5032	4978	4976	4984	4974	4943	4907	4876	4839	4752	4552	4171	3552	2666
	-22.7	-26.9	-28.4	-27.2	-23.6	-18.7	-13.4	-8.4	-4.1	-0.6	2.4	4.6	5.6	4.4	-0.2	-8.7	-21.1	-36.3	-52.2
5	6208	6103	5851	5547	5277	5093	4999	4959	4929	4885	4830	4784	4768	4772	4755	4645	4364	3846	3049
	-21.3	-25.6	-27.0	-25.5	-21.4	-15.9	-10.1	-4.8	-0.5	2.9	5.5	7.4	8.1	6.8	2.4	-6.0	-18.4	-33.8	-50.4
0	6517	6388	6120	5800	5513	5308	5188	5117	5054	4974	4885	4817	4794	4813	4835	4787	4583	4147	3427
	-19.4	-23.7	-25.1	-23.4	-19.1	-13.3	-7.2	-1.7	2.6	5.7	8.0	9.4	9.8	8.2	3.8	-4.4	-16.5	-31.7	-48.3

Y-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	6517	6388	6120	5800	5513	5308	5188	5117	5054	4974	4885	4817	4794	4813	4835	4787	4583	4147	3427
	-19.4	-23.7	-25.1	-23.4	-19.1	-13.3	-7.2	-1.7	2.6	5.7	8.0	9.4	9.8	8.2	3.8	-4.4	-16.5	-31.7	-48.3
-5	6812	6694	6444	6143	5868	5664	5532	5440	5347	5233	5110	5009	4961	4971	5001	4984	4830	4457	3804
	-17.1	-21.2	-22.6	-20.9	-16.7	-10.9	-4.8	0.7	5.0	8.0	9.9	10.8	10.6	8.7	4.0	-4.0	-15.7	-30.3	-46.2
-10	7105	7022	6817	6560	6318	6131	6000	5895	5781	5640	5485	5350	5269	5250	5265	5251	5123	4794	4196
	-14.2	-18.1	-19.5	-18.1	-14.2	-8.8	-2.8	2.6	6.8	9.6	11.2	11.6	10.8	8.3	3.3	-4.7	-15.9	-29.6	-44.6
-15	7402	7371	7226	7027	6830	6669	6546	6436	6310	6154	5979	5819	5706	5654	5641	5613	5491	5189	4633
	-10.9	-14.5	-16.0	-15.0	-11.7	-6.8	-1.3	3.9	8.0	10.8	12.1	12.1	10.6	7.4	1.9	-6.2	-16.9	-29.7	-43.4
-20	7701	7728	7650	7513	7363	7232	7121	7014	6888	6732	6557	6390	6261	6184	6145	6096	5967	5676	5147
	-7.4	-10.7	-12.3	-11.9	-9.3	-5.1	-0.1	4.8	8.8	11.5	12.7	12.4	10.3	6.4	0.4	-7.9	-18.3	-30.3	-42.6
-25	7992	8079	8065	7987	7883	7781	7686	7590	7478	7342	7189	7041	6921	6840	6786	6719	6576	6281	5761
	-3.7	-6.8	-8.7	-8.7	-6.9	-3.4	1.0	5.6	9.5	12.2	13.3	12.7	10.1	5.6	-1.0	-9.5	-19.7	-30.9	-42.1
-30	8263	8405	8449	8425	8364	8292	8220	8146	8063	7966	7861	7760	7676	7616	7564	7487	7326	7014	6483
	-0.1	-3.1	-5.1	-5.6	-4.4	-1.6	2.2	6.5	10.3	13.0	14.1	13.2	10.3	5.3	-1.8	-10.6	-20.7	-31.3	-41.5
-35	8500	8692	8789	8815	8798	8762	8722	8684	8647	8609	8571	8539	8515	8495	8461	8379	8198	7857	7297
	3.3	0.5	-1.6	-2.5	-1.8	0.4	3.8	7.7	11.3	13.9	15.0	14.1	10.9	5.5	-1.8	-10.8	-20.8	-31.0	-40.5
-40	8692	8932	9081	9159	9192	9203	9210	9224	9249	9284	9327	9375	9421	9451	9441	9357	9150	8770	8169
	6.5	3.9	1.8	0.8	1.2	3.0	5.9	9.4	12.7	15.2	16.1	15.1	11.8	6.2	-1.3	-10.3	-20.1	-29.9	-38.8
-45	8834	9125	9331	9470	9565	9639	9710	9792	9891	10007	10133	10259	10371	10446	10455	10362	10125	9701	9055
	9.5	7.2	5.3	4.3	4.6	6.0	8.5	11.6	14.5	16.6	17.3	16.0	12.7	7.1	-0.3	-9.0	-18.5	-27.8	-36.2
-50	8924	9277	9552	9766	9940	10094	10246	10409	10587	10781	10980	11170	11330	11432	11445	11334	11062	10595	9910
	12.2	10.4	8.9	8.1	8.3	9.6	11.6	14.1	16.4	17.9	18.2	16.7	13.3	7.9	0.9	-7.4	-16.3	-24.9	-32.7
-55	8959	9393	9756	10064	10334	10583	10827	11076	11332	11593	11847	12076	12258	12363	12361	12221	11911	11410	10701
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-60	8935	9474	9946	10366	10747	11102	11443	11775	12100	12411	12697	12939	13115	13201	13167	12991	12648	12123	11411
	16.7	16.1	15.7	15.6	15.9	16.6	17.6	18.7	19.4	19.6	18.7	16.7	13.3	8.7	2.9	-3.6	-10.4	-17.0	-22.8
-65	8846	9512	10114	10660	11161	11626	12062	12470	12850	13193	13489	13722	13874	13923	13851	13637	13268	12736	12039
	18.0	18.1	18.2	18.4	18.8	19.2	19.7	20.1	20.1	19.5	18.2	16.0	12.8	8.7	3.8	-1.5	-7.0	-12.2	-16.7
-70	8686	9495	10237	10917	11542	12115	12639	13113	13535	13897	14190	14403	14521	14531	14420	14177	13793	13266	12598
	18.6	19.2	19.7	20.1	20.4	20.6	20.7	20.5	20.0	18.9	17.3	15.1	12.3	8.9	5.1	1.0	-3.1	-6.9	-10.2
-75	8456	9409	10291	11102	11845	12519	13123	13656	14114	14490	14778	14972	15062	15041	14902	14640	14253	13740	13105
	18.1	19.1	19.8	20.3	20.6	20.6	20.5	20.0	19.2	18.0	16.5	14.5	12.2	9.6	6.9	4.0	1.2	-1.3	-3.5
-80	8164	9245	10252	11181	12029	12795	13474	14062	14557	14953	15247	15435	15513	15478	15327	15060	14678	14181	13574
	16.6	17.6	18.4	19.0	19.3	19.4	19.2	18.8	18.1	17.1	15.9	14.5	12.9	11.2	9.4	7.6	5.9	4.3	2.9
-85	7830	9005	10109	11131	12068	12913	13661	14307	14847	15279	15598	15803	15892	15864	15719	15459	15085	14601	14008
	13.9	15.0	15.8	16.5	17.0	17.3	17.4	17.3	17.0	16.6	16.0	15.3	14.5	13.6	12.6	11.6	10.6	9.6	8.7
-90	7477	8703	9863	10948	11950	12860	13673	14382	14981	15466	15833	16080	16205	16206	16084	15840	15475	14992	14395
	10.3	11.5	12.5	13.5	14.3	15.0	15.6	16.1	16.5	16.8	16.9	16.9	16.8	16.5	16.1	15.6	15.0	14.2	13.4

Y-COMPONENT

LATITUDE \ LONGITUDE:	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	-1856	-2001	-2130	-2241	-2332	-2403	-2451	-2476	-2478	-2455	-2408	-2337	-2243	-2127	-1991	-1835	-1663	-1475	-1275
	4.9	6.8	8.6	10.4	12.0	13.6	15.1	16.4	17.6	18.6	19.5	20.2	20.8	21.1	21.3	21.3	21.1	20.8	20.3
85	-1775	-2089	-2382	-2648	-2879	-3071	-3220	-3321	-3373	-3374	-3324	-3224	-3076	-2883	-2649	-2377	-2074	-1745	-1397
	3.1	5.6	8.1	10.5	12.9	15.1	17.1	19.0	20.6	21.9	23.0	23.8	24.3	24.6	24.5	24.2	23.7	22.9	21.9
80	-1679	-2199	-2688	-3131	-3521	-3846	-4101	-4279	-4378	-4396	-4335	-4196	-3986	-3708	-3370	-2980	-2546	-2077	-1584
	0.2	3.7	7.2	10.6	13.9	17.0	19.9	22.4	24.5	26.3	27.6	28.5	28.9	28.9	28.6	27.9	26.8	25.5	24.0
75	-1573	-2286	-2955	-3562	-4091	-4532	-4873	-5110	-5239	-5260	-5177	-4995	-4723	-4369	-3944	-3459	-2926	-2356	-1761
	-3.2	1.3	5.8	10.2	14.6	18.6	22.4	25.6	28.4	30.6	32.1	33.1	33.5	33.3	32.6	31.4	29.9	28.1	26.0
70	-1429	-2319	-3155	-3912	-4570	-5113	-5529	-5810	-5955	-5967	-5852	-5620	-5285	-4859	-4357	-3795	-3186	-2544	-1883
	-7.0	-1.8	3.6	9.1	14.4	19.5	24.2	28.4	31.9	34.6	36.5	37.6	37.9	37.5	36.5	35.0	33.0	30.7	28.2
65	-1223	-2273	-3264	-4163	-4943	-5583	-6067	-6385	-6538	-6531	-6375	-6087	-5685	-5188	-4615	-3986	-3318	-2626	-1924
	-11.2	-5.6	0.4	6.6	13.0	19.2	25.0	30.2	34.5	38.0	40.4	41.7	42.2	41.7	40.5	38.7	36.3	33.6	30.7
60	-946	-2137	-3270	-4306	-5207	-5943	-6493	-6846	-7002	-6970	-6768	-6419	-5949	-5383	-4746	-4059	-3342	-2613	-1886
	-16.0	-10.5	-4.2	2.7	9.9	17.3	24.3	30.7	36.1	40.5	43.6	45.4	46.1	45.8	44.6	42.6	40.0	37.0	33.7
55	-606	-1916	-3178	-4343	-5362	-6196	-6815	-7204	-7362	-7305	-7056	-6648	-6113	-5484	-4789	-4053	-3297	-2540	-1798
	-21.4	-16.5	-10.3	-3.1	5.0	13.5	21.9	29.6	36.4	41.8	45.9	48.4	49.7	49.7	48.7	46.9	44.3	41.0	37.3
50	-227	-1628	-3001	-4283	-5417	-6348	-7039	-7467	-7634	-7558	-7270	-6811	-6221	-5539	-4796	-4019	-3232	-2452	-1699
	-27.2	-23.4	-17.9	-10.5	-1.8	7.8	17.6	26.9	35.1	41.9	47.1	50.7	52.7	53.4	52.9	51.4	48.9	45.6	41.6
45	161	-1298	-2755	-4138	-5376	-6403	-7170	-7649	-7838	-7758	-7448	-6954	-6325	-5603	-4822	-4012	-3195	-2395	-1631
	-33.2	-31.1	-26.5	-19.5	-10.3	0.4	11.6	22.5	32.4	40.7	47.2	52.0	55.1	56.7	57.0	56.0	53.8	50.5	46.3
40	538	-946	-2456	-3917	-5245	-6365	-7216	-7762	-7995	-7938	-7632	-7128	-6479	-5730	-4919	-4075	-3227	-2402	-1622
	-39.0	-39.0	-35.9	-29.5	-20.2	-8.7	3.9	16.4	28.0	38.0	46.1	52.3	56.7	59.5	60.6	60.3	58.5	55.3	50.9
35	893	-579	-2112	-3625	-5030	-6241	-7187	-7821	-8131	-8132	-7864	-7380	-6732	-5967	-5125	-4241	-3352	-2491	-1689
	-44.3	-46.8	-45.5	-40.2	-31.0	-18.9	-5.2	8.9	22.2	34.0	43.8	51.6	57.4	61.4	63.6	63.9	62.6	59.5	55.1
30	1233	-200	-1727	-3270	-4739	-6041	-7095	-7844	-8264	-8362	-8171	-7737	-7110	-6336	-5459	-4524	-3578	-2670	-1837
	-48.6	-53.7	-54.6	-50.7	-42.1	-29.9	-15.2	0.2	15.2	28.7	40.3	49.8	57.2	62.4	65.6	66.6	65.6	62.8	58.4
25	1570	199	-1303	-2861	-4386	-5780	-6954	-7841	-8402	-8632	-8551	-8195	-7607	-6830	-5914	-4917	-3904	-2938	-2070
	-51.6	-59.4	-62.7	-60.6	-53.0	-41.0	-25.9	-9.3	7.1	22.4	35.7	47.0	55.9	62.4	66.5	68.1	67.4	64.8	60.7
20	1920	620	-845	-2410	-3985	-5473	-6775	-7814	-8537	-8921	-8973	-8714	-8177	-7405	-6453	-5395	-4315	-3293	-2391
	-53.1	-63.4	-69.2	-69.1	-63.0	-51.6	-36.4	-19.2	-1.6	15.2	30.3	43.2	53.6	61.3	66.2	68.3	67.9	65.6	62.0
15	2286	1062	-365	-1933	-3555	-5133	-6562	-7753	-8639	-9184	-9375	-9221	-8746	-7991	-7019	-5918	-4788	-3728	-2803
	-53.3	-65.8	-73.8	-75.9	-71.4	-61.1	-46.3	-28.8	-10.3	7.7	24.3	38.6	50.3	59.1	64.7	67.3	67.3	65.3	62.4
10	2666	1513	123	-1445	-3108	-4765	-6308	-7636	-8670	-9361	-9682	-9632	-9227	-8508	-7545	-6436	-5295	-4227	-3301
	-52.2	-66.4	-76.4	-80.4	-77.7	-68.7	-54.7	-37.3	-18.5	0.4	18.0	33.6	46.4	56.1	62.3	65.4	65.8	64.4	62.3
5	3049	1962	610	-953	-2647	-4367	-5999	-7436	-8589	-9397	-9828	-9871	-9541	-8882	-7966	-6898	-5796	-4762	-3860
	-50.4	-65.7	-77.1	-82.7	-81.6	-74.0	-61.1	-44.3	-25.5	-6.3	12.1	28.5	42.1	52.5	59.4	63.0	64.0	63.3	62.1
0	3427	2403	1091	-460	-2169	-3929	-5621	-7132	-8366	-9257	-9768	-9889	-9639	-9063	-8235	-7260	-6246	-5288	-4435
	-48.3	-63.9	-76.0	-82.7	-82.9	-76.7	-64.9	-49.1	-30.8	-11.7	6.9	23.7	37.9	48.9	56.4	60.6	62.3	62.4	62.0

Y-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	3427	2403	1091	-460	-2169	-3929	-5621	-7132	-8366	-9257	-9768	-9889	-9639	-9063	-8235	-7260	-6246	-5288	-4435
	-48.3	-63.9	-76.0	-82.7	-82.9	-76.7	-64.9	-49.1	-30.8	-11.7	6.9	23.7	37.9	48.9	56.4	60.6	62.3	62.4	62.0
-5	3804	2840	1572	45	-1661	-3437	-5161	-6712	-7991	-8931	-9496	-9682	-9512	-9036	-8329	-7485	-6600	-5747	-4962
	-46.2	-61.4	-73.5	-80.7	-81.8	-76.7	-66.2	-51.5	-34.0	-15.5	2.9	19.8	34.3	45.7	53.8	58.6	61.0	61.9	62.1
-10	4196	3289	2070	578	-1109	-2881	-4612	-6178	-7476	-8440	-9039	-9277	-9185	-8818	-8248	-7556	-6817	-6083	-5373
	-44.6	-58.8	-70.3	-77.3	-78.7	-74.5	-65.0	-51.5	-35.1	-17.4	0.4	17.1	31.6	43.3	51.9	57.4	60.4	61.8	62.3
-15	4633	3776	2606	1154	-503	-2258	-3981	-5545	-6848	-7823	-8446	-8728	-8710	-8449	-8014	-7470	-6872	-6253	-5618
	-43.4	-56.3	-66.6	-72.9	-74.3	-70.5	-61.9	-49.4	-34.1	-17.4	-0.3	15.8	30.2	42.0	50.9	56.9	60.4	61.9	62.2
-20	5147	4327	3199	1786	160	-1571	-3279	-4836	-6139	-7124	-7769	-8094	-8142	-7976	-7657	-7240	-6762	-6241	-5678
	-42.6	-54.0	-63.0	-68.3	-69.2	-65.5	-57.4	-45.8	-31.5	-15.7	0.5	16.1	30.1	41.9	50.9	57.1	60.7	62.0	61.5
-25	5761	4961	3859	2476	878	-828	-2520	-4069	-5375	-6374	-7047	-7415	-7526	-7440	-7214	-6895	-6510	-6071	-5579
	-42.1	-52.1	-59.7	-63.9	-64.1	-60.2	-52.4	-41.3	-27.8	-12.9	2.6	17.6	31.2	42.8	51.7	57.7	60.9	61.5	59.7
-30	6483	5681	4587	3221	1645	-39	-1714	-3257	-4569	-5588	-6296	-6712	-6882	-6865	-6715	-6471	-6160	-5794	-5381
	-41.5	-50.3	-56.6	-59.8	-59.3	-55.1	-47.3	-36.6	-23.7	-9.4	5.5	19.9	33.0	44.2	52.7	58.2	60.7	60.1	56.6
-35	7297	6474	5372	4011	2453	790	-863	-2396	-3714	-4758	-5507	-5978	-6213	-6263	-6181	-6007	-5767	-5481	-5167
	-40.5	-48.4	-53.8	-56.1	-55.0	-50.4	-42.7	-32.2	-19.6	-5.8	8.5	22.4	34.9	45.4	53.3	58.0	59.4	57.5	52.3
-40	8169	7313	6193	4835	3296	1662	37	-1477	-2797	-3865	-4661	-5195	-5504	-5632	-5629	-5536	-5384	-5200	-5014
	-38.8	-46.0	-50.7	-52.5	-51.0	-46.2	-38.4	-28.1	-15.9	-2.5	11.2	24.4	36.2	45.9	52.9	56.6	56.8	53.5	46.9
-45	9055	8164	7030	5681	4172	2581	998	-486	-1799	-2889	-3735	-4342	-4740	-4967	-5068	-5083	-5050	-5002	-4973
	-36.2	-42.9	-47.1	-48.5	-46.8	-42.0	-34.4	-24.5	-12.8	0.0	12.9	25.3	36.2	45.0	50.9	53.6	52.7	48.3	40.7
-50	9910	8996	7862	6539	5078	3548	2024	583	-712	-1820	-2719	-3410	-3915	-4266	-4502	-4662	-4784	-4905	-5060
	-32.7	-38.8	-42.6	-43.8	-42.1	-37.5	-30.4	-21.0	-10.1	1.7	13.6	24.9	34.6	42.3	47.1	48.8	47.1	42.1	34.1
-55	10701	9784	8673	7399	6007	4556	3108	1722	450	-671	-1625	-2409	-3038	-3536	-3937	-4275	-4585	-4902	-5258
	-28.2	-33.6	-36.9	-37.9	-36.4	-32.3	-25.9	-17.5	-7.8	2.7	13.2	23.0	31.4	37.7	41.5	42.4	40.2	35.2	27.5
-60	11411	10515	9450	8248	6945	5588	4224	2902	1658	523	-486	-1369	-2134	-2797	-3384	-3922	-4440	-4967	-5529
	-22.8	-27.3	-30.1	-31.0	-29.6	-26.2	-20.8	-13.7	-5.6	3.1	11.8	19.9	26.6	31.6	34.4	34.7	32.5	27.9	21.1
-65	12039	11184	10186	9070	7866	6608	5332	4072	2857	1708	639	-344	-1248	-2082	-2862	-3607	-4338	-5074	-5835
	-16.7	-20.3	-22.5	-23.1	-22.0	-19.3	-15.1	-9.7	-3.4	3.2	9.9	15.9	21.0	24.6	26.4	26.4	24.4	20.5	15.1
-70	12598	11795	10872	9845	8737	7572	6375	5169	3975	2808	1681	598	-440	-1438	-2403	-3346	-4278	-5210	-6151
	-10.2	-12.8	-14.3	-14.8	-14.1	-12.2	-9.3	-5.6	-1.3	3.2	7.7	11.7	15.0	17.3	18.3	18.0	16.3	13.4	9.3
-75	13105	12354	11498	10549	9520	8429	7291	6122	4936	3745	2559	1383	222	-922	-2053	-3170	-4276	-5375	-6468
	-3.5	-5.2	-6.3	-6.7	-6.4	-5.4	-3.8	-1.8	0.6	3.1	5.6	7.7	9.4	10.4	10.7	10.2	8.9	6.7	3.9
-80	13574	12863	12054	11155	10176	9127	8020	6863	5667	4442	3196	1937	670	-596	-1860	-3115	-4359	-5585	-6790
	2.9	1.8	0.9	0.4	0.3	0.4	0.8	1.4	2.2	3.0	3.7	4.2	4.5	4.5	4.2	3.4	2.2	0.7	-1.2
-85	14008	13313	12521	11637	10669	9624	8510	7334	6107	4836	3530	2197	847	-510	-1868	-3218	-4550	-5856	-7127
	8.7	7.8	7.0	6.2	5.5	4.9	4.3	3.8	3.2	2.7	2.1	1.4	0.7	-0.2	-1.1	-2.2	-3.4	-4.7	-6.0
-90	14395	13688	12878	11969	10969	9886	8727	7502	6220	4891	3524	2131	721	-693	-2103	-3497	-4864	-6194	-7477
	13.4	12.4	11.4	10.2	9.0	7.7	6.4	5.0	3.6	2.1	0.7	-0.8	-2.3	-3.7	-5.2	-6.5	-7.9	-9.1	-10.3

Y-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	-1275	-1065	-847	-624	-398	-172	50	268	479	682	874	1053	1220	1372	1508	1630	1736	1825	1900
	20.3	19.6	18.7	17.8	16.6	15.4	14.1	12.6	11.1	9.5	7.9	6.2	4.5	2.7	1.0	-0.7	-2.4	-4.1	-5.7
85	-1397	-1036	-668	-301	59	406	734	1037	1310	1550	1753	1917	2040	2123	2165	2170	2140	2079	1991
	21.9	20.7	19.3	17.8	16.2	14.5	12.7	10.9	9.1	7.2	5.4	3.6	1.9	0.2	-1.4	-2.9	-4.3	-5.6	-6.8
80	-1584	-1075	-561	-52	443	915	1355	1755	2105	2400	2633	2800	2898	2925	2882	2772	2600	2373	2101
	24.0	22.2	20.3	18.3	16.2	14.1	12.0	9.9	7.8	5.8	3.9	2.0	0.3	-1.3	-2.8	-4.2	-5.4	-6.5	-7.4
75	-1761	-1152	-540	64	651	1209	1730	2202	2616	2964	3236	3424	3522	3526	3433	3246	2968	2609	2180
	26.0	23.8	21.5	19.1	16.7	14.3	12.0	9.8	7.6	5.6	3.6	1.8	0.2	-1.4	-2.8	-4.0	-5.1	-6.0	-6.8
70	-1883	-1213	-547	106	738	1339	1900	2412	2866	3251	3556	3771	3885	3889	3778	3548	3202	2749	2201
	28.2	25.5	22.8	20.1	17.4	14.8	12.4	10.0	7.9	5.9	4.1	2.4	0.9	-0.4	-1.6	-2.7	-3.6	-4.4	-5.1
65	-1924	-1224	-537	127	764	1366	1928	2442	2902	3299	3620	3854	3986	4004	3895	3652	3274	2766	2139
	30.7	27.6	24.4	21.3	18.2	15.3	12.7	10.2	8.0	6.1	4.5	3.1	1.9	0.9	0.1	-0.6	-1.2	-1.8	-2.3
60	-1886	-1176	-491	160	772	1343	1871	2354	2787	3166	3479	3714	3856	3886	3790	3554	3173	2647	1986
	33.7	30.1	26.4	22.7	19.1	15.8	12.7	10.0	7.6	5.7	4.3	3.2	2.5	2.1	1.9	1.8	1.7	1.5	1.3
55	-1798	-1086	-414	209	782	1303	1776	2202	2583	2917	3196	3409	3541	3573	3488	3270	2907	2397	1744
	37.3	33.2	28.9	24.6	20.3	16.2	12.5	9.3	6.6	4.6	3.3	2.6	2.5	2.9	3.5	4.2	4.8	5.2	5.3
50	-1699	-989	-333	260	789	1257	1668	2028	2343	2612	2834	3001	3100	3116	3032	2831	2501	2032	1425
	41.6	37.0	32.0	26.9	21.7	16.8	12.3	8.4	5.3	3.1	1.9	1.6	2.2	3.3	4.9	6.5	7.9	8.9	9.2
45	-1631	-921	-279	288	780	1201	1556	1854	2100	2298	2447	2546	2589	2566	2467	2279	1988	1582	1054
	46.3	41.2	35.6	29.6	23.7	17.9	12.6	8.0	4.3	1.8	0.5	0.6	1.8	3.8	6.3	8.8	10.9	12.2	12.6
40	-1622	-910	-277	270	735	1123	1439	1689	1875	2001	2070	2086	2052	1970	1840	1656	1407	1079	657
	50.9	45.5	39.4	32.9	26.3	19.8	13.8	8.5	4.2	1.2	-0.2	0.1	1.8	4.6	8.0	11.2	13.7	15.1	15.0
35	-1689	-969	-342	192	642	1013	1310	1530	1672	1733	1720	1642	1517	1362	1189	1004	800	561	264
	55.1	49.6	43.3	36.6	29.7	22.9	16.3	10.4	5.4	1.9	0.2	0.5	2.6	6.0	10.0	13.6	16.2	17.1	16.2
30	-1837	-1106	-481	46	491	863	1161	1373	1485	1491	1396	1222	1000	764	544	356	200	58	-101
	58.4	53.0	47.0	40.5	33.9	27.1	20.3	13.9	8.3	4.1	1.8	1.9	4.1	7.8	12.2	16.0	18.2	18.3	16.0
25	-2070	-1324	-699	-172	279	668	985	1206	1302	1260	1087	818	500	186	-77	-262	-365	-405	-422
	60.7	55.8	50.3	44.7	38.7	32.4	25.7	18.8	12.4	7.3	4.2	3.8	5.9	9.7	14.2	17.9	19.5	18.4	14.6
20	-2391	-1632	-1003	-468	3	426	778	1019	1107	1021	774	414	6	-375	-672	-847	-890	-825	-698
	62.0	57.8	53.4	48.9	44.0	38.4	31.8	24.5	17.1	10.8	6.7	5.5	7.3	11.1	15.5	18.9	19.9	17.5	12.1
15	-2803	-2034	-1397	-844	-336	133	531	798	879	750	431	-13	-499	-937	-1255	-1408	-1386	-1213	-946
	62.4	59.2	56.1	52.9	49.3	44.4	37.8	29.9	21.4	13.7	8.4	6.2	7.5	11.1	15.6	18.8	19.1	15.8	9.0
10	-3301	-2529	-1878	-1293	-734	-206	240	530	597	419	27	-496	-1049	-1528	-1852	-1974	-1883	-1605	-1202
	62.3	60.2	58.4	56.6	54.0	49.6	42.9	34.0	24.2	15.0	8.2	5.1	5.8	9.4	13.9	17.1	17.2	13.3	5.8
5	-3860	-3094	-2425	-1795	-1177	-588	-100	197	235	-3	-471	-1069	-1677	-2184	-2503	-2587	-2425	-2045	-1514
	62.1	61.1	60.5	59.6	57.6	53.2	45.8	35.8	24.4	13.7	5.6	1.7	2.1	5.7	10.5	14.0	14.3	10.5	3.1
0	-4435	-3684	-2993	-2315	-1638	-1003	-496	-217	-234	-549	-1099	-1767	-2422	-2945	-3251	-3292	-3061	-2585	-1935
	62.0	61.9	61.9	61.5	59.3	54.3	45.9	34.4	21.6	9.5	0.4	-4.1	-3.7	0.2	5.6	9.8	10.8	7.8	1.2

Y-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-4435	-3684	-2993	-2315	-1638	-1003	-496	-217	-234	-549	-1099	-1767	-2422	-2945	-3251	-3292	-3061	-2585	-1935
	62.0	61.9	61.9	61.5	59.3	54.3	45.9	34.4	21.6	9.5	0.4	-4.1	-3.7	0.2	5.6	9.8	10.8	7.8	1.2
-5	-4962	-4233	-3524	-2806	-2089	-1437	-950	-729	-832	-1245	-1884	-2620	-3313	-3844	-4130	-4128	-3830	-3267	-2507
	62.1	62.4	62.5	61.7	58.7	52.4	42.5	29.6	15.5	2.4	-7.1	-11.6	-10.9	-6.3	-0.1	5.1	7.3	5.6	0.5
-10	-5373	-4674	-3960	-3225	-2505	-1882	-1466	-1350	-1574	-2104	-2840	-3641	-4365	-4896	-5158	-5112	-4753	-4112	-3254
	62.3	62.4	61.8	59.8	55.2	47.2	35.7	21.5	6.6	-6.7	-16.1	-20.0	-18.5	-13.0	-5.7	0.8	4.4	4.4	1.1
-15	-5618	-4956	-4260	-3546	-2875	-2341	-2052	-2086	-2462	-3125	-3960	-4820	-5568	-6094	-6329	-6240	-5826	-5116	-4175
	62.2	61.5	59.5	55.5	48.9	38.9	25.8	10.8	-4.3	-17.1	-25.5	-28.2	-25.5	-18.8	-10.3	-2.5	2.6	4.2	2.8
-20	-5678	-5068	-4422	-3779	-3214	-2828	-2716	-2937	-3485	-4286	-5215	-6126	-6889	-7404	-7611	-7483	-7022	-6255	-5245
	61.5	59.3	55.3	49.0	40.0	28.1	13.8	-1.5	-16.0	-27.5	-34.2	-35.2	-31.0	-22.9	-13.3	-4.5	1.9	5.0	5.3
-25	-5579	-5041	-4483	-3962	-3559	-3369	-3470	-3895	-4617	-5547	-6557	-7507	-8276	-8776	-8956	-8794	-8294	-7486	-6425
	59.7	55.6	49.3	40.5	29.2	15.7	0.9	-14.0	-27.2	-36.7	-41.2	-40.2	-34.4	-25.2	-14.7	-5.1	2.2	6.4	7.9
-30	-5381	-4941	-4513	-4159	-3959	-3994	-4320	-4945	-5824	-6860	-7929	-8901	-9667	-10150	-10306	-10118	-9593	-8758	-7664
	56.6	50.5	41.8	30.7	17.7	3.2	-11.7	-25.5	-36.7	-43.8	-46.0	-43.0	-35.7	-25.5	-14.6	-4.6	3.1	7.9	10.1
-35	-5167	-4856	-4591	-4437	-4461	-4726	-5263	-6062	-7065	-8175	-9275	-10250	-11002	-11467	-11605	-11402	-10867	-10023	-8914
	52.3	44.2	33.5	20.7	6.5	-8.3	-22.5	-34.8	-43.7	-48.4	-48.3	-43.6	-35.2	-24.6	-13.6	-3.7	3.9	8.8	11.2
-40	-5014	-4860	-4785	-4845	-5092	-5568	-6284	-7216	-8300	-9445	-10547	-11505	-12236	-12682	-12809	-12603	-12072	-11235	-10132
	46.9	37.2	25.2	11.4	-3.2	-17.6	-30.6	-41.0	-47.8	-50.3	-48.4	-42.5	-33.6	-23.1	-12.6	-3.3	3.8	8.5	10.8
-45	-4973	-5001	-5128	-5399	-5851	-6504	-7356	-8373	-9494	-10638	-11714	-12638	-13338	-13765	-13885	-13687	-13172	-12358	-11277
	40.7	30.2	17.6	3.7	-10.5	-23.8	-35.3	-43.8	-48.8	-49.7	-46.7	-40.3	-31.6	-21.8	-12.2	-3.9	2.5	6.6	8.7
-50	-5060	-5284	-5614	-6081	-6706	-7496	-8438	-9497	-10617	-11727	-12755	-13630	-14292	-14696	-14812	-14626	-14138	-13359	-12317
	34.1	23.6	11.3	-1.8	-14.9	-26.7	-36.5	-43.4	-47.0	-47.0	-43.7	-37.7	-29.8	-21.3	-13.0	-5.8	-0.4	3.2	5.0
-55	-5258	-5683	-6205	-6842	-7607	-8495	-9488	-10554	-11642	-12698	-13661	-14475	-15089	-15465	-15574	-15401	-14943	-14208	-13217
	27.5	17.7	6.6	-5.1	-16.5	-26.6	-34.8	-40.4	-43.1	-42.8	-39.9	-34.9	-28.5	-21.6	-14.9	-9.1	-4.6	-1.5	0.2
-60	-5529	-6149	-6845	-7628	-8500	-9452	-10467	-11513	-12551	-13537	-14424	-15166	-15723	-16062	-16156	-15993	-15565	-14879	-13949
	21.1	12.7	3.3	-6.5	-15.9	-24.3	-30.9	-35.6	-37.9	-37.9	-35.9	-32.3	-27.6	-22.5	-17.5	-13.0	-9.4	-6.8	-5.2
-65	-5835	-6635	-7484	-8386	-9337	-10329	-11343	-12352	-13328	-14234	-15036	-15698	-16189	-16480	-16551	-16389	-15987	-15350	-14489
	15.1	8.4	0.9	-6.7	-14.1	-20.7	-26.1	-29.9	-32.1	-32.7	-31.8	-29.8	-26.9	-23.5	-20.1	-16.9	-14.2	-12.0	-10.3
-70	-6151	-7108	-8085	-9081	-10090	-11099	-12096	-13057	-13962	-14783	-15493	-16068	-16483	-16717	-16755	-16586	-16206	-15615	-14823
	9.3	4.4	-1.0	-6.6	-12.1	-17.1	-21.3	-24.5	-26.7	-27.8	-27.9	-27.2	-25.8	-24.0	-22.0	-19.9	-17.9	-16.1	-14.5
-75	-6468	-7554	-8631	-9695	-10738	-11748	-12714	-13619	-14446	-15177	-15793	-16277	-16611	-16782	-16780	-16597	-16230	-15681	-14956
	3.9	0.6	-3.1	-7.0	-10.8	-14.3	-17.5	-20.1	-22.1	-23.6	-24.3	-24.5	-24.3	-23.6	-22.6	-21.4	-20.0	-18.6	-17.1
-80	-6790	-7968	-9113	-10217	-11271	-12266	-13189	-14031	-14779	-15420	-15942	-16336	-16590	-16697	-16651	-16449	-16089	-15573	-14907
	-1.2	-3.4	-5.8	-8.2	-10.7	-13.1	-15.3	-17.2	-18.9	-20.2	-21.2	-21.8	-22.1	-22.0	-21.7	-21.0	-20.2	-19.1	-17.8
-85	-7127	-8353	-9527	-10639	-11680	-12641	-13513	-14288	-14957	-15514	-15951	-16263	-16445	-16493	-16406	-16182	-15822	-15329	-14706
	-6.0	-7.5	-9.0	-10.5	-12.0	-13.4	-14.7	-16.0	-17.0	-17.9	-18.7	-19.2	-19.4	-19.5	-19.3	-18.9	-18.3	-17.5	-16.5
-90	-7477	-8703	-9863	-10948	-11950	-12860	-13673	-14382	-14981	-15466	-15833	-16080	-16205	-16206	-16084	-15840	-15475	-14992	-14395
	-10.3	-11.5	-12.5	-13.5	-14.3	-15.0	-15.6	-16.1	-16.5	-16.8	-16.9	-16.9	-16.8	-16.5	-16.1	-15.6	-15.0	-14.2	-13.4

Y-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	1900	1959	2004	2035	2053	2058	2051	2034	2006	1968	1920	1864	1800	1726	1644	1554	1455	1348	1232
	-5.7	-7.3	-8.8	-10.2	-11.6	-12.9	-14.1	-15.2	-16.2	-17.0	-17.8	-18.5	-19.0	-19.4	-19.7	-19.8	-19.9	-19.7	-19.5
85	1991	1883	1759	1626	1490	1357	1233	1122	1029	957	907	882	879	898	937	990	1053	1121	1188
	-6.8	-8.0	-9.0	-9.9	-10.8	-11.6	-12.3	-13.0	-13.6	-14.1	-14.7	-15.2	-15.7	-16.2	-16.6	-17.1	-17.5	-17.8	-18.1
80	2101	1794	1465	1127	796	483	204	-30	-210	-329	-381	-364	-279	-132	70	320	604	911	1225
	-7.4	-8.2	-8.8	-9.3	-9.8	-10.1	-10.3	-10.6	-10.8	-11.0	-11.3	-11.6	-12.0	-12.6	-13.2	-14.0	-14.9	-15.9	-16.9
75	2180	1698	1182	653	134	-352	-783	-1140	-1405	-1566	-1615	-1549	-1370	-1087	-711	-259	250	796	1354
	-6.8	-7.4	-7.9	-8.2	-8.4	-8.5	-8.5	-8.5	-8.4	-8.4	-8.5	-8.7	-9.1	-9.7	-10.6	-11.7	-13.1	-14.7	-16.5
70	2201	1577	904	209	-474	-1116	-1682	-2146	-2483	-2675	-2711	-2588	-2312	-1893	-1350	-706	12	776	1554
	-5.1	-5.6	-6.1	-6.4	-6.6	-6.7	-6.7	-6.6	-6.6	-6.5	-6.6	-6.8	-7.2	-8.0	-9.0	-10.5	-12.3	-14.5	-16.9
65	2139	1417	627	-194	-1008	-1773	-2448	-2994	-3381	-3587	-3599	-3414	-3040	-2495	-1801	-991	-97	844	1797
	-2.3	-2.8	-3.3	-3.7	-4.1	-4.4	-4.7	-4.9	-5.1	-5.3	-5.5	-5.9	-6.5	-7.4	-8.7	-10.4	-12.6	-15.2	-18.2
60	1986	1212	353	-548	-1448	-2296	-3042	-3641	-4055	-4256	-4232	-3981	-3515	-2857	-2039	-1098	-73	992	2061
	1.3	0.9	0.3	-0.3	-1.1	-1.9	-2.7	-3.5	-4.2	-4.8	-5.4	-6.0	-6.8	-7.9	-9.4	-11.3	-13.7	-16.7	-20.0
55	1744	965	91	-838	-1775	-2661	-3441	-4061	-4476	-4657	-4587	-4269	-3719	-2967	-2053	-1020	85	1219	2342
	5.3	5.0	4.2	3.2	1.9	0.4	-1.1	-2.5	-3.9	-5.1	-6.1	-7.1	-8.1	-9.3	-10.9	-12.9	-15.5	-18.6	-22.1
50	1425	691	-146	-1052	-1975	-2855	-3631	-4243	-4638	-4783	-4661	-4278	-3654	-2828	-1846	-760	379	1527	2642
	9.2	8.8	7.8	6.2	4.2	2.0	-0.3	-2.5	-4.4	-6.1	-7.6	-8.8	-9.9	-11.2	-12.8	-14.8	-17.3	-20.4	-24.0
45	1054	406	-347	-1179	-2041	-2876	-3614	-4190	-4547	-4645	-4469	-4023	-3337	-2455	-1432	-326	807	1919	2975
	12.6	11.9	10.3	8.0	5.2	2.2	-0.8	-3.5	-5.9	-7.9	-9.4	-10.7	-11.7	-12.9	-14.4	-16.3	-18.9	-21.9	-25.4
40	657	131	-499	-1215	-1978	-2731	-3402	-3920	-4223	-4266	-4033	-3532	-2797	-1877	-836	261	1354	2394	3348
	15.0	13.6	11.1	7.8	4.1	0.4	-3.0	-6.0	-8.3	-10.1	-11.3	-12.2	-13.0	-13.9	-15.2	-17.1	-19.7	-22.8	-26.3
35	264	-115	-592	-1162	-1796	-2440	-3021	-3463	-3698	-3679	-3390	-2841	-2070	-1132	-94	971	1999	2939	3760
	16.2	13.6	9.8	5.3	0.7	-3.4	-6.9	-9.6	-11.4	-12.4	-12.9	-13.0	-13.2	-13.7	-14.9	-16.9	-19.6	-22.9	-26.5
30	-101	-318	-624	-1028	-1514	-2032	-2507	-2858	-3015	-2929	-2586	-1998	-1206	-268	745	1759	2705	3529	4202
	16.0	11.8	6.5	0.7	-4.6	-9.0	-12.1	-14.0	-14.6	-14.4	-13.7	-12.7	-12.1	-12.2	-13.3	-15.5	-18.6	-22.4	-26.2
25	-422	-470	-597	-829	-1158	-1540	-1900	-2153	-2225	-2071	-1676	-1059	-262	657	1628	2577	3430	4131	4652
	14.6	8.6	1.6	-5.4	-11.3	-15.5	-17.8	-18.3	-17.5	-15.6	-13.4	-11.3	-9.8	-9.5	-10.6	-13.1	-16.9	-21.3	-25.6
20	-698	-577	-526	-585	-758	-1004	-1247	-1400	-1387	-1165	-725	-89	698	1583	2499	3372	4129	4712	5091
	12.1	4.4	-4.1	-12.0	-18.1	-21.7	-22.9	-21.8	-19.2	-15.7	-11.9	-8.6	-6.4	-5.8	-7.1	-10.2	-14.7	-19.9	-24.8
15	-946	-661	-437	-330	-352	-467	-597	-653	-559	-274	204	849	1618	2458	3308	4101	4767	5243	5501
	9.0	0.0	-9.5	-17.9	-23.7	-26.5	-26.3	-23.6	-19.3	-14.3	-9.3	-5.2	-2.5	-1.8	-3.4	-7.0	-12.3	-18.3	-23.9
10	-1202	-761	-372	-105	16	28	4	37	204	544	1054	1704	2448	3237	4021	4737	5320	5709	5873
	5.8	-3.8	-13.7	-21.9	-27.1	-28.8	-27.2	-23.1	-17.6	-11.5	-5.9	-1.4	1.4	1.9	0.1	-4.1	-10.1	-16.7	-22.7
5	-1514	-925	-380	40	303	436	513	629	862	1249	1785	2436	3155	3898	4620	5269	5783	6107	6208
	3.1	-6.4	-15.9	-23.4	-27.6	-28.1	-25.3	-20.2	-14.0	-7.6	-2.0	2.3	4.8	5.0	2.8	-1.8	-8.0	-15.0	-21.3
0	-1935	-1207	-512	58	461	716	895	1091	1385	1814	2374	3027	3728	4434	5107	5701	6165	6447	6517
	1.2	-7.3	-15.7	-21.9	-24.9	-24.2	-20.6	-15.1	-8.9	-3.0	2.0	5.5	7.4	7.1	4.6	0.0	-6.3	-13.2	-19.4

Y-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-1935	-1207	-512	58	461	716	895	1091	1385	1814	2374	3027	3728	4434	5107	5701	6165	6447	6517
	1.2	-7.3	-15.7	-21.9	-24.9	-24.2	-20.6	-15.1	-8.9	-3.0	2.0	5.5	7.4	7.1	4.6	0.0	-6.3	-13.2	-19.4
-5	-2507	-1650	-812	-93	452	836	1123	1404	1760	2233	2818	3479	4171	4855	5493	6051	6483	6745	6812
	0.5	-6.4	-13.1	-17.8	-19.5	-17.9	-13.9	-8.6	-3.1	1.8	5.6	8.0	9.0	8.3	5.7	1.2	-4.6	-11.1	-17.1
-10	-3254	-2280	-1307	-442	252	775	1184	1563	1991	2513	3128	3805	4501	5176	5799	6338	6757	7020	7105
	1.1	-3.9	-8.8	-11.8	-12.3	-10.2	-6.3	-1.6	2.8	6.2	8.6	9.8	9.8	8.7	6.2	2.2	-3.0	-8.8	-14.2
-15	-4175	-3098	-2002	-995	-147	529	1077	1572	2089	2672	3328	4029	4739	5419	6042	6579	7002	7282	7402
	2.8	-0.2	-3.3	-5.0	-4.6	-2.4	1.1	4.8	7.8	9.8	10.7	10.8	10.1	8.7	6.5	3.1	-1.2	-6.2	-10.9
-20	-5245	-4082	-2876	-1735	-732	107	813	1446	2071	2732	3439	4174	4907	5604	6239	6789	7228	7537	7701
	5.3	3.9	2.3	1.6	2.3	4.4	7.2	9.7	11.5	12.3	12.1	11.3	10.2	8.8	7.0	4.3	0.9	-3.2	-7.4
-25	-6425	-5194	-3895	-2631	-1477	-466	411	1200	1953	2708	3480	4260	5023	5745	6401	6972	7437	7780	7992
	7.9	7.7	7.0	6.9	7.6	9.2	11.2	12.8	13.6	13.5	12.7	11.7	10.5	9.3	7.9	6.0	3.3	-0.1	-3.7
-30	-7664	-6385	-5013	-3641	-2345	-1167	-111	846	1743	2610	3461	4295	5097	5849	6531	7128	7624	8004	8263
	10.1	10.6	10.3	10.2	10.7	11.7	12.9	13.7	14.0	13.6	12.8	11.9	11.1	10.3	9.4	8.0	5.9	3.1	-0.1
-35	-8914	-7608	-6183	-4724	-3302	-1967	-737	392	1442	2433	3377	4277	5127	5915	6628	7254	7780	8197	8500
	11.2	11.9	11.7	11.4	11.5	11.9	12.4	12.9	13.1	12.9	12.6	12.2	11.9	11.7	11.3	10.3	8.7	6.2	3.3
-40	-10132	-8818	-7362	-5839	-4316	-2844	-1457	-162	1040	2162	3210	4189	5097	5929	6678	7336	7895	8348	8692
	10.8	11.4	11.1	10.6	10.2	10.2	10.5	10.9	11.3	11.7	12.0	12.4	12.9	13.2	13.2	12.7	11.3	9.2	6.5
-45	-11277	-9976	-8514	-6953	-5358	-3781	-2262	-824	521	1773	2932	4000	4978	5865	6659	7356	7953	8445	8834
	8.7	9.2	8.8	8.1	7.6	7.4	7.6	8.2	9.1	10.1	11.3	12.5	13.7	14.6	15.0	14.7	13.6	11.8	9.5
-50	-12317	-11048	-9603	-8036	-6404	-4760	-3146	-1595	-127	1242	2510	3674	4734	5689	6542	7291	7936	8479	8924
	5.0	5.5	5.2	4.6	4.1	4.1	4.5	5.4	6.8	8.5	10.4	12.3	14.0	15.3	16.1	16.1	15.4	14.0	12.2
-55	-13217	-12000	-10598	-9056	-7427	-5758	-4093	-2468	-912	555	1922	3181	4330	5367	6294	7113	7827	8440	8959
	0.2	0.8	0.8	0.6	0.5	0.8	1.6	2.9	4.8	6.9	9.3	11.6	13.7	15.4	16.5	16.9	16.7	15.8	14.7
-60	-13949	-12800	-11464	-9981	-8393	-6744	-5075	-3421	-1815	-281	1164	2510	3748	4875	5893	6802	7608	8316	8935
	-5.2	-4.2	-3.7	-3.4	-2.9	-2.1	-0.9	0.8	2.9	5.4	8.0	10.5	12.9	14.8	16.2	17.1	17.3	17.1	16.7
-65	-14489	-13421	-12173	-10776	-9264	-7676	-6047	-4411	-2797	-1232	264	1678	2998	4219	5338	6355	7275	8103	8846
	-10.3	-9.0	-8.0	-7.0	-6.0	-4.6	-3.0	-1.0	1.3	3.9	6.5	9.1	11.5	13.6	15.3	16.6	17.4	17.8	18.0
-70	-14823	-13844	-12697	-11407	-9999	-8505	-6954	-5374	-3793	-2233	-716	741	2128	3435	4657	5792	6839	7803	8686
	-14.5	-13.0	-11.5	-10.0	-8.5	-6.7	-4.7	-2.5	-0.1	2.4	5.0	7.5	9.9	12.1	14.0	15.6	16.8	17.8	18.6
-75	-14956	-14066	-13025	-11849	-10561	-9180	-7731	-6236	-4717	-3195	-1687	-211	1220	2597	3912	5157	6330	7430	8456
	-17.1	-15.5	-13.9	-12.1	-10.2	-8.2	-6.1	-3.8	-1.4	1.0	3.4	5.9	8.2	10.4	12.4	14.1	15.7	17.0	18.1
-80	-14907	-14097	-13154	-12090	-10918	-9655	-8316	-6919	-5481	-4017	-2543	-1074	377	1799	3182	4516	5795	7013	8164
	-17.8	-16.4	-14.8	-13.0	-11.1	-9.1	-7.0	-4.8	-2.6	-0.3	2.0	4.2	6.4	8.5	10.5	12.3	13.9	15.3	16.6
-85	-14706	-13960	-13097	-12126	-11055	-9896	-8659	-7357	-6002	-4606	-3181	-1741	-297	1138	2555	3942	5290	6589	7830
	-16.5	-15.3	-14.0	-12.5	-10.8	-9.1	-7.2	-5.3	-3.3	-1.3	0.6	2.6	4.5	6.4	8.2	9.8	11.3	12.7	13.9
-90	-14395	-13688	-12878	-11969	-10969	-9886	-8727	-7502	-6220	-4891	-3524	-2131	-721	693	2103	3497	4864	6194	7477
	-13.4	-12.4	-11.4	-10.2	-9.0	-7.7	-6.4	-5.0	-3.6	-2.1	-0.7	0.8	2.3	3.7	5.2	6.5	7.9	9.1	10.3

Plots and Tables of DGRF 1985

Z Component

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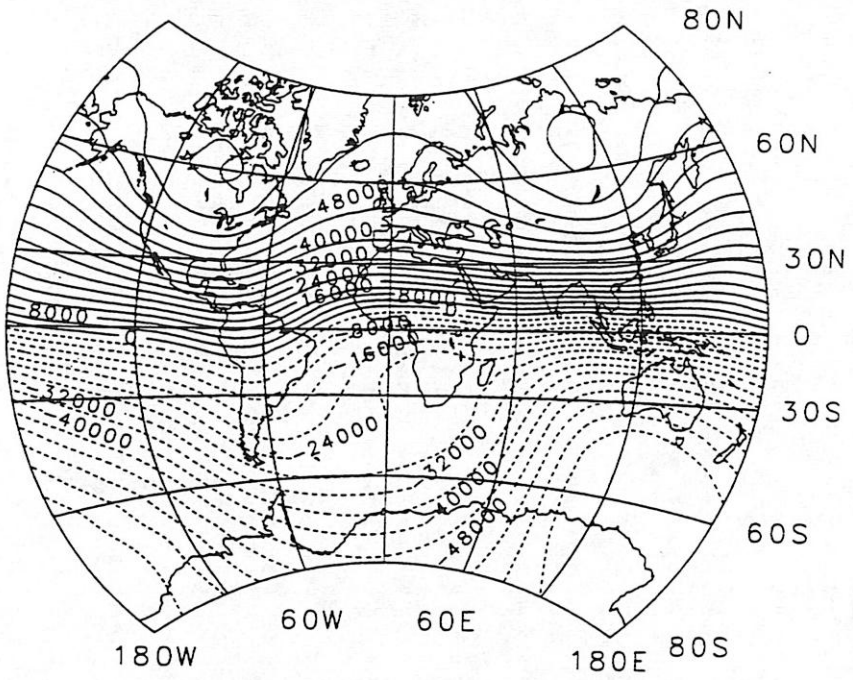
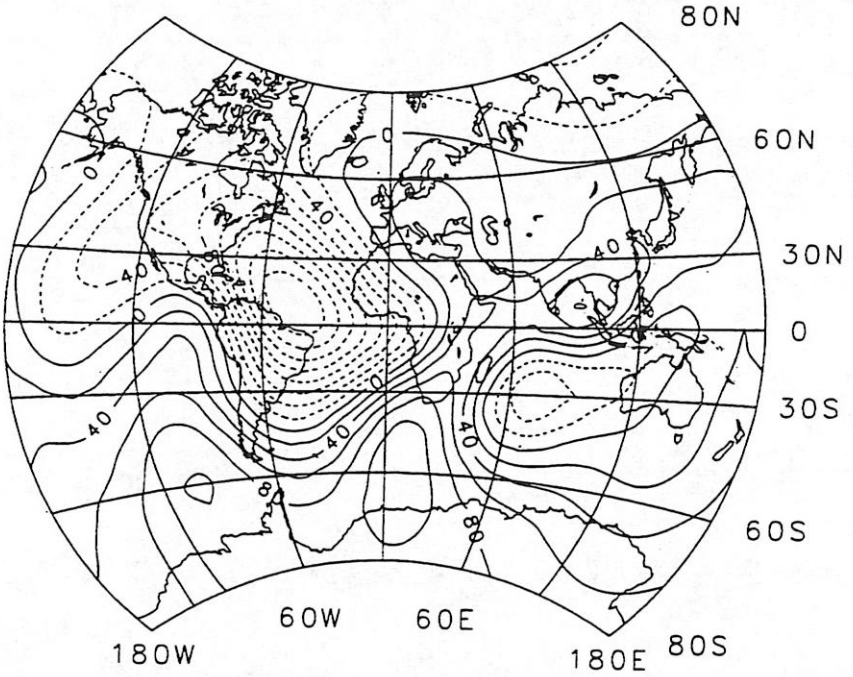
DGRF 1985 - Z - COMPONENT

Figure 11 (**Z**, top) Figure 12 ($\dot{\mathbf{Z}}$, bottom)





Z-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	56756	56749	56742	56733	56723	56712	56701	56688	56675	56661	56646	56630	56614	56598	56581	56564	56547	56530	56513
	-41.3	-41.3	-41.3	-41.2	-41.2	-41.1	-41.0	-41.0	-40.9	-40.8	-40.7	-40.6	-40.5	-40.4	-40.3	-40.2	-40.1	-40.0	-39.9
85	57315	57284	57254	57225	57197	57169	57141	57113	57082	57050	57014	56974	56930	56880	56825	56764	56696	56623	56544
	-43.2	-43.0	-42.8	-42.6	-42.3	-42.1	-41.9	-41.6	-41.4	-41.1	-40.8	-40.6	-40.3	-40.0	-39.6	-39.3	-38.9	-38.5	-38.1
80	57426	57378	57351	57344	57354	57378	57413	57455	57498	57538	57570	57589	57592	57575	57535	57471	57380	57263	57120
	-39.4	-38.9	-38.5	-38.2	-37.9	-37.7	-37.6	-37.5	-37.5	-37.5	-37.6	-37.6	-37.6	-37.5	-37.4	-37.1	-36.8	-36.3	-35.7
75	56715	56680	56703	56779	56904	57069	57264	57478	57700	57917	58118	58292	58429	58522	58562	58547	58472	58337	58144
	-29.5	-28.9	-28.4	-28.2	-28.3	-28.5	-29.0	-29.7	-30.6	-31.5	-32.5	-33.5	-34.4	-35.2	-35.8	-36.2	-36.3	-36.2	-35.7
70	55092	55101	55217	55433	55737	56113	56545	57011	57493	57968	58417	58820	59162	59427	59604	59685	59665	59542	59318
	-15.8	-15.2	-15.0	-15.3	-16.1	-17.3	-18.9	-20.9	-23.2	-25.6	-28.1	-30.6	-32.9	-35.0	-36.8	-38.2	-39.2	-39.7	-39.7
65	52580	52657	52894	53279	53793	54415	55119	55875	56655	57428	58165	58841	59429	59911	60269	60489	60564	60489	60265
	-1.1	-0.9	-1.4	-2.6	-4.5	-7.1	-10.3	-14.0	-18.0	-22.2	-26.4	-30.5	-34.4	-37.9	-41.0	-43.6	-45.7	-47.0	-47.7
60	49311	49467	49829	50381	51099	51955	52917	53950	55016	56078	57101	58051	58899	59618	60185	60581	60791	60807	60625
	11.4	10.9	9.4	7.0	3.6	-0.6	-5.6	-11.1	-16.8	-22.7	-28.4	-33.9	-39.0	-43.6	-47.8	-51.4	-54.5	-57.0	-58.6
55	45494	45729	46202	46893	47774	48816	49982	51232	52528	53827	55092	56285	57371	58321	59105	59699	60079	60228	60133
	19.6	18.1	15.4	11.6	6.7	0.8	-5.8	-12.8	-20.0	-27.0	-33.7	-39.9	-45.6	-50.7	-55.4	-59.7	-63.7	-67.3	-70.3
50	41372	41686	42248	43035	44021	45176	46463	47847	49287	50743	52176	53549	54826	55974	56960	57752	58317	58627	58656
	22.8	20.1	16.2	11.0	4.8	-2.5	-10.3	-18.4	-26.4	-34.0	-40.9	-47.0	-52.4	-57.2	-61.8	-66.2	-70.9	-75.6	-80.2
45	37177	37573	38204	39046	40075	41264	42586	44010	45500	47019	48533	50006	51405	52696	53843	54808	55549	56023	56194
	21.5	17.7	12.6	6.4	-1.0	-9.1	-17.6	-26.1	-34.3	-41.6	-47.9	-53.2	-57.5	-61.3	-65.0	-69.1	-74.0	-79.8	-86.3
40	33082	33573	34262	35125	36142	37297	38573	39950	41401	42895	44402	45892	47334	48697	49944	51034	51916	52537	52845
	17.4	12.5	6.5	-0.5	-8.4	-16.9	-25.5	-33.8	-41.4	-47.9	-53.0	-56.8	-59.5	-61.6	-63.9	-67.2	-72.1	-78.8	-87.2
35	29170	29772	30517	31378	32343	33409	34576	35836	37175	38569	39993	41420	42827	44186	45465	46619	47594	48328	48757
	12.3	6.7	0.0	-7.6	-15.7	-24.1	-32.2	-39.8	-46.3	-51.5	-55.1	-57.1	-57.8	-58.0	-58.6	-60.6	-65.0	-72.3	-82.5
30	25413	26143	26945	27791	28677	29618	30632	31728	32904	34141	35421	36721	38024	39312	40557	41718	42739	43551	44083
	8.2	1.9	-5.4	-13.4	-21.5	-29.4	-36.7	-43.0	-48.2	-51.8	-53.7	-54.0	-52.8	-50.9	-49.5	-49.9	-53.4	-60.9	-72.5
25	21686	22552	23412	24236	25031	25829	26669	27577	28561	29608	30703	31830	32980	34145	35308	36433	37466	38335	38963
	5.9	-0.9	-8.9	-17.2	-25.2	-32.5	-38.7	-43.6	-47.1	-49.2	-49.5	-48.1	-45.1	-41.3	-37.9	-36.5	-38.7	-45.8	-58.1
20	17795	18793	19709	20513	21219	21877	22545	23265	24053	24902	25796	26727	27697	28711	29765	30834	31867	32788	33515
	5.7	-1.7	-10.3	-19.0	-27.0	-33.6	-38.6	-42.0	-43.9	-44.4	-43.2	-40.4	-35.9	-30.4	-25.1	-21.7	-22.2	-28.3	-40.6
15	13530	14643	15612	16402	17038	17581	18106	18666	19283	19951	20656	21397	22186	23046	23988	25000	26034	27014	27849
	7.0	-0.9	-10.1	-19.3	-27.2	-33.2	-37.0	-38.9	-39.3	-38.2	-35.8	-31.8	-26.1	-19.1	-12.1	-6.9	-5.6	-10.2	-21.8
10	8715	9921	10940	11735	12334	12809	13244	13698	14195	14728	15285	15867	16502	17227	18073	19038	20082	21128	22077
	9.1	0.7	-8.9	-18.4	-26.3	-31.7	-34.5	-35.0	-33.9	-31.5	-27.9	-22.8	-16.2	-8.2	0.1	6.9	9.9	7.0	-3.4
5	3261	4537	5606	6432	7042	7513	7928	8351	8801	9269	9742	10225	10754	11383	12156	13088	14146	15255	16310
	11.2	2.8	-7.1	-16.6	-24.3	-29.2	-31.1	-30.5	-28.0	-24.4	-19.8	-13.9	-6.7	1.9	10.9	18.8	23.2	21.7	12.7
0	-2811	-1480	-354	532	1207	1741	2216	2690	3176	3662	4129	4585	5072	5651	6383	7293	8361	9518	10659
	13.1	5.0	-4.6	-13.9	-21.2	-25.6	-26.7	-25.1	-21.7	-17.0	-11.6	-5.2	2.3	11.0	20.3	28.5	33.5	33.1	25.4

Z-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	-2811	-1480	-354	532	1207	1741	2216	2690	3176	3662	4129	4585	5072	5651	6383	7293	8361	9518	10659
	13.1	5.0	-4.6	-13.9	-21.2	-25.6	-26.7	-25.1	-21.7	-17.0	-11.6	-5.2	2.3	11.0	20.3	28.5	33.5	33.1	25.4
-5	-9368	-7991	-6797	-5818	-5030	-4370	-3765	-3168	-2570	-1990	-1450	-946	-437	145	867	1768	2839	4024	5223
	14.8	7.4	-1.5	-10.0	-16.7	-20.5	-21.1	-18.9	-14.7	-9.4	-3.4	3.3	10.9	19.3	28.0	35.8	40.7	40.6	33.8
-10	-16182	-14761	-13489	-12395	-11461	-10633	-9852	-9083	-8322	-7594	-6924	-6311	-5720	-5085	-4338	-3430	-2354	-1152	87
	16.5	10.3	2.7	-4.8	-10.7	-14.0	-14.2	-11.7	-7.3	-1.6	4.7	11.6	18.9	26.7	34.5	41.2	45.2	44.7	38.3
-15	-22979	-21513	-20159	-18942	-17850	-16842	-15875	-14920	-13982	-13084	-12254	-11496	-10781	-10052	-9240	-8294	-7195	-5969	-4687
	18.7	13.9	7.9	1.7	-3.3	-6.2	-6.3	-3.9	0.6	6.3	12.7	19.5	26.6	33.6	40.2	45.4	47.9	46.5	40.0
-20	-29491	-27985	-26555	-25225	-23989	-22821	-21687	-20570	-19473	-18420	-17433	-16519	-15656	-14797	-13880	-12853	-11691	-10407	-9057
	21.5	18.4	13.9	9.0	4.9	2.4	2.2	4.3	8.5	14.1	20.5	27.2	34.0	40.3	45.6	49.3	50.3	47.7	40.7
-25	-35506	-33974	-32489	-31075	-29732	-28445	-27192	-25960	-24751	-23578	-22460	-21399	-20380	-19363	-18298	-17139	-15861	-14470	-13015
	24.9	23.3	20.3	16.6	13.3	11.1	10.7	12.5	16.3	21.6	28.0	34.8	41.3	47.2	51.7	54.1	53.8	50.0	42.4
-30	-40911	-39377	-37870	-36413	-35013	-33663	-32349	-31059	-29788	-28540	-27323	-26134	-24958	-23766	-22518	-21180	-19734	-18188	-16589
	28.6	28.2	26.5	23.9	21.2	19.3	18.9	20.4	23.9	29.1	35.5	42.4	49.0	54.8	58.8	60.5	59.3	54.7	46.7
-35	-45695	-44191	-42702	-41251	-39846	-38488	-37164	-35863	-34572	-33285	-31996	-30697	-29371	-27996	-26547	-25003	-23358	-21631	-19871
	32.1	32.7	32.0	30.3	28.4	26.9	26.6	28.1	31.5	36.7	43.2	50.4	57.2	63.1	67.1	68.6	67.0	62.2	54.1
-40	-49929	-48489	-47057	-45654	-44290	-42964	-41668	-40384	-39097	-37789	-36444	-35048	-33584	-32037	-30394	-28650	-26813	-24914	-23006
	35.2	36.6	36.7	35.9	34.7	33.8	34.0	35.8	39.4	44.8	51.4	58.8	65.9	72.0	76.2	77.8	76.4	71.8	64.1
-45	-53705	-52360	-51019	-49697	-48403	-47135	-45882	-44627	-43348	-42022	-40630	-39152	-37574	-35887	-34088	-32187	-30206	-28183	-26177
	37.8	39.8	40.6	40.7	40.4	40.5	41.4	43.7	47.7	53.2	60.0	67.3	74.5	80.7	85.1	87.1	86.1	82.2	75.3
-50	-57079	-55854	-54626	-53404	-52195	-50993	-49787	-48560	-47287	-45948	-44519	-42984	-41331	-39559	-37673	-35693	-33647	-31582	-29552
	40.2	42.6	44.1	45.1	45.9	46.9	48.8	51.7	56.1	61.7	68.3	75.4	82.3	88.3	92.7	94.9	94.5	91.3	85.6
-55	-60013	-58926	-57823	-56713	-55594	-54461	-53304	-52105	-50844	-49503	-48064	-46513	-44845	-43063	-41179	-39215	-37206	-35194	-33228
	42.8	45.5	47.7	49.5	51.3	53.3	56.0	59.5	64.0	69.5	75.7	82.2	88.4	93.8	97.8	100.0	100.0	97.8	93.4
-60	-62359	-61424	-60458	-59465	-58443	-57387	-56287	-55132	-53906	-52596	-51190	-49683	-48073	-46367	-44579	-42733	-40858	-38991	-37173
	46.2	49.1	51.6	54.1	56.6	59.4	62.6	66.4	70.8	75.8	81.3	86.8	92.0	96.5	99.9	101.8	102.2	100.8	97.7
-65	-63896	-63124	-62304	-61440	-60529	-59569	-58553	-57474	-56324	-55097	-53787	-52393	-50918	-49372	-47768	-46124	-44466	-42821	-41217
	50.8	53.6	56.2	58.9	61.8	64.8	68.1	71.8	75.8	80.1	84.5	88.8	92.8	96.3	98.9	100.6	101.1	100.4	98.6
-70	-64391	-63789	-63128	-62410	-61635	-60803	-59911	-58958	-57940	-56857	-55709	-54499	-53231	-51915	-50562	-49185	-47802	-46431	-45091
	56.7	59.1	61.5	64.0	66.7	69.5	72.5	75.6	78.8	82.1	85.4	88.6	91.5	93.9	95.9	97.2	97.8	97.8	97.0
-75	-63678	-63248	-62756	-62204	-61596	-60931	-60211	-59437	-58611	-57735	-56812	-55846	-54842	-53809	-52752	-51683	-50612	-49549	-48506
	63.7	65.4	67.2	69.2	71.3	73.5	75.7	78.1	80.4	82.7	84.9	87.0	89.0	90.6	92.0	93.1	93.8	94.2	94.2
-80	-61716	-61449	-61131	-60762	-60346	-59885	-59380	-58836	-58253	-57636	-56989	-56314	-55616	-54900	-54172	-53437	-52701	-51969	-51249
	71.2	72.2	73.3	74.6	75.9	77.2	78.6	80.0	81.4	82.8	84.2	85.4	86.6	87.7	88.7	89.5	90.2	90.8	91.2
-85	-58605	-58485	-58333	-58153	-57945	-57711	-57453	-57172	-56871	-56551	-56215	-55865	-55504	-55133	-54757	-54377	-53997	-53618	-53245
	78.7	79.1	79.6	80.1	80.6	81.2	81.8	82.4	83.0	83.7	84.3	84.9	85.5	86.0	86.6	87.1	87.6	88.0	88.5
-90	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572
	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8

Z-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	56513	56496	56479	56463	56447	56432	56418	56405	56393	56383	56373	56365	56359	56355	56352	56351	56352	56354	56359
	-39.9	-39.8	-39.7	-39.6	-39.5	-39.4	-39.4	-39.3	-39.2	-39.1	-39.1	-39.0	-39.0	-38.9	-38.9	-38.9	-38.9	-38.9	-38.9
85	56544	56461	56373	56282	56188	56094	56000	55908	55819	55735	55657	55587	55526	55475	55435	55408	55393	55392	55404
	-38.1	-37.6	-37.1	-36.6	-36.1	-35.6	-35.1	-34.6	-34.2	-33.7	-33.3	-32.9	-32.5	-32.2	-31.9	-31.7	-31.6	-31.5	-31.5
80	57120	56954	56765	56558	56336	56103	55863	55621	55382	55150	54930	54727	54543	54384	54252	54149	54078	54042	54040
	-35.7	-35.0	-34.1	-33.2	-32.1	-30.9	-29.7	-28.5	-27.2	-25.9	-24.7	-23.6	-22.5	-21.6	-20.8	-20.2	-19.7	-19.4	-19.2
75	58144	57896	57598	57255	56877	56472	56048	55616	55186	54765	54364	53990	53650	53351	53097	52892	52741	52646	52609
	-35.7	-34.9	-33.8	-32.4	-30.6	-28.7	-26.5	-24.2	-21.8	-19.4	-17.1	-14.9	-12.8	-11.0	-9.4	-8.2	-7.2	-6.5	-6.1
70	59318	58998	58590	58105	57557	56960	56331	55686	55041	54412	53813	53255	52748	52302	51922	51613	51380	51223	51145
	-39.7	-39.0	-37.8	-36.0	-33.6	-30.8	-27.5	-23.9	-20.1	-16.3	-12.5	-8.9	-5.6	-2.7	-0.1	1.9	3.6	4.8	5.5
65	60265	59897	59396	58777	58061	57269	56426	55560	54693	53851	53053	52316	51653	51074	50586	50192	49894	49694	49590
	-47.7	-47.6	-46.5	-44.6	-41.8	-38.2	-33.8	-28.9	-23.6	-18.1	-12.6	-7.4	-2.6	1.7	5.4	8.5	10.9	12.7	13.9
60	60625	60248	59686	58958	58089	57110	56059	54973	53889	52841	51857	50960	50165	49482	48916	48469	48141	47929	47829
	-58.6	-59.4	-59.0	-57.5	-54.7	-50.6	-45.4	-39.3	-32.5	-25.3	-18.1	-11.1	-4.6	1.2	6.3	10.6	14.1	16.8	18.8
55	60133	59792	59210	58406	57411	56266	55020	53727	52439	51202	50054	49024	48129	47377	46770	46307	45983	45792	45728
	-70.3	-72.4	-73.4	-72.9	-70.7	-66.9	-61.3	-54.3	-46.3	-37.6	-28.6	-19.9	-11.7	-4.1	2.6	8.4	13.3	17.3	20.4
50	58656	58390	57830	56989	55902	54619	53203	51724	50253	48852	47568	46435	45471	44682	44064	43612	43317	43171	43164
	-80.2	-84.2	-87.3	-88.7	-88.1	-85.2	-80.0	-72.7	-63.8	-53.9	-43.5	-33.1	-23.1	-13.7	-5.2	2.5	9.2	14.9	19.6
45	56194	56032	55526	54686	53545	52160	50607	48975	47349	45809	44413	43200	42186	41374	40758	40326	40067	39971	40025
	-86.3	-92.8	-98.6	-102.8	-104.7	-103.7	-99.6	-92.8	-83.7	-73.0	-61.4	-49.6	-37.9	-26.7	-16.2	-6.4	2.5	10.3	17.0
40	52845	52798	52373	51568	50415	48972	47325	45574	43823	42164	40667	39374	38304	37459	36828	36400	36163	36104	36206
	-87.2	-96.5	-105.7	-113.5	-118.7	-120.5	-118.6	-113.0	-104.4	-93.6	-81.3	-68.4	-55.2	-42.3	-29.6	-17.6	-6.3	3.9	12.9
35	48757	48827	48500	47765	46644	45192	43496	41665	39812	38040	36429	35029	33863	32937	32245	31780	31530	31481	31611
	-82.5	-94.7	-107.6	-119.5	-128.8	-134.3	-135.3	-131.9	-124.7	-114.4	-102.0	-88.4	-74.1	-59.5	-44.9	-30.6	-16.9	-4.4	6.7
30	44083	44270	44060	43429	42385	40972	39273	37392	35449	33553	31793	30229	28898	27816	26992	26427	26117	26044	26176
	-72.5	-87.3	-103.9	-120.1	-134.0	-143.9	-148.7	-148.3	-143.2	-134.3	-122.5	-108.7	-93.6	-77.6	-61.3	-45.0	-29.4	-14.9	-2.0
25	38963	39272	39199	38704	37777	36447	34779	32873	30841	28798	26841	25045	23465	22142	21105	20374	19952	19815	19918
	-58.1	-75.0	-94.8	-115.2	-133.8	-148.4	-157.6	-161.0	-158.9	-152.0	-141.5	-128.1	-112.7	-95.9	-78.2	-60.5	-43.4	-27.6	-13.7
20	33515	33958	34042	33710	32930	31712	30102	28182	26060	23850	21656	19573	17680	16046	14732	13778	13195	12953	12988
	-40.6	-58.8	-81.1	-105.2	-128.1	-147.5	-161.4	-169.0	-170.5	-166.5	-157.8	-145.4	-130.2	-113.1	-94.8	-76.3	-58.5	-42.1	-27.7
15	27849	28440	28695	28540	27923	26832	25293	23371	21165	18785	16348	13963	11737	9771	8153	6945	6164	5773	5689
	-21.8	-40.3	-64.2	-91.0	-117.7	-141.3	-159.7	-171.7	-177.1	-176.3	-170.0	-159.2	-144.9	-128.0	-109.7	-91.1	-73.4	-57.2	-43.0
10	22077	22818	23247	23269	22817	21856	20396	18488	16221	13705	11063	8420	5906	3645	1748	290	-705	-1286	-1545
	-3.4	-21.5	-45.9	-74.3	-103.5	-130.5	-152.8	-168.9	-178.1	-180.6	-177.0	-168.2	-155.2	-139.2	-121.6	-103.6	-86.4	-70.9	-57.1
5	16310	17192	17781	17970	17673	16842	15471	13604	11323	8738	5978	3178	478	-1982	-4084	-5748	-6955	-7753	-8240
	12.7	-4.2	-28.2	-56.9	-87.4	-116.4	-141.5	-160.7	-173.2	-178.7	-177.8	-171.2	-160.0	-145.4	-128.9	-111.9	-95.8	-81.0	-67.7
0	10659	11658	12386	12723	12572	11872	10610	8823	6593	4031	1269	-1554	-4298	-6827	-9028	-10828	-12214	-13233	-13972
	25.4	9.8	-12.9	-40.8	-71.0	-100.7	-127.1	-148.2	-163.0	-171.0	-172.4	-167.9	-158.6	-145.6	-130.5	-114.7	-99.5	-85.4	-72.2

Z-COMPONENT

LATITUDE \ LONGITUDE:	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	10659	11658	12386	12723	12572	11872	10610	8823	6593	4031	1269	-1554	-4298	-6827	-9028	-10828	-12214	-13233	-13972
	25.4	9.8	-12.9	-40.8	-71.0	-100.7	-127.1	-148.2	-163.0	-171.0	-172.4	-167.9	-158.6	-145.6	-130.5	-114.7	-99.5	-85.4	-72.2
-5	5223	6312	7157	7627	7616	7057	5931	4274	2167	-275	-2920	-5633	-8281	-10744	-12927	-14776	-16283	-17492	-18467
	33.8	19.7	-1.3	-27.4	-56.2	-85.0	-111.2	-132.8	-148.6	-158.1	-161.3	-158.6	-150.9	-139.5	-125.7	-111.0	-96.4	-82.5	-69.0
-10	87	1247	2193	2790	2925	2524	1566	84	-1836	-4079	-6514	-9010	-11452	-13740	-15806	-17614	-19168	-20497	-21641
	38.3	25.4	6.3	-17.5	-44.0	-70.6	-95.2	-116.0	-131.6	-141.5	-145.5	-143.9	-137.5	-127.3	-114.5	-100.4	-86.1	-71.8	-57.6
-15	-4687	-3457	-2410	-1681	-1389	-1612	-2376	-3645	-5337	-7332	-9502	-11724	-13897	-15946	-17825	-19519	-21034	-22388	-23595
	40.0	27.9	10.6	-10.7	-34.3	-58.1	-80.3	-99.1	-113.5	-122.8	-126.7	-125.5	-119.6	-109.9	-97.6	-83.6	-68.9	-54.0	-38.9
-20	-9057	-7741	-6581	-5710	-5249	-5280	-5830	-6869	-8312	-10043	-11934	-13870	-15761	-17549	-19208	-20732	-22129	-23406	-24555
	40.7	29.0	13.2	-5.8	-26.5	-47.3	-66.5	-82.8	-95.3	-103.2	-106.3	-104.6	-98.5	-88.8	-76.3	-61.9	-46.5	-30.7	-14.9
-25	-13015	-11583	-10293	-9271	-8636	-8470	-8803	-9607	-10802	-12273	-13897	-15564	-17192	-18730	-20160	-21482	-22701	-23815	-24807
	42.4	31.0	16.3	-0.8	-19.0	-37.0	-53.4	-67.2	-77.4	-83.5	-85.2	-82.5	-75.7	-65.3	-52.1	-37.0	-20.9	-4.4	11.7
-30	-16589	-15019	-13587	-12414	-11611	-11256	-11379	-11956	-12909	-14133	-15509	-16932	-18322	-19632	-20841	-21949	-22957	-23860	-24639
	46.7	35.4	21.5	5.9	-10.4	-26.1	-40.1	-51.6	-59.7	-64.0	-64.2	-60.2	-52.3	-41.0	-27.0	-11.1	5.6	22.3	38.1
-35	-19871	-18155	-16587	-15275	-14320	-13793	-13719	-14076	-14795	-15778	-16915	-18107	-19276	-20374	-21375	-22274	-23069	-23754	-24319
	54.1	43.1	30.0	15.5	0.7	-13.3	-25.5	-35.2	-41.6	-44.3	-43.1	-37.9	-29.0	-16.9	-2.2	14.0	30.8	47.1	61.8
-40	-23006	-21165	-19485	-18062	-16981	-16302	-16044	-16186	-16669	-17405	-18297	-19254	-20203	-21093	-21896	-22601	-23202	-23701	-24094
	64.1	53.8	41.5	28.0	14.5	1.8	-9.1	-17.4	-22.5	-24.1	-21.9	-15.9	-6.4	6.1	20.8	36.7	52.8	68.0	81.1
-45	-26177	-24259	-22511	-21014	-19838	-19028	-18597	-18527	-18767	-19243	-19873	-20580	-21296	-21975	-22585	-23114	-23556	-23916	-24201
	75.3	65.9	54.7	42.6	30.3	18.9	9.2	2.0	-2.3	-3.1	-0.4	5.8	15.2	27.3	41.2	56.1	70.8	84.2	95.2
-50	-29552	-27624	-25865	-24340	-23102	-22184	-21595	-21317	-21310	-21517	-21872	-22314	-22786	-23247	-23671	-24042	-24359	-24627	-24860
	85.6	77.6	68.0	57.4	46.8	36.9	28.5	22.2	18.7	18.3	21.0	26.8	35.4	46.3	58.6	71.6	84.1	95.3	104.2
-55	-33228	-31364	-29655	-28150	-26888	-25892	-25166	-24696	-24455	-24399	-24484	-24661	-24889	-25137	-25382	-25614	-25831	-26041	-26259
	93.4	87.1	79.3	70.8	62.1	54.1	47.2	42.1	39.4	39.1	41.5	46.5	53.7	62.7	72.8	83.3	93.3	102.0	108.7
-60	-37173	-35444	-33845	-32411	-31168	-30132	-29306	-28682	-28241	-27957	-27800	-27739	-27747	-27801	-27887	-27997	-28133	-28300	-28512
	97.7	93.2	87.6	81.3	74.9	68.9	63.9	60.2	58.1	58.1	60.0	63.8	69.3	76.1	83.6	91.4	98.8	105.1	109.9
-65	-41217	-39684	-38249	-36936	-35762	-34738	-33869	-33150	-32573	-32123	-31784	-31539	-31373	-31273	-31231	-31244	-31312	-31442	-31642
	98.6	95.8	92.3	88.3	84.2	80.4	77.2	74.8	73.7	73.7	75.2	77.8	81.6	86.2	91.3	96.5	101.4	105.6	108.7
-70	-45091	-43800	-42577	-41435	-40387	-39440	-38600	-37866	-37237	-36707	-36270	-35919	-35648	-35451	-35326	-35272	-35291	-35386	-35563
	97.0	95.7	94.0	92.0	89.9	88.0	86.4	85.3	84.8	85.1	86.1	87.8	90.1	92.8	95.8	98.9	101.7	104.1	105.9
-75	-48506	-47494	-46523	-45603	-44740	-43941	-43211	-42552	-41967	-41454	-41015	-40648	-40352	-40127	-39973	-39891	-39882	-39949	-40095
	94.2	94.0	93.5	93.0	92.4	91.8	91.4	91.2	91.2	91.6	92.3	93.2	94.5	95.9	97.4	98.8	100.2	101.3	102.2
-80	-51249	-50546	-49865	-49212	-48593	-48010	-47468	-46971	-46521	-46120	-45770	-45473	-45230	-45043	-44912	-44840	-44826	-44873	-44981
	91.2	91.5	91.8	92.0	92.2	92.3	92.5	92.8	93.1	93.4	93.9	94.4	94.9	95.5	96.0	96.5	97.0	97.3	97.5
-85	-53245	-52879	-52524	-52181	-51854	-51544	-51254	-50987	-50743	-50525	-50334	-50172	-50039	-49938	-49868	-49831	-49827	-49856	-49918
	88.5	88.9	89.2	89.6	89.9	90.2	90.5	90.7	91.0	91.2	91.4	91.6	91.8	91.9	92.1	92.1	92.2	92.1	92.1
-90	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572
	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8

Z-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	56359	56365	56373	56383	56394	56407	56421	56436	56453	56471	56489	56508	56527	56546	56566	56585	56605	56623	56641
	-38.9	-38.9	-39.0	-39.0	-39.1	-39.1	-39.2	-39.3	-39.3	-39.4	-39.5	-39.6	-39.7	-39.9	-40.0	-40.1	-40.2	-40.3	-40.4
85	55404	55430	55471	55524	55591	55670	55760	55860	55969	56084	56205	56330	56456	56582	56706	56826	56941	57048	57146
	-31.5	-31.6	-31.7	-31.9	-32.2	-32.5	-32.8	-33.3	-33.7	-34.3	-34.8	-35.4	-36.0	-36.6	-37.3	-37.9	-38.5	-39.2	-39.8
80	54040	54074	54144	54249	54389	54563	54767	54999	55255	55533	55826	56131	56441	56751	57054	57345	57617	57865	58084
	-19.2	-19.2	-19.4	-19.7	-20.1	-20.7	-21.4	-22.2	-23.1	-24.1	-25.1	-26.3	-27.5	-28.7	-30.0	-31.3	-32.6	-33.9	-35.1
75	52609	52630	52711	52851	53049	53304	53613	53972	54376	54821	55299	55801	56318	56838	57350	57841	58299	58711	59066
	-6.1	-5.9	-6.0	-6.3	-6.8	-7.5	-8.4	-9.4	-10.5	-11.7	-13.1	-14.5	-16.0	-17.7	-19.3	-21.1	-22.8	-24.6	-26.4
70	51145	51146	51226	51385	51621	51934	52320	52776	53300	53883	54520	55198	55906	56628	57345	58037	58684	59264	59757
	5.5	5.9	6.0	5.7	5.2	4.5	3.7	2.6	1.5	0.3	-1.1	-2.6	-4.1	-5.8	-7.5	-9.4	-11.3	-13.2	-15.1
65	49590	49582	49666	49842	50107	50458	50893	51412	52010	52685	53429	54234	55085	55964	56848	57711	58521	59247	59859
	13.9	14.7	15.0	14.9	14.5	13.9	13.0	12.0	10.9	9.7	8.4	7.1	5.6	4.1	2.6	1.0	-0.7	-2.4	-4.0
60	47829	47837	47947	48153	48450	48834	49302	49852	50485	51200	51994	52860	53788	54758	55746	56719	57640	58467	59161
	18.8	20.1	20.8	21.0	20.8	20.2	19.3	18.2	16.9	15.6	14.2	12.7	11.3	10.0	8.7	7.5	6.4	5.4	4.5
55	45728	45781	45942	46199	46543	46966	47461	48028	48668	49383	50175	51042	51977	52964	53978	54986	55947	56814	57537
	20.4	22.6	24.1	24.8	24.8	24.2	23.1	21.6	19.8	17.9	16.0	14.1	12.4	11.0	9.9	9.2	8.9	9.0	9.3
50	43164	43282	43511	43836	44239	44709	45236	45816	46451	47144	47902	48725	49610	50546	51512	52476	53399	54234	54930
	19.6	23.2	25.7	27.1	27.5	26.9	25.5	23.4	20.8	17.9	14.9	12.1	9.8	8.0	7.1	6.9	7.6	8.9	10.8
45	40025	40211	40512	40906	41371	41891	42453	43051	43683	44353	45065	45821	46620	47454	48308	49157	49970	50706	51318
	17.0	22.4	26.3	28.7	29.7	29.2	27.5	24.7	21.1	17.0	12.8	8.9	5.7	3.5	2.6	3.1	4.8	7.7	11.4
40	36206	36450	36811	37261	37778	38341	38938	39558	40199	40857	41531	42217	42913	43614	44310	44990	45635	46217	46700
	12.9	20.2	25.7	29.4	31.1	31.1	29.4	26.2	21.9	16.8	11.5	6.6	2.7	0.2	-0.4	0.9	4.0	8.5	13.8
35	31611	31892	32291	32777	33325	33916	34540	35188	35850	36514	37166	37793	38386	38939	39454	39930	40369	40762	41092
	6.7	15.9	23.1	28.1	31.1	31.9	30.8	28.0	23.7	18.3	12.6	7.1	2.9	0.6	0.7	3.2	7.8	13.9	20.6
30	26176	26470	26883	27378	27930	28529	29170	29847	30542	31229	31879	32461	32958	33364	33689	33950	34170	34366	34538
	-2.0	8.8	17.4	23.9	28.4	30.8	31.2	29.8	26.5	21.8	16.4	11.3	7.5	5.9	7.1	11.1	17.4	25.0	32.7
25	19918	20198	20596	21068	21596	22181	22827	23531	24267	24991	25651	26201	26612	26879	27022	27077	27090	27101	27135
	-13.7	-1.8	8.1	16.1	22.4	27.1	30.1	31.1	29.9	27.0	22.9	18.7	15.9	15.5	18.1	23.8	31.7	40.4	48.5
20	12988	13215	13559	13972	14445	14992	15630	16357	17136	17902	18579	19102	19434	19572	19550	19421	19255	19114	19043
	-27.7	-15.3	-4.5	5.0	13.6	21.3	27.5	31.9	33.7	33.2	30.9	28.1	26.4	27.2	31.2	38.4	47.5	57.0	64.8
15	5689	5810	6048	6356	6737	7223	7840	8584	9402	10205	10893	11384	11636	11654	11483	11197	10883	10624	10483
	-43.0	-30.4	-18.8	-7.7	3.5	14.5	24.5	32.6	37.7	39.7	39.1	37.4	36.5	38.0	42.8	50.8	60.7	70.2	77.2
10	-1545	-1595	-1526	-1373	-1119	-718	-135	613	1456	2277	2954	3394	3554	3448	3136	2709	2269	1916	1725
	-57.1	-44.5	-32.2	-19.4	-5.6	8.8	22.4	33.9	41.8	45.7	46.1	44.6	43.5	44.7	49.4	57.3	66.9	75.9	81.7
5	-8240	-8522	-8677	-8723	-8622	-8319	-7783	-7046	-6205	-5400	-4773	-4422	-4385	-4636	-5100	-5673	-6241	-6692	-6939
	-67.7	-55.0	-41.8	-27.2	-10.9	6.2	22.7	36.6	46.0	50.5	50.5	47.9	45.4	45.1	48.5	55.2	63.7	71.5	76.0
0	-13972	-14520	-14927	-15186	-15243	-15040	-14560	-13858	-13059	-12324	-11806	-11602	-11740	-12178	-12829	-13580	-14306	-14888	-15229
	-72.2	-59.0	-44.8	-28.6	-10.5	8.4	26.3	40.8	50.0	53.2	51.3	46.3	41.1	38.2	39.2	43.8	50.6	57.0	60.3

Z-COMPONENT

LATITUDE \ LONGITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-13972	-14520	-14927	-15186	-15243	-15040	-14560	-13858	-13059	-12324	-11806	-11602	-11740	-12178	-12829	-13580	-14306	-14888	-15229
	-72.2	-59.0	-44.8	-28.6	-10.5	8.4	26.3	40.8	50.0	53.2	51.3	46.3	41.1	38.2	39.2	43.8	50.6	57.0	60.3
-5	-18467	-19265	-19904	-20349	-20537	-20419	-20000	-19363	-18658	-18063	-17730	-17747	-18127	-18813	-19708	-20689	-21627	-22397	-22897
	-69.0	-55.1	-39.8	-22.5	-3.6	15.6	33.0	46.1	53.1	53.4	48.1	39.5	30.8	24.6	22.7	24.9	29.7	34.6	37.2
-10	-21641	-22620	-23417	-23979	-24245	-24182	-23826	-23289	-22740	-22361	-22295	-22613	-23309	-24311	-25512	-26784	-27997	-29024	-29756
	-57.6	-42.8	-26.7	-9.2	9.2	26.9	41.7	51.4	54.4	50.4	40.9	28.3	15.9	6.5	1.8	1.6	4.7	8.6	11.1
-15	-23595	-24641	-25487	-26072	-26346	-26307	-26020	-25622	-25291	-25201	-25475	-26163	-27236	-28610	-30168	-31783	-33323	-34663	-35694
	-38.9	-23.4	-7.2	9.6	26.0	40.4	51.0	55.6	53.4	44.5	30.5	14.2	-1.2	-13.1	-19.9	-21.7	-19.7	-16.2	-13.1
-20	-24555	-25544	-26323	-26839	-27066	-27031	-26828	-26609	-26547	-26799	-27463	-28559	-30042	-31813	-33753	-35733	-37627	-39312	-40680
	-14.9	0.9	16.4	31.2	44.2	54.0	59.0	57.8	50.0	36.2	18.5	-0.6	-17.8	-30.9	-38.6	-41.0	-39.3	-35.4	-31.4
-25	-24807	-25639	-26266	-26656	-26810	-26785	-26694	-26690	-26932	-27551	-28613	-30117	-31998	-34152	-36457	-38789	-41025	-43051	-44763
	11.7	27.0	40.9	52.7	61.4	65.8	64.8	57.8	44.9	27.2	6.9	-13.4	-31.1	-44.0	-51.3	-53.2	-51.0	-46.5	-41.2
-30	-24639	-25265	-25711	-25969	-26068	-26086	-26143	-26382	-26939	-27913	-29344	-31209	-33434	-35913	-38527	-41158	-43692	-46021	-48048
	38.1	52.2	63.7	71.9	76.0	75.0	68.5	56.4	39.6	19.5	-1.8	-21.9	-38.6	-50.2	-56.2	-57.0	-53.8	-48.4	-42.2
-35	-24319	-24750	-25042	-25212	-25309	-25422	-25663	-26158	-27013	-28299	-30032	-32177	-34657	-37370	-40206	-43056	-45814	-48380	-50665
	61.8	74.0	82.8	87.3	87.0	81.5	70.7	55.3	36.2	15.3	-5.5	-24.1	-38.7	-48.3	-52.6	-52.1	-48.2	-42.2	-35.6
-40	-24094	-24386	-24592	-24746	-24908	-25164	-25614	-26355	-27468	-28996	-30942	-33264	-35891	-38731	-41686	-44656	-47547	-50269	-52737
	81.1	91.1	97.1	98.5	94.8	86.2	72.9	55.9	36.5	16.4	-2.6	-18.9	-31.1	-38.6	-41.3	-40.0	-35.7	-29.8	-23.6
-45	-24201	-24427	-24623	-24831	-25112	-25541	-26195	-27150	-28458	-30145	-32205	-34598	-37261	-40118	-43084	-46073	-48999	-51783	-54348
	95.2	102.9	106.6	105.7	100.1	90.1	76.2	59.6	41.5	23.4	6.9	-6.7	-16.6	-22.3	-24.1	-22.5	-18.7	-13.7	-8.6
-50	-24860	-25082	-25324	-25630	-26051	-26646	-27474	-28585	-30013	-31770	-33847	-36210	-38809	-41580	-44455	-47360	-50223	-52973	-55540
	104.2	109.9	111.8	109.7	103.6	93.8	81.1	66.3	50.7	35.6	22.0	11.0	3.0	-1.6	-3.1	-2.2	0.5	3.9	7.3
-55	-26259	-26508	-26817	-27224	-27768	-28492	-29434	-30628	-32092	-33833	-35838	-38082	-40526	-43121	-45811	-48538	-51241	-53857	-56329
	108.7	112.8	113.7	111.4	105.9	97.6	87.0	75.1	62.7	50.8	40.1	31.4	24.9	20.9	19.0	18.9	19.9	21.4	22.9
-60	-28512	-28789	-29153	-29631	-30251	-31041	-32025	-33221	-34640	-36282	-38137	-40185	-42396	-44735	-47158	-49619	-52069	-54458	-56738
	109.9	112.6	113.1	111.2	107.0	100.7	93.0	84.2	75.1	66.3	58.2	51.5	46.1	42.3	39.9	38.5	37.9	37.6	37.3
-65	-31642	-31927	-32312	-32814	-33449	-34235	-35184	-36305	-37602	-39074	-40710	-42496	-44410	-46425	-48509	-50629	-52746	-54822	-56821
	108.7	110.5	110.7	109.4	106.7	102.6	97.4	91.5	85.4	79.2	73.5	68.4	64.0	60.4	57.6	55.3	53.5	51.9	50.3
-70	-35563	-35831	-36198	-36672	-37263	-37979	-38825	-39804	-40915	-42156	-43517	-44988	-46552	-48191	-49883	-51602	-53323	-55020	-56665
	105.9	107.0	107.1	106.4	104.8	102.3	99.3	95.7	91.8	87.9	84.0	80.2	76.8	73.6	70.8	68.2	65.9	63.7	61.5
-75	-40095	-40323	-40637	-41041	-41537	-42128	-42815	-43598	-44473	-45436	-46481	-47599	-48779	-50009	-51273	-52558	-53846	-55119	-56363
	102.2	102.6	102.6	102.2	101.3	100.0	98.3	96.3	94.0	91.6	89.1	86.6	84.1	81.7	79.3	77.0	74.8	72.7	70.6
-80	-44981	-45152	-45386	-45683	-46044	-46468	-46954	-47499	-48101	-48756	-49458	-50203	-50983	-51792	-52620	-53460	-54303	-55139	-55959
	97.5	97.6	97.4	97.1	96.6	95.9	95.0	93.9	92.7	91.4	89.9	88.4	86.9	85.3	83.7	82.1	80.6	79.0	77.5
-85	-49918	-50014	-50143	-50305	-50498	-50721	-50974	-51254	-51560	-51889	-52239	-52607	-52990	-53384	-53787	-54194	-54603	-55009	-55410
	92.1	91.9	91.8	91.5	91.2	90.8	90.4	89.9	89.4	88.8	88.1	87.5	86.8	86.0	85.3	84.6	83.8	83.1	82.4
-90	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572
	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8

Z-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	56641	56658	56675	56690	56704	56717	56728	56738	56747	56754	56760	56765	56767	56769	56769	56768	56765	56761	56756
	-40.4	-40.5	-40.6	-40.7	-40.8	-40.9	-41.0	-41.1	-41.1	-41.2	-41.3	-41.3	-41.3	-41.3	-41.4	-41.4	-41.4	-41.4	-41.3
85	57146	57235	57313	57380	57435	57478	57509	57529	57539	57540	57532	57517	57496	57471	57442	57411	57379	57347	57315
	-39.8	-40.4	-40.9	-41.4	-41.9	-42.3	-42.7	-43.0	-43.2	-43.4	-43.6	-43.7	-43.7	-43.7	-43.7	-43.6	-43.5	-43.3	-43.2
80	58084	58269	58419	58530	58602	58636	58632	58595	58528	58436	58325	58200	58068	57935	57806	57687	57582	57495	57426
	-35.1	-36.3	-37.4	-38.5	-39.4	-40.2	-40.9	-41.4	-41.8	-42.0	-42.1	-42.1	-41.9	-41.6	-41.2	-40.8	-40.3	-39.8	-39.4
75	59066	59355	59569	59705	59760	59735	59634	59466	59240	58968	58664	58342	58018	57706	57418	57167	56962	56810	56715
	-26.4	-28.1	-29.7	-31.1	-32.5	-33.6	-34.5	-35.2	-35.6	-35.7	-35.6	-35.2	-34.7	-33.9	-33.1	-32.1	-31.2	-30.3	-29.5
70	59757	60145	60413	60553	60560	60435	60188	59830	59381	58862	58299	57718	57145	56607	56125	55719	55405	55194	55092
	-15.1	-17.0	-18.8	-20.5	-22.0	-23.3	-24.3	-25.0	-25.3	-25.3	-24.9	-24.2	-23.3	-22.0	-20.7	-19.3	-17.9	-16.7	-15.8
65	59859	60329	60634	60757	60692	60440	60013	59430	58722	57921	57067	56199	55358	54580	53898	53339	52925	52670	52580
	-4.0	-5.7	-7.2	-8.6	-9.9	-11.0	-11.8	-12.3	-12.5	-12.3	-11.7	-10.8	-9.5	-8.0	-6.3	-4.7	-3.2	-1.9	-1.1
60	59161	59683	59999	60087	59935	59543	58927	58114	57142	56060	54919	53775	52681	51684	50826	50139	49650	49371	49311
	4.5	3.7	3.0	2.4	1.9	1.5	1.2	1.1	1.2	1.6	2.2	3.2	4.4	5.9	7.4	8.9	10.2	11.1	11.4
55	57537	58071	58373	58412	58170	57646	56855	55833	54626	53296	51908	50532	49231	48064	47079	46310	45782	45509	45494
	9.3	9.8	10.5	11.3	12.0	12.7	13.2	13.7	14.1	14.6	15.1	15.7	16.5	17.5	18.5	19.4	20.1	20.2	19.6
50	54930	55433	55697	55681	55361	54730	53805	52620	51234	49717	48148	46608	45173	43907	42861	42071	41556	41325	41372
	10.8	13.1	15.6	18.0	20.2	22.0	23.5	24.5	25.0	25.3	25.4	25.4	25.4	25.5	25.6	25.6	25.3	24.5	22.8
45	51318	51754	51961	51895	51522	50828	49823	48546	47056	45433	43768	42153	40670	39390	38365	37626	37185	37041	37177
	11.4	15.5	19.6	23.6	27.0	29.7	31.6	32.8	33.1	32.9	32.2	31.3	30.4	29.4	28.5	27.5	26.2	24.3	21.5
40	46700	47040	47185	47083	46692	45988	44974	43683	42178	40545	38882	37290	35857	34657	33739	33128	32829	32823	33082
	13.8	19.4	24.9	29.7	33.5	36.3	37.9	38.4	38.0	36.9	35.2	33.4	31.5	29.7	27.9	26.1	23.9	21.1	17.4
35	41092	41324	41411	41298	40931	40275	39322	38101	36674	35130	33573	32106	30822	29794	29067	28661	28567	28752	29170
	20.6	27.2	33.1	37.6	40.6	42.2	42.3	41.4	39.5	37.1	34.4	31.7	29.3	27.1	25.0	22.8	20.2	16.8	12.3
30	34538	34669	34717	34623	34324	33772	32949	31876	30614	29253	27899	26654	25609	24834	24371	24229	24390	24806	25413
	32.7	39.4	44.5	47.5	48.3	47.3	44.8	41.4	37.6	33.7	30.1	27.1	24.7	22.8	21.1	19.3	16.8	13.1	8.2
25	27135	27189	27227	27189	27000	26602	25965	25104	24078	22978	21905	20960	20225	19763	19609	19768	20211	20878	21686
	48.5	54.6	57.9	58.0	55.4	50.8	44.9	38.6	32.6	27.4	23.3	20.5	18.8	18.0	17.5	16.6	14.7	11.2	5.9
20	19043	19054	19117	19170	19128	18922	18510	17905	17164	16374	15634	15034	14648	14526	14697	15161	15882	16792	17795
	64.8	69.5	70.1	66.8	60.2	51.5	42.0	32.9	25.1	19.0	15.0	13.0	12.7	13.6	14.7	15.3	14.3	11.1	5.7
15	10483	10484	10603	10773	10903	10910	10746	10415	9975	9512	9118	8874	8837	9048	9526	10267	11235	12357	13530
	77.2	80.0	77.8	71.0	60.6	48.3	35.9	24.8	15.9	9.8	6.5	5.9	7.4	10.2	13.2	15.3	15.3	12.6	7.0
10	1725	1733	1919	2215	2522	2744	2824	2761	2610	2455	2385	2467	2748	3252	3992	4961	6125	7411	8715
	81.7	82.6	78.0	68.3	55.2	40.7	26.8	15.1	6.4	1.1	-0.8	0.3	3.6	8.1	12.8	16.1	17.1	14.7	9.1
5	-6939	-6937	-6699	-6295	-5834	-5420	-5123	-4950	-4851	-4743	-4542	-4190	-3651	-2912	-1970	-832	469	1867	3261
	76.0	75.4	69.2	58.1	44.0	29.2	15.7	5.0	-2.2	-5.7	-5.8	-3.1	1.6	7.4	13.1	17.3	18.8	16.8	11.2
0	-15229	-15276	-15035	-14576	-14011	-13456	-12991	-12634	-12340	-12032	-11630	-11078	-10352	-9445	-8362	-7112	-5726	-4261	-2811
	60.3	58.9	52.3	41.5	28.5	15.3	4.1	-4.1	-8.6	-9.7	-7.9	-3.9	1.7	8.0	14.0	18.4	20.1	18.4	13.1

Z-COMPONENT

LATITUDE \ LONGITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-15229	-15276	-15035	-14576	-14011	-13456	-12991	-12634	-12340	-12032	-11630	-11078	-10352	-9445	-8362	-7112	-5726	-4261	-2811
	60.3	58.9	52.3	41.5	28.5	15.3	4.1	-4.1	-8.6	-9.7	-7.9	-3.9	1.7	8.0	14.0	18.4	20.1	18.4	13.1
-5	-22897	-23064	-22897	-22460	-21868	-21244	-20679	-20202	-19778	-19337	-18803	-18124	-17278	-16266	-15096	-13782	-12350	-10852	-9368
	37.2	35.9	30.3	21.4	11.0	1.2	-6.4	-10.9	-12.2	-10.8	-7.3	-2.3	3.5	9.5	15.0	19.2	20.9	19.5	14.8
-10	-29756	-30126	-30122	-29802	-29275	-28668	-28079	-27549	-27057	-26543	-25937	-25189	-24280	-23213	-21998	-20652	-19201	-17688	-16182
	11.1	10.7	7.2	1.3	-5.3	-10.8	-14.1	-14.7	-12.8	-9.1	-4.4	0.9	6.3	11.5	16.2	19.7	21.3	20.3	16.5
-15	-35694	-36341	-36585	-36473	-36104	-35599	-35061	-34541	-34034	-33492	-32856	-32082	-31150	-30062	-28832	-27477	-26021	-24503	-22979
	-13.1	-11.9	-12.9	-15.3	-17.8	-19.1	-18.4	-15.6	-11.1	-5.8	-0.4	4.7	9.3	13.5	17.2	20.1	21.7	21.3	18.7
-20	-40680	-41656	-42211	-42379	-42243	-41914	-41490	-41031	-40547	-40007	-39367	-38590	-37658	-36572	-35346	-33996	-32545	-31028	-29491
	-31.4	-28.3	-26.7	-25.8	-24.8	-22.7	-19.1	-14.0	-8.0	-2.0	3.4	8.0	11.9	15.2	18.2	20.7	22.5	22.9	21.5
-25	-44763	-46085	-46981	-47470	-47617	-47513	-47250	-46888	-46453	-45932	-45299	-44529	-43607	-42536	-41325	-39991	-38556	-37048	-35506
	-41.2	-36.5	-32.7	-29.4	-26.0	-21.9	-16.8	-10.8	-4.6	1.3	6.3	10.2	13.4	16.2	18.9	21.5	23.7	25.0	24.9
-30	-48048	-49698	-50930	-51748	-52195	-52342	-52265	-52026	-51658	-51168	-50549	-49788	-48881	-47828	-46641	-45333	-43924	-42439	-40911
	-42.2	-36.3	-31.2	-26.7	-22.3	-17.6	-12.5	-6.9	-1.5	3.5	7.7	11.1	14.0	16.7	19.5	22.5	25.3	27.5	28.6
-35	-50665	-52597	-54130	-55254	-55991	-56390	-56512	-56411	-56126	-55682	-55085	-54340	-53451	-52423	-51267	-49996	-48628	-47185	-45695
	-35.6	-29.3	-23.9	-19.3	-15.2	-11.2	-7.1	-3.0	1.0	4.7	8.0	11.0	13.8	16.7	20.0	23.6	27.2	30.2	32.1
-40	-52737	-54884	-56660	-58044	-59039	-59675	-59995	-60044	-59864	-59485	-58931	-58219	-57360	-56368	-55256	-54037	-52729	-51351	-49929
	-23.6	-17.8	-13.0	-9.2	-6.2	-3.7	-1.3	1.0	3.4	5.7	8.1	10.7	13.6	16.9	20.7	24.9	29.0	32.6	35.2
-45	-54348	-56629	-58576	-60157	-61364	-62209	-62719	-62928	-62875	-62594	-62115	-61465	-60665	-59734	-58688	-57544	-56319	-55032	-53705
	-8.6	-4.1	-0.6	1.8	3.3	4.2	4.9	5.5	6.3	7.5	9.1	11.4	14.3	17.8	22.0	26.4	30.8	34.7	37.8
-50	-55540	-57865	-59898	-61605	-62966	-63981	-64664	-65038	-65134	-64985	-64623	-64079	-63379	-62546	-61602	-60564	-59453	-58285	-57079
	7.3	10.1	12.0	12.9	12.9	12.4	11.6	11.0	10.7	11.0	12.0	13.9	16.6	20.1	24.2	28.6	33.0	36.9	40.2
-55	-56329	-58603	-60632	-62381	-63828	-64962	-65788	-66319	-66577	-66589	-66385	-65993	-65440	-64752	-63952	-63060	-62095	-61074	-60013
	22.9	23.9	24.1	23.7	22.6	21.1	19.4	18.0	17.0	16.8	17.3	18.8	21.1	24.2	27.9	31.8	35.8	39.5	42.8
-60	-56738	-58864	-60794	-62498	-63951	-65140	-66063	-66724	-67136	-67319	-67295	-67088	-66722	-66220	-65604	-64893	-64106	-63257	-62359
	37.3	36.8	35.7	34.3	32.5	30.4	28.5	26.7	25.5	24.9	25.1	26.1	27.8	30.2	33.2	36.5	39.8	43.1	46.2
-65	-56821	-58707	-60447	-62015	-63390	-64558	-65512	-66251	-66782	-67115	-67265	-67248	-67082	-66785	-66375	-65867	-65277	-64617	-63896
	50.3	48.7	46.8	44.8	42.7	40.6	38.6	36.9	35.6	34.9	34.8	35.3	36.5	38.1	40.3	42.7	45.4	48.1	50.8
-70	-56665	-58234	-59703	-61051	-62263	-63326	-64232	-64977	-65562	-65991	-66271	-66411	-66422	-66315	-66102	-65794	-65400	-64930	-64391
	61.5	59.4	57.3	55.2	53.1	51.2	49.4	47.9	46.8	46.0	45.7	45.9	46.5	47.5	48.8	50.5	52.4	54.5	56.7
-75	-56363	-57559	-58694	-59754	-60727	-61603	-62376	-63041	-63595	-64039	-64374	-64603	-64731	-64763	-64704	-64561	-64339	-64043	-63678
	70.6	68.6	66.7	64.9	63.2	61.6	60.2	59.0	58.0	57.4	57.0	56.9	57.1	57.6	58.4	59.4	60.6	62.1	63.7
-80	-55959	-56755	-57518	-58240	-58915	-59537	-60099	-60599	-61034	-61401	-61699	-61929	-62091	-62185	-62214	-62179	-62083	-61928	-61716
	77.5	76.1	74.7	73.4	72.2	71.1	70.2	69.4	68.7	68.2	67.9	67.7	67.7	67.9	68.3	68.8	69.4	70.2	71.2
-85	-55410	-55800	-56178	-56540	-56882	-57202	-57497	-57765	-58005	-58214	-58391	-58536	-58647	-58724	-58767	-58777	-58752	-58695	-58605
	82.4	81.7	81.0	80.4	79.9	79.3	78.9	78.5	78.1	77.9	77.7	77.5	77.5	77.5	77.6	77.8	78.0	78.3	78.7
-90	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572	-54572
	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8

Plots and Tables of DGRF 1985

Total Field F

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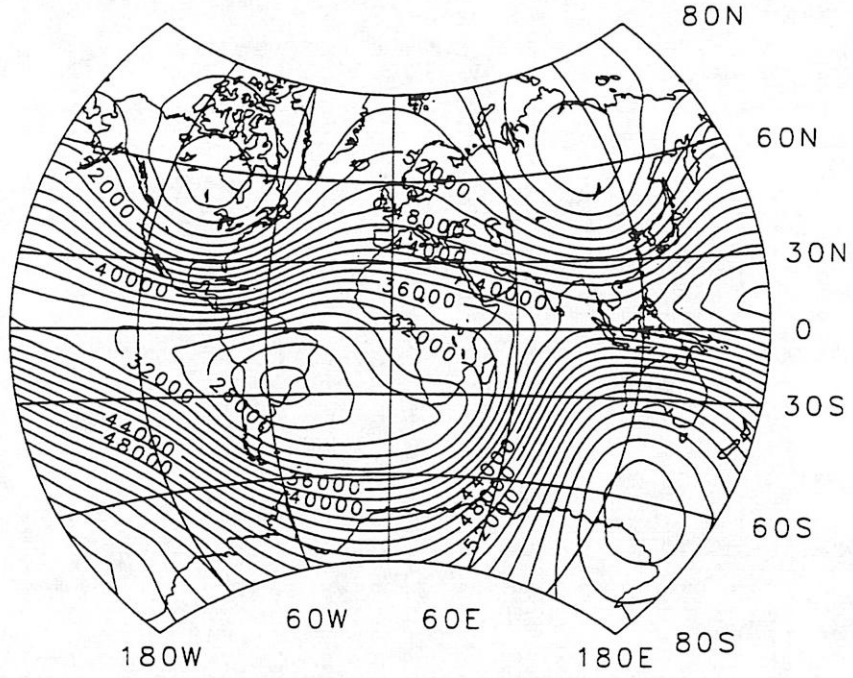
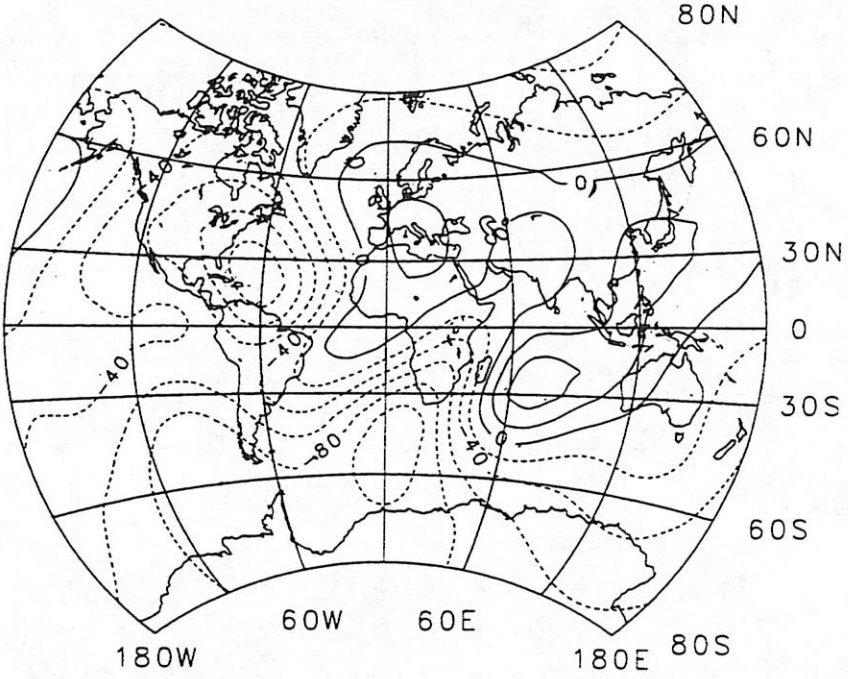
DGRF 1985 - TOTAL FIELD F

Figure 13 (**F**, top) Figure 14 ($\dot{\mathbf{F}}$, bottom)





TOTAL FIELD

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	56784	56777	56770	56761	56751	56741	56730	56718	56705	56692	56678	56663	56648	56633	56618	56602	56586	56571	56555
	-41.8	-41.8	-41.7	-41.7	-41.6	-41.6	-41.5	-41.4	-41.4	-41.3	-41.2	-41.1	-41.0	-40.9	-40.8	-40.8	-40.7	-40.6	-40.5
85	57340	57308	57276	57245	57215	57185	57155	57124	57092	57058	57022	56982	56938	56890	56837	56780	56718	56651	56579
	-43.6	-43.4	-43.2	-43.0	-42.7	-42.5	-42.2	-42.0	-41.7	-41.4	-41.1	-40.8	-40.5	-40.2	-39.9	-39.5	-39.2	-38.8	-38.4
80	57623	57571	57535	57516	57511	57518	57535	57556	57580	57600	57615	57619	57609	57583	57538	57472	57385	57276	57146
	-41.0	-40.6	-40.1	-39.7	-39.3	-39.0	-38.8	-38.6	-38.4	-38.3	-38.2	-38.0	-37.9	-37.8	-37.5	-37.2	-36.9	-36.4	-35.9
75	57324	57275	57273	57317	57401	57518	57661	57819	57984	58144	58292	58417	58512	58570	58585	58554	58474	58345	58168
	-33.5	-32.8	-32.2	-31.8	-31.6	-31.6	-31.8	-32.1	-32.6	-33.2	-33.8	-34.4	-35.0	-35.6	-35.9	-36.1	-36.1	-35.9	-35.4
70	56373	56351	56419	56571	56795	57080	57410	57769	58140	58504	58846	59150	59403	59592	59709	59748	59704	59577	59368
	-22.7	-21.9	-21.5	-21.4	-21.7	-22.4	-23.5	-24.9	-26.5	-28.3	-30.1	-32.0	-33.7	-35.3	-36.7	-37.7	-38.3	-38.6	-38.4
65	54775	54799	54958	55241	55633	56113	56660	57249	57855	58453	59019	59531	59972	60323	60574	60713	60735	60637	60420
	-10.7	-10.1	-10.1	-10.7	-11.9	-13.8	-16.2	-19.0	-22.1	-25.4	-28.7	-31.9	-35.0	-37.8	-40.2	-42.2	-43.6	-44.6	-44.8
60	52611	52688	52940	53353	53906	54575	55330	56140	56973	57798	58585	59308	59944	60472	60875	61141	61258	61221	61029
	0.4	0.4	-0.4	-2.0	-4.4	-7.7	-11.6	-16.0	-20.7	-25.4	-30.1	-34.6	-38.8	-42.6	-45.9	-48.8	-51.1	-52.8	-53.7
55	50024	50147	50476	50995	51680	52500	53422	54412	55432	56447	57426	58337	59155	59855	60418	60825	61062	61117	60983
	8.6	7.9	6.1	3.3	-0.5	-5.2	-10.6	-16.5	-22.5	-28.4	-34.2	-39.5	-44.3	-48.7	-52.6	-56.1	-59.1	-61.6	-63.4
50	47191	47349	47731	48319	49086	50002	51032	52140	53287	54437	55556	56614	57581	58434	59147	59699	60068	60235	60185
	13.2	11.5	8.7	4.7	-0.4	-6.4	-13.0	-19.9	-26.9	-33.6	-39.7	-45.3	-50.3	-54.8	-58.8	-62.6	-66.1	-69.4	-72.3
45	44308	44488	44897	45512	46310	47260	48331	49488	50693	51913	53112	54262	55335	56303	57140	57820	58315	58596	58643
	14.0	11.3	7.5	2.5	-3.5	-10.4	-17.7	-25.3	-32.6	-39.5	-45.6	-50.9	-55.4	-59.4	-63.2	-66.9	-70.8	-74.8	-78.9
40	41556	41752	42163	42769	43547	44474	45522	46662	47859	49082	50300	51483	52605	53639	54559	55333	55927	56307	56443
	11.7	8.2	3.6	-2.0	-8.6	-15.9	-23.5	-31.2	-38.4	-44.9	-50.4	-54.9	-58.6	-61.8	-64.9	-68.3	-72.3	-77.1	-82.3
35	39086	39291	39687	40253	40971	41824	42795	43859	44989	46156	47330	48487	49600	50645	51594	52413	53067	53514	53718
	7.5	3.4	-1.7	-7.6	-14.4	-21.6	-29.0	-36.2	-42.9	-48.6	-53.3	-56.9	-59.5	-61.6	-63.8	-66.6	-70.6	-75.9	-82.3
30	37001	37208	37572	38072	38696	39437	40286	41227	42240	43298	44376	45450	46497	47495	48417	49230	49896	50372	50618
	2.6	-1.9	-7.1	-13.1	-19.5	-26.3	-33.1	-39.6	-45.4	-50.3	-54.0	-56.5	-58.0	-59.1	-60.3	-62.4	-66.1	-71.7	-79.1
25	35355	35549	35862	36274	36778	37376	38069	38852	39708	40616	41551	42493	43423	44322	45166	45924	46558	47026	47287
	-2.0	-6.5	-11.7	-17.4	-23.4	-29.5	-35.4	-41.0	-45.8	-49.8	-52.6	-54.2	-54.8	-54.9	-55.2	-56.5	-59.8	-65.3	-73.2
20	34170	34325	34563	34864	35227	35662	36178	36776	37446	38169	38926	39698	40470	41228	41952	42616	43183	43612	43864
	-5.8	-10.2	-15.2	-20.4	-25.8	-31.0	-36.0	-40.6	-44.5	-47.7	-49.7	-50.7	-50.6	-50.0	-49.5	-50.1	-52.7	-57.9	-65.8
15	33467	33544	33675	33843	34050	34308	34632	35030	35495	36011	36564	37138	37724	38311	38887	39426	39898	40264	40486
	-9.0	-13.0	-17.5	-22.2	-26.8	-31.2	-35.2	-38.9	-42.0	-44.5	-46.1	-46.7	-46.2	-45.2	-44.1	-44.1	-45.9	-50.5	-58.0
10	33284	33237	33228	33242	33279	33354	33481	33670	33918	34215	34549	34910	35293	35693	36100	36493	36845	37122	37289
	-11.8	-15.2	-19.1	-23.0	-26.8	-30.3	-33.5	-36.5	-39.0	-41.1	-42.4	-42.9	-42.4	-41.2	-39.9	-39.4	-40.6	-44.2	-50.8
5	33682	33473	33293	33131	32989	32877	32806	32784	32812	32883	32992	33135	33310	33514	33739	33968	34176	34335	34415
	-14.5	-17.3	-20.3	-23.3	-26.2	-28.9	-31.5	-33.9	-36.1	-37.9	-39.2	-39.8	-39.5	-38.6	-37.4	-36.7	-37.3	-40.0	-45.3
0	34721	34322	33950	33601	33273	32972	32703	32471	32279	32125	32012	31939	31907	31914	31950	31998	32039	32047	31998
	-17.3	-19.4	-21.5	-23.5	-25.5	-27.4	-29.4	-31.5	-33.6	-35.5	-37.0	-37.9	-38.1	-37.6	-36.9	-36.2	-36.5	-38.3	-42.2

TOTAL FIELD

LATITUDE \ LONGITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	34721	34322	33950	33601	33273	32972	32703	32471	32279	32125	32012	31939	31907	31914	31950	31998	32039	32047	31998
	-17.3	-19.4	-21.5	-23.5	-25.5	-27.4	-29.4	-31.5	-33.6	-35.5	-37.0	-37.9	-38.1	-37.6	-36.9	-36.2	-36.5	-38.3	-42.2
-5	36406	35812	35245	34704	34189	33701	33238	32803	32397	32027	31698	31417	31184	30996	30839	30695	30545	30369	30151
	-20.2	-21.7	-23.0	-24.1	-25.2	-26.5	-28.0	-29.9	-31.9	-34.0	-35.9	-37.3	-38.1	-38.4	-38.1	-37.9	-38.0	-39.1	-41.6
-10	38662	37887	37136	36414	35722	35055	34410	33785	33182	32611	32083	31605	31180	30800	30449	30106	29750	29365	28942
	-23.0	-24.2	-24.9	-25.4	-25.8	-26.4	-27.6	-29.2	-31.4	-33.8	-36.1	-38.1	-39.7	-40.6	-41.1	-41.3	-41.5	-42.0	-43.3
-15	41335	40408	39499	38619	37769	36945	36140	35350	34579	33835	33130	32475	31868	31302	30757	30210	29639	29030	28380
	-25.9	-27.0	-27.5	-27.5	-27.4	-27.6	-28.3	-29.8	-32.0	-34.6	-37.5	-40.2	-42.5	-44.3	-45.5	-46.2	-46.5	-46.6	-46.8
-20	44234	43192	42160	41154	40177	39228	38298	37383	36482	35602	34753	33943	33170	32425	31686	30932	30141	29301	28417
	-28.7	-30.0	-30.5	-30.4	-29.9	-29.7	-30.1	-31.4	-33.6	-36.5	-39.9	-43.3	-46.5	-49.1	-51.1	-52.2	-52.7	-52.4	-51.8
-25	47182	46063	44950	43857	42795	41761	40749	39752	38766	37792	36835	35897	34975	34058	33128	32166	31154	30085	28969
	-31.5	-33.1	-33.8	-33.6	-33.1	-32.7	-32.8	-33.9	-36.1	-39.3	-43.1	-47.3	-51.3	-54.9	-57.6	-59.3	-59.9	-59.5	-58.2
-30	50052	48897	47744	46610	45504	44430	43379	42342	41312	40283	39250	38210	37157	36081	34967	33802	32576	31289	29959
	-34.1	-36.0	-37.0	-37.0	-36.5	-36.0	-36.1	-37.1	-39.4	-42.9	-47.2	-52.1	-57.0	-61.4	-64.9	-67.2	-68.1	-67.7	-66.1
-35	52782	51631	50479	49345	48239	47162	46108	45066	44023	42964	41880	40760	39596	38378	37097	35746	34327	32849	31336
	-36.4	-38.6	-39.9	-40.1	-39.8	-39.5	-39.7	-40.9	-43.4	-47.2	-52.0	-57.5	-63.1	-68.3	-72.5	-75.5	-76.9	-76.6	-74.9
-40	55362	54250	53137	52038	50964	49914	48882	47855	46814	45741	44621	43439	42185	40851	39433	37934	36363	34739	33094
	-38.3	-40.8	-42.3	-43.0	-43.1	-43.1	-43.7	-45.3	-48.1	-52.2	-57.4	-63.3	-69.4	-75.1	-80.0	-83.4	-85.3	-85.4	-83.8
-45	57798	56754	55708	54671	53650	52645	51647	50641	49609	48529	47384	46158	44841	43427	41919	40326	38663	36958	35244
	-39.9	-42.6	-44.4	-45.5	-46.2	-46.9	-48.1	-50.1	-53.3	-57.7	-63.1	-69.1	-75.4	-81.3	-86.4	-90.2	-92.4	-92.9	-91.7
-50	60067	59114	58153	57194	56239	55287	54327	53346	52324	51244	50087	48840	47495	46050	44510	42890	41210	39498	37790
	-41.5	-44.3	-46.5	-48.1	-49.4	-50.8	-52.6	-55.2	-58.7	-63.2	-68.6	-74.5	-80.5	-86.2	-91.2	-95.0	-97.4	-98.2	-97.4
-55	62086	61239	60377	59504	58623	57728	56810	55858	54856	53788	52642	51407	50078	48656	47151	45577	43955	42313	40681
	-43.4	-46.3	-48.7	-50.8	-52.7	-54.8	-57.2	-60.2	-63.9	-68.3	-73.3	-78.7	-84.1	-89.3	-93.8	-97.3	-99.6	-100.6	-100.2
-60	63704	62976	62222	61444	60642	59813	58948	58039	57075	56046	54944	53762	52499	51160	49753	48292	46796	45289	43795
	-46.1	-48.8	-51.3	-53.7	-56.1	-58.6	-61.4	-64.5	-68.2	-72.2	-76.7	-81.3	-85.9	-90.2	-93.9	-97.0	-99.0	-100.1	-100.1
-65	64731	64132	63495	62821	62112	61363	60572	59731	58837	57883	56866	55784	54639	53435	52181	50889	49573	48251	46942
	-49.6	-52.1	-54.5	-57.0	-59.5	-62.1	-64.9	-67.9	-71.2	-74.8	-78.4	-82.1	-85.8	-89.1	-92.1	-94.5	-96.3	-97.3	-97.6
-70	64983	64518	64007	63451	62851	62207	61517	60780	59994	59157	58270	57334	56352	55328	54271	53188	52090	50989	49897
	-54.1	-56.2	-58.3	-60.5	-62.8	-65.2	-67.7	-70.3	-73.1	-75.9	-78.7	-81.5	-84.2	-86.7	-88.9	-90.7	-92.2	-93.2	-93.8
-75	64327	63996	63618	63193	62724	62211	61656	61059	60422	59745	59030	58280	57499	56691	55861	55016	54161	53306	52456
	-59.4	-61.0	-62.6	-64.4	-66.2	-68.0	-70.0	-72.0	-74.0	-76.0	-78.0	-80.0	-81.9	-83.6	-85.2	-86.5	-87.7	-88.6	-89.3
-80	62718	62515	62270	61987	61666	61310	60920	60498	60046	59566	59060	58531	57983	57418	56841	56254	55663	55071	54484
	-65.3	-66.3	-67.3	-68.5	-69.6	-70.8	-72.1	-73.4	-74.7	-75.9	-77.2	-78.4	-79.6	-80.7	-81.8	-82.7	-83.6	-84.4	-85.0
-85	60209	60117	60001	59862	59700	59518	59316	59096	58859	58607	58341	58063	57775	57479	57177	56872	56564	56256	55951
	-71.5	-71.9	-72.3	-72.8	-73.4	-73.9	-74.5	-75.1	-75.7	-76.3	-76.9	-77.5	-78.1	-78.7	-79.2	-79.7	-80.2	-80.7	-81.1
-90	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932
	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5

TOTAL FIELD

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	56555	56540	56525	56511	56497	56484	56471	56460	56450	56441	56433	56427	56422	56418	56417	56417	56418	56421	56426
	-40.5	-40.4	-40.3	-40.2	-40.1	-40.0	-40.0	-39.9	-39.8	-39.8	-39.7	-39.7	-39.7	-39.6	-39.6	-39.6	-39.6	-39.6	-39.6
85	56579	56504	56425	56344	56262	56179	56097	56017	55940	55868	55802	55742	55691	55649	55618	55597	55588	55591	55606
	-38.4	-38.0	-37.6	-37.2	-36.7	-36.3	-35.9	-35.5	-35.1	-34.7	-34.3	-34.0	-33.8	-33.5	-33.3	-33.2	-33.1	-33.1	-33.1
80	57146	56997	56829	56646	56450	56246	56036	55825	55618	55417	55227	55052	54895	54760	54649	54565	54510	54485	54491
	-35.9	-35.2	-34.4	-33.6	-32.7	-31.7	-30.6	-29.6	-28.5	-27.4	-26.4	-25.5	-24.7	-23.9	-23.3	-22.8	-22.5	-22.3	-22.2
75	58168	57945	57680	57380	57049	56696	56328	55954	55580	55216	54869	54545	54252	53994	53777	53604	53479	53404	53381
	-35.4	-34.7	-33.6	-32.4	-30.8	-29.1	-27.2	-25.2	-23.2	-21.1	-19.1	-17.2	-15.5	-14.0	-12.7	-11.7	-10.9	-10.4	-10.2
70	59368	59081	58722	58300	57826	57312	56772	56217	55663	55121	54604	54122	53684	53298	52970	52705	52506	52376	52317
	-38.4	-37.7	-36.5	-34.9	-32.7	-30.2	-27.3	-24.1	-20.8	-17.4	-14.1	-11.0	-8.1	-5.6	-3.4	-1.7	-0.4	0.4	0.9
65	60420	60089	59651	59119	58508	57835	57121	56386	55650	54933	54251	53619	53049	52549	52126	51785	51528	51357	51272
	-44.8	-44.4	-43.3	-41.4	-38.8	-35.4	-31.5	-27.0	-22.3	-17.4	-12.6	-8.0	-3.8	-0.1	3.1	5.6	7.5	8.8	9.6
60	61029	60683	60194	59574	58843	58025	57149	56243	55336	54457	53628	52868	52191	51606	51119	50733	50448	50264	50178
	-53.7	-53.9	-53.1	-51.2	-48.4	-44.4	-39.6	-33.9	-27.8	-21.3	-14.9	-8.7	-3.1	1.9	6.2	9.6	12.2	14.1	15.3
55	60983	60659	60150	59472	58647	57706	56686	55627	54570	53552	52604	51748	50999	50367	49854	49459	49181	49016	48958
	-63.4	-64.4	-64.3	-63.0	-60.3	-56.2	-50.7	-44.1	-36.6	-28.7	-20.6	-12.9	-5.8	0.6	6.0	10.5	14.0	16.6	18.4
50	60185	59911	59415	58709	57819	56781	55644	54460	53281	52156	51123	50209	49430	48790	48288	47920	47680	47561	47557
	-72.3	-74.4	-75.5	-75.2	-73.1	-69.2	-63.5	-56.2	-47.7	-38.5	-29.1	-19.9	-11.3	-3.6	3.1	8.7	13.3	17.0	19.6
45	58643	58438	57977	57270	56345	55243	54022	52746	51481	50286	49208	48276	47503	46891	46433	46118	45938	45883	45943
	-78.9	-82.5	-85.1	-86.3	-85.4	-82.3	-76.8	-69.2	-60.0	-49.8	-39.1	-28.6	-18.7	-9.7	-1.6	5.3	11.1	15.9	19.6
40	56443	56310	55898	55214	54283	53152	51885	50558	49247	48023	46936	46020	45284	44726	44330	44084	43973	43987	44115
	-82.3	-87.6	-92.1	-95.1	-95.9	-94.0	-89.3	-81.9	-72.3	-61.4	-49.7	-38.0	-26.9	-16.6	-7.3	1.0	8.2	14.2	19.0
35	53718	53650	53292	52648	51741	50618	49348	48013	46698	45479	44415	43537	42856	42361	42035	41860	41819	41901	42092
	-82.3	-89.2	-95.8	-101.0	-103.8	-103.6	-100.0	-93.1	-83.6	-72.2	-59.8	-47.2	-34.9	-23.4	-12.8	-3.3	5.0	12.2	17.9
30	50618	50599	50297	49708	48852	47775	46543	45241	43958	42774	41753	40926	40304	39874	39616	39510	39537	39681	39929
	-79.1	-87.5	-96.1	-103.5	-108.4	-110.1	-108.0	-102.1	-92.9	-81.4	-68.4	-54.9	-41.6	-28.9	-17.3	-6.8	2.4	10.2	16.5
25	47287	47304	47055	46533	45752	44751	43593	42359	41138	40014	39049	38282	37722	37358	37170	37133	37226	37432	37731
	-73.2	-82.9	-93.1	-102.4	-109.6	-113.2	-112.7	-107.9	-99.3	-87.8	-74.3	-60.0	-45.7	-32.1	-19.7	-8.6	0.9	8.8	14.9
20	43864	43903	43703	43253	42561	41659	40601	39462	38329	37284	36394	35700	35216	34932	34825	34868	35036	35307	35658
	-65.8	-76.0	-87.3	-98.2	-107.1	-112.6	-113.6	-110.0	-102.0	-90.5	-76.5	-61.4	-46.2	-31.9	-19.0	-7.9	1.2	8.4	13.7
15	40486	40529	40367	39986	39386	38591	37648	36623	35599	34658	33869	33278	32900	32726	32730	32878	33138	33483	33892
	-58.0	-68.1	-79.7	-91.4	-101.4	-108.2	-110.5	-107.8	-100.3	-88.7	-74.2	-58.4	-42.5	-27.7	-14.9	-4.5	3.6	9.4	13.1
10	37289	37314	37169	36839	36320	35627	34802	33904	33011	32204	31553	31104	30874	30852	31002	31283	31655	32091	32571
	-50.8	-60.1	-71.3	-82.9	-93.2	-100.5	-103.5	-101.3	-94.0	-82.2	-67.3	-50.9	-34.7	-20.0	-8.0	1.2	7.6	11.5	13.3
5	34415	34386	34225	33914	33450	32844	32132	31370	30629	29987	29510	29243	29197	29355	29673	30104	30604	31147	31716
	-45.3	-53.2	-63.1	-73.7	-83.4	-90.4	-93.2	-91.0	-83.6	-71.7	-56.6	-40.1	-24.2	-10.5	0.1	7.4	11.8	13.6	13.2
0	31998	31871	31647	31313	30868	30325	29716	29093	28520	28067	27789	27722	27869	28206	28685	29259	29886	30541	31209
	-42.2	-48.3	-56.2	-65.0	-73.1	-78.9	-80.9	-78.1	-70.4	-58.5	-43.8	-28.1	-13.6	-1.7	6.8	11.9	14.0	13.6	11.2

TOTAL FIELD

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	31998	31871	31647	31313	30868	30325	29716	29093	28520	28067	27789	27722	27869	28206	28685	29259	29886	30541	31209
	-42.2	-48.3	-56.2	-65.0	-73.1	-78.9	-80.9	-78.1	-70.4	-58.5	-43.8	-28.1	-13.6	-1.7	6.8	11.9	14.0	13.6	11.2
-5	30151	29877	29539	29134	28667	28156	27633	27144	26744	26486	26408	26530	26846	27327	27930	28613	29343	30096	30854
	-41.6	-45.7	-51.3	-57.6	-63.4	-67.3	-67.9	-64.3	-56.4	-44.9	-31.3	-17.5	-5.3	4.0	10.0	12.5	12.3	9.8	5.6
-10	28942	28479	27980	27456	26926	26413	25952	25582	25341	25261	25359	25635	26072	26642	27314	28055	28842	29653	30464
	-43.3	-45.5	-48.7	-52.2	-55.4	-57.0	-55.9	-51.4	-43.5	-33.1	-21.5	-10.3	-1.1	5.1	8.1	8.1	5.6	1.2	-4.7
-15	28380	27699	27005	26326	25695	25147	24717	24435	24322	24386	24617	24998	25504	26109	26791	27534	28319	29127	29927
	-46.8	-47.3	-48.2	-49.2	-49.7	-49.0	-46.3	-41.1	-33.7	-24.8	-15.7	-7.7	-1.8	1.2	1.2	-1.3	-6.0	-12.1	-19.4
-20	28417	27505	26601	25747	24989	24375	23939	23706	23676	23835	24152	24590	25118	25713	26360	27051	27774	28510	29226
	-51.8	-50.9	-49.8	-48.6	-46.8	-44.1	-40.1	-34.6	-27.9	-20.9	-14.4	-9.6	-7.1	-7.3	-10.1	-15.0	-21.7	-29.3	-37.6
-25	28969	27834	26722	25690	24795	24091	23616	23386	23388	23588	23938	24390	24905	25457	26035	26634	27246	27854	28427
	-58.2	-56.2	-53.7	-50.6	-47.0	-42.8	-37.9	-32.3	-26.6	-21.4	-17.4	-15.5	-16.0	-19.0	-24.4	-31.5	-39.8	-48.7	-57.4
-30	29959	28619	27321	26126	25099	24295	23753	23481	23460	23644	23977	24400	24868	25353	25840	26323	26797	27246	27650
	-66.1	-63.3	-59.7	-55.3	-50.5	-45.2	-39.7	-34.3	-29.5	-25.9	-24.1	-24.6	-27.5	-32.9	-40.2	-49.1	-58.6	-68.1	-76.8
-35	31336	29829	28381	27054	25913	25011	24381	24030	23935	24048	24308	24657	25045	25438	25818	26177	26509	26805	27055
	-74.9	-71.7	-67.5	-62.4	-56.8	-51.0	-45.3	-40.1	-36.1	-33.8	-33.6	-35.8	-40.5	-47.4	-56.1	-65.9	-76.0	-85.5	-93.6
-40	33094	31470	29920	28504	27278	26288	25564	25107	24896	24887	25025	25253	25524	25801	26065	26302	26510	26685	26829
	-83.8	-80.7	-76.3	-71.0	-65.2	-59.2	-53.6	-48.9	-45.6	-44.1	-45.0	-48.2	-53.9	-61.5	-70.7	-80.6	-90.4	-99.2	-106.0
-45	35244	33566	31973	30515	29239	28183	27367	26792	26441	26277	26254	26326	26449	26592	26732	26860	26972	27072	27170
	-91.7	-88.9	-84.8	-79.7	-74.1	-68.5	-63.4	-59.2	-56.5	-55.7	-57.1	-60.7	-66.5	-74.0	-82.7	-91.8	-100.6	-108.0	-113.2
-50	37790	36126	34547	33096	31809	30713	29822	29137	28644	28316	28120	28020	27983	27985	28006	28040	28084	28148	28247
	-97.4	-95.1	-91.6	-87.2	-82.3	-77.4	-73.0	-69.6	-67.5	-67.1	-68.6	-72.0	-77.2	-83.8	-91.2	-98.9	-105.9	-111.6	-115.1
-55	40681	39094	37586	36189	34929	33825	32889	32119	31506	31035	30682	30424	30240	30112	30029	29986	29985	30036	30154
	-100.2	-98.5	-95.8	-92.4	-88.6	-84.7	-81.3	-78.6	-77.1	-77.0	-78.3	-81.1	-85.3	-90.5	-96.2	-101.9	-107.0	-110.9	-112.9
-60	43795	42341	40952	39651	38457	37385	36441	35627	34938	34366	33898	33521	33223	32996	32833	32733	32701	32745	32877
	-100.1	-99.1	-97.4	-95.0	-92.4	-89.7	-87.3	-85.5	-84.5	-84.5	-85.5	-87.6	-90.5	-94.1	-98.1	-101.9	-105.2	-107.5	-108.5
-65	46942	45663	44433	43268	42182	41183	40280	39474	38764	38149	37623	37182	36819	36534	36323	36189	36136	36170	36301
	-97.6	-97.3	-96.5	-95.2	-93.7	-92.1	-90.8	-89.7	-89.2	-89.3	-90.0	-91.4	-93.2	-95.4	-97.7	-100.0	-101.8	-103.1	-103.4
-70	49897	48827	47790	46798	45858	44981	44170	43429	42762	42168	41649	41203	40832	40534	40312	40168	40106	40131	40248
	-93.8	-93.9	-93.8	-93.4	-92.8	-92.3	-91.7	-91.4	-91.2	-91.4	-91.9	-92.6	-93.6	-94.8	-95.9	-97.0	-97.9	-98.3	-98.3
-75	52456	51620	50805	50019	49267	48556	47890	47274	46710	46202	45753	45363	45035	44772	44575	44448	44392	44411	44508
	-89.3	-89.8	-90.2	-90.3	-90.4	-90.5	-90.5	-90.6	-90.7	-90.9	-91.2	-91.6	-92.1	-92.5	-93.0	-93.4	-93.6	-93.6	-93.4
-80	54484	53905	53338	52789	52262	51759	51286	50845	50439	50072	49745	49462	49224	49034	48893	48804	48768	48786	48860
	-85.0	-85.6	-86.1	-86.5	-86.9	-87.2	-87.5	-87.7	-88.0	-88.2	-88.4	-88.6	-88.7	-88.9	-88.9	-88.9	-88.9	-88.7	-88.4
-85	55951	55651	55357	55072	54799	54538	54292	54064	53854	53664	53497	53352	53232	53138	53070	53029	53016	53032	53076
	-81.1	-81.5	-81.9	-82.2	-82.6	-82.8	-83.1	-83.3	-83.4	-83.6	-83.7	-83.8	-83.8	-83.8	-83.7	-83.7	-83.5	-83.4	-83.1
-90	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932
	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5

TOTAL FIELD

LONGITUDE: LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	56426	56432	56440	56450	56461	56473	56486	56501	56516	56533	56550	56567	56585	56603	56621	56638	56656	56673	56689
	-39.6	-39.7	-39.7	-39.7	-39.8	-39.9	-39.9	-40.0	-40.1	-40.2	-40.3	-40.4	-40.5	-40.6	-40.7	-40.8	-40.9	-41.0	-41.1
85	55606	55634	55674	55726	55790	55864	55948	56041	56141	56247	56358	56471	56586	56701	56813	56922	57025	57121	57210
	-33.1	-33.2	-33.4	-33.6	-33.8	-34.1	-34.5	-34.9	-35.3	-35.8	-36.3	-36.8	-37.4	-37.9	-38.5	-39.1	-39.6	-40.2	-40.7
80	54491	54530	54601	54703	54837	54999	55189	55404	55640	55894	56161	56437	56718	56997	57269	57530	57774	57996	58193
	-22.2	-22.3	-22.5	-22.8	-23.3	-23.9	-24.5	-25.3	-26.1	-27.0	-28.0	-29.0	-30.0	-31.1	-32.3	-33.4	-34.5	-35.7	-36.8
75	53381	53411	53495	53632	53821	54062	54350	54683	55056	55464	55899	56355	56822	57290	57749	58188	58596	58964	59282
	-10.2	-10.2	-10.4	-10.8	-11.3	-12.1	-12.9	-13.9	-14.9	-16.1	-17.3	-18.6	-20.0	-21.4	-22.9	-24.4	-26.0	-27.6	-29.1
70	52317	52329	52413	52568	52794	53090	53452	53878	54363	54901	55484	56103	56745	57395	58039	58658	59235	59752	60194
	0.9	1.0	0.9	0.5	-0.1	-0.9	-1.8	-2.9	-4.0	-5.2	-6.4	-7.8	-9.2	-10.7	-12.3	-14.0	-15.7	-17.5	-19.3
65	51272	51273	51358	51526	51777	52107	52516	53002	53560	54187	54876	55616	56395	57194	57993	58769	59495	60146	60697
	9.6	9.9	9.8	9.5	8.8	8.0	7.1	6.1	5.0	3.8	2.6	1.3	0.0	-1.4	-2.9	-4.5	-6.1	-7.8	-9.4
60	50178	50187	50289	50479	50754	51111	51547	52063	52657	53328	54071	54879	55739	56634	57539	58426	59262	60014	60647
	15.3	16.0	16.1	15.8	15.2	14.3	13.3	12.1	10.9	9.7	8.4	7.1	5.8	4.5	3.2	1.9	0.7	-0.6	-1.8
55	48958	49003	49143	49371	49679	50063	50520	51048	51649	52325	53076	53899	54783	55714	56665	57606	58499	59305	59982
	18.4	19.5	20.0	19.8	19.2	18.2	16.9	15.5	13.9	12.2	10.5	9.0	7.5	6.2	5.1	4.1	3.4	2.8	2.4
50	47557	47657	47853	48133	48486	48902	49378	49911	50504	51162	51888	52685	53545	54456	55395	56330	57224	58032	58710
	19.6	21.4	22.3	22.4	21.8	20.6	18.9	16.8	14.5	12.1	9.7	7.5	5.5	4.0	2.9	2.3	2.2	2.5	3.2
45	45943	46110	46369	46706	47106	47558	48053	48590	49170	49801	50488	51234	52037	52888	53766	54643	55484	56246	56884
	19.6	22.2	23.8	24.2	23.6	22.1	19.9	17.1	13.8	10.4	7.0	3.8	1.2	-0.7	-1.9	-2.2	-1.6	-0.3	1.7
40	44115	44346	44663	45051	45493	45975	46487	47027	47597	48202	48847	49536	50267	51033	51818	52601	53349	54026	54591
	19.0	22.5	24.6	25.4	24.9	23.1	20.4	16.8	12.6	8.2	3.8	-0.3	-3.6	-6.0	-7.2	-7.1	-5.9	-3.6	-0.4
35	42092	42379	42744	43170	43640	44139	44660	45201	45762	46345	46954	47589	48248	48923	49604	50273	50908	51479	51952
	17.9	22.1	24.7	25.8	25.3	23.3	20.2	16.1	11.3	6.1	1.0	-3.7	-7.5	-10.0	-11.1	-10.6	-8.7	-5.5	-1.4
30	39929	40263	40664	41113	41594	42096	42613	43145	43693	44257	44836	45426	46021	46615	47199	47760	48284	48750	49131
	16.5	21.0	23.8	24.8	24.3	22.2	18.9	14.7	9.7	4.4	-0.9	-5.6	-9.4	-11.8	-12.6	-11.6	-9.1	-5.3	-0.5
25	37731	38105	38532	38993	39471	39959	40456	40965	41488	42027	42577	43132	43681	44217	44731	45213	45654	46039	46346
	14.9	19.2	21.6	22.3	21.5	19.3	16.0	11.9	7.3	2.5	-2.2	-6.3	-9.5	-11.3	-11.5	-10.1	-7.2	-3.1	1.8
20	35658	36070	36518	36984	37450	37911	38369	38833	39312	39812	40330	40859	41386	41900	42389	42843	43250	43597	43866
	13.7	17.0	18.5	18.4	16.9	14.3	10.9	7.2	3.4	-0.3	-3.6	-6.4	-8.3	-9.0	-8.6	-6.8	-3.9	0.1	4.7
15	33892	34345	34818	35290	35741	36164	36565	36960	37370	37812	38293	38808	39344	39883	40407	40897	41335	41704	41982
	13.1	15.0	15.0	13.6	10.9	7.5	3.8	0.4	-2.5	-4.6	-5.9	-6.6	-6.6	-6.1	-4.8	-2.9	-0.2	3.1	6.9
10	32571	33078	33587	34074	34512	34891	35218	35521	35839	36210	36656	37179	37764	38384	39009	39607	40147	40600	40939
	13.3	13.2	11.5	8.2	3.9	-0.8	-5.2	-8.5	-10.3	-10.5	-9.4	-7.4	-5.0	-2.7	-0.6	1.4	3.4	5.8	8.7
5	31716	32294	32856	33369	33799	34129	34373	34573	34793	35097	35526	36091	36774	37536	38328	39101	39807	40404	40852
	13.2	11.1	7.3	2.1	-4.1	-10.3	-15.6	-18.9	-19.5	-17.5	-13.3	-8.1	-3.0	1.4	4.5	6.6	8.0	9.3	11.2
0	31209	31871	32496	33039	33459	33739	33900	34005	34146	34413	34869	35530	36369	37330	38346	39348	40273	41061	41665
	11.2	7.1	1.4	-5.6	-13.4	-21.0	-26.9	-29.8	-28.8	-24.1	-16.5	-7.7	0.6	7.2	11.5	13.7	14.5	14.9	15.8

TOTAL FIELD

LATITUDE \ LONGITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	31209	31871	32496	33039	33459	33739	33900	34005	34146	34413	34869	35530	36369	37330	38346	39348	40273	41061	41665
	11.2	7.1	1.4	-5.6	-13.4	-21.0	-26.9	-29.8	-28.8	-24.1	-16.5	-7.7	0.6	7.2	11.5	13.7	14.5	14.9	15.8
-5	30854	31592	32267	32826	33226	33452	33541	33580	33689	33981	34530	35351	36405	37618	38903	40175	41354	42372	43170
	5.6	-0.2	-7.5	-15.9	-24.7	-32.7	-38.3	-40.0	-36.7	-28.7	-17.3	-4.9	6.5	15.3	20.7	23.1	23.5	23.0	22.8
-10	30464	31238	31924	32466	32821	32990	33030	33052	33197	33592	34313	35364	36688	38192	39775	41339	42797	44070	45095
	-4.7	-11.8	-20.1	-29.0	-37.8	-45.0	-49.1	-48.2	-41.7	-30.0	-14.9	1.0	14.9	25.3	31.5	33.9	33.8	32.4	31.0
-15	29927	30674	31312	31788	32074	32190	32214	32280	32540	33122	34088	35426	37057	38874	40765	42628	44370	45911	47182
	-19.4	-27.4	-35.9	-44.4	-51.9	-57.1	-58.1	-53.7	-43.2	-27.5	-9.0	9.3	24.8	35.9	42.1	44.2	43.3	40.9	38.1
-20	29226	29876	30406	30776	30979	31058	31114	31292	31743	32581	33845	35498	37446	39570	41757	43902	45916	47717	49239
	-37.6	-45.9	-53.9	-60.9	-66.0	-67.7	-64.6	-55.7	-40.9	-21.8	-1.0	18.5	34.2	44.9	50.4	51.4	49.5	45.9	41.9
-25	28427	28925	29309	29559	29691	29772	29918	30274	30976	32110	33687	35646	37883	40278	42719	45109	47360	49396	51151
	-57.4	-65.4	-72.1	-76.8	-78.5	-75.9	-68.1	-54.6	-36.1	-14.5	7.2	26.3	40.8	50.0	54.1	53.8	50.6	45.9	40.7
-30	27650	27982	28222	28375	28481	28623	28921	29507	30488	31916	33774	35988	38450	41050	43681	46255	48690	50915	52870
	-76.8	-83.9	-88.7	-90.4	-88.2	-81.2	-68.8	-51.5	-30.5	-8.2	12.8	30.1	42.6	49.7	51.9	50.2	45.9	40.4	34.5
-35	27055	27250	27393	27510	27658	27927	28426	29261	30506	32179	34246	36629	39229	41946	44687	47371	49925	52282	54386
	-93.6	-99.2	-101.8	-100.5	-94.5	-83.6	-67.9	-48.4	-26.8	-5.4	13.4	28.2	38.1	43.0	43.6	40.9	36.0	30.1	24.2
-40	26829	26950	27068	27225	27485	27928	28644	29707	31157	32992	35171	37622	40261	43003	45768	48483	51083	53508	55703
	-106.0	-110.0	-110.2	-106.2	-97.5	-84.2	-67.1	-47.4	-27.1	-8.1	7.9	19.9	27.4	30.6	30.1	26.9	22.1	16.6	11.3
-45	27170	27285	27448	27705	28114	28739	29643	30871	32440	34340	36530	38952	41537	44216	46922	49591	52165	54589	56812
	-113.2	-115.3	-113.7	-107.9	-98.0	-84.4	-67.9	-50.1	-32.5	-16.5	-3.5	6.0	11.7	13.8	13.1	10.2	6.1	1.6	-2.5
-50	28247	28402	28647	29021	29570	30338	31364	32673	34271	36142	38254	40562	43013	45552	48124	50673	53150	55502	57685
	-115.1	-115.7	-113.0	-106.9	-97.4	-85.1	-71.0	-56.2	-42.0	-29.3	-19.0	-11.5	-7.0	-5.2	-5.6	-7.5	-10.3	-13.2	-15.8
-55	30154	30360	30679	31143	31782	32624	33692	34996	36536	38299	40260	42386	44637	46970	49339	51700	54009	56220	58294
	-112.9	-112.6	-109.8	-104.3	-96.5	-86.7	-75.8	-64.5	-53.6	-44.0	-36.0	-30.1	-26.3	-24.3	-23.9	-24.5	-25.7	-26.9	-27.9
-60	32877	33113	33472	33974	34637	35478	36508	37730	39143	40735	42487	44375	46370	48439	50546	52654	54728	56729	58624
	-108.5	-107.9	-105.5	-101.4	-95.6	-88.6	-80.8	-72.8	-65.1	-58.0	-52.1	-47.3	-43.9	-41.6	-40.3	-39.6	-39.3	-39.1	-38.7
-65	36301	36539	36895	37382	38008	38783	39711	40792	42023	43394	44892	46498	48192	49948	51740	53540	55318	57047	58698
	-103.4	-102.8	-101.0	-98.2	-94.4	-89.9	-84.8	-79.5	-74.3	-69.4	-65.0	-61.2	-58.1	-55.6	-53.7	-52.1	-50.7	-49.4	-48.1
-70	40248	40463	40783	41213	41757	42419	43199	44097	45107	46222	47432	48724	50083	51492	52930	54378	55816	57221	58575
	-98.3	-97.8	-96.6	-94.8	-92.5	-89.8	-86.7	-83.4	-80.1	-76.8	-73.6	-70.7	-68.1	-65.7	-63.6	-61.6	-59.8	-58.0	-56.3
-75	44508	44686	44946	45292	45724	46243	46847	47533	48298	49137	50040	51000	52007	53049	54113	55186	56255	57307	58327
	-93.4	-92.9	-92.1	-91.0	-89.7	-88.1	-86.3	-84.3	-82.3	-80.2	-78.1	-76.0	-74.0	-72.0	-70.1	-68.3	-66.5	-64.8	-63.2
-80	48860	48990	49177	49421	49722	50078	50488	50949	51458	52011	52603	53229	53882	54557	55246	55942	56638	57325	57998
	-88.4	-88.0	-87.5	-86.8	-86.0	-85.1	-84.1	-83.0	-81.8	-80.5	-79.2	-77.9	-76.6	-75.3	-73.9	-72.6	-71.4	-70.1	-68.9
-85	53076	53149	53250	53378	53534	53715	53922	54151	54402	54673	54961	55264	55579	55903	56234	56569	56904	57237	57565
	-83.1	-82.9	-82.5	-82.2	-81.8	-81.3	-80.8	-80.3	-79.8	-79.2	-78.6	-77.9	-77.3	-76.7	-76.0	-75.4	-74.8	-74.1	-73.6
-90	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932
	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5

TOTAL FIELD

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	56689	56704	56719	56732	56745	56756	56766	56775	56783	56789	56793	56797	56799	56799	56799	56797	56794	56789	56784
	-41.1	-41.2	-41.3	-41.3	-41.4	-41.5	-41.6	-41.6	-41.7	-41.7	-41.8	-41.8	-41.8	-41.9	-41.9	-41.9	-41.9	-41.8	-41.8
85	57210	57290	57360	57420	57469	57508	57536	57554	57562	57562	57554	57539	57519	57495	57467	57436	57404	57372	57340
	-40.7	-41.3	-41.7	-42.2	-42.6	-43.0	-43.3	-43.6	-43.8	-44.0	-44.2	-44.2	-44.3	-44.3	-44.2	-44.1	-44.0	-43.8	-43.6
80	58193	58360	58495	58597	58664	58698	58699	58670	58615	58537	58442	58334	58218	58100	57984	57875	57777	57692	57623
	-36.8	-37.9	-38.9	-39.8	-40.7	-41.4	-42.1	-42.6	-43.0	-43.3	-43.4	-43.5	-43.3	-43.1	-42.8	-42.4	-42.0	-41.5	-41.0
75	59282	59542	59738	59866	59925	59916	59843	59710	59527	59303	59049	58778	58501	58231	57979	57755	57567	57422	57324
	-29.1	-30.7	-32.2	-33.5	-34.8	-36.0	-36.9	-37.7	-38.2	-38.5	-38.6	-38.5	-38.1	-37.6	-36.9	-36.1	-35.2	-34.3	-33.5
70	60194	60544	60794	60935	60964	60882	60696	60417	60058	59637	59174	58691	58209	57750	57332	56973	56688	56485	56373
	-19.3	-21.1	-22.8	-24.5	-26.0	-27.4	-28.6	-29.5	-30.1	-30.4	-30.4	-30.0	-29.4	-28.5	-27.4	-26.2	-24.9	-23.7	-22.7
65	60697	61127	61417	61555	61536	61362	61041	60590	60029	59385	58689	57973	57268	56606	56015	55519	55139	54888	54775
	-9.4	-11.1	-12.8	-14.4	-15.9	-17.2	-18.4	-19.2	-19.8	-20.1	-19.9	-19.4	-18.6	-17.4	-16.0	-14.5	-13.0	-11.7	-10.7
60	60647	61132	61444	61566	61487	61211	60747	60118	59351	58484	57556	56611	55691	54837	54085	53467	53005	52717	52611
	-1.8	-3.0	-4.1	-5.2	-6.2	-7.1	-7.9	-8.4	-8.8	-8.9	-8.7	-8.1	-7.2	-6.0	-4.5	-3.0	-1.5	-0.3	0.4
55	59982	60493	60806	60898	60755	60378	59780	58985	58030	56960	55824	54678	53572	52555	51670	50953	50430	50118	50024
	2.4	2.2	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.8	2.1	2.6	3.3	4.3	5.5	6.7	7.8	8.5	8.6
50	58710	59214	59508	59561	59356	58892	58180	57249	56140	54905	53605	52300	51051	49914	48936	48154	47594	47271	47191
	3.2	4.2	5.4	6.6	7.8	8.9	9.8	10.5	10.9	11.1	11.3	11.5	11.8	12.3	12.9	13.6	14.0	13.9	13.2
45	56884	57352	57608	57619	57364	56834	56042	55015	53799	52452	51040	49632	48294	47088	46062	45253	44686	44370	44308
	1.7	4.0	6.7	9.4	12.0	14.2	16.0	17.3	18.1	18.3	18.3	18.0	17.7	17.4	17.2	17.0	16.6	15.6	14.0
40	54591	54999	55207	55179	54887	54321	53487	52414	51146	49746	48284	46834	45468	44246	43221	42426	41883	41595	41556
	-0.4	3.3	7.3	11.2	14.9	18.1	20.5	22.2	23.0	23.1	22.6	21.7	20.6	19.5	18.5	17.3	16.0	14.2	11.7
35	51952	52287	52443	52381	52071	51497	50663	49593	48332	46942	45495	44067	42730	41548	40570	39827	39336	39094	39086
	-1.4	3.3	8.2	13.0	17.3	20.9	23.5	25.1	25.7	25.4	24.3	22.7	20.9	19.1	17.2	15.3	13.2	10.7	7.5
30	49131	49393	49500	49413	49102	48547	47749	46728	45527	44206	42835	41488	40236	39139	38245	37582	37162	36976	37001
	-0.5	4.7	10.1	15.1	19.4	22.8	25.1	26.3	26.3	25.4	23.7	21.5	19.1	16.7	14.3	11.9	9.3	6.2	2.6
25	46346	46549	46616	46514	46215	45698	44963	44029	42933	41729	40484	39264	38135	37154	36364	35792	35445	35308	35355
	1.8	7.1	12.4	17.2	21.1	23.9	25.6	26.0	25.3	23.7	21.4	18.7	15.9	13.2	10.5	7.8	5.0	1.8	-2.0
20	43866	44035	44079	43971	43690	43221	42566	41740	40776	39722	38632	37565	36577	35720	35033	34539	34243	34130	34170
	4.7	9.6	14.4	18.7	22.0	24.1	25.0	24.6	23.1	20.9	18.2	15.1	12.1	9.2	6.5	3.8	1.1	-2.1	-5.8
15	41982	42150	42189	42082	41820	41399	40825	40114	39293	38397	37469	36555	35703	34954	34344	33894	33610	33477	33467
	6.9	11.2	15.4	19.2	22.0	23.5	23.7	22.7	20.6	17.9	14.7	11.4	8.2	5.3	2.6	0.0	-2.6	-5.5	-9.0
10	40939	41142	41196	41097	40851	40470	39969	39365	38677	37929	37148	36367	35623	34949	34376	33925	33601	33395	33284
	8.7	12.2	15.8	19.1	21.6	22.7	22.5	20.9	18.3	15.0	11.5	7.9	4.6	1.5	-1.2	-3.7	-6.1	-8.8	-11.8
5	40852	41128	41222	41143	40914	40565	40124	39609	39035	38410	37748	37067	36393	35755	35178	34680	34269	33941	33682
	11.2	13.8	16.8	19.7	21.8	22.5	21.8	19.6	16.3	12.5	8.5	4.6	1.1	-2.1	-4.8	-7.3	-9.6	-12.0	-14.5
0	41665	42052	42218	42182	41982	41666	41275	40833	40349	39819	39244	38630	37994	37357	36742	36166	35637	35156	34721
	15.8	17.4	19.6	21.8	23.2	23.2	21.6	18.6	14.5	10.0	5.5	1.3	-2.3	-5.6	-8.4	-10.9	-13.1	-15.2	-17.3

TOTAL FIELD

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	41665	42052	42218	42182	41982	41666	41275	40833	40349	39819	39244	38630	37994	37357	36742	36166	35637	35156	34721
	15.8	17.4	19.6	21.8	23.2	23.2	21.6	18.6	14.5	10.0	5.5	1.3	-2.3	-5.6	-8.4	-10.9	-13.1	-15.2	-17.3
-5	43170	43711	43989	44031	43887	43619	43280	42900	42486	42028	41515	40942	40318	39662	38992	38323	37665	37025	36406
	22.8	23.3	24.3	25.4	25.6	24.4	21.6	17.4	12.4	7.1	2.2	-2.1	-5.8	-8.9	-11.7	-14.2	-16.4	-18.4	-20.2
-10	45095	45829	46264	46427	46377	46184	45910	45591	45235	44831	44360	43811	43189	42505	41776	41016	40237	39449	38662
	31.0	30.1	29.7	29.2	27.8	25.2	21.0	15.6	9.6	3.8	-1.3	-5.6	-9.1	-12.0	-14.6	-17.1	-19.4	-21.4	-23.0
-15	47182	48140	48770	49099	49184	49099	48908	48654	48351	47987	47544	47010	46382	45671	44891	44054	43174	42262	41335
	38.1	35.8	33.7	31.5	28.5	24.4	19.0	12.8	6.3	0.3	-4.8	-8.9	-12.0	-14.6	-17.0	-19.5	-21.9	-24.1	-25.9
-20	49239	50434	51286	51814	52069	52120	52032	51851	51595	51262	50838	50309	49675	48942	48122	47227	46271	45267	44234
	41.9	38.0	34.5	30.8	26.6	21.5	15.6	9.1	2.7	-3.0	-7.8	-11.4	-14.2	-16.5	-18.9	-21.4	-24.1	-26.6	-28.7
-25	51151	52579	53658	54400	54845	55052	55081	54980	54771	54463	54047	53520	52878	52129	51283	50351	49346	48284	47182
	40.7	35.8	31.2	26.7	21.9	16.7	10.9	5.0	-0.7	-5.7	-9.7	-12.9	-15.4	-17.7	-20.2	-23.0	-26.0	-29.0	-31.5
-30	52870	54506	55799	56750	57388	57759	57914	57896	57737	57451	57042	56513	55866	55108	54250	53301	52274	51185	50052
	34.5	29.0	24.0	19.4	14.9	10.3	5.6	0.9	-3.6	-7.5	-10.7	-13.4	-15.8	-18.3	-21.1	-24.3	-27.8	-31.2	-34.1
-35	54386	56190	57666	58805	59624	60154	60436	60509	60405	60147	59749	59223	58577	57821	56964	56018	54995	53910	52782
	24.2	18.8	14.1	10.1	6.6	3.3	0.1	-3.0	-5.9	-8.6	-11.1	-13.4	-15.8	-18.5	-21.7	-25.4	-29.4	-33.1	-36.4
-40	55703	57624	59238	60531	61506	62182	62588	62757	62720	62506	62135	61627	60997	60257	59420	58498	57504	56453	55362
	11.3	6.6	2.9	0.1	-2.1	-3.8	-5.3	-6.8	-8.2	-9.7	-11.4	-13.4	-15.9	-18.9	-22.5	-26.6	-30.8	-34.9	-38.3
-45	56812	58790	60490	61892	62990	63791	64315	64587	64634	64487	64169	63705	63115	62416	61624	60751	59813	58823	57798
	-2.5	-5.8	-8.3	-9.7	-10.5	-10.7	-10.7	-10.7	-11.0	-11.6	-12.7	-14.4	-16.9	-20.0	-23.8	-28.0	-32.3	-36.4	-39.9
-50	57685	59657	61385	62845	64025	64925	65555	65933	66081	66026	65794	65409	64894	64269	63552	62758	61904	61002	60067
	-15.8	-17.7	-18.7	-18.9	-18.4	-17.4	-16.4	-15.4	-14.9	-14.8	-15.5	-17.0	-19.3	-22.3	-26.0	-30.0	-34.1	-38.1	-41.5
-55	58294	60192	61884	63345	64560	65524	66240	66719	66977	67036	66918	66646	66243	65729	65123	64441	63698	62909	62086
	-27.9	-28.3	-28.1	-27.3	-25.9	-24.3	-22.7	-21.3	-20.3	-19.9	-20.3	-21.4	-23.4	-26.1	-29.3	-32.9	-36.6	-40.2	-43.4
-60	58624	60380	61969	63370	64566	65550	66320	66881	67244	67423	67436	67302	67039	66667	66202	65660	65055	64400	63704
	-38.7	-37.9	-36.8	-35.3	-33.5	-31.6	-29.8	-28.3	-27.2	-26.7	-26.8	-27.7	-29.2	-31.4	-34.0	-36.9	-40.0	-43.1	-46.1
-65	58698	60246	61668	62945	64063	65014	65793	66401	66842	67127	67266	67272	67159	66943	66635	66249	65797	65288	64731
	-48.1	-46.6	-45.0	-43.2	-41.3	-39.5	-37.8	-36.4	-35.4	-34.9	-34.9	-35.4	-36.5	-38.0	-39.9	-42.2	-44.6	-47.1	-49.6
-70	58575	59859	61054	62148	63128	63987	64718	65321	65796	66147	66380	66502	66522	66449	66291	66058	65758	65398	64983
	-56.3	-54.5	-52.8	-51.0	-49.3	-47.8	-46.4	-45.2	-44.4	-43.9	-43.7	-44.0	-44.6	-45.6	-46.9	-48.5	-50.2	-52.1	-54.1
-75	58327	59305	60229	61088	61874	62581	63203	63738	64185	64543	64815	65003	65111	65143	65104	64999	64831	64606	64327
	-63.2	-61.6	-60.1	-58.6	-57.3	-56.1	-55.0	-54.1	-53.5	-53.0	-52.9	-52.9	-53.3	-53.8	-54.6	-55.6	-56.7	-58.0	-59.4
-80	57998	58648	59270	59857	60404	60907	61363	61767	62118	62415	62657	62845	62978	63058	63087	63065	62995	62879	62718
	-68.9	-67.8	-66.7	-65.7	-64.8	-64.0	-63.3	-62.7	-62.2	-61.9	-61.8	-61.7	-61.9	-62.1	-62.5	-63.1	-63.7	-64.5	-65.3
-85	57565	57885	58193	58489	58768	59029	59270	59490	59686	59857	60003	60123	60215	60281	60320	60332	60317	60276	60209
	-73.6	-73.0	-72.5	-72.0	-71.6	-71.2	-70.8	-70.5	-70.3	-70.2	-70.1	-70.0	-70.0	-70.1	-70.3	-70.5	-70.8	-71.1	-71.5
-90	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932	56932
	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5	-77.5

Plots and Tables of IGRF 1990

Declination

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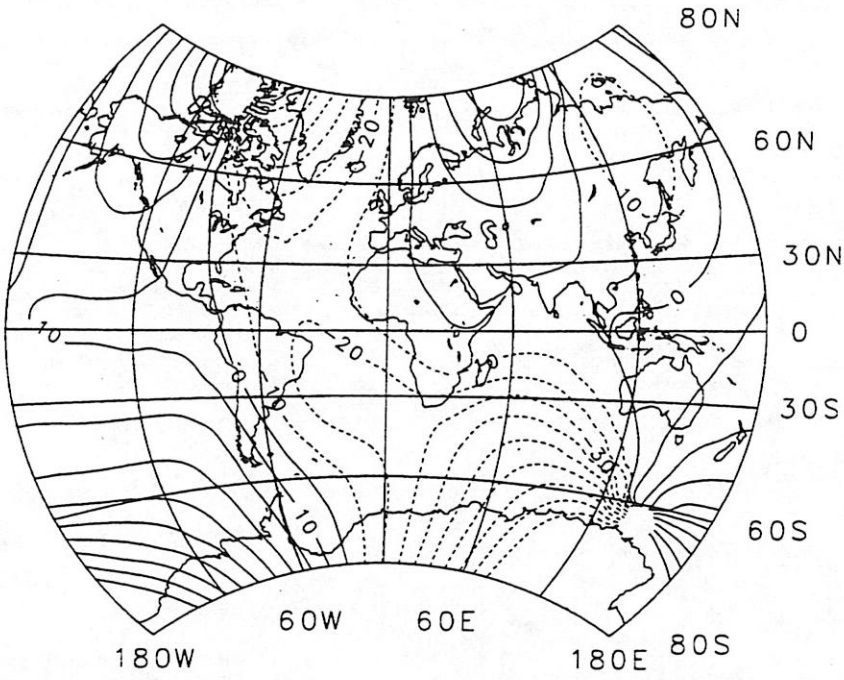
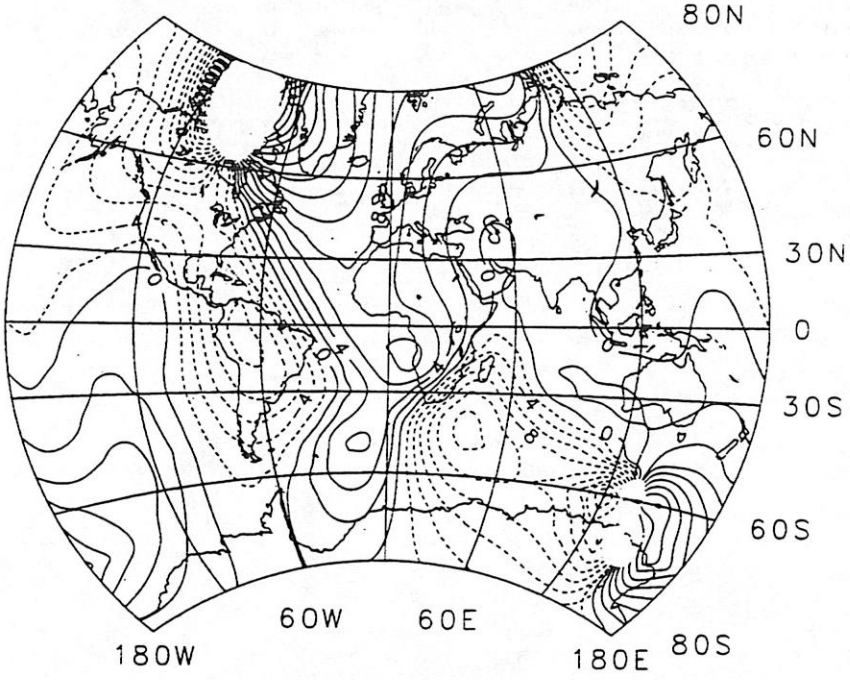
IGRF 1990 - DECLINATION

Figure 15 (**D**, top) Figure 16 ($\dot{\mathbf{D}}$, bottom)





DECLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	138.5	143.6	148.9	154.3	159.7	165.3	170.9	176.5	-177.8	-172.1	-166.3	-160.5	-154.8	-149.0	-143.2	-137.5	-131.8	-126.1	-120.5
	17.7	17.9	18.0	18.2	18.3	18.4	18.5	18.6	18.6	18.7	18.7	18.7	18.6	18.5	18.4	18.3	18.2	18.0	17.8
85	43.7	48.0	52.9	58.5	64.9	72.2	80.7	90.8	102.8	117.4	134.7	153.8	173.1	-169.5	-154.6	-142.2	-131.6	-122.5	-114.3
	-19.6	-20.0	-20.5	-21.1	-21.8	-22.4	-22.8	-22.4	-20.2	-14.6	-4.2	9.7	22.3	29.6	32.0	31.4	29.5	27.3	25.2
80	14.2	18.3	22.6	27.0	31.5	36.1	40.9	45.8	50.9	56.2	61.9	68.4	76.3	88.1	116.0	-162.2	-122.9	-108.9	-100.3
	-7.6	-7.7	-8.0	-8.5	-9.2	-10.1	-11.4	-13.1	-15.4	-18.5	-23.0	-29.9	-41.2	-62.2	-88.2	123.5	90.0	58.6	43.4
75	9.0	13.0	17.0	21.1	25.2	29.3	33.2	37.1	40.9	44.4	47.6	50.4	52.4	52.9	49.9	35.9	-13.6	-57.6	-69.1
	-4.2	-4.4	-4.7	-5.2	-5.9	-6.8	-7.9	-9.2	-11.0	-13.3	-16.3	-20.6	-26.9	-37.1	-55.4	-87.2	-18.5	66.9	53.4
70	7.2	11.0	14.8	18.6	22.3	25.9	29.3	32.5	35.3	37.8	39.8	41.0	41.2	39.7	35.2	25.7	8.4	-14.9	-34.4
	-3.0	-3.4	-3.8	-4.4	-5.2	-6.1	-7.2	-8.5	-10.0	-11.9	-14.1	-17.0	-20.7	-25.5	-31.3	-35.6	-28.8	-2.4	20.3
65	6.5	10.1	13.6	17.1	20.4	23.5	26.3	28.9	31.0	32.7	33.8	34.2	33.5	31.4	27.3	20.4	10.1	-2.9	-16.4
	-2.7	-3.1	-3.7	-4.4	-5.2	-6.2	-7.2	-8.3	-9.6	-11.0	-12.5	-14.3	-16.3	-18.5	-20.5	-21.2	-18.4	-10.2	1.1
60	6.2	9.5	12.8	15.9	18.8	21.4	23.8	25.8	27.4	28.5	29.0	28.9	27.9	25.8	22.3	17.1	10.0	1.3	-8.2
	-2.6	-3.1	-3.8	-4.6	-5.4	-6.3	-7.2	-8.1	-9.0	-9.9	-10.8	-11.7	-12.6	-13.5	-14.1	-14.1	-12.8	-9.5	-4.3
55	6.2	9.2	12.2	14.9	17.4	19.7	21.6	23.1	24.3	25.0	25.2	24.8	23.7	21.8	18.9	14.9	9.6	3.1	-4.0
	-2.7	-3.3	-4.0	-4.7	-5.4	-6.2	-6.9	-7.6	-8.1	-8.6	-9.0	-9.3	-9.5	-9.8	-10.0	-10.0	-9.5	-8.2	-5.8
50	6.4	9.1	11.7	14.1	16.2	18.1	19.6	20.8	21.7	22.1	22.1	21.6	20.6	19.0	16.6	13.3	9.1	4.1	-1.5
	-2.9	-3.5	-4.1	-4.7	-5.3	-5.9	-6.4	-6.8	-7.0	-7.1	-7.1	-7.1	-7.0	-7.0	-7.1	-7.3	-7.4	-7.1	-6.2
45	6.8	9.2	11.4	13.4	15.2	16.7	17.9	18.8	19.4	19.7	19.6	19.1	18.2	16.8	14.8	12.1	8.8	4.7	0.0
	-3.1	-3.6	-4.1	-4.6	-5.0	-5.4	-5.6	-5.8	-5.8	-5.7	-5.5	-5.2	-5.0	-4.9	-5.0	-5.4	-5.9	-6.4	-6.4
40	7.4	9.4	11.2	12.8	14.2	15.4	16.3	17.0	17.4	17.6	17.5	17.0	16.2	15.1	13.4	11.2	8.4	5.0	1.0
	-3.3	-3.7	-4.0	-4.3	-4.5	-4.7	-4.8	-4.7	-4.6	-4.3	-4.0	-3.6	-3.3	-3.2	-3.4	-4.0	-4.9	-5.8	-6.4
35	8.0	9.7	11.1	12.3	13.3	14.1	14.8	15.3	15.6	15.7	15.6	15.2	14.6	13.6	12.2	10.4	8.0	5.1	1.7
	-3.4	-3.7	-3.9	-4.0	-4.0	-3.9	-3.8	-3.7	-3.4	-3.1	-2.7	-2.3	-1.9	-1.9	-2.2	-3.0	-4.1	-5.4	-6.5
30	8.7	10.0	10.9	11.7	12.3	12.9	13.4	13.7	14.0	14.0	13.9	13.6	13.1	12.3	11.2	9.7	7.7	5.3	2.3
	-3.4	-3.7	-3.8	-3.7	-3.5	-3.2	-3.0	-2.7	-2.4	-2.0	-1.6	-1.2	-0.9	-0.8	-1.2	-2.1	-3.5	-5.1	-6.5
25	9.3	10.2	10.8	11.1	11.4	11.7	12.0	12.2	12.4	12.5	12.4	12.1	11.7	11.1	10.3	9.1	7.5	5.4	2.8
	-3.3	-3.6	-3.6	-3.4	-3.0	-2.6	-2.2	-1.9	-1.6	-1.2	-0.8	-0.3	0.0	0.0	-0.4	-1.4	-2.9	-4.7	-6.5
20	9.8	10.3	10.5	10.6	10.6	10.7	10.8	11.0	11.1	11.1	11.0	10.9	10.6	10.2	9.6	8.7	7.4	5.7	3.4
	-3.1	-3.5	-3.5	-3.2	-2.7	-2.1	-1.6	-1.2	-0.9	-0.5	-0.1	0.3	0.6	0.7	0.2	-0.8	-2.4	-4.4	-6.4
15	10.1	10.4	10.3	10.1	9.9	9.8	9.8	9.9	10.0	10.0	10.0	9.9	9.7	9.5	9.1	8.5	7.4	6.0	4.0
	-2.9	-3.4	-3.4	-3.0	-2.4	-1.7	-1.1	-0.7	-0.3	0.0	0.4	0.8	1.1	1.2	0.7	-0.3	-1.9	-4.0	-6.2
10	10.3	10.4	10.1	9.8	9.4	9.3	9.2	9.3	9.3	9.3	9.3	9.2	9.1	9.0	8.8	8.4	7.6	6.4	4.6
	-2.7	-3.1	-3.2	-2.8	-2.1	-1.4	-0.7	-0.3	0.1	0.4	0.8	1.2	1.5	1.5	1.1	0.1	-1.5	-3.6	-5.9
5	10.5	10.4	10.1	9.6	9.3	9.0	9.0	9.0	9.0	9.0	8.9	8.9	8.8	8.8	8.8	8.5	8.0	6.9	5.4
	-2.4	-2.8	-2.9	-2.5	-1.8	-1.1	-0.4	0.1	0.5	0.7	1.1	1.4	1.7	1.8	1.4	0.4	-1.2	-3.3	-5.6
0	10.7	10.6	10.2	9.8	9.4	9.2	9.1	9.1	9.1	9.1	9.0	8.9	8.9	9.0	9.0	8.9	8.4	7.6	6.1
	-2.0	-2.5	-2.5	-2.1	-1.5	-0.7	0.0	0.5	0.8	1.0	1.3	1.6	1.8	1.9	1.5	0.5	-1.0	-3.0	-5.3

DECLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	10.7	10.6	10.2	9.8	9.4	9.2	9.1	9.1	9.1	9.1	9.0	8.9	8.9	9.0	9.0	8.9	8.4	7.6	6.1
	-2.0	-2.5	-2.5	-2.1	-1.5	-0.7	0.0	0.5	0.8	1.0	1.3	1.6	1.8	1.9	1.5	0.5	-1.0	-3.0	-5.3
-5	11.1	10.9	10.6	10.2	9.9	9.7	9.6	9.6	9.6	9.5	9.4	9.3	9.3	9.4	9.4	9.4	9.0	8.3	7.0
	-1.6	-2.0	-2.1	-1.7	-1.1	-0.4	0.3	0.8	1.1	1.3	1.5	1.7	1.8	1.8	1.4	0.5	-0.9	-2.8	-5.0
-10	11.6	11.5	11.2	10.9	10.7	10.5	10.5	10.5	10.5	10.4	10.3	10.1	10.1	10.1	10.2	10.1	9.9	9.2	7.9
	-1.1	-1.5	-1.6	-1.3	-0.7	0.0	0.6	1.1	1.4	1.5	1.6	1.7	1.8	1.7	1.2	0.4	-1.0	-2.8	-4.8
-15	12.4	12.4	12.2	12.0	11.8	11.7	11.7	11.7	11.6	11.5	11.4	11.2	11.1	11.1	11.2	11.1	10.9	10.3	9.1
	-0.6	-1.0	-1.1	-0.8	-0.3	0.3	0.9	1.3	1.6	1.7	1.7	1.8	1.7	1.5	1.0	0.1	-1.1	-2.8	-4.6
-20	13.5	13.5	13.5	13.3	13.2	13.1	13.1	13.1	13.1	13.0	12.8	12.6	12.5	12.5	12.5	12.5	12.3	11.7	10.6
	-0.1	-0.5	-0.6	-0.4	0.0	0.6	1.1	1.5	1.8	1.9	1.9	1.8	1.7	1.3	0.8	-0.1	-1.3	-2.8	-4.4
-25	14.9	15.0	15.0	14.9	14.9	14.8	14.8	14.7	14.7	14.6	14.5	14.4	14.3	14.3	14.3	14.3	14.1	13.5	12.5
	0.4	0.0	-0.1	0.0	0.3	0.8	1.3	1.7	2.0	2.1	2.1	2.0	1.7	1.3	0.7	-0.2	-1.3	-2.7	-4.2
-30	16.7	16.9	16.9	16.9	16.8	16.7	16.7	16.6	16.6	16.5	16.4	16.4	16.4	16.5	16.5	16.5	16.3	15.8	14.7
	0.8	0.4	0.3	0.3	0.6	1.0	1.5	1.9	2.2	2.4	2.4	2.2	1.9	1.5	0.8	-0.1	-1.2	-2.5	-3.8
-35	18.9	19.1	19.1	19.1	19.0	18.9	18.8	18.8	18.7	18.7	18.8	18.8	18.9	19.1	19.2	19.2	18.9	18.3	17.2
	1.3	0.9	0.6	0.6	0.9	1.2	1.7	2.2	2.5	2.7	2.8	2.6	2.3	1.8	1.1	0.1	-0.9	-2.1	-3.4
-40	21.5	21.7	21.7	21.6	21.5	21.4	21.3	21.3	21.3	21.4	21.5	21.7	21.9	22.1	22.2	22.2	21.8	21.1	19.8
	1.7	1.3	1.1	1.0	1.2	1.6	2.1	2.6	3.0	3.2	3.3	3.2	2.8	2.2	1.5	0.5	-0.5	-1.7	-2.8
-45	24.6	24.8	24.8	24.7	24.6	24.5	24.4	24.4	24.5	24.7	24.9	25.1	25.4	25.5	25.5	25.3	24.8	23.8	22.4
	2.3	1.9	1.7	1.6	1.8	2.2	2.7	3.2	3.6	3.9	3.9	3.7	3.3	2.7	1.8	0.9	-0.2	-1.2	-2.3
-50	28.8	28.9	28.9	28.8	28.6	28.5	28.4	28.5	28.6	28.7	29.0	29.1	29.3	29.3	29.0	28.5	27.7	26.4	24.7
	3.3	2.8	2.6	2.6	2.8	3.1	3.6	4.0	4.3	4.5	4.5	4.2	3.7	2.9	2.1	1.1	0.1	-0.9	-1.9
-55	34.7	34.7	34.5	34.3	34.1	33.9	33.8	33.8	33.8	33.8	33.9	33.8	33.7	33.3	32.7	31.8	30.6	29.0	27.0
	4.8	4.3	4.0	4.0	4.1	4.3	4.6	4.9	5.1	5.0	4.8	4.4	3.7	2.9	2.0	1.1	0.1	-0.8	-1.6
-60	43.9	43.5	43.1	42.6	42.1	41.7	41.3	40.9	40.6	40.3	39.9	39.4	38.7	37.8	36.7	35.3	33.7	31.7	29.4
	7.1	6.4	6.0	5.8	5.7	5.7	5.7	5.7	5.6	5.3	4.8	4.2	3.5	2.6	1.8	0.9	0.1	-0.7	-1.3
-65	59.4	57.9	56.4	55.0	53.8	52.7	51.6	50.5	49.5	48.4	47.3	46.0	44.7	43.1	41.4	39.4	37.3	34.9	32.3
	10.0	8.9	8.1	7.6	7.1	6.7	6.4	6.0	5.5	4.9	4.3	3.6	2.9	2.1	1.3	0.6	0.0	-0.6	-1.1
-70	84.0	79.8	76.3	73.1	70.3	67.7	65.3	63.0	60.8	58.6	56.4	54.2	51.9	49.5	47.1	44.5	41.8	39.0	36.1
	10.3	9.3	8.4	7.7	7.0	6.4	5.8	5.2	4.6	3.9	3.3	2.7	2.0	1.4	0.8	0.3	-0.1	-0.5	-0.8
-75	112.3	105.8	100.0	94.8	90.1	85.7	81.7	77.9	74.3	70.8	67.4	64.1	60.8	57.5	54.2	51.0	47.7	44.4	41.0
	5.1	5.1	5.0	4.7	4.4	4.0	3.6	3.2	2.8	2.4	1.9	1.5	1.1	0.7	0.4	0.1	-0.1	-0.3	-0.5
-80	133.1	126.5	120.3	114.4	108.7	103.4	98.2	93.3	88.6	84.1	79.6	75.3	71.1	67.0	63.0	59.0	55.0	51.1	47.2
	0.4	0.7	0.9	1.0	1.1	1.1	1.0	0.9	0.8	0.7	0.5	0.4	0.3	0.1	0.0	-0.1	-0.2	-0.3	-0.3
-85	145.4	139.6	133.9	128.4	122.9	117.5	112.2	106.9	101.8	96.8	91.8	87.0	82.2	77.4	72.8	68.1	63.6	59.1	54.6
	-1.2	-1.1	-1.0	-0.9	-0.8	-0.7	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
-90	152.5	147.5	142.5	137.5	132.5	127.5	122.5	117.5	112.5	107.5	102.5	97.5	92.5	87.5	82.5	77.5	72.5	67.5	62.5
	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4

DECLINATION

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	-120.5	-114.9	-109.3	-103.8	-98.3	-92.9	-87.5	-82.1	-76.8	-71.6	-66.3	-61.2	-56.0	-50.9	-45.9	-40.9	-35.9	-31.0	-26.1
	17.8	17.7	17.5	17.3	17.1	16.9	16.7	16.5	16.3	16.1	16.0	15.8	15.7	15.5	15.4	15.3	15.2	15.1	15.0
85	-114.3	-106.9	-100.1	-93.6	-87.5	-81.7	-76.0	-70.5	-65.2	-59.9	-54.8	-49.7	-44.7	-39.8	-35.0	-30.2	-25.4	-20.8	-16.1
	25.2	23.3	21.6	20.1	18.8	17.7	16.7	15.8	15.0	14.3	13.7	13.2	12.7	12.2	11.8	11.5	11.2	10.9	10.7
80	-100.3	-93.6	-87.7	-82.2	-77.0	-72.0	-67.1	-62.3	-57.5	-52.8	-48.2	-43.5	-39.0	-34.4	-29.9	-25.4	-21.0	-16.6	-12.3
	43.4	34.8	29.2	25.4	22.5	20.3	18.5	17.1	15.8	14.7	13.8	12.9	12.1	11.4	10.8	10.2	9.6	9.2	8.7
75	-69.1	-71.4	-70.6	-68.5	-65.6	-62.3	-58.7	-55.0	-51.1	-47.1	-43.1	-39.0	-34.9	-30.8	-26.7	-22.6	-18.5	-14.5	-10.5
	53.4	41.5	34.0	28.9	25.3	22.7	20.5	18.8	17.3	16.0	14.9	13.8	12.8	11.9	11.0	10.2	9.4	8.7	8.1
70	-34.4	-45.7	-51.1	-53.1	-53.1	-51.9	-49.9	-47.4	-44.5	-41.3	-38.0	-34.5	-30.9	-27.3	-23.6	-20.0	-16.3	-12.7	-9.2
	20.3	27.4	27.6	25.9	23.9	22.1	20.5	19.1	17.8	16.7	15.5	14.5	13.4	12.4	11.4	10.5	9.5	8.7	7.8
65	-16.4	-27.5	-35.1	-39.5	-41.7	-42.2	-41.6	-40.2	-38.2	-35.7	-33.0	-30.1	-27.0	-23.8	-20.6	-17.4	-14.2	-11.0	-7.8
	1.1	10.4	15.7	18.0	18.6	18.6	18.1	17.5	16.8	16.0	15.2	14.3	13.4	12.5	11.5	10.5	9.6	8.6	7.7
60	-8.2	-17.1	-24.3	-29.4	-32.6	-34.2	-34.5	-33.9	-32.6	-30.7	-28.5	-26.0	-23.3	-20.6	-17.7	-14.9	-12.0	-9.2	-6.5
	-4.3	1.5	6.6	10.2	12.5	13.9	14.5	14.8	14.7	14.5	14.1	13.5	12.8	12.1	11.2	10.3	9.4	8.5	7.5
55	-4.0	-11.1	-17.4	-22.4	-26.0	-28.1	-29.0	-28.9	-28.1	-26.7	-24.8	-22.6	-20.2	-17.8	-15.2	-12.7	-10.1	-7.7	-5.3
	-5.8	-2.5	1.2	4.6	7.4	9.5	10.9	11.9	12.4	12.6	12.5	12.3	11.9	11.4	10.7	9.9	9.1	8.2	7.3
50	-1.5	-7.4	-12.9	-17.6	-21.2	-23.6	-24.9	-25.2	-24.6	-23.5	-21.9	-19.9	-17.8	-15.5	-13.2	-10.9	-8.6	-6.4	-4.3
	-6.2	-4.5	-2.0	0.8	3.6	6.0	7.8	9.2	10.2	10.7	11.0	11.1	10.9	10.6	10.1	9.5	8.8	8.0	7.1
45	0.0	-5.0	-9.9	-14.3	-17.8	-20.3	-21.8	-22.4	-22.1	-21.1	-19.7	-18.0	-16.0	-13.9	-11.7	-9.5	-7.4	-5.4	-3.5
	-6.4	-5.6	-4.0	-1.8	0.7	3.2	5.3	7.0	8.3	9.1	9.7	9.9	10.0	9.8	9.5	9.1	8.5	7.8	7.0
40	1.0	-3.3	-7.7	-11.8	-15.3	-17.9	-19.6	-20.3	-20.2	-19.5	-18.2	-16.6	-14.8	-12.8	-10.7	-8.7	-6.7	-4.8	-3.1
	-6.4	-6.4	-5.5	-3.8	-1.5	0.9	3.2	5.1	6.6	7.7	8.5	8.9	9.2	9.2	9.0	8.7	8.2	7.5	6.8
35	1.7	-2.1	-6.1	-9.9	-13.3	-16.0	-17.9	-18.8	-19.0	-18.5	-17.4	-15.9	-14.1	-12.2	-10.2	-8.2	-6.3	-4.5	-2.9
	-6.5	-7.0	-6.7	-5.4	-3.4	-1.0	1.4	3.5	5.2	6.5	7.4	8.1	8.5	8.6	8.6	8.3	7.9	7.3	6.6
30	2.3	-1.1	-4.7	-8.4	-11.7	-14.5	-16.6	-17.8	-18.2	-17.9	-17.0	-15.6	-14.0	-12.1	-10.1	-8.2	-6.3	-4.5	-2.9
	-6.5	-7.5	-7.7	-6.8	-5.0	-2.8	-0.4	1.9	3.8	5.3	6.5	7.3	7.9	8.2	8.2	8.0	7.7	7.1	6.5
25	2.8	-0.2	-3.6	-7.1	-10.4	-13.3	-15.6	-17.1	-17.8	-17.8	-17.1	-15.9	-14.3	-12.4	-10.5	-8.4	-6.5	-4.7	-3.1
	-6.5	-7.9	-8.4	-8.0	-6.6	-4.5	-2.1	0.3	2.4	4.2	5.5	6.6	7.3	7.8	7.9	7.8	7.5	6.9	6.3
20	3.4	0.6	-2.5	-5.9	-9.2	-12.3	-14.8	-16.6	-17.6	-17.9	-17.5	-16.5	-15.0	-13.2	-11.1	-9.0	-7.0	-5.2	-3.6
	-6.4	-8.1	-9.1	-9.0	-7.9	-6.0	-3.7	-1.3	1.0	2.9	4.6	5.8	6.8	7.4	7.7	7.6	7.3	6.8	6.3
15	4.0	1.5	-1.5	-4.8	-8.1	-11.3	-14.1	-16.3	-17.7	-18.3	-18.1	-17.4	-16.0	-14.2	-12.2	-10.0	-7.8	-5.9	-4.3
	-6.2	-8.2	-9.4	-9.8	-9.1	-7.5	-5.3	-2.9	-0.5	1.6	3.5	5.0	6.2	7.0	7.5	7.5	7.3	6.8	6.3
10	4.6	2.3	-0.5	-3.7	-7.2	-10.5	-13.6	-16.0	-17.8	-18.8	-19.0	-18.4	-17.3	-15.6	-13.5	-11.2	-9.0	-7.0	-5.3
	-5.9	-8.0	-9.6	-10.3	-10.0	-8.7	-6.8	-4.5	-2.1	0.2	2.3	4.1	5.6	6.6	7.3	7.4	7.3	6.9	6.5
5	5.4	3.2	0.5	-2.7	-6.2	-9.7	-13.0	-15.8	-17.9	-19.3	-19.8	-19.6	-18.7	-17.2	-15.2	-12.9	-10.6	-8.5	-6.7
	-5.6	-7.8	-9.6	-10.5	-10.6	-9.7	-8.1	-5.9	-3.6	-1.3	1.0	3.0	4.8	6.1	7.0	7.4	7.4	7.1	6.8
0	6.1	4.1	1.4	-1.8	-5.3	-9.0	-12.5	-15.5	-18.0	-19.7	-20.7	-20.8	-20.2	-18.9	-17.1	-14.9	-12.6	-10.5	-8.5
	-5.3	-7.5	-9.3	-10.5	-10.9	-10.3	-9.1	-7.2	-5.1	-2.8	-0.4	1.8	3.7	5.4	6.5	7.2	7.4	7.4	7.3

DECLINATION

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	6.1	4.1	1.4	-1.8	-5.3	-9.0	-12.5	-15.5	-18.0	-19.7	-20.7	-20.8	-20.2	-18.9	-17.1	-14.9	-12.6	-10.5	-8.5
	-5.3	-7.5	-9.3	-10.5	-10.9	-10.3	-9.1	-7.2	-5.1	-2.8	-0.4	1.8	3.7	5.4	6.5	7.2	7.4	7.4	7.3
-5	7.0	5.0	2.4	-0.7	-4.3	-8.1	-11.8	-15.2	-18.0	-20.1	-21.4	-21.9	-21.7	-20.8	-19.2	-17.3	-15.1	-13.0	-11.0
	-5.0	-7.1	-9.0	-10.3	-10.9	-10.7	-9.8	-8.3	-6.4	-4.2	-1.9	0.4	2.5	4.4	5.9	6.8	7.4	7.7	7.8
-10	7.9	6.1	3.6	0.4	-3.2	-7.2	-11.1	-14.7	-17.8	-20.3	-21.9	-22.9	-23.0	-22.5	-21.4	-19.8	-17.9	-15.9	-13.9
	-4.8	-6.8	-8.5	-9.9	-10.6	-10.7	-10.1	-9.0	-7.4	-5.5	-3.3	-1.1	1.1	3.2	4.9	6.2	7.1	7.7	8.1
-15	9.1	7.4	4.9	1.7	-2.0	-6.0	-10.2	-14.0	-17.4	-20.2	-22.2	-23.5	-24.1	-24.0	-23.4	-22.2	-20.8	-19.1	-17.1
	-4.6	-6.4	-8.0	-9.3	-10.2	-10.5	-10.2	-9.4	-8.1	-6.4	-4.5	-2.4	-0.2	1.9	3.7	5.2	6.4	7.3	8.0
-20	10.6	8.9	6.5	3.3	-0.4	-4.6	-8.9	-13.1	-16.8	-19.8	-22.1	-23.8	-24.7	-25.1	-24.9	-24.3	-23.4	-22.1	-20.4
	-4.4	-6.0	-7.5	-8.8	-9.6	-10.0	-10.0	-9.4	-8.4	-7.0	-5.3	-3.4	-1.3	0.7	2.5	4.1	5.5	6.5	7.4
-25	12.5	10.8	8.4	5.2	1.4	-2.9	-7.4	-11.8	-15.7	-19.0	-21.6	-23.5	-24.8	-25.6	-25.8	-25.7	-25.3	-24.4	-23.2
	-4.2	-5.6	-7.0	-8.1	-9.0	-9.4	-9.5	-9.1	-8.3	-7.1	-5.6	-3.9	-2.0	-0.1	1.7	3.2	4.5	5.5	6.3
-30	14.7	13.0	10.6	7.4	3.5	-0.9	-5.5	-10.0	-14.1	-17.7	-20.5	-22.7	-24.3	-25.3	-25.9	-26.2	-26.1	-25.7	-25.0
	-3.8	-5.1	-6.4	-7.4	-8.2	-8.6	-8.7	-8.4	-7.7	-6.7	-5.3	-3.7	-1.9	-0.1	1.5	2.9	4.0	4.8	5.2
-35	17.2	15.5	13.0	9.8	5.9	1.5	-3.1	-7.7	-11.9	-15.7	-18.7	-21.1	-22.9	-24.2	-25.1	-25.6	-25.8	-25.8	-25.4
	-3.4	-4.6	-5.6	-6.6	-7.2	-7.6	-7.7	-7.4	-6.7	-5.6	-4.3	-2.7	-1.0	0.7	2.2	3.5	4.3	4.6	4.4
-40	19.8	17.9	15.4	12.2	8.3	4.0	-0.5	-4.9	-9.2	-12.9	-16.1	-18.6	-20.6	-22.1	-23.1	-23.9	-24.4	-24.6	-24.7
	-2.8	-3.9	-4.9	-5.6	-6.2	-6.5	-6.4	-6.0	-5.2	-4.1	-2.7	-1.1	0.6	2.2	3.7	4.7	5.2	5.0	4.1
-45	22.4	20.3	17.7	14.5	10.7	6.7	2.4	-1.8	-5.9	-9.5	-12.7	-15.3	-17.4	-19.1	-20.3	-21.3	-22.1	-22.7	-23.3
	-2.3	-3.2	-4.1	-4.7	-5.1	-5.2	-5.0	-4.4	-3.5	-2.3	-0.8	0.8	2.5	4.0	5.3	6.0	6.1	5.4	3.8
-50	24.7	22.5	19.8	16.6	13.1	9.3	5.3	1.4	-2.3	-5.8	-8.8	-11.5	-13.7	-15.5	-17.0	-18.3	-19.5	-20.6	-21.8
	-1.9	-2.7	-3.4	-3.8	-4.0	-4.0	-3.6	-2.9	-1.9	-0.6	0.8	2.4	3.9	5.3	6.2	6.6	6.3	5.3	3.4
-55	27.0	24.6	21.8	18.7	15.4	11.8	8.2	4.6	1.2	-2.0	-4.9	-7.6	-9.9	-11.9	-13.7	-15.4	-17.0	-18.7	-20.5
	-1.6	-2.2	-2.7	-3.0	-3.1	-2.9	-2.4	-1.6	-0.6	0.6	1.9	3.3	4.6	5.6	6.2	6.3	5.8	4.6	2.8
-60	29.4	26.9	24.0	21.0	17.8	14.5	11.1	7.8	4.6	1.6	-1.3	-3.9	-6.4	-8.7	-10.8	-12.9	-15.0	-17.2	-19.5
	-1.3	-1.8	-2.1	-2.3	-2.2	-1.9	-1.4	-0.7	0.2	1.3	2.3	3.4	4.3	5.0	5.3	5.2	4.6	3.6	2.1
-65	32.3	29.6	26.7	23.6	20.5	17.3	14.1	11.0	7.9	4.9	2.0	-0.8	-3.4	-6.0	-8.5	-11.1	-13.6	-16.2	-19.0
	-1.1	-1.4	-1.6	-1.6	-1.4	-1.1	-0.6	0.0	0.7	1.4	2.2	2.9	3.5	3.9	4.0	3.8	3.3	2.5	1.4
-70	36.1	33.1	30.0	26.9	23.7	20.5	17.3	14.1	11.0	7.9	4.9	1.9	-1.1	-4.0	-6.9	-9.8	-12.8	-15.8	-18.9
	-0.8	-0.9	-1.0	-0.9	-0.8	-0.5	-0.2	0.3	0.7	1.2	1.7	2.1	2.4	2.6	2.6	2.4	2.0	1.5	0.8
-75	41.0	37.7	34.3	30.9	27.5	24.1	20.7	17.4	14.0	10.7	7.4	4.1	0.8	-2.5	-5.8	-9.2	-12.6	-16.0	-19.5
	-0.5	-0.5	-0.5	-0.5	-0.3	-0.2	0.1	0.3	0.6	0.8	1.0	1.2	1.3	1.4	1.3	1.2	0.9	0.6	0.1
-80	47.2	43.4	39.6	35.8	32.0	28.2	24.4	20.7	17.0	13.2	9.5	5.8	2.0	-1.7	-5.5	-9.3	-13.1	-16.9	-20.9
	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	-0.2	-0.5	
-85	54.6	50.1	45.7	41.4	37.0	32.7	28.4	24.1	19.8	15.5	11.2	7.0	2.7	-1.6	-5.9	-10.2	-14.6	-18.9	-23.3
	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7	-0.8	-0.9	-1.0
-90	62.5	57.5	52.5	47.5	42.5	37.5	32.5	27.5	22.5	17.5	12.5	7.5	2.5	-2.5	-7.5	-12.5	-17.5	-22.5	-27.5
	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4

DECLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	-26.1 15.0	-21.2 15.0	-16.4 14.9	-11.6 14.9	-6.8 14.9	-2.1 14.9	2.6 14.9	7.2 14.9	11.9 14.9	16.5 14.9	21.0 15.0	25.5 15.0	30.0 15.1	34.5 15.2	39.0 15.3	43.4 15.4	47.8 15.5	52.1 15.6	56.5 15.7
85	-16.1 10.7	-11.6 10.5	-7.1 10.4	-2.6 10.3	1.7 10.2	6.0 10.2	10.3 10.2	14.4 10.3	18.4 10.4	22.3 10.5	26.1 10.7	29.8 10.9	33.3 11.2	36.6 11.4	39.7 11.7	42.5 12.0	45.0 12.2	47.2 12.4	48.9 12.4
80	-12.3 8.7	-8.0 8.4	-3.8 8.1	0.3 7.8	4.4 7.7	8.4 7.5	12.2 7.5	16.0 7.5	19.6 7.6	23.0 7.7	26.3 7.9	29.3 8.1	32.1 8.3	34.5 8.6	36.5 8.9	37.9 9.1	38.6 9.2	38.4 8.9	37.1 8.2
75	-10.5 8.1	-6.6 7.5	-2.8 7.0	1.0 6.6	4.7 6.3	8.3 6.0	11.8 5.9	15.1 5.8	18.2 5.7	21.2 5.8	23.9 5.9	26.4 6.0	28.4 6.2	30.1 6.4	31.1 6.5	31.5 6.5	30.9 6.3	29.2 5.7	26.1 4.4
70	-9.2 7.8	-5.7 7.1	-2.3 6.4	1.1 5.9	4.3 5.4	7.5 5.0	10.4 4.7	13.3 4.5	16.0 4.4	18.4 4.3	20.6 4.3	22.5 4.3	24.0 4.4	25.0 4.5	25.4 4.5	25.1 4.4	23.8 4.1	21.5 3.4	17.9 2.3
65	-7.8 7.7	-4.8 6.8	-1.8 6.1	1.0 5.3	3.8 4.7	6.4 4.2	8.9 3.8	11.3 3.5	13.4 3.3	15.4 3.1	17.1 3.0	18.5 3.0	19.5 3.0	20.1 3.0	20.1 3.0	19.5 2.9	18.0 2.7	15.7 2.3	12.4 1.6
60	-6.5 7.5	-3.9 6.6	-1.4 5.7	1.0 5.0	3.3 4.3	5.4 3.6	7.4 3.1	9.3 2.7	11.0 2.4	12.5 2.1	13.7 2.0	14.8 1.9	15.5 1.9	15.8 1.9	15.6 2.0	14.9 2.0	13.5 2.0	11.4 1.8	8.7 1.4
55	-5.3 7.3	-3.0 6.4	-0.9 5.5	1.1 4.7	2.9 3.9	4.6 3.2	6.1 2.5	7.5 2.0	8.7 1.6	9.8 1.3	10.8 1.1	11.5 1.1	11.9 1.1	12.0 1.2	11.8 1.4	11.1 1.6	9.9 1.7	8.2 1.7	6.0 1.6
50	-4.3 7.1	-2.3 6.2	-0.5 5.3	1.1 4.4	2.6 3.6	3.9 2.8	5.0 2.1	6.0 1.5	6.9 1.0	7.6 0.7	8.2 0.5	8.7 0.4	8.9 0.5	8.9 0.7	8.7 1.0	8.1 1.3	7.1 1.6	5.8 1.8	4.1 1.8
45	-3.5 7.0	-1.8 6.1	-0.3 5.2	1.1 4.3	2.3 3.4	3.3 2.6	4.1 1.8	4.8 1.1	5.4 0.6	5.9 0.2	6.2 0.0	6.4 0.0	6.5 0.1	6.4 0.5	6.1 0.9	5.6 1.3	4.9 1.6	3.9 1.9	2.6 1.9
40	-3.1 6.8	-1.5 6.0	-0.2 5.1	1.0 4.2	2.0 3.3	2.8 2.5	3.4 1.7	3.9 0.9	4.3 0.3	4.5 -0.1	4.6 -0.3	4.6 -0.3	4.5 -0.1	4.3 0.3	4.0 0.8	3.6 1.3	3.1 1.7	2.4 1.9	1.5 2.0
35	-2.9 6.6	-1.5 5.8	-0.3 5.0	0.8 4.2	1.6 3.4	2.3 2.5	2.8 1.7	3.2 1.0	3.4 0.3	3.5 -0.2	3.5 -0.4	3.3 -0.4	3.0 -0.1	2.7 0.3	2.4 0.9	2.0 1.4	1.6 1.7	1.2 1.9	0.6 1.9
30	-2.9 6.5	-1.6 5.7	-0.5 5.0	0.5 4.3	1.2 3.5	1.8 2.7	2.3 1.9	2.7 1.1	2.8 0.4	2.8 -0.1	2.6 -0.4	2.2 -0.4	1.8 -0.1	1.4 0.4	1.1 1.0	0.7 1.4	0.5 1.8	0.2 1.8	0.0 1.7
25	-3.1 6.3	-1.8 5.7	-0.8 5.0	0.1 4.4	0.8 3.7	1.4 3.0	1.9 2.2	2.2 1.4	2.3 0.6	2.2 0.0	1.9 -0.3	1.4 -0.3	0.9 0.1	0.4 0.6	0.0 1.1	-0.3 1.5	-0.4 1.8	-0.5 1.7	-0.5 1.5
20	-3.6 6.3	-2.3 5.7	-1.2 5.2	-0.4 4.6	0.4 4.1	1.0 3.4	1.5 2.6	1.9 1.7	1.9 0.9	1.7 0.2	1.3 -0.1	0.7 -0.2	0.1 0.2	-0.5 0.7	-0.9 1.2	-1.1 1.6	-1.2 1.8	-1.1 1.6	-0.9 1.3
15	-4.3 6.3	-2.9 5.8	-1.9 5.4	-1.0 5.0	-0.1 4.5	0.6 3.8	1.2 3.0	1.5 2.0	1.6 1.1	1.3 0.3	0.7 -0.1	0.0 -0.1	-0.7 0.2	-1.3 0.8	-1.7 1.3	-1.9 1.7	-1.9 1.7	-1.6 1.5	-1.3 1.0
10	-5.3 6.5	-3.9 6.1	-2.7 5.8	-1.7 5.4	-0.8 5.0	0.1 4.3	0.7 3.4	1.1 2.3	1.2 1.2	0.8 0.3	0.1 -0.2	-0.7 -0.2	-1.6 0.1	-2.2 0.7	-2.6 1.3	-2.7 1.7	-2.6 1.7	-2.2 1.4	-1.6 0.9
5	-6.7 6.8	-5.1 6.5	-3.9 6.3	-2.7 6.1	-1.6 5.6	-0.6 4.9	0.2 3.8	0.6 2.5	0.6 1.1	0.1 0.1	-0.7 -0.5	-1.7 -0.6	-2.6 -0.1	-3.3 0.6	-3.7 1.2	-3.7 1.6	-3.4 1.7	-2.9 1.4	-2.1 0.8
0	-8.5 7.3	-6.9 7.1	-5.4 7.0	-3.9 6.8	-2.6 6.3	-1.4 5.4	-0.5 4.0	-0.1 2.4	-0.2 0.8	-0.9 -0.5	-1.9 -1.1	-3.0 -1.1	-4.1 -0.6	-4.8 0.3	-5.1 1.1	-5.0 1.6	-4.6 1.7	-3.8 1.4	-2.8 0.8

DECLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-8.5	-6.9	-5.4	-3.9	-2.6	-1.4	-0.5	-0.1	-0.2	-0.9	-1.9	-3.0	-4.1	-4.8	-5.1	-5.0	-4.6	-3.8	-2.8
	7.3	7.1	7.0	6.8	6.3	5.4	4.0	2.4	0.8	-0.5	-1.1	-1.1	-0.6	0.3	1.1	1.6	1.7	1.4	0.8
-5	-11.0	-9.1	-7.3	-5.6	-4.0	-2.6	-1.6	-1.2	-1.5	-2.5	-3.7	-5.0	-6.1	-6.8	-7.0	-6.8	-6.1	-5.1	-3.9
	7.8	7.8	7.8	7.6	7.0	5.8	4.1	2.0	0.1	-1.4	-2.1	-2.0	-1.2	-0.1	0.9	1.5	1.7	1.5	1.0
-10	-13.9	-11.9	-9.8	-7.8	-5.8	-4.2	-3.2	-3.0	-3.7	-4.9	-6.4	-7.9	-9.0	-9.6	-9.7	-9.3	-8.3	-7.0	-5.5
	8.1	8.4	8.5	8.3	7.5	5.9	3.7	1.1	-1.2	-2.8	-3.4	-3.0	-2.0	-0.6	0.6	1.5	1.8	1.7	1.3
-15	-17.1	-15.1	-12.8	-10.5	-8.4	-6.7	-5.9	-6.0	-7.0	-8.6	-10.3	-11.9	-13.0	-13.5	-13.4	-12.6	-11.4	-9.7	-7.7
	8.0	8.6	8.9	8.6	7.4	5.4	2.5	-0.5	-3.0	-4.6	-4.9	-4.2	-2.8	-1.2	0.3	1.4	1.9	2.0	1.8
-20	-20.4	-18.5	-16.2	-13.9	-11.8	-10.3	-9.8	-10.4	-11.8	-13.8	-15.7	-17.3	-18.2	-18.5	-18.1	-17.0	-15.4	-13.2	-10.8
	7.4	8.1	8.4	7.9	6.3	3.7	0.3	-3.0	-5.5	-6.7	-6.6	-5.4	-3.7	-1.8	-0.1	1.2	2.0	2.2	2.2
-25	-23.2	-21.6	-19.6	-17.6	-15.8	-14.9	-15.0	-16.2	-18.1	-20.2	-22.2	-23.7	-24.4	-24.5	-23.8	-22.4	-20.4	-17.9	-14.9
	6.3	6.8	6.8	5.8	3.7	0.5	-3.0	-6.1	-8.1	-8.6	-8.0	-6.6	-4.7	-2.7	-0.9	0.6	1.6	2.1	2.3
-30	-25.0	-23.8	-22.4	-21.1	-20.1	-20.0	-20.9	-22.6	-24.8	-27.1	-29.0	-30.4	-31.1	-31.0	-30.2	-28.7	-26.5	-23.6	-20.2
	5.2	5.1	4.3	2.6	-0.1	-3.5	-6.7	-9.1	-10.3	-10.2	-9.3	-7.7	-5.9	-4.0	-2.2	-0.7	0.5	1.3	1.9
-35	-25.4	-24.9	-24.2	-23.8	-23.8	-24.6	-26.2	-28.4	-30.8	-33.1	-35.1	-36.5	-37.3	-37.5	-36.8	-35.5	-33.3	-30.4	-26.8
	4.4	3.5	1.8	-0.8	-3.9	-7.1	-9.7	-11.3	-11.8	-11.4	-10.4	-8.9	-7.3	-5.7	-4.1	-2.6	-1.4	-0.4	0.5
-40	-24.7	-24.8	-24.9	-25.4	-26.4	-28.0	-30.2	-32.7	-35.4	-37.8	-40.0	-41.7	-42.8	-43.4	-43.2	-42.3	-40.6	-38.0	-34.6
	4.1	2.3	-0.2	-3.3	-6.5	-9.3	-11.3	-12.4	-12.7	-12.2	-11.3	-10.2	-8.9	-7.5	-6.2	-5.0	-3.9	-2.8	-1.9
-45	-23.3	-24.1	-25.0	-26.3	-28.1	-30.3	-32.9	-35.7	-38.6	-41.3	-43.8	-45.8	-47.4	-48.5	-49.0	-48.9	-47.9	-46.1	-43.4
	3.8	1.5	-1.4	-4.6	-7.5	-10.0	-11.7	-12.6	-12.9	-12.6	-11.9	-11.1	-10.2	-9.2	-8.2	-7.3	-6.5	-5.6	-4.8
-50	-21.8	-23.2	-24.8	-26.8	-29.1	-31.8	-34.7	-37.8	-40.9	-43.9	-46.7	-49.2	-51.3	-53.0	-54.3	-55.0	-55.1	-54.4	-52.8
	3.4	1.0	-1.9	-4.8	-7.4	-9.6	-11.1	-12.0	-12.4	-12.4	-12.0	-11.5	-10.9	-10.3	-9.6	-9.0	-8.5	-8.1	-7.7
-55	-20.5	-22.4	-24.7	-27.1	-29.9	-32.9	-36.1	-39.4	-42.7	-46.0	-49.1	-52.0	-54.7	-57.0	-59.1	-60.7	-61.9	-62.6	-62.5
	2.8	0.6	-1.8	-4.3	-6.5	-8.4	-9.8	-10.8	-11.3	-11.5	-11.5	-11.2	-10.9	-10.6	-10.2	-9.9	-9.7	-9.6	-9.7
-60	-19.5	-22.0	-24.6	-27.5	-30.6	-33.9	-37.3	-40.8	-44.3	-47.8	-51.2	-54.5	-57.7	-60.7	-63.5	-66.0	-68.3	-70.3	-71.9
	2.1	0.4	-1.5	-3.5	-5.3	-6.8	-8.1	-9.0	-9.7	-10.1	-10.2	-10.3	-10.2	-10.1	-10.0	-9.9	-9.9	-10.1	-10.4
-65	-19.0	-21.9	-24.9	-28.1	-31.4	-34.9	-38.5	-42.2	-45.9	-49.6	-53.3	-57.0	-60.6	-64.2	-67.6	-71.0	-74.3	-77.5	-80.5
	1.4	0.2	-1.2	-2.6	-3.9	-5.2	-6.2	-7.1	-7.7	-8.2	-8.6	-8.8	-8.9	-9.0	-9.1	-9.1	-9.3	-9.5	-9.9
-70	-18.9	-22.2	-25.5	-29.0	-32.6	-36.2	-40.0	-43.9	-47.8	-51.7	-55.7	-59.7	-63.8	-67.8	-71.8	-75.9	-80.0	-84.1	-88.3
	0.8	-0.1	-1.0	-1.9	-2.8	-3.7	-4.5	-5.2	-5.8	-6.3	-6.7	-7.0	-7.2	-7.4	-7.6	-7.8	-8.0	-8.3	-8.6
-75	-19.5	-23.1	-26.7	-30.5	-34.3	-38.2	-42.2	-46.3	-50.4	-54.6	-58.8	-63.1	-67.5	-71.9	-76.4	-81.0	-85.7	-90.5	-95.4
	0.1	-0.4	-0.9	-1.5	-2.0	-2.6	-3.2	-3.7	-4.1	-4.5	-4.9	-5.2	-5.5	-5.7	-5.9	-6.1	-6.3	-6.5	-6.8
-80	-20.9	-24.8	-28.8	-32.9	-37.0	-41.2	-45.5	-49.8	-54.1	-58.6	-63.1	-67.7	-72.4	-77.1	-82.0	-86.9	-91.9	-97.1	-102.4
	-0.5	-0.7	-1.0	-1.3	-1.6	-1.9	-2.2	-2.5	-2.8	-3.1	-3.4	-3.6	-3.8	-4.0	-4.2	-4.4	-4.5	-4.6	-4.7
-85	-23.3	-27.7	-32.2	-36.7	-41.2	-45.7	-50.3	-55.0	-59.7	-64.4	-69.2	-74.0	-78.9	-83.9	-88.9	-94.0	-99.2	-104.4	-109.7
	-1.0	-1.1	-1.2	-1.4	-1.5	-1.6	-1.7	-1.9	-2.0	-2.1	-2.2	-2.3	-2.4	-2.5	-2.6	-2.7	-2.8	-2.8	-2.9
-90	-27.5	-32.5	-37.5	-42.5	-47.5	-52.5	-57.5	-62.5	-67.5	-72.5	-77.5	-82.5	-87.5	-92.5	-97.5	-102.5	-107.5	-112.5	-117.5
	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4

DECLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	56.5	60.8	65.1	69.5	73.8	78.1	82.5	86.8	91.2	95.6	100.1	104.6	109.2	113.9	118.6	123.4	128.4	133.4	138.5
	15.7	15.8	15.9	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.8	16.9	17.0	17.1	17.2	17.3	17.5	17.6	17.7
85	48.9	50.1	50.7	50.6	49.7	48.0	45.7	42.8	39.7	36.7	34.3	32.6	31.7	31.8	32.7	34.4	36.8	39.9	43.7
	12.4	12.2	11.7	10.7	9.0	6.6	3.3	-0.7	-5.0	-9.0	-12.4	-15.0	-16.8	-17.9	-18.5	-18.9	-19.1	-19.4	-19.6
80	37.1	34.4	30.0	24.0	17.0	9.7	3.2	-1.7	-5.0	-6.7	-7.0	-6.3	-4.8	-2.6	0.0	3.2	6.6	10.3	14.2
	8.2	6.6	3.8	-0.2	-5.1	-9.6	-12.6	-13.9	-14.0	-13.3	-12.4	-11.3	-10.4	-9.6	-8.9	-8.3	-7.9	-7.7	-7.6
75	26.1	21.4	15.3	8.3	1.2	-5.1	-9.9	-13.1	-14.8	-15.2	-14.6	-13.2	-11.1	-8.5	-5.6	-2.3	1.3	5.1	9.0
	4.4	2.3	-0.7	-4.1	-7.2	-9.2	-10.1	-10.0	-9.4	-8.5	-7.7	-6.8	-6.1	-5.4	-4.9	-4.5	-4.3	-4.2	-4.2
70	17.9	13.2	7.6	1.5	-4.3	-9.2	-13.0	-15.4	-16.6	-16.7	-16.0	-14.5	-12.4	-9.9	-7.0	-3.7	-0.2	3.4	7.2
	2.3	0.7	-1.4	-3.5	-5.3	-6.5	-7.0	-6.9	-6.5	-6.0	-5.3	-4.7	-4.1	-3.6	-3.3	-3.0	-2.9	-2.9	-3.0
65	12.4	8.3	3.6	-1.3	-5.9	-9.9	-13.0	-15.1	-16.1	-16.3	-15.6	-14.2	-12.3	-9.8	-7.0	-3.9	-0.6	2.9	6.5
	1.6	0.5	-0.7	-2.1	-3.3	-4.2	-4.7	-4.8	-4.7	-4.3	-3.9	-3.5	-3.1	-2.7	-2.4	-2.3	-2.3	-2.4	-2.7
60	8.7	5.3	1.5	-2.4	-6.2	-9.5	-12.1	-13.9	-14.9	-15.1	-14.5	-13.2	-11.5	-9.2	-6.5	-3.6	-0.4	2.8	6.2
	1.4	0.9	0.1	-0.8	-1.7	-2.5	-3.0	-3.3	-3.4	-3.3	-3.1	-2.8	-2.5	-2.2	-2.0	-2.0	-2.0	-2.3	-2.6
55	6.0	3.4	0.4	-2.8	-5.8	-8.6	-10.9	-12.5	-13.4	-13.6	-13.1	-12.0	-10.3	-8.2	-5.7	-2.9	0.0	3.1	6.2
	1.6	1.3	0.8	0.1	-0.6	-1.3	-1.9	-2.3	-2.5	-2.6	-2.5	-2.3	-2.2	-2.0	-1.9	-1.9	-2.0	-2.3	-2.7
50	4.1	2.0	-0.3	-2.8	-5.3	-7.6	-9.5	-10.9	-11.8	-12.0	-11.6	-10.6	-9.0	-7.0	-4.7	-2.0	0.7	3.6	6.4
	1.8	1.6	1.2	0.7	0.1	-0.5	-1.1	-1.6	-1.9	-2.1	-2.1	-2.1	-2.0	-2.0	-1.9	-2.0	-2.2	-2.5	-2.9
45	2.6	1.1	-0.7	-2.6	-4.6	-6.5	-8.1	-9.4	-10.1	-10.3	-9.9	-9.0	-7.5	-5.6	-3.4	-0.9	1.7	4.3	6.8
	1.9	1.8	1.5	1.0	0.4	-0.2	-0.7	-1.2	-1.5	-1.8	-1.9	-1.9	-1.9	-2.0	-2.0	-2.2	-2.4	-2.7	-3.1
40	1.5	0.4	-0.9	-2.4	-3.9	-5.4	-6.8	-7.9	-8.5	-8.6	-8.2	-7.3	-5.9	-4.1	-1.9	0.4	2.8	5.1	7.4
	2.0	1.8	1.5	1.0	0.5	-0.1	-0.6	-1.0	-1.4	-1.6	-1.7	-1.8	-1.8	-1.9	-2.1	-2.3	-2.6	-2.9	-3.3
35	0.6	-0.1	-1.0	-2.0	-3.2	-4.4	-5.5	-6.4	-6.9	-6.9	-6.5	-5.5	-4.1	-2.4	-0.3	1.8	4.0	6.1	8.0
	1.9	1.7	1.3	0.8	0.3	-0.2	-0.7	-1.0	-1.3	-1.5	-1.5	-1.6	-1.6	-1.7	-1.9	-2.2	-2.6	-3.0	-3.4
30	0.0	-0.4	-1.0	-1.7	-2.5	-3.4	-4.3	-4.9	-5.3	-5.2	-4.7	-3.7	-2.3	-0.6	1.3	3.4	5.3	7.2	8.7
	1.7	1.4	1.0	0.5	0.0	-0.5	-0.9	-1.2	-1.3	-1.4	-1.3	-1.3	-1.3	-1.4	-1.6	-2.0	-2.5	-3.0	-3.4
25	-0.5	-0.7	-0.9	-1.3	-1.9	-2.5	-3.1	-3.6	-3.7	-3.5	-2.9	-1.9	-0.5	1.1	3.0	4.8	6.6	8.1	9.3
	1.5	1.1	0.6	0.0	-0.5	-0.9	-1.2	-1.4	-1.4	-1.3	-1.1	-1.0	-0.8	-0.9	-1.1	-1.6	-2.2	-2.8	-3.3
20	-0.9	-0.8	-0.8	-0.9	-1.2	-1.6	-2.0	-2.3	-2.3	-2.0	-1.3	-0.2	1.1	2.7	4.4	6.1	7.7	8.9	9.8
	1.3	0.7	0.1	-0.4	-0.9	-1.3	-1.5	-1.6	-1.5	-1.2	-0.9	-0.6	-0.4	-0.3	-0.5	-1.1	-1.8	-2.5	-3.1
15	-1.3	-0.9	-0.7	-0.6	-0.7	-0.9	-1.1	-1.1	-1.0	-0.5	0.3	1.3	2.7	4.2	5.7	7.2	8.5	9.5	10.1
	1.0	0.4	-0.2	-0.8	-1.3	-1.6	-1.8	-1.7	-1.5	-1.2	-0.7	-0.3	0.1	0.2	0.0	-0.5	-1.3	-2.2	-2.9
10	-1.6	-1.1	-0.6	-0.3	-0.2	-0.2	-0.2	-0.1	0.2	0.7	1.6	2.7	4.0	5.4	6.8	8.1	9.2	10.0	10.3
	0.9	0.2	-0.5	-1.1	-1.5	-1.8	-1.9	-1.8	-1.5	-1.1	-0.6	0.0	0.5	0.7	0.5	-0.1	-0.9	-1.9	-2.7
5	-2.1	-1.4	-0.6	-0.1	0.2	0.4	0.6	0.8	1.2	1.8	2.7	3.8	5.0	6.3	7.6	8.7	9.7	10.3	10.5
	0.8	0.1	-0.6	-1.1	-1.5	-1.7	-1.8	-1.7	-1.4	-1.0	-0.4	0.2	0.7	0.9	0.8	0.3	-0.6	-1.5	-2.4
0	-2.8	-1.8	-0.9	-0.1	0.5	0.9	1.2	1.5	2.0	2.7	3.6	4.7	5.9	7.1	8.2	9.3	10.1	10.6	10.7
	0.8	0.1	-0.5	-1.0	-1.3	-1.5	-1.5	-1.4	-1.2	-0.8	-0.3	0.3	0.8	1.1	1.0	0.5	-0.3	-1.2	-2.0

DECLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-2.8	-1.8	-0.9	-0.1	0.5	0.9	1.2	1.5	2.0	2.7	3.6	4.7	5.9	7.1	8.2	9.3	10.1	10.6	10.7
	0.8	0.1	-0.5	-1.0	-1.3	-1.5	-1.5	-1.4	-1.2	-0.8	-0.3	0.3	0.8	1.1	1.0	0.5	-0.3	-1.2	-2.0
-5	-3.9	-2.6	-1.3	-0.3	0.5	1.1	1.6	2.1	2.7	3.4	4.4	5.5	6.6	7.8	8.8	9.8	10.5	10.9	11.1
	1.0	0.4	-0.2	-0.6	-0.8	-1.0	-1.0	-1.0	-0.9	-0.6	-0.2	0.3	0.8	1.1	1.1	0.7	0.0	-0.8	-1.6
-10	-5.5	-3.8	-2.2	-0.8	0.3	1.1	1.8	2.5	3.2	4.0	5.1	6.2	7.3	8.4	9.5	10.3	11.0	11.4	11.6
	1.3	0.8	0.3	0.0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	0.0	0.4	0.8	1.1	1.2	0.9	0.3	-0.4	-1.1
-15	-7.7	-5.6	-3.6	-1.8	-0.3	0.9	1.8	2.7	3.6	4.5	5.6	6.8	8.0	9.2	10.2	11.1	11.7	12.2	12.4
	1.8	1.4	1.0	0.8	0.6	0.5	0.4	0.2	0.0	0.0	0.1	0.4	0.8	1.2	1.3	1.1	0.6	0.0	-0.6
-20	-10.8	-8.2	-5.6	-3.3	-1.3	0.2	1.6	2.7	3.8	5.0	6.2	7.5	8.8	10.0	11.1	12.0	12.7	13.2	13.5
	2.2	2.0	1.8	1.6	1.5	1.3	1.1	0.8	0.5	0.3	0.4	0.6	0.9	1.2	1.4	1.3	0.9	0.4	-0.1
-25	-14.9	-11.7	-8.6	-5.6	-3.0	-0.9	0.9	2.5	4.0	5.4	6.9	8.4	9.8	11.1	12.3	13.3	14.0	14.6	14.9
	2.3	2.4	2.3	2.2	2.1	2.0	1.7	1.3	1.0	0.7	0.7	0.8	1.1	1.4	1.6	1.6	1.3	0.8	0.4
-30	-20.2	-16.5	-12.6	-8.9	-5.5	-2.6	-0.1	2.1	4.0	5.9	7.7	9.4	11.0	12.5	13.8	14.9	15.7	16.3	16.7
	1.9	2.2	2.4	2.5	2.5	2.4	2.1	1.8	1.4	1.1	1.1	1.2	1.5	1.8	2.0	2.0	1.7	1.3	0.8
-35	-26.8	-22.6	-18.1	-13.5	-9.2	-5.3	-1.8	1.2	3.9	6.3	8.6	10.6	12.5	14.2	15.7	16.8	17.8	18.4	18.9
	0.5	1.1	1.7	2.1	2.4	2.4	2.3	2.0	1.7	1.6	1.6	1.8	2.0	2.3	2.5	2.4	2.2	1.7	1.3
-40	-34.6	-30.3	-25.3	-19.9	-14.4	-9.3	-4.5	-0.3	3.4	6.7	9.6	12.2	14.4	16.4	18.0	19.3	20.3	21.0	21.5
	-1.9	-1.0	-0.1	0.7	1.4	1.8	2.0	2.0	2.0	2.0	2.2	2.5	2.8	3.1	3.2	3.0	2.7	2.2	1.7
-45	-43.4	-39.5	-34.6	-28.7	-22.3	-15.6	-9.1	-3.1	2.2	6.8	10.7	14.1	16.9	19.2	21.1	22.5	23.5	24.2	24.6
	-4.8	-4.0	-3.0	-1.9	-0.9	0.1	1.0	1.6	2.1	2.6	3.1	3.5	3.9	4.1	4.1	3.9	3.4	2.9	2.3
-50	-52.8	-50.2	-46.2	-40.8	-33.9	-25.9	-17.1	-8.4	-0.5	6.4	12.1	16.6	20.3	23.1	25.2	26.7	27.8	28.4	28.8
	-7.7	-7.2	-6.7	-6.0	-4.9	-3.4	-1.6	0.3	2.0	3.4	4.4	5.2	5.6	5.7	5.5	5.1	4.5	3.9	3.3
-55	-62.5	-61.7	-59.7	-56.2	-50.9	-43.1	-32.6	-20.1	-7.2	4.5	13.7	20.6	25.5	29.0	31.4	33.0	34.0	34.5	34.7
	-9.7	-9.8	-10.1	-10.5	-10.6	-10.1	-8.1	-4.4	0.3	4.4	7.1	8.3	8.7	8.4	7.8	7.0	6.2	5.4	4.8
-60	-71.9	-73.1	-73.7	-73.4	-71.9	-68.6	-62.0	-49.9	-29.6	-4.1	16.6	29.2	36.3	40.3	42.5	43.7	44.1	44.2	43.9
	-10.4	-10.9	-11.8	-13.1	-15.0	-17.5	-20.4	-21.6	-14.4	3.4	15.2	17.5	16.2	14.2	12.3	10.6	9.2	8.0	7.1
-65	-80.5	-83.5	-86.4	-89.3	-92.0	-94.7	-97.4	-100.1	-103.1	-107.5	90.7	74.7	71.4	68.9	66.8	64.8	62.9	61.1	59.4
	-9.9	-10.5	-11.4	-12.6	-14.5	-17.2	-21.7	-29.4	-45.9	-102.3	430.6	72.1	39.2	26.8	20.2	16.2	13.4	11.4	10.0
-70	-88.3	-92.6	-97.2	-102.0	-107.2	-113.0	-119.7	-127.8	-138.1	-151.7	-170.0	167.7	145.1	126.5	112.7	102.6	95.0	88.9	84.0
	-8.6	-9.0	-9.5	-10.2	-11.1	-12.2	-13.6	-15.0	-16.2	-15.9	-11.5	-1.5	9.2	14.5	15.4	14.4	13.0	11.6	10.3
-75	-95.4	-100.6	-105.9	-111.6	-117.7	-124.2	-131.3	-139.1	-147.7	-157.2	-167.5	-178.6	169.9	158.4	147.3	137.1	127.8	119.6	112.3
	-6.8	-7.0	-7.2	-7.5	-7.7	-7.9	-8.1	-8.0	-7.8	-7.1	-6.0	-4.3	-2.3	-0.1	1.8	3.3	4.3	4.9	5.1
-80	-102.4	-107.9	-113.5	-119.3	-125.4	-131.7	-138.2	-145.0	-152.0	-159.3	-166.8	-174.4	177.8	170.0	162.2	154.6	147.2	140.0	133.1
	-4.7	-4.8	-4.9	-5.0	-5.0	-4.9	-4.8	-4.7	-4.4	-4.1	-3.7	-3.2	-2.7	-2.1	-1.5	-0.9	-0.4	0.1	0.4
-85	-109.7	-115.1	-120.6	-126.1	-131.7	-137.4	-143.2	-149.0	-154.9	-160.9	-166.8	-172.8	-178.9	175.1	169.1	163.1	157.1	151.2	145.4
	-2.9	-2.9	-2.9	-2.9	-2.9	-2.8	-2.8	-2.7	-2.6	-2.5	-2.4	-2.2	-2.1	-1.9	-1.8	-1.6	-1.5	-1.3	-1.2
-90	-117.5	-122.5	-127.5	-132.5	-137.5	-142.5	-147.5	-152.5	-157.5	-162.5	-167.5	-172.5	-177.5	177.5	172.5	167.5	162.5	157.5	152.5
	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4

Plots and Tables of IGRF 1990

Inclination

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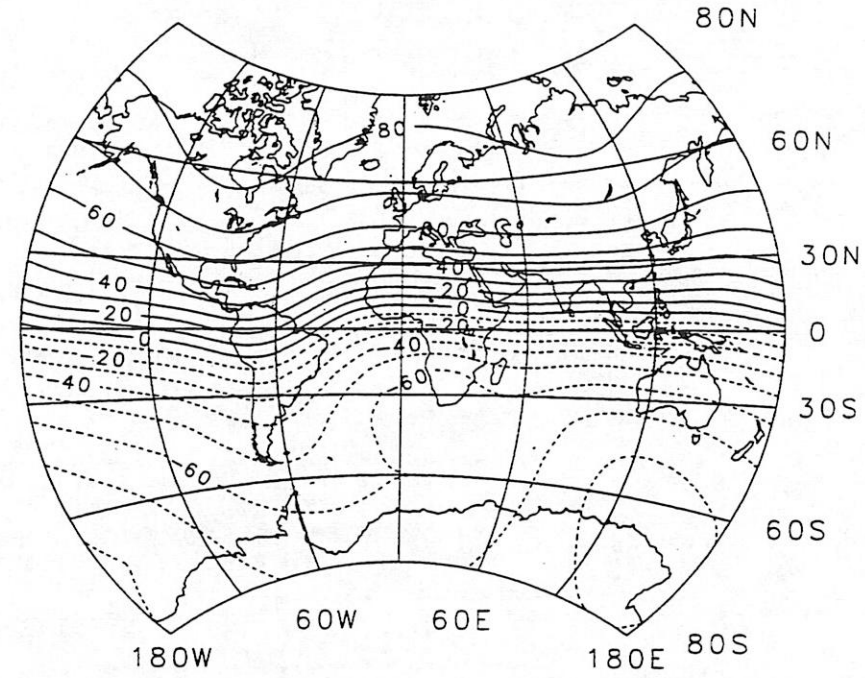
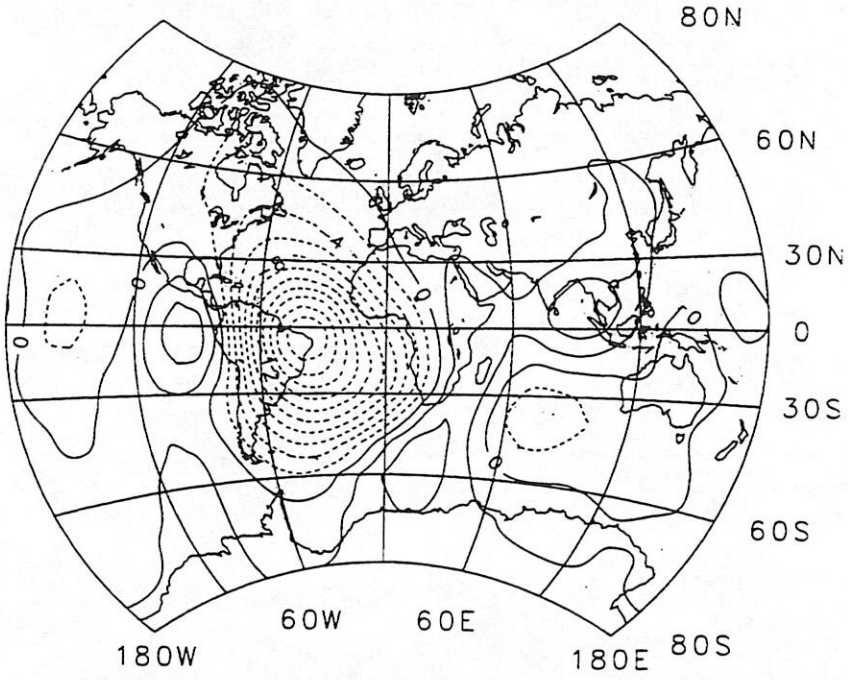
IGRF 1990 - INCLINATION

Figure 17 (**I**, top) Figure 18 ($\dot{\mathbf{I}}$, bottom)





INCLINATION

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	88.3 0.9	88.3 0.9	88.3 0.9	88.3 0.9	88.3 0.9	88.3 0.9	88.2 0.9	88.2 0.9	88.2 0.9	88.2 0.9	88.1 0.9	88.1 0.9	88.1 0.9	88.0 0.9	88.0 0.9	88.0 0.9	87.9 0.9	87.9 0.9	87.8 0.9
85	88.4 0.7	88.4 0.7	88.5 0.7	88.5 0.7	88.6 0.7	88.7 0.8	88.8 0.8	88.9 0.8	89.0 0.9	89.1 0.9	89.2 0.9	89.2 0.9	89.1 0.9	89.0 0.8	88.9 0.8	88.7 0.7	88.5 0.7	88.3 0.7	88.0 0.7
80	85.4 1.0	85.4 0.9	85.5 0.9	85.7 0.9	85.9 0.9	86.1 0.9	86.4 0.8	86.7 0.8	87.0 0.8	87.4 0.7	87.8 0.7	88.2 0.6	88.7 0.6	89.1 0.7	89.6 1.0	89.6 0.9	89.2 0.4	88.8 0.3	88.3 0.3
75	81.8 1.4	81.9 1.4	82.0 1.4	82.3 1.4	82.6 1.3	82.9 1.3	83.4 1.2	83.9 1.1	84.4 1.0	85.0 0.9	85.6 0.8	86.3 0.6	87.0 0.5	87.7 0.3	88.4 -0.1	89.1 -0.7	89.4 -1.6	89.0 -1.2	88.3 -0.7
70	77.9 1.8	78.1 1.8	78.3 1.8	78.6 1.7	79.1 1.7	79.6 1.6	80.2 1.5	80.8 1.3	81.5 1.2	82.3 1.0	83.1 0.8	84.0 0.6	84.9 0.3	85.7 0.0	86.6 -0.5	87.3 -1.0	87.8 -1.7	87.9 -2.1	87.5 -2.0
65	73.9 2.0	74.1 2.0	74.4 1.9	74.8 1.9	75.4 1.8	76.0 1.6	76.7 1.5	77.5 1.3	78.4 1.1	79.3 0.8	80.3 0.6	81.3 0.3	82.3 0.0	83.3 -0.4	84.2 -0.8	85.0 -1.3	85.6 -1.8	85.8 -2.3	85.7 -2.5
60	69.8 1.9	70.0 1.9	70.4 1.8	70.9 1.7	71.6 1.6	72.3 1.4	73.1 1.3	74.0 1.0	75.0 0.8	76.0 0.5	77.1 0.3	78.2 0.0	79.3 -0.3	80.3 -0.7	81.3 -1.0	82.1 -1.4	82.8 -1.9	83.1 -2.3	83.2 -2.6
55	65.6 1.7	65.9 1.6	66.4 1.5	67.0 1.4	67.7 1.2	68.5 1.1	69.4 0.8	70.4 0.6	71.4 0.4	72.5 0.1	73.6 -0.1	74.7 -0.4	75.8 -0.6	76.9 -0.9	77.9 -1.1	78.8 -1.4	79.6 -1.8	80.0 -2.2	80.2 -2.6
50	61.4 1.2	61.8 1.1	62.4 1.0	63.0 0.8	63.8 0.7	64.7 0.5	65.6 0.3	66.6 0.1	67.6 -0.1	68.7 -0.3	69.9 -0.5	71.0 -0.7	72.1 -0.8	73.2 -0.9	74.3 -1.1	75.2 -1.3	76.0 -1.6	76.6 -2.0	76.9 -2.4
45	57.2 0.8	57.7 0.6	58.4 0.4	59.1 0.2	59.9 0.1	60.8 -0.1	61.8 -0.3	62.7 -0.4	63.8 -0.6	64.8 -0.7	66.0 -0.8	67.1 -0.9	68.2 -0.9	69.3 -0.9	70.4 -0.9	71.3 -1.0	72.2 -1.2	72.8 -1.6	73.2 -2.1
40	52.9 0.4	53.6 0.1	54.4 -0.2	55.2 -0.4	56.1 -0.6	57.0 -0.7	57.9 -0.8	58.8 -0.9	59.8 -1.0	60.8 -1.0	61.9 -1.0	63.0 -0.9	64.1 -0.8	65.1 -0.7	66.2 -0.6	67.2 -0.6	68.1 -0.7	68.8 -1.0	69.3 -1.6
35	48.3 0.2	49.3 -0.2	50.3 -0.6	51.2 -0.9	52.1 -1.1	52.9 -1.2	53.8 -1.2	54.7 -1.3	55.6 -1.2	56.6 -1.2	57.6 -1.1	58.6 -0.9	59.6 -0.7	60.7 -0.4	61.8 -0.2	62.8 0.0	63.7 -0.1	64.5 -0.4	65.1 -1.1
30	43.4 0.4	44.7 -0.2	45.8 -0.7	46.8 -1.2	47.7 -1.4	48.6 -1.6	49.4 -1.6	50.2 -1.5	51.0 -1.4	51.9 -1.3	52.8 -1.1	53.8 -0.9	54.8 -0.5	55.8 -0.1	56.9 0.3	58.0 0.6	59.0 0.7	59.8 0.3	60.5 -0.4
25	37.9 0.8	39.4 0.0	40.7 -0.7	41.9 -1.3	42.8 -1.7	43.6 -1.8	44.3 -1.8	45.1 -1.7	45.8 -1.6	46.7 -1.4	47.5 -1.1	48.4 -0.8	49.4 -0.3	50.4 0.3	51.5 0.9	52.6 1.3	53.7 1.5	54.7 1.2	55.5 0.4
20	31.5 1.3	33.2 0.4	34.7 -0.5	36.0 -1.3	36.9 -1.8	37.7 -2.0	38.4 -2.0	39.1 -1.9	39.8 -1.7	40.6 -1.4	41.4 -1.1	42.3 -0.7	43.2 -0.1	44.2 0.6	45.3 1.4	46.5 2.1	47.7 2.4	48.9 2.2	49.9 1.4
15	23.9 1.8	25.9 0.8	27.6 -0.4	28.9 -1.3	29.9 -1.9	30.7 -2.2	31.3 -2.2	32.0 -2.0	32.7 -1.8	33.5 -1.5	34.3 -1.1	35.1 -0.6	36.0 0.1	37.1 1.0	38.2 1.9	39.5 2.8	41.0 3.3	42.4 3.2	43.6 2.4
10	15.3 2.1	17.4 1.0	19.2 -0.3	20.6 -1.3	21.6 -2.1	22.4 -2.4	23.1 -2.4	23.8 -2.2	24.6 -1.8	25.4 -1.5	26.2 -1.1	27.0 -0.5	27.9 0.2	29.0 1.3	30.2 2.4	31.7 3.5	33.3 4.1	35.0 4.2	36.6 3.4
5	5.7 2.2	7.8 1.0	9.7 -0.3	11.1 -1.4	12.2 -2.2	13.0 -2.5	13.8 -2.5	14.6 -2.2	15.4 -1.8	16.2 -1.5	17.1 -1.0	17.9 -0.4	18.9 0.4	20.0 1.6	21.3 2.8	23.0 4.1	24.8 4.9	26.7 5.0	28.6 4.3
0	-4.5 1.9	-2.4 0.9	-0.6 -0.4	0.8 -1.5	1.9 -2.2	2.8 -2.6	3.7 -2.5	4.5 -2.2	5.5 -1.7	6.4 -1.3	7.3 -0.8	8.2 -0.2	9.2 0.6	10.4 1.8	11.8 3.1	13.5 4.4	15.5 5.3	17.7 5.6	19.8 4.9

INCLINATION

LONGITUDE: LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	-4.5	-2.4	-0.6	0.8	1.9	2.8	3.7	4.5	5.5	6.4	7.3	8.2	9.2	10.4	11.8	13.5	15.5	17.7	19.8
	1.9	0.9	-0.4	-1.5	-2.2	-2.6	-2.5	-2.2	-1.7	-1.3	-0.8	-0.2	0.6	1.8	3.1	4.4	5.3	5.6	4.9
-5	-14.8	-12.9	-11.2	-9.8	-8.6	-7.7	-6.7	-5.7	-4.7	-3.7	-2.7	-1.7	-0.7	0.5	1.9	3.7	5.8	8.1	10.4
	1.5	0.6	-0.5	-1.5	-2.2	-2.4	-2.3	-2.0	-1.5	-1.1	-0.6	0.0	0.8	1.9	3.2	4.5	5.4	5.7	5.2
-10	-24.7	-22.9	-21.3	-20.0	-18.9	-17.8	-16.8	-15.8	-14.7	-13.6	-12.5	-11.5	-10.5	-9.3	-7.9	-6.2	-4.1	-1.8	0.6
	1.0	0.3	-0.6	-1.4	-2.0	-2.2	-2.0	-1.7	-1.2	-0.7	-0.2	0.3	1.0	2.0	3.1	4.3	5.1	5.4	4.9
-15	-33.7	-32.2	-30.7	-29.5	-28.3	-27.3	-26.2	-25.1	-24.0	-22.8	-21.7	-20.7	-19.7	-18.5	-17.2	-15.6	-13.7	-11.5	-9.2
	0.6	0.1	-0.6	-1.2	-1.7	-1.8	-1.6	-1.3	-0.8	-0.4	0.1	0.6	1.2	2.0	2.9	3.8	4.4	4.6	4.1
-20	-41.8	-40.4	-39.1	-37.9	-36.8	-35.7	-34.6	-33.5	-32.4	-31.2	-30.1	-29.1	-28.0	-27.0	-25.7	-24.3	-22.5	-20.5	-18.3
	0.3	-0.1	-0.5	-1.0	-1.3	-1.4	-1.2	-0.9	-0.5	-0.1	0.4	0.8	1.3	1.8	2.5	3.1	3.5	3.6	3.1
-25	-48.8	-47.5	-46.3	-45.2	-44.1	-43.0	-42.0	-40.9	-39.7	-38.6	-37.6	-36.5	-35.5	-34.5	-33.3	-32.0	-30.3	-28.5	-26.5
	0.2	-0.1	-0.4	-0.7	-0.9	-1.0	-0.9	-0.6	-0.2	0.2	0.5	0.9	1.3	1.7	2.1	2.5	2.7	2.6	2.0
-30	-54.8	-53.6	-52.5	-51.4	-50.4	-49.3	-48.3	-47.3	-46.2	-45.1	-44.1	-43.1	-42.1	-41.0	-39.9	-38.6	-37.1	-35.4	-33.5
	0.2	0.0	-0.2	-0.5	-0.6	-0.7	-0.6	-0.4	-0.1	0.3	0.6	0.9	1.3	1.6	1.8	2.0	2.0	1.7	1.2
-35	-60.0	-58.9	-57.8	-56.8	-55.7	-54.8	-53.8	-52.8	-51.8	-50.8	-49.8	-48.8	-47.8	-46.7	-45.5	-44.2	-42.7	-41.0	-39.3
	0.3	0.2	0.0	-0.2	-0.4	-0.4	-0.4	-0.2	0.1	0.4	0.7	1.0	1.3	1.5	1.7	1.7	1.6	1.3	0.7
-40	-64.4	-63.4	-62.3	-61.3	-60.4	-59.4	-58.5	-57.6	-56.6	-55.7	-54.7	-53.7	-52.6	-51.5	-50.3	-48.9	-47.3	-45.7	-44.0
	0.4	0.3	0.1	-0.1	-0.2	-0.3	-0.2	-0.1	0.1	0.4	0.7	1.1	1.3	1.6	1.7	1.7	1.5	1.2	0.6
-45	-68.3	-67.3	-66.3	-65.4	-64.5	-63.6	-62.7	-61.8	-60.9	-59.9	-59.0	-57.9	-56.8	-55.6	-54.2	-52.8	-51.2	-49.6	-47.9
	0.4	0.3	0.2	0.0	-0.1	-0.1	-0.1	0.0	0.3	0.6	0.9	1.2	1.5	1.7	1.9	1.9	1.7	1.4	0.8
-50	-71.8	-70.9	-69.9	-69.0	-68.1	-67.3	-66.4	-65.5	-64.6	-63.7	-62.6	-61.5	-60.3	-59.0	-57.6	-56.1	-54.6	-52.9	-51.3
	0.4	0.4	0.2	0.1	0.1	0.0	0.1	0.2	0.5	0.8	1.1	1.4	1.7	2.0	2.1	2.1	2.0	1.7	1.2
-55	-75.1	-74.2	-73.3	-72.4	-71.5	-70.6	-69.7	-68.8	-67.9	-66.9	-65.8	-64.7	-63.4	-62.1	-60.6	-59.2	-57.6	-56.1	-54.6
	0.4	0.4	0.3	0.3	0.2	0.3	0.4	0.5	0.8	1.1	1.4	1.7	2.0	2.2	2.3	2.3	2.2	2.0	1.6
-60	-78.2	-77.2	-76.3	-75.4	-74.5	-73.6	-72.7	-71.7	-70.7	-69.7	-68.6	-67.4	-66.1	-64.8	-63.4	-62.0	-60.6	-59.2	-57.9
	0.5	0.5	0.5	0.5	0.6	0.6	0.8	0.9	1.2	1.4	1.7	1.9	2.2	2.3	2.4	2.4	2.3	2.1	1.8
-65	-80.7	-79.8	-78.8	-77.9	-77.0	-76.0	-75.1	-74.1	-73.1	-72.0	-70.9	-69.7	-68.5	-67.3	-66.1	-64.8	-63.6	-62.4	-61.2
	0.8	0.8	0.9	0.9	1.0	1.1	1.2	1.4	1.6	1.8	2.0	2.1	2.3	2.4	2.4	2.4	2.3	2.1	1.9
-70	-82.2	-81.3	-80.4	-79.5	-78.6	-77.7	-76.7	-75.8	-74.8	-73.8	-72.8	-71.7	-70.7	-69.6	-68.5	-67.4	-66.4	-65.4	-64.5
	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.3	2.3	2.3	2.2	2.1	1.9
-75	-81.7	-81.1	-80.4	-79.7	-79.0	-78.2	-77.4	-76.6	-75.8	-74.9	-74.1	-73.2	-72.3	-71.5	-70.6	-69.8	-69.0	-68.2	-67.5
	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.0	1.9
-80	-79.6	-79.2	-78.8	-78.4	-77.9	-77.4	-76.9	-76.4	-75.8	-75.2	-74.6	-74.0	-73.4	-72.8	-72.2	-71.6	-71.0	-70.5	-70.0
	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0
-85	-76.6	-76.4	-76.3	-76.1	-75.9	-75.7	-75.4	-75.2	-74.9	-74.6	-74.3	-74.0	-73.7	-73.4	-73.1	-72.8	-72.5	-72.2	-71.9
	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
-90	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	INCLINATION -50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	87.8	87.8	87.8	87.7	87.7	87.6	87.6	87.5	87.5	87.5	87.4	87.4	87.4	87.3	87.3	87.3	87.3	87.3	87.3
	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85	88.0	87.8	87.6	87.3	87.1	86.9	86.7	86.5	86.3	86.1	86.0	85.8	85.7	85.5	85.4	85.4	85.3	85.2	85.2
	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2
80	88.3	87.8	87.3	86.8	86.4	86.0	85.5	85.2	84.8	84.4	84.1	83.9	83.6	83.4	83.2	83.0	82.9	82.8	82.7
	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.3	1.4
75	88.3	87.6	86.9	86.2	85.6	84.9	84.3	83.7	83.2	82.7	82.3	81.9	81.5	81.2	81.0	80.8	80.6	80.5	80.4
	-0.7	-0.5	-0.3	-0.1	0.0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.4
70	87.5	86.8	86.1	85.2	84.4	83.6	82.8	82.1	81.4	80.8	80.3	79.8	79.3	79.0	78.7	78.4	78.2	78.1	78.0
	-2.0	-1.6	-1.3	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	0.1	0.3	0.4	0.6	0.7	0.9	1.0	1.1	1.2	1.3
65	85.7	85.2	84.5	83.7	82.8	81.9	81.0	80.1	79.3	78.6	77.9	77.3	76.9	76.4	76.1	75.8	75.6	75.5	75.4
	-2.5	-2.4	-2.2	-2.0	-1.8	-1.5	-1.3	-1.0	-0.8	-0.6	-0.4	-0.2	0.0	0.2	0.4	0.6	0.8	0.9	1.0
60	83.2	82.9	82.3	81.5	80.6	79.6	78.6	77.6	76.7	75.9	75.1	74.5	73.9	73.5	73.1	72.8	72.6	72.5	72.5
	-2.6	-2.8	-2.9	-2.8	-2.6	-2.4	-2.2	-1.9	-1.7	-1.4	-1.2	-0.9	-0.6	-0.4	-0.1	0.1	0.4	0.6	0.8
55	80.2	80.0	79.6	78.9	77.9	76.9	75.8	74.7	73.7	72.8	71.9	71.2	70.6	70.1	69.7	69.4	69.2	69.1	69.1
	-2.6	-3.0	-3.2	-3.3	-3.3	-3.2	-3.1	-2.9	-2.6	-2.3	-2.0	-1.7	-1.4	-1.1	-0.7	-0.4	0.0	0.3	0.6
50	76.9	76.8	76.4	75.8	74.9	73.8	72.6	71.4	70.3	69.2	68.3	67.4	66.7	66.2	65.7	65.4	65.3	65.2	65.2
	-2.4	-2.9	-3.3	-3.7	-3.9	-3.9	-3.9	-3.7	-3.5	-3.3	-2.9	-2.6	-2.2	-1.8	-1.4	-0.9	-0.5	-0.1	0.3
45	73.2	73.3	73.0	72.4	71.5	70.4	69.1	67.8	66.5	65.3	64.1	63.2	62.4	61.7	61.2	60.8	60.6	60.5	60.6
	-2.1	-2.7	-3.4	-3.9	-4.4	-4.6	-4.7	-4.7	-4.5	-4.3	-4.0	-3.6	-3.1	-2.6	-2.1	-1.5	-1.0	-0.4	0.1
40	69.3	69.4	69.3	68.7	67.8	66.7	65.3	63.8	62.3	60.9	59.6	58.4	57.4	56.5	55.9	55.4	55.2	55.1	55.1
	-1.6	-2.4	-3.3	-4.1	-4.8	-5.3	-5.6	-5.7	-5.6	-5.5	-5.2	-4.8	-4.3	-3.7	-3.0	-2.3	-1.6	-0.9	-0.2
35	65.1	65.3	65.2	64.8	63.9	62.7	61.2	59.6	57.9	56.1	54.5	53.0	51.7	50.6	49.7	49.1	48.7	48.6	48.6
	-1.1	-2.0	-3.1	-4.2	-5.2	-6.0	-6.6	-6.9	-7.0	-6.9	-6.6	-6.2	-5.6	-4.9	-4.1	-3.2	-2.3	-1.5	-0.7
30	60.5	60.9	60.9	60.5	59.7	58.5	56.9	55.0	53.0	50.9	48.8	46.9	45.2	43.7	42.5	41.6	41.0	40.8	40.8
	-0.4	-1.5	-2.8	-4.3	-5.6	-6.8	-7.6	-8.2	-8.5	-8.6	-8.4	-8.0	-7.3	-6.5	-5.5	-4.4	-3.3	-2.2	-1.3
25	55.5	56.1	56.2	55.9	55.2	53.9	52.2	50.1	47.7	45.1	42.5	40.0	37.6	35.6	34.0	32.8	32.0	31.7	31.7
	0.4	-0.8	-2.4	-4.2	-5.9	-7.5	-8.8	-9.7	-10.3	-10.6	-10.5	-10.1	-9.4	-8.4	-7.1	-5.8	-4.4	-3.2	-2.1
20	49.9	50.7	51.0	50.9	50.2	48.9	47.0	44.6	41.8	38.7	35.4	32.2	29.1	26.4	24.2	22.6	21.6	21.1	21.1
	1.4	0.0	-1.9	-4.0	-6.2	-8.2	-9.9	-11.3	-12.3	-12.8	-12.9	-12.6	-11.7	-10.5	-9.0	-7.4	-5.8	-4.3	-3.1
15	43.6	44.6	45.2	45.3	44.7	43.4	41.3	38.6	35.3	31.5	27.5	23.5	19.7	16.3	13.5	11.4	10.1	9.4	9.3
	2.4	0.9	-1.2	-3.7	-6.3	-8.8	-11.0	-12.9	-14.3	-15.2	-15.5	-15.2	-14.3	-12.8	-11.0	-9.1	-7.3	-5.6	-4.2
10	36.6	37.8	38.7	39.0	38.5	37.1	34.9	31.9	28.1	23.7	19.0	14.2	9.6	5.5	2.1	-0.4	-2.0	-2.9	-3.2
	3.4	1.8	-0.5	-3.2	-6.2	-9.2	-12.0	-14.4	-16.3	-17.5	-18.1	-17.8	-16.7	-15.0	-12.9	-10.7	-8.7	-6.9	-5.4
5	28.6	30.2	31.3	31.8	31.5	30.1	27.8	24.5	20.2	15.3	10.0	4.6	-0.7	-5.3	-9.2	-12.1	-14.0	-15.1	-15.6
	4.3	2.7	0.3	-2.7	-6.0	-9.4	-12.7	-15.6	-17.9	-19.5	-20.2	-19.9	-18.7	-16.8	-14.5	-12.1	-9.9	-8.0	-6.5
0	19.8	21.7	23.1	23.8	23.6	22.3	19.9	16.4	11.8	6.6	0.8	-5.0	-10.6	-15.6	-19.7	-22.9	-25.1	-26.5	-27.3
	4.9	3.4	0.9	-2.2	-5.8	-9.5	-13.1	-16.3	-19.0	-20.8	-21.6	-21.3	-20.0	-18.0	-15.6	-13.2	-10.9	-9.0	-7.4

INCLINATION

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	19.8	21.7	23.1	23.8	23.6	22.3	19.9	16.4	11.8	6.6	0.8	-5.0	-10.6	-15.6	-19.7	-22.9	-25.1	-26.5	-27.3
	4.9	3.4	0.9	-2.2	-5.8	-9.5	-13.1	-16.3	-19.0	-20.8	-21.6	-21.3	-20.0	-18.0	-15.6	-13.2	-10.9	-9.0	-7.4
-5	10.4	12.5	14.1	15.1	15.0	13.8	11.4	7.7	3.1	-2.3	-8.2	-14.1	-19.7	-24.7	-29.0	-32.3	-34.7	-36.4	-37.5
	5.2	3.7	1.3	-1.8	-5.4	-9.3	-13.0	-16.5	-19.3	-21.2	-22.1	-21.8	-20.5	-18.6	-16.3	-13.9	-11.7	-9.9	-8.2
-10	0.6	2.8	4.6	5.7	5.8	4.8	2.4	-1.1	-5.7	-11.0	-16.7	-22.4	-27.8	-32.6	-36.8	-40.1	-42.7	-44.7	-46.1
	4.9	3.5	1.3	-1.7	-5.1	-8.9	-12.6	-16.0	-18.8	-20.7	-21.6	-21.4	-20.3	-18.6	-16.5	-14.4	-12.4	-10.6	-8.9
-15	-9.2	-6.9	-5.1	-3.8	-3.5	-4.4	-6.5	-9.8	-14.1	-19.1	-24.4	-29.6	-34.6	-39.2	-43.1	-46.4	-49.1	-51.2	-52.9
	4.1	2.9	0.9	-1.8	-5.0	-8.4	-11.9	-15.1	-17.7	-19.5	-20.3	-20.3	-19.4	-18.1	-16.3	-14.5	-12.8	-11.1	-9.5
-20	-18.3	-16.2	-14.3	-13.0	-12.6	-13.2	-15.0	-18.0	-21.9	-26.4	-31.2	-35.9	-40.4	-44.5	-48.1	-51.2	-53.9	-56.2	-58.0
	3.1	2.0	0.3	-2.1	-4.9	-7.9	-11.0	-13.9	-16.2	-17.8	-18.6	-18.7	-18.2	-17.2	-15.8	-14.3	-12.8	-11.2	-9.7
-25	-26.5	-24.5	-22.7	-21.4	-20.8	-21.3	-22.8	-25.3	-28.8	-32.7	-36.9	-41.1	-45.0	-48.7	-52.0	-54.9	-57.5	-59.7	-61.6
	2.0	1.0	-0.5	-2.5	-4.8	-7.4	-10.1	-12.5	-14.5	-15.9	-16.7	-16.9	-16.6	-15.9	-14.9	-13.7	-12.3	-10.9	-9.3
-30	-33.5	-31.6	-29.9	-28.6	-28.0	-28.2	-29.4	-31.6	-34.5	-37.9	-41.6	-45.2	-48.7	-51.9	-54.9	-57.5	-59.9	-62.0	-63.7
	1.2	0.3	-1.1	-2.8	-4.8	-6.9	-9.1	-11.1	-12.8	-14.0	-14.8	-15.0	-14.9	-14.4	-13.5	-12.5	-11.2	-9.8	-8.3
-35	-39.3	-37.5	-35.9	-34.6	-34.0	-34.0	-35.0	-36.7	-39.2	-42.1	-45.2	-48.4	-51.4	-54.3	-56.9	-59.2	-61.3	-63.1	-64.6
	0.7	-0.2	-1.3	-2.8	-4.5	-6.3	-8.1	-9.7	-11.1	-12.2	-12.8	-13.0	-12.9	-12.5	-11.7	-10.7	-9.5	-8.0	-6.4
-40	-44.0	-42.3	-40.7	-39.5	-38.8	-38.8	-39.5	-40.9	-42.9	-45.3	-47.9	-50.6	-53.2	-55.7	-57.9	-59.9	-61.7	-63.1	-64.3
	0.6	-0.2	-1.2	-2.5	-3.9	-5.4	-6.9	-8.2	-9.3	-10.2	-10.7	-10.8	-10.6	-10.1	-9.3	-8.3	-7.0	-5.5	-3.9
-45	-47.9	-46.2	-44.8	-43.7	-43.0	-42.8	-43.3	-44.3	-45.9	-47.8	-49.9	-52.2	-54.3	-56.4	-58.2	-59.9	-61.2	-62.3	-63.1
	0.8	0.1	-0.8	-1.8	-3.0	-4.2	-5.4	-6.5	-7.4	-8.0	-8.3	-8.3	-8.0	-7.4	-6.5	-5.3	-4.0	-2.5	-1.0
-50	-51.3	-49.8	-48.5	-47.4	-46.7	-46.5	-46.7	-47.4	-48.5	-50.0	-51.6	-53.3	-55.0	-56.6	-58.1	-59.3	-60.3	-61.1	-61.6
	1.2	0.6	-0.1	-1.0	-2.0	-3.0	-3.9	-4.7	-5.3	-5.7	-5.9	-5.7	-5.2	-4.5	-3.5	-2.4	-1.1	0.3	1.7
-55	-54.6	-53.2	-52.0	-51.1	-50.4	-50.1	-50.1	-50.5	-51.2	-52.2	-53.3	-54.5	-55.7	-56.8	-57.9	-58.7	-59.5	-60.0	-60.3
	1.6	1.1	0.5	-0.2	-1.0	-1.7	-2.4	-2.9	-3.3	-3.5	-3.5	-3.2	-2.7	-1.9	-1.0	0.1	1.3	2.4	3.4
-60	-57.9	-56.7	-55.6	-54.8	-54.1	-53.7	-53.6	-53.7	-54.1	-54.6	-55.2	-56.0	-56.7	-57.5	-58.1	-58.7	-59.2	-59.6	-59.9
	1.8	1.4	1.0	0.4	-0.1	-0.6	-1.0	-1.4	-1.6	-1.6	-1.5	-1.1	-0.6	0.0	0.8	1.7	2.6	3.4	4.2
-65	-61.2	-60.2	-59.3	-58.5	-57.9	-57.5	-57.2	-57.1	-57.2	-57.4	-57.7	-58.0	-58.4	-58.8	-59.2	-59.5	-59.8	-60.1	-60.3
	1.9	1.6	1.3	1.0	0.6	0.3	0.1	-0.1	-0.2	-0.1	0.0	0.3	0.8	1.3	1.9	2.5	3.1	3.6	4.1
-70	-64.5	-63.6	-62.9	-62.2	-61.6	-61.2	-60.8	-60.6	-60.5	-60.4	-60.5	-60.6	-60.7	-60.8	-61.0	-61.2	-61.4	-61.6	-61.8
	1.9	1.7	1.5	1.3	1.2	1.0	0.9	0.8	0.8	0.9	1.0	1.3	1.6	1.9	2.3	2.7	3.0	3.4	3.7
-75	-67.5	-66.8	-66.2	-65.6	-65.1	-64.7	-64.3	-64.0	-63.8	-63.7	-63.5	-63.5	-63.5	-63.5	-63.5	-63.6	-63.7	-63.8	-64.0
	1.9	1.8	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.7	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.1
-80	-70.0	-69.5	-69.0	-68.6	-68.2	-67.9	-67.6	-67.3	-67.1	-66.9	-66.8	-66.6	-66.6	-66.5	-66.5	-66.5	-66.6	-66.7	-66.8
	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.6	2.7
-85	-71.9	-71.7	-71.4	-71.2	-70.9	-70.7	-70.5	-70.4	-70.2	-70.1	-70.0	-69.9	-69.8	-69.8	-69.8	-69.8	-69.8	-69.8	-69.9
	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.5
-90	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

INCLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	87.3 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.3 0.9	87.4 1.0	87.4 1.0	87.4 1.0	87.5 1.0	87.5 1.0	87.5 1.0	87.6 0.9	87.6 0.9	87.6 0.9	87.7 0.9	87.7 0.9
85	85.2 1.2	85.2 1.2	85.2 1.2	85.2 1.2	85.3 1.2	85.3 1.2	85.4 1.2	85.5 1.2	85.6 1.2	85.7 1.2	85.9 1.2	86.0 1.2	86.2 1.2	86.4 1.2	86.6 1.2	86.8 1.2	87.0 1.2	87.2 1.2	87.4 1.2
80	82.7 1.4	82.7 1.4	82.7 1.4	82.7 1.4	82.8 1.5	82.9 1.5	83.0 1.5	83.2 1.5	83.4 1.5	83.6 1.5	83.9 1.5	84.2 1.5	84.5 1.5	84.8 1.5	85.2 1.5	85.5 1.5	85.9 1.5	86.3 1.5	86.6 1.5
75	80.4 1.4	80.3 1.5	80.3 1.5	80.3 1.5	80.4 1.6	80.5 1.6	80.7 1.6	80.9 1.6	81.1 1.6	81.4 1.6	81.7 1.6	82.1 1.6	82.5 1.6	82.9 1.6	83.4 1.7	83.9 1.7	84.4 1.7	84.8 1.7	85.3 1.7
70	78.0 1.3	77.9 1.3	77.9 1.4	78.0 1.5	78.0 1.5	78.2 1.6	78.3 1.6	78.5 1.6	78.8 1.6	79.1 1.6	79.4 1.6	79.8 1.6	80.3 1.7	80.8 1.7	81.3 1.7	81.8 1.7	82.3 1.8	82.8 1.8	83.3 1.9
65	75.4 1.0	75.4 1.2	75.4 1.3	75.4 1.3	75.5 1.4	75.7 1.4	75.9 1.5	76.1 1.5	76.3 1.5	76.6 1.5	76.9 1.5	77.3 1.5	77.8 1.5	78.2 1.6	78.7 1.6	79.3 1.6	79.8 1.7	80.2 1.8	80.6 1.8
60	72.5 0.8	72.5 1.0	72.5 1.1	72.7 1.2	72.8 1.3	73.0 1.4	73.1 1.4	73.4 1.4	73.6 1.4	73.9 1.3	74.2 1.3	74.5 1.3	74.9 1.3	75.3 1.3	75.8 1.3	76.2 1.4	76.7 1.4	77.1 1.5	77.4 1.7
55	69.1 0.6	69.2 0.8	69.3 1.0	69.5 1.2	69.6 1.3	69.9 1.3	70.1 1.3	70.3 1.3	70.5 1.3	70.8 1.2	71.1 1.1	71.4 1.0	71.7 1.0	72.0 0.9	72.4 1.0	72.7 1.0	73.1 1.1	73.4 1.2	73.7 1.4
50	65.2 0.3	65.3 0.7	65.5 0.9	65.7 1.2	66.0 1.3	66.2 1.4	66.5 1.4	66.7 1.4	67.0 1.3	67.2 1.1	67.5 1.0	67.7 0.8	68.0 0.7	68.2 0.6	68.5 0.6	68.7 0.6	69.0 0.8	69.2 0.9	69.4 1.2
45	60.6 0.1	60.7 0.5	61.0 0.9	61.2 1.2	61.5 1.4	61.9 1.5	62.2 1.5	62.5 1.5	62.8 1.3	63.0 1.1	63.3 0.9	63.5 0.7	63.7 0.5	63.9 0.4	64.0 0.3	64.2 0.4	64.3 0.6	64.4 0.8	64.6 1.0
40	55.1 -0.2	55.3 0.3	55.6 0.8	55.9 1.2	56.3 1.5	56.6 1.6	57.0 1.7	57.4 1.7	57.7 1.5	58.1 1.3	58.3 1.0	58.5 0.7	58.7 0.4	58.8 0.3	58.8 0.3	58.9 0.4	58.9 0.6	58.9 0.8	59.0 1.1
35	48.6 -0.7	48.8 0.0	49.1 0.6	49.5 1.1	49.9 1.5	50.3 1.8	50.8 1.9	51.3 1.9	51.7 1.7	52.1 1.5	52.4 1.1	52.7 0.8	52.8 0.5	52.8 0.4	52.8 0.4	52.7 0.5	52.6 0.8	52.5 1.2	52.5 1.5
30	40.8 -1.3	41.1 -0.4	41.4 0.3	41.8 0.9	42.3 1.4	42.8 1.8	43.4 2.1	44.0 2.1	44.5 2.0	45.1 1.8	45.5 1.4	45.7 1.0	45.9 0.8	45.8 0.7	45.7 0.7	45.5 1.0	45.2 1.4	45.1 1.8	44.9 2.2
25	31.7 -2.1	31.9 -1.1	32.3 -0.3	32.7 0.5	33.3 1.2	33.9 1.8	34.5 2.2	35.3 2.4	36.0 2.4	36.7 2.2	37.3 1.8	37.6 1.4	37.7 1.1	37.6 1.1	37.4 1.2	37.0 1.6	36.7 2.1	36.4 2.7	36.2 3.1
20	21.1 -3.1	21.3 -2.0	21.7 -1.0	22.2 -0.1	22.7 0.8	23.4 1.7	24.2 2.3	25.1 2.7	26.1 2.8	27.0 2.6	27.7 2.2	28.1 1.8	28.2 1.6	28.1 1.5	27.7 1.8	27.3 2.4	26.8 3.0	26.4 3.7	26.2 4.2
15	9.3 -4.2	9.5 -3.0	9.8 -1.9	10.3 -0.7	10.9 0.4	11.6 1.5	12.6 2.4	13.7 3.0	14.9 3.2	16.0 3.1	16.8 2.7	17.4 2.2	17.5 2.0	17.3 2.0	16.8 2.4	16.3 3.1	15.7 3.9	15.3 4.6	15.0 5.1
10	-3.2 -5.4	-3.1 -4.1	-2.9 -2.8	-2.5 -1.5	-1.9 -0.1	-1.1 1.2	0.0 2.4	1.3 3.3	2.7 3.6	4.0 3.5	5.0 3.1	5.6 2.6	5.7 2.3	5.5 2.3	5.0 2.8	4.3 3.5	3.7 4.4	3.2 5.1	3.0 5.6
5	-15.6 -6.5	-15.8 -5.1	-15.7 -3.7	-15.4 -2.2	-14.9 -0.7	-14.1 0.9	-12.9 2.3	-11.5 3.4	-9.9 3.9	-8.5 3.8	-7.3 3.3	-6.7 2.8	-6.5 2.4	-6.7 2.4	-7.3 2.9	-7.9 3.6	-8.5 4.5	-9.0 5.2	-9.2 5.6
0	-27.3 -7.4	-27.7 -6.0	-27.8 -4.5	-27.7 -2.9	-27.3 -1.2	-26.5 0.6	-25.3 2.2	-23.8 3.3	-22.1 3.9	-20.6 3.9	-19.4 3.4	-18.7 2.8	-18.5 2.3	-18.7 2.3	-19.2 2.6	-19.8 3.3	-20.4 4.0	-20.8 4.7	-21.0 5.0

INCLINATION

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-27.3	-27.7	-27.8	-27.7	-27.3	-26.5	-25.3	-23.8	-22.1	-20.6	-19.4	-18.7	-18.5	-18.7	-19.2	-19.8	-20.4	-20.8	-21.0
	-7.4	-6.0	-4.5	-2.9	-1.2	0.6	2.2	3.3	3.9	3.9	3.4	2.8	2.3	2.3	2.6	3.3	4.0	4.7	5.0
-5	-37.5	-38.2	-38.6	-38.7	-38.4	-37.7	-36.5	-35.0	-33.3	-31.7	-30.5	-29.8	-29.6	-29.7	-30.2	-30.7	-31.2	-31.5	-31.7
	-8.2	-6.7	-5.2	-3.5	-1.6	0.3	1.9	3.2	3.8	3.8	3.3	2.6	2.0	1.8	2.1	2.6	3.2	3.7	4.0
-10	-46.1	-47.1	-47.7	-48.0	-47.9	-47.2	-46.1	-44.6	-42.9	-41.4	-40.2	-39.4	-39.2	-39.3	-39.7	-40.2	-40.6	-40.9	-41.0
	-8.9	-7.4	-5.7	-3.9	-1.9	0.0	1.7	3.0	3.6	3.6	3.1	2.3	1.6	1.3	1.3	1.6	2.1	2.5	2.7
-15	-52.9	-54.2	-55.1	-55.5	-55.5	-54.9	-53.8	-52.3	-50.7	-49.2	-48.1	-47.4	-47.1	-47.2	-47.6	-48.1	-48.6	-48.9	-49.0
	-9.5	-7.8	-6.1	-4.2	-2.1	-0.1	1.6	2.9	3.5	3.4	2.8	1.9	1.1	0.5	0.4	0.5	0.8	1.1	1.3
-20	-58.0	-59.5	-60.5	-61.1	-61.2	-60.6	-59.5	-58.1	-56.5	-55.1	-54.0	-53.4	-53.2	-53.4	-53.9	-54.5	-55.0	-55.4	-55.7
	-9.7	-8.0	-6.2	-4.2	-2.1	-0.1	1.7	2.9	3.4	3.2	2.5	1.4	0.4	-0.3	-0.7	-0.7	-0.5	-0.2	0.0
-25	-61.6	-63.1	-64.2	-64.8	-64.8	-64.2	-63.1	-61.6	-60.1	-58.8	-57.9	-57.5	-57.6	-58.0	-58.6	-59.4	-60.1	-60.7	-61.1
	-9.3	-7.6	-5.8	-3.7	-1.6	0.4	2.0	3.1	3.5	3.1	2.1	0.8	-0.3	-1.2	-1.7	-1.8	-1.7	-1.4	-1.2
-30	-63.7	-65.1	-66.1	-66.5	-66.4	-65.7	-64.5	-63.2	-61.8	-60.8	-60.2	-60.1	-60.4	-61.1	-62.0	-63.0	-64.0	-64.8	-65.5
	-8.3	-6.6	-4.7	-2.7	-0.6	1.2	2.7	3.5	3.5	2.7	1.5	0.1	-1.1	-2.0	-2.5	-2.7	-2.6	-2.4	-2.1
-35	-64.6	-65.7	-66.4	-66.5	-66.2	-65.4	-64.3	-63.1	-62.1	-61.4	-61.2	-61.4	-62.1	-63.1	-64.3	-65.6	-66.8	-67.9	-68.9
	-6.4	-4.7	-2.8	-0.9	0.9	2.4	3.4	3.7	3.3	2.2	0.9	-0.5	-1.7	-2.6	-3.0	-3.2	-3.2	-2.9	-2.6
-40	-64.3	-65.0	-65.4	-65.3	-64.8	-64.0	-63.1	-62.2	-61.6	-61.3	-61.5	-62.2	-63.2	-64.4	-65.8	-67.3	-68.8	-70.2	-71.4
	-3.9	-2.2	-0.4	1.2	2.6	3.6	4.0	3.8	3.0	1.8	0.4	-0.9	-1.9	-2.7	-3.1	-3.3	-3.2	-3.0	-2.7
-45	-63.1	-63.6	-63.7	-63.5	-63.0	-62.4	-61.7	-61.3	-61.1	-61.2	-61.8	-62.7	-63.9	-65.3	-66.9	-68.5	-70.1	-71.8	-73.3
	-1.0	0.6	2.0	3.2	4.1	4.4	4.3	3.7	2.7	1.5	0.2	-0.9	-1.8	-2.4	-2.7	-2.8	-2.8	-2.6	-2.4
-50	-61.6	-61.9	-61.9	-61.7	-61.4	-61.1	-60.8	-60.7	-60.9	-61.4	-62.1	-63.2	-64.5	-66.0	-67.6	-69.3	-71.0	-72.8	-74.5
	1.7	2.9	3.9	4.6	5.0	4.9	4.4	3.6	2.6	1.5	0.5	-0.4	-1.1	-1.6	-1.9	-2.0	-2.0	-1.9	-1.7
-55	-60.3	-60.5	-60.6	-60.6	-60.5	-60.4	-60.5	-60.7	-61.2	-61.9	-62.8	-63.9	-65.2	-66.7	-68.3	-69.9	-71.6	-73.4	-75.2
	3.4	4.3	4.9	5.2	5.3	5.0	4.4	3.6	2.8	1.9	1.0	0.3	-0.3	-0.6	-0.9	-1.0	-1.0	-0.9	-0.8
-60	-59.9	-60.1	-60.2	-60.3	-60.4	-60.6	-60.9	-61.4	-62.0	-62.7	-63.7	-64.8	-66.0	-67.4	-68.9	-70.4	-72.1	-73.7	-75.4
	4.2	4.7	5.1	5.2	5.1	4.8	4.3	3.7	3.0	2.3	1.7	1.2	0.7	0.4	0.2	0.1	0.1	0.1	0.1
-65	-60.3	-60.6	-60.8	-61.0	-61.3	-61.6	-62.0	-62.5	-63.2	-64.0	-64.8	-65.9	-67.0	-68.2	-69.5	-70.9	-72.4	-73.9	-75.4
	4.1	4.5	4.7	4.7	4.6	4.4	4.0	3.6	3.2	2.7	2.3	1.9	1.6	1.4	1.2	1.1	1.0	1.0	1.0
-70	-61.8	-62.0	-62.2	-62.5	-62.8	-63.2	-63.7	-64.2	-64.8	-65.5	-66.3	-67.2	-68.1	-69.2	-70.3	-71.4	-72.7	-73.9	-75.2
	3.7	3.9	4.0	4.0	4.0	3.9	3.7	3.5	3.2	2.9	2.7	2.5	2.2	2.1	1.9	1.8	1.8	1.7	1.7
-75	-64.0	-64.2	-64.4	-64.7	-65.0	-65.3	-65.8	-66.2	-66.8	-67.4	-68.0	-68.7	-69.5	-70.3	-71.1	-72.0	-73.0	-73.9	-74.9
	3.1	3.3	3.3	3.4	3.4	3.3	3.3	3.2	3.1	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.3	2.2	2.2
-80	-66.8	-66.9	-67.1	-67.3	-67.6	-67.8	-68.2	-68.5	-68.9	-69.4	-69.8	-70.3	-70.9	-71.4	-72.0	-72.7	-73.3	-73.9	-74.6
	2.7	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.5	2.4
-85	-69.9	-70.0	-70.1	-70.2	-70.4	-70.6	-70.7	-70.9	-71.2	-71.4	-71.7	-71.9	-72.2	-72.5	-72.8	-73.1	-73.4	-73.8	-74.1
	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
-90	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

INCLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	87.7 0.9	87.8 0.9	87.8 0.9	87.9 0.9	87.9 0.9	87.9 0.9	88.0 0.9	88.0 0.9	88.1 0.9	88.1 0.9	88.1 0.9	88.1 0.9	88.2 0.9	88.2 0.9	88.2 0.9	88.2 0.9	88.2 0.9	88.3 0.9	88.3 0.9
85	87.4 1.2	87.6 1.1	87.8 1.1	88.0 1.1	88.1 1.1	88.3 1.1	88.4 1.1	88.4 1.1	88.5 1.1	88.5 1.0	88.5 1.0	88.5 0.9	88.5 0.9	88.4 0.8	88.4 0.8	88.4 0.8	88.4 0.8	88.4 0.7	88.4 0.7
80	86.6 1.5	86.9 1.5	87.2 1.5	87.4 1.4	87.5 1.4	87.5 1.3	87.4 1.2	87.2 1.1	87.0 1.0	86.7 1.0	86.5 0.9	86.2 0.9	86.0 0.9	85.8 0.9	85.6 0.9	85.5 0.9	85.4 0.9	85.3 1.0	85.4 1.0
75	85.3 1.7	85.6 1.8	85.9 1.7	85.9 1.7	85.9 1.6	85.7 1.5	85.4 1.4	84.9 1.3	84.5 1.3	84.0 1.3	83.6 1.3	83.1 1.3	82.8 1.3	82.4 1.3	82.1 1.4	81.9 1.4	81.8 1.4	81.7 1.4	81.8 1.4
70	83.3 1.9	83.6 1.9	83.7 1.9	83.7 1.9	83.6 1.8	83.2 1.7	82.7 1.7	82.2 1.6	81.5 1.6	80.9 1.6	80.3 1.6	79.7 1.6	79.2 1.6	78.7 1.7	78.4 1.7	78.1 1.8	77.9 1.8	77.9 1.8	77.9 1.8
65	80.6 1.8	80.9 1.9	81.0 2.0	80.9 2.0	80.7 2.0	80.2 1.9	79.6 1.9	78.9 1.8	78.2 1.8	77.4 1.8	76.7 1.8	76.0 1.8	75.3 1.9	74.8 1.9	74.4 1.9	74.1 2.0	73.9 2.0	73.8 2.0	73.9 2.0
60	77.4 1.7	77.6 1.8	77.7 1.9	77.6 2.0	77.3 2.0	76.8 2.0	76.1 2.0	75.3 2.0	74.5 2.0	73.6 1.9	72.8 1.9	72.0 1.9	71.3 1.9	70.7 1.9	70.2 2.0	69.9 2.0	69.7 2.0	69.7 2.0	69.8 1.9
55	73.7 1.4	73.9 1.6	73.9 1.7	73.7 1.9	73.4 2.0	72.9 2.1	72.2 2.1	71.4 2.1	70.5 2.1	69.5 2.0	68.6 2.0	67.7 1.9	67.0 1.9	66.3 1.9	65.8 1.8	65.5 1.8	65.4 1.8	65.4 1.7	65.6 1.7
50	69.4 1.2	69.5 1.4	69.5 1.6	69.4 1.8	69.0 2.0	68.5 2.1	67.8 2.1	67.0 2.1	66.1 2.1	65.1 2.0	64.1 1.9	63.2 1.9	62.4 1.8	61.8 1.7	61.3 1.6	61.1 1.5	61.0 1.5	61.1 1.3	61.4 1.2
45	64.6 1.0	64.6 1.3	64.6 1.6	64.4 1.8	64.1 2.0	63.6 2.1	62.9 2.1	62.1 2.1	61.2 2.1	60.2 2.0	59.2 1.9	58.3 1.8	57.5 1.6	56.9 1.5	56.6 1.4	56.4 1.3	56.5 1.1	56.7 0.9	57.2 0.8
40	59.0 1.1	59.0 1.5	58.9 1.7	58.8 2.0	58.5 2.1	58.1 2.2	57.4 2.2	56.7 2.1	55.7 2.0	54.8 1.9	53.8 1.8	52.9 1.7	52.2 1.5	51.7 1.4	51.5 1.3	51.5 1.1	51.7 0.9	52.2 0.7	52.9 0.4
35	52.5 1.5	52.4 1.9	52.4 2.1	52.3 2.3	52.1 2.4	51.7 2.4	51.1 2.3	50.4 2.1	49.5 2.0	48.6 1.8	47.7 1.7	46.9 1.6	46.3 1.5	45.9 1.4	45.9 1.3	46.1 1.2	46.7 0.9	47.4 0.6	48.3 0.2
30	44.9 2.2	44.9 2.5	44.8 2.7	44.8 2.8	44.6 2.8	44.3 2.6	43.9 2.4	43.2 2.1	42.4 1.9	41.6 1.7	40.8 1.5	40.1 1.4	39.6 1.4	39.5 1.5	39.7 1.5	40.3 1.5	41.1 1.2	42.2 0.9	43.4 0.4
25	36.2 3.1	36.1 3.4	36.1 3.6	36.1 3.5	36.1 3.3	35.9 2.9	35.5 2.5	35.0 2.1	34.3 1.7	33.5 1.4	32.9 1.2	32.3 1.2	32.1 1.4	32.2 1.6	32.7 1.8	33.6 1.9	34.9 1.8	36.3 1.4	37.9 0.8
20	26.2 4.2	26.1 4.4	26.2 4.4	26.3 4.2	26.3 3.7	26.3 3.2	26.0 2.6	25.6 2.0	25.0 1.5	24.4 1.1	23.9 0.9	23.6 0.9	23.7 1.2	24.1 1.6	24.9 2.1	26.2 2.4	27.8 2.4	29.6 2.0	31.5 1.3
15	15.0 5.1	14.9 5.3	15.1 5.1	15.3 4.7	15.5 4.1	15.6 3.3	15.5 2.6	15.2 1.8	14.8 1.1	14.4 0.6	14.1 0.4	14.1 0.5	14.4 0.9	15.1 1.6	16.2 2.3	17.8 2.8	19.7 2.9	21.8 2.6	23.9 1.8
10	3.0 5.6	3.0 5.7	3.2 5.5	3.6 4.9	3.9 4.1	4.2 3.3	4.2 2.4	4.1 1.5	3.9 0.7	3.7 0.2	3.7 -0.1	3.9 0.1	4.5 0.6	5.4 1.4	6.8 2.2	8.6 2.9	10.7 3.2	13.0 2.9	15.3 2.1
5	-9.2 5.6	-9.2 5.6	-8.9 5.3	-8.4 4.6	-7.9 3.8	-7.5 2.9	-7.2 2.0	-7.1 1.1	-7.1 0.4	-7.1 -0.2	-6.9 -0.4	-6.5 -0.3	-5.7 0.2	-4.6 1.0	-3.1 2.0	-1.2 2.7	1.0 3.1	3.3 2.9	5.7 2.2
0	-21.0 5.0	-20.8 5.0	-20.4 4.6	-19.9 4.0	-19.2 3.2	-18.7 2.4	-18.3 1.5	-18.0 0.8	-17.8 0.1	-17.6 -0.4	-17.3 -0.7	-16.7 -0.6	-15.8 -0.2	-14.6 0.6	-13.0 1.5	-11.2 2.3	-9.1 2.7	-6.8 2.6	-4.5 1.9

INCLINATION

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-21.0	-20.8	-20.4	-19.9	-19.2	-18.7	-18.3	-18.0	-17.8	-17.6	-17.3	-16.7	-15.8	-14.6	-13.0	-11.2	-9.1	-6.8	-4.5
	5.0	5.0	4.6	4.0	3.2	2.4	1.5	0.8	0.1	-0.4	-0.7	-0.6	-0.2	0.6	1.5	2.3	2.7	2.6	1.9
-5	-31.7	-31.5	-31.0	-30.4	-29.7	-29.1	-28.5	-28.1	-27.8	-27.5	-27.0	-26.3	-25.4	-24.2	-22.7	-21.0	-19.0	-16.9	-14.8
	4.0	3.9	3.6	3.0	2.4	1.7	1.1	0.5	-0.1	-0.5	-0.8	-0.8	-0.4	0.2	1.0	1.7	2.1	2.0	1.5
-10	-41.0	-40.9	-40.4	-39.8	-39.0	-38.3	-37.7	-37.2	-36.8	-36.4	-35.8	-35.1	-34.2	-33.1	-31.7	-30.1	-28.4	-26.6	-24.7
	2.7	2.6	2.4	2.0	1.5	1.1	0.7	0.3	-0.1	-0.5	-0.7	-0.8	-0.6	-0.1	0.5	1.1	1.4	1.4	1.0
-15	-49.0	-48.9	-48.5	-47.9	-47.2	-46.5	-45.8	-45.3	-44.8	-44.3	-43.7	-43.0	-42.2	-41.1	-39.9	-38.5	-37.0	-35.4	-33.7
	1.3	1.3	1.2	1.0	0.8	0.6	0.4	0.1	-0.1	-0.4	-0.6	-0.7	-0.6	-0.3	0.1	0.6	0.9	0.9	0.6
-20	-55.7	-55.7	-55.4	-54.9	-54.3	-53.6	-52.9	-52.4	-51.8	-51.3	-50.8	-50.1	-49.3	-48.3	-47.2	-46.0	-44.7	-43.2	-41.8
	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	-0.2	-0.4	-0.5	-0.5	-0.3	-0.1	0.3	0.5	0.5	0.3
-25	-61.1	-61.3	-61.2	-60.8	-60.3	-59.7	-59.1	-58.6	-58.1	-57.5	-57.0	-56.3	-55.6	-54.7	-53.7	-52.6	-51.4	-50.1	-48.8
	-1.2	-1.0	-0.8	-0.6	-0.5	-0.3	-0.1	0.0	0.0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.1	0.1	0.3	0.3	0.2
-30	-65.5	-65.9	-66.0	-65.9	-65.5	-65.1	-64.6	-64.0	-63.5	-63.0	-62.4	-61.8	-61.0	-60.2	-59.3	-58.3	-57.1	-56.0	-54.8
	-2.1	-1.8	-1.5	-1.2	-0.9	-0.6	-0.3	-0.1	0.0	0.0	-0.1	-0.2	-0.2	-0.1	0.0	0.1	0.3	0.3	0.2
-35	-68.9	-69.6	-70.0	-70.1	-70.0	-69.7	-69.3	-68.9	-68.4	-67.8	-67.2	-66.6	-65.9	-65.0	-64.1	-63.2	-62.1	-61.1	-60.0
	-2.6	-2.3	-1.9	-1.6	-1.2	-0.8	-0.5	-0.3	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.1	0.2	0.3	0.4	0.3
-40	-71.4	-72.5	-73.2	-73.7	-73.9	-73.8	-73.6	-73.2	-72.7	-72.2	-71.6	-70.9	-70.1	-69.3	-68.4	-67.5	-66.5	-65.4	-64.4
	-2.7	-2.4	-2.1	-1.7	-1.4	-1.1	-0.8	-0.5	-0.3	-0.2	-0.2	-0.1	0.0	0.1	0.2	0.3	0.4	0.4	0.4
-45	-73.3	-74.6	-75.7	-76.6	-77.1	-77.3	-77.3	-77.1	-76.7	-76.2	-75.5	-74.8	-74.0	-73.2	-72.2	-71.3	-70.3	-69.3	-68.3
	-2.4	-2.2	-1.9	-1.7	-1.5	-1.2	-1.0	-0.8	-0.6	-0.5	-0.4	-0.2	-0.1	0.1	0.2	0.4	0.5	0.5	0.4
-50	-74.5	-76.1	-77.5	-78.7	-79.7	-80.3	-80.7	-80.7	-80.4	-79.9	-79.3	-78.5	-77.6	-76.7	-75.8	-74.8	-73.8	-72.8	-71.8
	-1.7	-1.6	-1.5	-1.4	-1.3	-1.3	-1.2	-1.1	-1.0	-0.9	-0.7	-0.5	-0.3	0.0	0.1	0.3	0.4	0.5	0.4
-55	-75.2	-76.9	-78.5	-80.1	-81.5	-82.6	-83.4	-83.8	-83.9	-83.5	-82.9	-82.0	-81.1	-80.1	-79.1	-78.1	-77.1	-76.1	-75.1
	-0.8	-0.8	-0.7	-0.8	-0.9	-1.1	-1.2	-1.4	-1.4	-1.3	-1.0	-0.7	-0.5	-0.2	0.0	0.2	0.3	0.4	0.4
-60	-75.4	-77.1	-78.8	-80.5	-82.1	-83.6	-85.0	-86.2	-86.9	-87.0	-86.4	-85.5	-84.5	-83.4	-82.3	-81.2	-80.2	-79.2	-78.2
	0.1	0.1	0.1	0.1	-0.1	-0.3	-0.6	-1.1	-1.5	-1.7	-1.4	-0.9	-0.5	-0.2	0.0	0.2	0.4	0.4	0.5
-65	-75.4	-76.9	-78.5	-80.1	-81.6	-83.2	-84.6	-86.1	-87.5	-88.9	-89.7	-88.5	-87.2	-86.1	-84.9	-83.8	-82.8	-81.7	-80.7
	1.0	1.0	1.0	0.9	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.1	0.3	0.4	0.5	0.6	0.7	0.8	0.8
-70	-75.2	-76.5	-77.8	-79.1	-80.4	-81.6	-82.8	-84.0	-85.0	-85.9	-86.6	-86.8	-86.7	-86.2	-85.5	-84.8	-83.9	-83.0	-82.2
	1.7	1.7	1.7	1.6	1.6	1.6	1.7	1.7	1.8	1.9	2.1	2.2	2.1	1.9	1.7	1.6	1.5	1.5	1.5
-75	-74.9	-75.9	-76.9	-77.8	-78.8	-79.7	-80.6	-81.3	-82.1	-82.7	-83.1	-83.5	-83.6	-83.6	-83.5	-83.2	-82.8	-82.3	-81.7
	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1
-80	-74.6	-75.2	-75.8	-76.5	-77.1	-77.6	-78.2	-78.7	-79.1	-79.5	-79.8	-80.0	-80.2	-80.3	-80.3	-80.2	-80.1	-79.8	-79.6
	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3
-85	-74.1	-74.4	-74.7	-75.0	-75.2	-75.5	-75.8	-76.0	-76.2	-76.3	-76.5	-76.6	-76.7	-76.8	-76.8	-76.8	-76.7	-76.7	-76.6
	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3
-90	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2	-73.2
	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4

Plots and Tables of IGRF 1990

H Component

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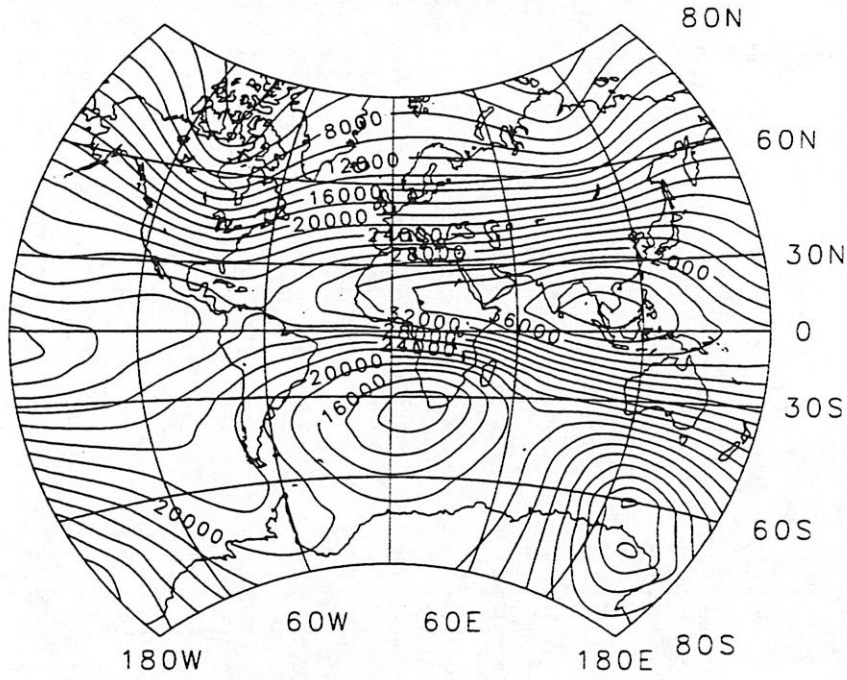
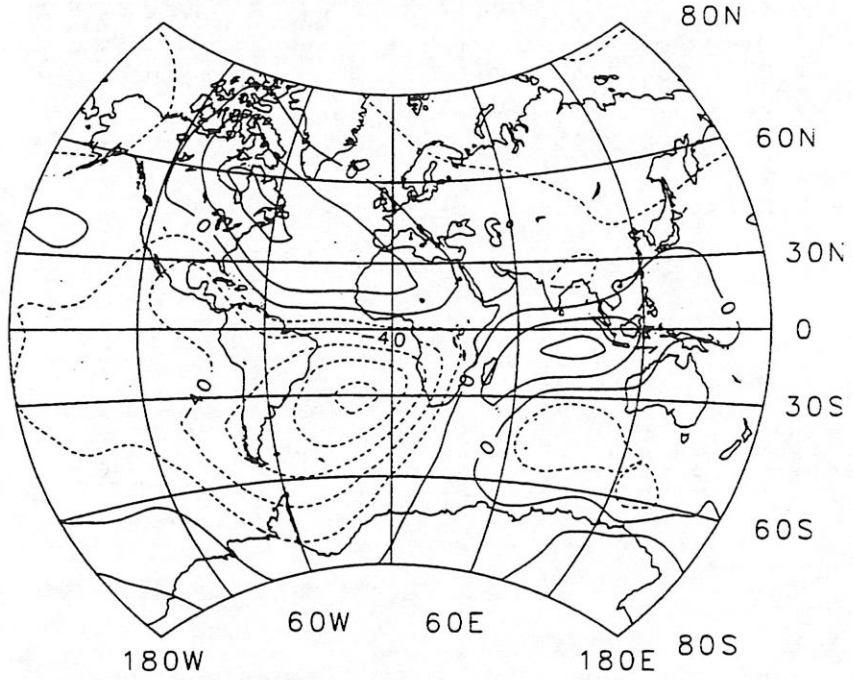
IGRF 1990 - H - COMPONENT

Figure 19 (**H**, top) Figure 20 ($\dot{\mathbf{H}}$, bottom)





H-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	1710	1706	1706	1709	1715	1725	1739	1755	1776	1799	1826	1855	1887	1922	1958	1997	2037	2079	2121
	-15.8	-15.7	-15.6	-15.6	-15.5	-15.5	-15.4	-15.4	-15.3	-15.3	-15.2	-15.2	-15.2	-15.2	-15.2	-15.2	-15.2	-15.3	-15.3
85	1591	1558	1510	1445	1366	1275	1175	1071	970	885	830	822	870	973	1119	1297	1496	1708	1928
	-13.3	-13.1	-13.0	-13.0	-13.1	-13.2	-13.5	-14.0	-14.7	-15.4	-16.0	-16.1	-15.5	-14.6	-13.6	-13.0	-12.6	-12.4	-12.5
80	4649	4591	4488	4339	4147	3913	3638	3326	2978	2599	2191	1759	1311	855	434	353	747	1221	1704
	-18.8	-18.7	-18.4	-18.0	-17.4	-16.8	-16.0	-15.2	-14.2	-13.3	-12.4	-11.6	-11.2	-12.0	-16.5	-16.0	-7.7	-6.1	-6.3
75	8183	8085	7921	7691	7398	7042	6625	6150	5620	5040	4414	3749	3053	2337	1620	957	627	1032	1700
	-27.9	-27.6	-27.1	-26.5	-25.6	-24.5	-23.2	-21.7	-19.9	-17.8	-15.5	-12.8	-9.7	-5.7	0.1	10.7	27.0	19.4	11.6
70	11773	11635	11419	11127	10758	10313	9792	9196	8529	7795	7003	6161	5287	4403	3549	2798	2289	2210	2591
	-32.9	-32.5	-31.9	-31.1	-30.0	-28.7	-27.1	-25.1	-22.7	-19.9	-16.6	-12.6	-7.8	-1.8	5.9	16.0	27.7	34.5	32.1
65	15175	15004	14758	14437	14038	13557	12993	12345	11613	10803	9921	8984	8012	7037	6105	5288	4687	4412	4527
	-32.1	-31.5	-30.9	-30.1	-29.1	-27.8	-26.2	-24.1	-21.6	-18.4	-14.5	-9.9	-4.5	2.1	9.9	19.1	28.8	36.7	40.1
60	18190	17995	17742	17428	17046	16590	16053	15431	14720	13924	13049	12110	11130	10140	9187	8337	7669	7269	7201
	-25.9	-25.2	-24.5	-23.9	-23.3	-22.4	-21.2	-19.5	-17.2	-14.3	-10.7	-6.5	-1.5	4.3	11.0	18.6	26.8	34.5	40.2
55	20689	20473	20227	19945	19619	19238	18789	18262	17651	16954	16173	15320	14412	13479	12562	11716	11012	10526	10320
	-16.5	-15.6	-15.1	-14.8	-14.7	-14.4	-14.0	-13.1	-11.7	-9.7	-7.2	-4.1	-0.6	3.5	8.3	14.0	20.6	27.8	34.7
50	22630	22388	22151	21913	21663	21385	21062	20679	20222	19684	19062	18360	17591	16774	15945	15149	14449	13914	13611
	-7.0	-6.1	-5.6	-5.6	-5.9	-6.5	-6.9	-7.2	-7.0	-6.4	-5.4	-4.2	-2.6	-0.7	1.9	5.5	10.5	17.1	24.7
45	24067	23788	23552	23354	23180	23012	22829	22607	22328	21979	21550	21039	20450	19795	19097	18394	17739	17197	16836
	-0.5	0.7	1.3	1.2	0.5	-0.6	-2.0	-3.4	-4.6	-5.5	-6.2	-6.8	-7.3	-7.6	-7.2	-5.7	-2.2	3.6	11.6
40	25131	24805	24558	24386	24277	24208	24154	24086	23982	23822	23591	23282	22890	22418	21879	21300	20723	20208	19819
	1.4	2.9	3.8	4.0	3.3	1.9	-0.1	-2.4	-4.7	-6.9	-9.1	-11.2	-13.5	-15.8	-17.5	-17.9	-16.1	-11.2	-3.2
35	26004	25629	25360	25200	25134	25141	25190	25251	25295	25300	25248	25126	24924	24635	24260	23815	23331	22859	22460
	-1.3	0.4	1.9	2.7	2.4	1.1	-1.1	-4.0	-7.0	-10.1	-13.2	-16.5	-20.1	-23.8	-27.3	-29.5	-29.3	-25.7	-18.1
30	26874	26456	26163	25999	25955	26007	26124	26273	26424	26553	26641	26673	26632	26502	26274	25950	25554	25123	24714
	-7.0	-5.2	-3.2	-1.7	-1.3	-2.2	-4.3	-7.2	-10.6	-14.1	-17.7	-21.5	-25.8	-30.6	-35.3	-39.1	-40.6	-38.5	-32.0
25	27888	27444	27128	26950	26904	26967	27109	27298	27503	27704	27881	28018	28092	28080	27964	27734	27402	26997	26571
	-13.3	-11.7	-9.5	-7.4	-6.4	-6.7	-8.4	-11.2	-14.5	-18.1	-21.7	-25.7	-30.2	-35.3	-40.8	-45.8	-48.9	-48.6	-43.8
20	29120	28669	28337	28135	28061	28099	28219	28393	28596	28809	29015	29198	29332	29389	29341	29169	28875	28480	28030
	-18.1	-17.2	-15.1	-12.9	-11.5	-11.4	-12.8	-15.2	-18.3	-21.7	-25.1	-28.8	-33.0	-38.0	-43.7	-49.3	-53.7	-55.2	-52.6
15	30544	30108	29765	29530	29405	29380	29432	29539	29681	29845	30018	30185	30322	30396	30374	30230	29954	29562	29090
	-20.1	-20.2	-19.0	-17.2	-15.9	-15.8	-16.9	-19.1	-21.9	-24.9	-28.0	-31.1	-34.6	-39.0	-44.1	-49.8	-54.9	-58.0	-57.6
10	32047	31639	31289	31013	30817	30698	30644	30639	30672	30734	30819	30916	31002	31047	31017	30878	30615	30229	29750
	-19.2	-20.9	-20.9	-20.2	-19.5	-19.7	-20.8	-22.8	-25.4	-28.1	-30.6	-32.9	-35.5	-38.6	-42.7	-47.6	-52.8	-57.0	-58.7
5	33445	33073	32719	32398	32121	31893	31710	31569	31462	31388	31347	31331	31328	31311	31248	31103	30850	30481	30013
	-16.8	-20.0	-21.7	-22.3	-22.7	-23.3	-24.6	-26.5	-28.8	-31.1	-33.0	-34.5	-35.9	-37.5	-40.0	-43.6	-48.2	-52.7	-56.0
0	34525	34193	33840	33480	33127	32795	32489	32211	31963	31746	31564	31419	31305	31206	31093	30932	30690	30346	29902
	-14.4	-18.9	-22.2	-24.3	-25.6	-26.8	-28.2	-30.0	-31.9	-33.8	-35.1	-35.8	-36.0	-36.1	-36.8	-38.8	-42.1	-46.5	-50.7

H-COMPONENT

LATITUDE \ LONGITUDE:	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	34525	34193	33840	33480	33127	32795	32489	32211	31963	31746	31564	31419	31305	31206	31093	30932	30690	30346	29902
	-14.4	-18.9	-22.2	-24.3	-25.6	-26.8	-28.2	-30.0	-31.9	-33.8	-35.1	-35.8	-36.0	-36.1	-36.8	-38.8	-42.1	-46.5	-50.7
-5	35096	34807	34465	34082	33678	33270	32871	32489	32127	31789	31482	31215	30990	30802	30629	30441	30200	29875	29454
	-13.3	-18.8	-23.2	-26.4	-28.6	-30.1	-31.4	-32.8	-34.3	-35.7	-36.6	-36.7	-35.9	-34.8	-33.9	-34.2	-36.2	-39.8	-44.3
-10	35024	34785	34472	34097	33681	33244	32805	32371	31948	31536	31145	30785	30467	30194	29955	29725	29465	29139	28724
	-14.2	-20.0	-25.0	-28.7	-31.2	-32.7	-33.7	-34.6	-35.6	-36.5	-37.0	-36.8	-35.6	-33.7	-31.9	-31.0	-31.8	-34.6	-38.8
-15	34265	34090	33832	33502	33122	32713	32294	31873	31451	31026	30603	30194	29813	29470	29163	28875	28573	28219	27785
	-16.5	-22.1	-27.0	-30.7	-33.0	-34.1	-34.6	-34.9	-35.3	-35.9	-36.3	-36.0	-34.9	-33.1	-31.1	-29.8	-29.9	-32.0	-35.8
-20	32871	32780	32606	32360	32062	31734	31391	31040	30676	30294	29893	29480	29072	28682	28315	27963	27602	27201	26728
	-19.0	-23.9	-28.3	-31.6	-33.4	-34.0	-33.9	-33.6	-33.6	-34.0	-34.4	-34.6	-34.1	-33.0	-31.6	-30.7	-30.9	-32.8	-36.2
-25	30973	30986	30923	30793	30613	30404	30176	29933	29667	29368	29029	28655	28257	27850	27445	27042	26627	26175	25661
	-20.2	-24.4	-28.2	-30.9	-32.3	-32.5	-32.0	-31.4	-31.1	-31.3	-31.9	-32.7	-33.1	-33.2	-33.1	-33.2	-34.2	-36.3	-39.7
-30	28740	28875	28941	28946	28904	28830	28734	28615	28464	28269	28019	27715	27365	26981	26577	26158	25717	25240	24705
	-19.3	-23.0	-26.3	-28.7	-29.9	-30.0	-29.4	-28.6	-28.2	-28.4	-29.3	-30.5	-31.9	-33.3	-34.7	-36.3	-38.5	-41.4	-45.0
-35	26331	26596	26798	26943	27041	27103	27135	27137	27102	27017	26873	26666	26400	26087	25737	25356	24943	24486	23970
	-16.5	-19.9	-23.0	-25.4	-26.7	-27.0	-26.6	-26.0	-25.6	-25.8	-26.7	-28.2	-30.2	-32.6	-35.3	-38.4	-42.0	-45.9	-50.1
-40	23844	24240	24575	24853	25081	25267	25418	25533	25609	25638	25612	25528	25387	25194	24957	24677	24351	23969	23519
	-12.5	-15.8	-19.0	-21.6	-23.3	-24.0	-24.0	-23.7	-23.3	-23.3	-23.9	-25.4	-27.6	-30.6	-34.2	-38.4	-43.1	-48.1	-53.1
-45	21302	21821	22281	22681	23028	23329	23590	23816	24006	24158	24268	24334	24353	24325	24249	24122	23935	23677	23336
	-8.6	-11.8	-15.0	-17.8	-19.9	-21.0	-21.4	-21.1	-20.7	-20.4	-20.6	-21.6	-23.7	-26.7	-30.8	-35.7	-41.2	-47.0	-52.7
-50	18659	19297	19874	20390	20851	21266	21643	21988	22306	22599	22866	23104	23308	23471	23584	23638	23619	23514	23312
	-5.5	-8.4	-11.4	-14.2	-16.3	-17.5	-17.9	-17.6	-16.9	-16.3	-16.0	-16.6	-18.2	-21.1	-25.2	-30.4	-36.3	-42.5	-48.7
-55	15871	16628	17321	17955	18537	19077	19584	20067	20532	20984	21421	21839	22230	22582	22882	23115	23265	23318	23266
	-3.1	-5.3	-7.7	-9.9	-11.6	-12.5	-12.7	-12.2	-11.3	-10.4	-10.0	-10.3	-11.7	-14.4	-18.3	-23.4	-29.2	-35.5	-41.8
-60	13001	13875	14687	15444	16157	16833	17483	18116	18736	19347	19945	20525	21077	21586	22039	22419	22713	22908	22995
	0.2	-1.1	-2.6	-3.9	-4.9	-5.3	-5.1	-4.5	-3.7	-3.0	-2.7	-3.2	-4.8	-7.4	-11.2	-16.0	-21.4	-27.3	-33.2
-65	10384	11346	12256	13121	13949	14748	15525	16286	17033	17765	18480	19170	19824	20432	20980	21456	21849	22148	22349
	7.5	6.7	5.9	5.1	4.7	4.5	4.6	4.8	5.1	5.1	4.6	3.5	1.6	-1.2	-4.8	-9.1	-13.9	-19.0	-24.2
-70	8830	9747	10643	11517	12372	13208	14029	14833	15621	16390	17134	17847	18522	19150	19721	20228	20662	21019	21293
	20.2	18.8	17.6	16.5	15.7	15.0	14.4	13.8	13.0	12.0	10.7	8.9	6.6	3.8	0.5	-3.2	-7.2	-11.4	-15.5
-75	9241	9881	10553	11245	11949	12658	13366	14069	14762	15439	16096	16726	17324	17884	18400	18867	19281	19638	19936
	29.8	28.2	26.6	25.1	23.7	22.3	20.9	19.5	18.0	16.3	14.4	12.3	9.9	7.4	4.6	1.7	-1.3	-4.3	-7.3
-80	11301	11621	11983	12380	12805	13251	13711	14179	14650	15118	15579	16027	16458	16868	17255	17613	17942	18239	18502
	29.2	28.2	27.1	25.9	24.7	23.3	21.9	20.5	18.9	17.3	15.6	13.8	12.0	10.1	8.2	6.2	4.3	2.4	0.6
-85	13912	14022	14153	14303	14470	14651	14844	15046	15255	15469	15684	15900	16112	16320	16522	16716	16901	17075	17237
	22.8	22.3	21.8	21.1	20.5	19.7	18.9	18.1	17.2	16.3	15.4	14.5	13.6	12.6	11.7	10.8	9.9	9.1	8.3
-90	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303
	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0

H-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	2121	2164	2208	2251	2293	2335	2376	2415	2452	2487	2520	2550	2577	2602	2623	2640	2655	2665	2672
	-15.3	-15.3	-15.4	-15.5	-15.5	-15.6	-15.7	-15.8	-15.9	-16.0	-16.1	-16.2	-16.3	-16.4	-16.4	-16.5	-16.6	-16.7	-16.7
85	1928	2152	2376	2597	2814	3025	3227	3419	3600	3769	3925	4068	4196	4309	4406	4488	4553	4602	4635
	-12.5	-12.7	-13.1	-13.5	-14.0	-14.5	-15.1	-15.6	-16.2	-16.7	-17.3	-17.8	-18.3	-18.7	-19.2	-19.6	-20.0	-20.3	-20.6
80	1704	2183	2652	3105	3539	3952	4340	4704	5040	5349	5630	5882	6106	6302	6470	6612	6726	6814	6875
	-6.3	-7.2	-8.2	-9.4	-10.6	-11.8	-13.0	-14.1	-15.2	-16.2	-17.2	-18.1	-19.0	-19.8	-20.6	-21.3	-21.9	-22.5	-23.1
75	1700	2404	3100	3772	4411	5012	5569	6082	6549	6969	7344	7675	7963	8211	8421	8595	8735	8844	8922
	11.6	6.7	3.0	0.0	-2.6	-4.9	-6.9	-8.8	-10.5	-12.0	-13.4	-14.7	-15.9	-17.0	-18.1	-19.0	-19.9	-20.8	-21.7
70	2591	3252	4028	4832	5620	6369	7064	7698	8268	8772	9212	9592	9914	10184	10406	10585	10725	10831	10906
	32.1	26.0	20.0	14.8	10.5	6.8	3.5	0.7	-1.8	-4.0	-6.0	-7.8	-9.4	-10.9	-12.2	-13.6	-14.8	-16.1	-17.2
65	4527	4987	5678	6487	7334	8165	8949	9665	10304	10860	11336	11735	12064	12329	12538	12698	12816	12897	12949
	40.1	38.8	34.8	29.9	25.0	20.4	16.2	12.5	9.2	6.3	3.7	1.4	-0.7	-2.6	-4.5	-6.3	-8.0	-9.7	-11.4
60	7201	7467	8012	8743	9570	10420	11239	11994	12664	13240	13723	14117	14431	14673	14853	14981	15065	15113	15131
	40.2	42.9	42.6	40.1	36.4	32.2	27.9	23.8	20.1	16.7	13.7	11.0	8.5	6.1	3.7	1.4	-0.9	-3.3	-5.5
55	10320	10425	10818	11436	12196	13015	13826	14580	15249	15818	16287	16660	16948	17163	17315	17414	17469	17489	17481
	34.7	40.1	43.3	44.1	42.7	39.9	36.4	32.6	28.9	25.5	22.4	19.5	16.8	14.1	11.4	8.6	5.7	2.7	-0.2
50	13611	13585	13839	14334	15000	15755	16524	17249	17893	18440	18885	19237	19507	19707	19847	19938	19987	20000	19986
	24.7	32.3	38.5	42.5	44.0	43.3	41.1	38.2	35.0	32.0	29.1	26.5	23.8	21.1	18.1	15.0	11.6	8.1	4.6
45	16836	16709	16839	17210	17766	18433	19136	19812	20420	20942	21373	21722	21998	22213	22375	22490	22563	22600	22609
	11.6	20.8	29.7	36.8	41.2	42.9	42.5	40.8	38.5	36.2	34.0	31.8	29.4	26.8	23.9	20.6	17.0	13.2	9.3
40	19819	19616	19637	19881	20315	20878	21498	22116	22690	23199	23640	24017	24338	24608	24831	25006	25136	25225	25281
	-3.2	7.2	18.3	28.1	35.4	39.6	41.2	41.1	40.0	38.7	37.2	35.6	33.7	31.4	28.7	25.5	22.0	18.2	14.3
35	22460	22195	22111	22229	22533	22979	23511	24071	24620	25137	25615	26055	26458	26820	27135	27399	27610	27771	27894
	-18.1	-7.3	5.3	17.4	27.3	34.1	37.9	39.4	39.8	39.4	38.8	37.8	36.4	34.5	32.1	29.4	26.3	23.0	19.5
30	24714	24389	24204	24194	24365	24694	25136	25645	26182	26723	27257	27779	28280	28748	29168	29530	29830	30073	30272
	-32.0	-21.5	-8.3	5.4	17.5	26.5	32.4	35.8	37.4	38.1	38.1	37.6	36.6	35.2	33.4	31.3	29.1	26.6	23.9
25	26571	26184	25900	25768	25812	26027	26386	26848	27375	27940	28525	29116	29697	30248	30751	31193	31572	31894	32175
	-43.8	-34.4	-21.6	-7.3	6.1	17.0	24.7	29.6	32.5	33.9	34.4	34.3	33.6	32.6	31.5	30.4	29.2	28.0	26.3
20	28030	27584	27210	26968	26897	27009	27288	27699	28204	28767	29365	29974	30575	31147	31676	32153	32581	32971	33334
	-52.6	-45.2	-33.7	-20.0	-6.2	5.7	14.7	20.7	24.4	26.3	27.0	26.9	26.4	25.9	25.6	25.6	25.8	25.9	25.3
15	29090	28597	28150	27817	27648	27666	27864	28209	28659	29172	29714	30261	30791	31294	31765	32212	32645	33076	33511
	-57.6	-52.8	-43.7	-31.6	-18.6	-6.8	2.6	9.1	13.1	15.0	15.5	15.3	14.9	14.8	15.4	16.7	18.2	19.4	19.9
10	29750	29229	28733	28330	28079	28008	28115	28367	28717	29117	29526	29919	30283	30620	30948	31292	31674	32107	32586
	-58.7	-56.6	-50.5	-41.1	-30.1	-19.4	-10.6	-4.4	-0.8	0.7	0.7	0.1	-0.4	-0.1	1.3	3.6	6.3	8.5	9.7
5	30013	29488	28964	28510	28186	28023	28023	28151	28357	28586	28795	28962	29085	29185	29301	29478	29752	30133	30606
	-56.0	-56.6	-53.7	-47.6	-39.4	-31.0	-23.7	-18.6	-15.9	-15.3	-16.0	-17.2	-18.0	-17.5	-15.7	-12.6	-9.3	-6.5	-4.8
0	29902	29386	28849	28353	27957	27696	27572	27552	27581	27604	27579	27487	27339	27173	27045	27016	27131	27399	27794
	-50.7	-53.3	-53.4	-50.8	-46.0	-40.4	-35.4	-32.1	-30.7	-31.2	-32.9	-34.8	-36.1	-36.0	-34.1	-30.9	-27.4	-24.5	-22.6

H-COMPONENT

LATITUDE \ LONGITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	29902	29386	28849	28353	27957	27696	27572	27552	27581	27604	27579	27487	27339	27173	27045	27016	27131	27399	27794
	-50.7	-53.3	-53.4	-50.8	-46.0	-40.4	-35.4	-32.1	-30.7	-31.2	-32.9	-34.8	-36.1	-36.0	-34.1	-30.9	-27.4	-24.5	-22.6
-5	29454	28949	28401	27863	27392	27026	26769	26589	26435	26250	25995	25658	25258	24844	24483	24242	24165	24262	24501
	-44.3	-48.4	-50.9	-51.3	-49.7	-47.2	-44.7	-43.4	-43.7	-45.5	-48.2	-51.1	-53.2	-53.7	-52.4	-49.8	-46.6	-43.9	-41.9
-10	28724	28219	27650	27065	26518	26046	25659	25330	25009	24644	24199	23667	23073	22468	21917	21484	21210	21099	21123
	-38.8	-43.5	-47.6	-50.3	-51.4	-51.5	-51.4	-52.1	-54.0	-57.1	-61.0	-64.9	-67.9	-69.4	-69.2	-67.6	-65.3	-62.9	-60.6
-15	27785	27260	26661	26025	25404	24836	24335	23882	23430	22932	22356	21697	20980	20253	19573	18991	18538	18216	18006
	-35.8	-40.6	-45.4	-49.3	-52.2	-54.1	-55.9	-58.2	-61.5	-65.8	-70.7	-75.6	-79.7	-82.4	-83.4	-83.0	-81.6	-79.5	-76.7
-20	26728	26170	25533	24850	24166	23521	22932	22385	21843	21261	20611	19887	19113	18327	17574	16892	16301	15803	15390
	-36.2	-40.7	-45.5	-49.8	-53.4	-56.3	-59.1	-62.5	-66.7	-71.9	-77.8	-83.6	-88.6	-92.3	-94.4	-95.0	-94.1	-91.8	-88.1
-25	25661	25069	24402	23685	22957	22257	21605	20995	20394	19764	19080	18335	17546	16745	15963	15227	14552	13941	13399
	-39.7	-43.8	-48.2	-52.3	-55.8	-59.0	-62.1	-65.9	-70.6	-76.3	-82.7	-89.1	-94.8	-99.2	-101.9	-102.7	-101.7	-98.7	-93.4
-30	24705	24099	23420	22690	21940	21208	20515	19859	19217	18557	17856	17109	16327	15534	14753	14004	13301	12653	12076
	-45.0	-49.0	-52.9	-56.5	-59.6	-62.4	-65.4	-69.1	-73.8	-79.6	-86.1	-92.6	-98.3	-102.7	-105.3	-105.7	-103.8	-99.4	-92.3
-35	23970	23382	22722	22005	21259	20515	19795	19103	18423	17733	17017	16269	15499	14725	13966	13240	12562	11948	11422
	-50.1	-54.2	-58.0	-61.3	-63.9	-66.3	-69.0	-72.3	-76.6	-82.0	-88.0	-93.9	-99.0	-102.7	-104.3	-103.5	-100.2	-94.1	-85.4
-40	23519	22991	22383	21709	20990	20255	19522	18801	18084	17363	16626	15875	15118	14370	13651	12977	12367	11840	11423
	-53.1	-57.7	-61.7	-64.9	-67.4	-69.6	-71.9	-74.8	-78.6	-83.1	-88.0	-92.6	-96.4	-98.5	-98.6	-96.1	-91.1	-83.6	-73.7
-45	23336	22905	22384	21782	21118	20414	19689	18955	18215	17469	16718	15967	15229	14519	13855	13256	12739	12325	12036
	-52.7	-57.9	-62.3	-65.8	-68.6	-70.9	-73.1	-75.6	-78.5	-81.9	-85.2	-88.1	-89.9	-90.1	-88.2	-84.1	-77.7	-69.3	-59.2
-50	23312	23007	22600	22098	21517	20875	20189	19473	18740	17998	17257	16529	15828	15172	14579	14065	13647	13341	13163
	-48.7	-54.4	-59.3	-63.3	-66.5	-69.1	-71.3	-73.4	-75.5	-77.5	-79.2	-80.1	-79.8	-77.9	-74.3	-68.9	-61.8	-53.3	-44.0
-55	23266	23102	22827	22448	21978	21432	20825	20175	19497	18805	18117	17447	16813	16233	15721	15294	14964	14742	14637
	-41.8	-47.6	-52.9	-57.3	-60.9	-63.8	-66.0	-67.7	-69.0	-69.8	-69.8	-68.9	-66.9	-63.5	-58.7	-52.8	-45.7	-38.0	-30.0
-60	22995	22970	22835	22595	22260	21843	21358	20822	20252	19665	19079	18510	17977	17493	17074	16730	16472	16306	16234
	-33.2	-38.8	-44.0	-48.5	-52.2	-55.1	-57.2	-58.6	-59.2	-59.0	-57.9	-55.9	-52.8	-48.7	-43.7	-37.9	-31.7	-25.2	-18.7
-65	22349	22448	22445	22347	22160	21895	21564	21183	20765	20327	19885	19453	19047	18678	18359	18097	17898	17767	17703
	-24.2	-29.2	-33.8	-37.8	-41.2	-43.8	-45.7	-46.7	-46.9	-46.2	-44.7	-42.3	-39.1	-35.1	-30.6	-25.7	-20.6	-15.5	-10.7
-70	21293	21484	21593	21622	21579	21469	21304	21093	20847	20580	20302	20025	19759	19514	19297	19114	18969	18864	18798
	-15.5	-19.5	-23.2	-26.4	-29.1	-31.2	-32.6	-33.4	-33.4	-32.6	-31.2	-29.1	-26.5	-23.4	-19.9	-16.2	-12.5	-8.8	-5.4
-75	19936	20176	20356	20480	20551	20574	20553	20497	20410	20302	20179	20047	19914	19785	19663	19554	19458	19377	19312
	-7.3	-10.1	-12.7	-14.9	-16.8	-18.2	-19.2	-19.7	-19.7	-19.2	-18.3	-16.9	-15.2	-13.1	-10.9	-8.5	-6.1	-3.7	-1.5
-80	18502	18731	18927	19089	19219	19319	19391	19438	19463	19469	19459	19436	19403	19363	19316	19266	19212	19156	19098
	0.6	-1.0	-2.5	-3.9	-5.0	-5.8	-6.4	-6.8	-6.8	-6.7	-6.2	-5.6	-4.7	-3.7	-2.6	-1.4	0.0	1.3	2.6
-85	17237	17388	17525	17649	17760	17857	17942	18013	18072	18119	18155	18180	18194	18199	18194	18180	18157	18126	18086
	8.3	7.6	6.9	6.3	5.8	5.4	5.1	4.9	4.8	4.8	4.8	5.0	5.2	5.6	5.9	6.4	6.9	7.4	8.0
-90	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303
	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0

H-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	2672	2675	2674	2670	2661	2650	2634	2615	2593	2568	2540	2509	2476	2440	2403	2364	2324	2283	2241
	-16.7	-16.8	-16.9	-16.9	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0	-17.0	-16.9	-16.9	-16.9	-16.8
85	4635	4650	4649	4630	4595	4543	4473	4388	4286	4168	4035	3888	3729	3557	3375	3186	2990	2792	2593
	-20.6	-20.9	-21.1	-21.3	-21.5	-21.6	-21.7	-21.8	-21.8	-21.7	-21.7	-21.6	-21.5	-21.4	-21.2	-21.1	-20.9	-20.8	-20.6
80	6875	6910	6919	6901	6856	6784	6683	6552	6393	6203	5983	5733	5454	5150	4822	4477	4120	3763	3417
	-23.1	-23.6	-24.1	-24.5	-24.9	-25.3	-25.6	-25.8	-26.0	-26.2	-26.3	-26.3	-26.4	-26.4	-26.4	-26.4	-26.5	-26.5	-26.6
75	8922	8971	8992	8984	8947	8880	8781	8648	8479	8271	8022	7731	7397	7023	6614	6178	5729	5287	4879
	-21.7	-22.5	-23.2	-24.0	-24.6	-25.3	-25.9	-26.4	-26.9	-27.4	-27.9	-28.4	-28.8	-29.3	-29.8	-30.3	-30.9	-31.5	-32.0
70	10906	10953	10974	10971	10944	10892	10813	10705	10563	10383	10160	9889	9570	9203	8792	8348	7891	7449	7058
	-17.2	-18.4	-19.5	-20.5	-21.5	-22.4	-23.2	-24.0	-24.8	-25.5	-26.3	-27.1	-27.9	-28.8	-29.8	-31.0	-32.2	-33.4	-34.6
65	12949	12975	12981	12969	12942	12901	12845	12772	12677	12554	12397	12199	11956	11664	11327	10956	10570	10199	9883
	-11.4	-13.0	-14.5	-15.9	-17.1	-18.2	-19.2	-20.0	-20.8	-21.5	-22.2	-22.9	-23.8	-24.8	-26.1	-27.6	-29.3	-31.2	-33.0
60	15131	15127	15107	15076	15039	15001	14961	14920	14875	14820	14748	14651	14521	14353	14147	13908	13652	13405	13202
	-5.5	-7.7	-9.7	-11.5	-13.0	-14.3	-15.2	-15.9	-16.4	-16.6	-16.9	-17.1	-17.6	-18.3	-19.4	-20.9	-22.9	-25.2	-27.7
55	17481	17452	17409	17361	17313	17271	17241	17225	17221	17227	17238	17246	17242	17218	17170	17095	17003	16909	16838
	-0.2	-3.0	-5.6	-7.9	-9.8	-11.3	-12.2	-12.7	-12.7	-12.4	-11.9	-11.4	-11.0	-11.1	-11.7	-12.9	-14.9	-17.5	-20.6
50	19986	19952	19904	19852	19803	19764	19741	19741	19766	19817	19893	19990	20101	20216	20325	20422	20502	20568	20631
	4.6	1.1	-2.1	-5.0	-7.3	-9.1	-10.2	-10.6	-10.4	-9.5	-8.4	-7.1	-5.9	-5.3	-5.4	-6.4	-8.2	-10.9	-14.2
45	22609	22595	22567	22534	22501	22477	22467	22479	22519	22596	22714	22875	23076	23307	23557	23808	24046	24259	24443
	9.3	5.4	1.7	-1.7	-4.7	-7.0	-8.6	-9.3	-9.2	-8.2	-6.7	-5.1	-3.6	-2.6	-2.5	-3.4	-5.2	-7.9	-11.1
40	25281	25313	25329	25336	25341	25346	25357	25382	25431	25519	25658	25858	26121	26441	26801	27178	27544	27876	28153
	14.3	10.3	6.3	2.4	-1.2	-4.3	-6.7	-8.1	-8.6	-8.1	-6.9	-5.5	-4.2	-3.5	-3.6	-4.8	-6.8	-9.4	-12.2
35	27894	27988	28066	28133	28192	28241	28283	28325	28381	28472	28621	28844	29149	29531	29970	30436	30893	31305	31641
	19.5	15.7	11.7	7.5	3.4	-0.6	-4.1	-6.7	-8.2	-8.7	-8.4	-7.6	-7.1	-7.1	-8.1	-9.8	-12.1	-14.5	-16.6
30	30272	30442	30594	30734	30859	30964	31046	31113	31181	31278	31436	31678	32015	32440	32932	33453	33961	34414	34774
	23.9	20.7	17.1	12.8	8.2	3.3	-1.2	-5.0	-7.8	-9.5	-10.1	-10.4	-10.8	-11.8	-13.6	-16.0	-18.6	-20.7	-21.8
25	32175	32430	32669	32893	33095	33263	33394	33493	33585	33702	33880	34149	34518	34980	35506	36057	36586	37048	37404
	26.3	24.0	20.8	16.7	11.7	6.3	0.9	-3.9	-7.6	-10.1	-11.5	-12.5	-13.5	-15.2	-17.5	-20.3	-22.7	-24.3	-24.5
20	33334	33681	34016	34332	34615	34853	35039	35185	35316	35473	35694	36007	36422	36925	37482	38051	38586	39044	39386
	25.3	23.9	21.3	17.4	12.5	6.9	1.2	-3.8	-7.8	-10.4	-11.8	-12.7	-13.7	-15.3	-17.5	-19.8	-21.8	-22.5	-21.7
15	33511	33949	34381	34788	35153	35460	35708	35913	36106	36330	36622	37009	37493	38053	38652	39247	39793	40252	40590
	19.9	19.2	17.1	13.7	9.1	4.0	-1.1	-5.5	-8.6	-10.3	-10.7	-10.5	-10.4	-10.9	-12.1	-13.4	-14.2	-13.9	-12.4
10	32586	33094	33603	34084	34514	34882	35194	35472	35752	36074	36473	36967	37550	38194	38859	39501	40082	40568	40932
	9.7	9.6	8.0	5.2	1.6	-2.3	-5.9	-8.5	-9.8	-9.6	-8.0	-5.8	-3.8	-2.4	-1.8	-1.4	-0.7	0.6	2.6
5	30606	31133	31673	32185	32647	33057	33429	33791	34181	34632	35173	35809	36524	37283	38041	38761	39407	39955	40384
	-4.8	-4.6	-5.6	-7.3	-9.4	-11.1	-12.2	-12.2	-10.8	-7.8	-3.6	1.0	5.4	8.8	11.5	13.8	16.0	18.1	20.1
0	27794	28265	28761	29239	29685	30107	30529	30982	31499	32106	32816	33622	34495	35391	36266	37084	37821	38459	38986
	-22.6	-21.9	-22.0	-22.1	-21.8	-20.7	-18.5	-15.3	-10.7	-4.8	2.0	9.0	15.3	20.6	24.9	28.5	31.8	34.4	36.0

H-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	27794	28265	28761	29239	29685	30107	30529	30982	31499	32106	32816	33622	34495	35391	36266	37084	37821	38459	38986
	-22.6	-21.9	-22.0	-22.1	-21.8	-20.7	-18.5	-15.3	-10.7	-4.8	2.0	9.0	15.3	20.6	24.9	28.5	31.8	34.4	36.0
-5	24501	24831	25197	25570	25947	26350	26808	27353	28006	28781	29674	30661	31698	32735	33728	34647	35478	36212	36847
	-41.9	-40.5	-39.1	-37.0	-33.7	-29.0	-23.3	-16.6	-8.9	-0.4	8.6	17.0	24.3	30.2	35.0	39.2	42.7	45.2	46.2
-10	21123	21239	21409	21621	21891	22251	22736	23366	24152	25091	26160	27313	28494	29646	30728	31718	32613	33416	34137
	-60.6	-58.2	-54.8	-49.9	-43.0	-34.7	-25.4	-15.5	-5.2	5.3	15.3	23.9	30.6	35.6	39.5	42.9	45.7	47.6	47.9
-15	18006	17882	17831	17865	18020	18336	18843	19553	20460	21542	22754	24032	25305	26513	27621	28618	29512	30322	31070
	-76.7	-72.7	-67.0	-58.9	-48.6	-36.8	-24.4	-12.0	0.2	11.6	21.3	28.4	32.9	35.5	37.0	38.4	39.8	40.7	40.4
-20	15390	15058	14820	14712	14784	15079	15618	16402	17410	18599	19903	21236	22521	23700	24747	25662	26466	27194	27882
	-88.1	-82.3	-74.0	-62.9	-49.7	-35.3	-20.7	-6.6	6.5	17.5	25.5	29.8	30.8	29.7	27.9	26.6	26.1	25.9	25.3
-25	13399	12942	12603	12433	12487	12803	13395	14251	15335	16582	17906	19211	20417	21474	22366	23105	23725	24273	24801
	-93.4	-85.6	-74.9	-61.6	-46.5	-30.5	-14.8	-0.1	12.5	21.9	27.0	27.5	24.4	19.4	14.1	10.0	7.5	6.3	5.8
-30	12076	11598	11265	11129	11240	11625	12290	13208	14329	15571	16838	18032	19081	19942	20608	21100	21459	21742	22013
	-92.3	-82.5	-70.1	-55.5	-39.5	-23.3	-7.8	6.1	16.9	23.4	25.0	21.7	15.0	6.6	-1.4	-7.7	-11.7	-13.6	-13.8
-35	11422	11017	10779	10751	10969	11450	12183	13133	14237	15408	16551	17576	18421	19049	19460	19673	19734	19701	19647
	-85.4	-74.1	-60.7	-45.9	-30.4	-15.2	-1.3	10.2	18.1	21.4	19.6	13.5	4.4	-5.8	-15.3	-22.7	-27.4	-29.6	-29.5
-40	11423	11147	11046	11152	11483	12042	12808	13738	14765	15808	16781	17608	18236	18634	18799	18749	18520	18167	17762
	-73.7	-61.9	-48.7	-34.9	-21.1	-8.1	3.1	11.5	16.1	16.3	12.2	4.6	-5.2	-15.5	-24.9	-32.1	-36.6	-38.6	-38.3
-45	12036	11895	11925	12140	12545	13132	13873	14721	15617	16490	17269	17893	18315	18509	18467	18198	17726	17095	16363
	-59.2	-48.0	-36.1	-24.2	-12.9	-2.9	5.0	10.1	11.9	10.0	4.8	-2.9	-11.9	-21.0	-28.8	-34.7	-38.2	-39.5	-39.0
-50	13163	13126	13240	13508	13926	14476	15130	15845	16571	17250	17828	18256	18494	18519	18316	17887	17242	16407	15424
	-44.0	-34.1	-24.3	-15.0	-6.6	0.3	5.2	7.6	7.4	4.5	-0.6	-7.3	-14.6	-21.4	-27.1	-31.0	-33.0	-33.3	-32.4
-55	14637	14654	14794	15053	15420	15877	16397	16944	17478	17958	18340	18587	18667	18555	18238	17706	16962	16018	14896
	-30.0	-22.0	-14.5	-7.7	-2.1	2.2	4.7	5.4	4.2	1.3	-2.9	-7.9	-12.9	-17.4	-20.8	-22.7	-23.2	-22.5	-21.0
-60	16234	16259	16375	16575	16848	17176	17536	17902	18244	18531	18731	18817	18762	18546	18153	17572	16801	15841	14702
	-18.7	-12.7	-7.2	-2.6	0.9	3.4	4.5	4.4	3.2	1.0	-1.9	-5.0	-7.9	-10.1	-11.5	-11.9	-11.2	-9.7	-7.7
-65	17703	17706	17769	17886	18046	18233	18433	18625	18788	18901	18943	18891	18728	18436	18004	17421	16682	15788	14741
	-10.7	-6.3	-2.5	0.6	2.9	4.4	5.0	4.9	4.2	3.0	1.6	0.2	-0.9	-1.5	-1.5	-0.9	0.5	2.3	4.5
-70	18798	18770	18775	18807	18858	18918	18975	19018	19031	19002	18916	18760	18520	18186	17750	17206	16549	15780	14903
	-5.4	-2.3	0.4	2.6	4.3	5.4	6.2	6.5	6.5	6.4	6.2	6.1	6.2	6.6	7.3	8.5	10.0	11.9	13.9
-75	19312	19259	19217	19181	19147	19109	19060	18992	18899	18772	18603	18385	18112	17778	17379	16912	16377	15774	15109
	-1.5	0.6	2.5	4.2	5.6	6.7	7.7	8.5	9.1	9.7	10.3	11.0	11.8	12.7	13.7	15.0	16.4	18.0	19.6
-80	19098	19036	18969	18896	18815	18723	18617	18494	18352	18186	17994	17774	17524	17241	16926	16578	16198	15789	15353
	2.6	3.9	5.2	6.3	7.5	8.5	9.5	10.5	11.4	12.3	13.2	14.1	15.0	16.0	17.0	18.1	19.2	20.3	21.5
-85	18086	18037	17980	17913	17837	17751	17655	17549	17432	17304	17166	17016	16855	16685	16504	16315	16119	15916	15709
	8.0	8.6	9.2	9.9	10.5	11.2	11.8	12.5	13.2	13.8	14.5	15.2	15.8	16.5	17.2	17.8	18.5	19.1	19.7
-90	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303
	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0

H-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	2241	2199	2157	2115	2074	2034	1995	1958	1923	1889	1858	1829	1803	1780	1760	1743	1729	1718	1710
	-16.8	-16.8	-16.7	-16.7	-16.6	-16.6	-16.5	-16.5	-16.4	-16.3	-16.3	-16.2	-16.2	-16.1	-16.0	-16.0	-15.9	-15.8	-15.8
85	2593	2399	2212	2037	1879	1743	1634	1553	1501	1478	1477	1494	1520	1550	1578	1599	1610	1608	1591
	-20.6	-20.5	-20.4	-20.4	-20.3	-20.1	-19.9	-19.5	-18.9	-18.2	-17.4	-16.6	-15.8	-15.2	-14.6	-14.2	-13.8	-13.5	-13.3
80	3417	3101	2836	2645	2549	2557	2663	2844	3074	3329	3590	3839	4067	4265	4427	4548	4627	4661	4649
	-26.6	-26.7	-26.6	-26.2	-25.3	-24.0	-22.4	-20.9	-19.7	-18.9	-18.5	-18.3	-18.3	-18.4	-18.6	-18.7	-18.9	-18.9	-18.8
75	4879	4540	4309	4220	4287	4503	4835	5245	5694	6151	6591	6997	7355	7657	7896	8069	8175	8213	8183
	-32.0	-32.4	-32.3	-31.6	-30.3	-28.7	-27.3	-26.2	-25.5	-25.3	-25.4	-25.8	-26.3	-26.8	-27.2	-27.6	-27.8	-27.9	-27.9
70	7058	6763	6608	6626	6824	7184	7668	8229	8824	9415	9971	10473	10904	11257	11526	11712	11813	11833	11773
	-34.6	-35.5	-35.8	-35.6	-34.8	-33.7	-32.6	-31.8	-31.4	-31.3	-31.4	-31.8	-32.2	-32.6	-32.9	-33.2	-33.3	-33.2	-32.9
65	9883	9667	9594	9693	9972	10412	10973	11610	12273	12920	13518	14043	14480	14822	15068	15222	15288	15270	15175
	-33.0	-34.7	-36.0	-36.6	-36.7	-36.3	-35.7	-35.1	-34.6	-34.3	-34.1	-34.0	-33.9	-33.8	-33.7	-33.4	-33.1	-32.6	-32.1
60	13202	13082	13085	13238	13550	14006	14574	15207	15857	16479	17038	17510	17883	18152	18322	18400	18398	18326	18190
	-27.7	-30.3	-32.6	-34.3	-35.3	-35.7	-35.6	-35.1	-34.4	-33.6	-32.9	-32.1	-31.3	-30.4	-29.5	-28.6	-27.6	-26.7	-25.9
55	16838	16820	16888	17067	17369	17786	18293	18849	19409	19929	20376	20726	20970	21109	21154	21119	21020	20873	20689
	-20.6	-23.8	-26.9	-29.5	-31.3	-32.3	-32.5	-32.0	-31.0	-29.8	-28.4	-26.9	-25.4	-23.8	-22.2	-20.6	-19.0	-17.6	-16.5
50	20631	20709	20827	21005	21260	21590	21980	22398	22804	23159	23432	23603	23668	23633	23515	23335	23115	22875	22630
	-14.2	-17.8	-21.2	-24.1	-26.1	-27.2	-27.3	-26.6	-25.3	-23.7	-21.9	-20.0	-18.1	-16.1	-14.1	-12.1	-10.2	-8.5	-7.0
45	24443	24602	24749	24904	25082	25292	25525	25761	25967	26111	26166	26119	25971	25735	25432	25089	24732	24385	24067
	-11.1	-14.4	-17.4	-19.9	-21.4	-21.9	-21.4	-20.2	-18.5	-16.6	-14.7	-12.9	-11.2	-9.5	-7.7	-5.9	-4.0	-2.1	-0.5
40	28153	28368	28525	28636	28720	28790	28846	28876	28858	28766	28581	28298	27925	27479	26988	26481	25986	25530	25131
	-12.2	-14.7	-16.6	-17.8	-17.9	-17.2	-15.6	-13.6	-11.4	-9.4	-7.8	-6.6	-5.8	-5.1	-4.3	-3.2	-1.9	-0.3	1.4
35	31641	31884	32028	32083	32065	31992	31869	31693	31449	31120	30698	30184	29596	28957	28298	27647	27032	26477	26004
	-16.6	-17.9	-18.2	-17.4	-15.7	-13.2	-10.2	-7.2	-4.6	-2.7	-1.7	-1.6	-2.1	-3.0	-3.7	-4.1	-3.8	-2.8	-1.3
30	34774	35016	35130	35122	35007	34801	34517	34154	33706	33166	32533	31822	31056	30265	29479	28725	28027	27403	26874
	-21.8	-21.7	-20.2	-17.4	-13.6	-9.4	-5.0	-1.2	1.7	3.3	3.5	2.4	0.3	-2.3	-4.9	-6.9	-8.1	-8.1	-7.0
25	37404	37627	37703	37635	37435	37122	36707	36196	35589	34886	34098	33247	32363	31480	30628	29828	29096	28445	27888
	-24.5	-23.0	-19.9	-15.6	-10.4	-5.0	0.1	4.3	7.1	8.4	7.9	5.7	2.4	-1.7	-6.0	-9.7	-12.4	-13.7	-13.3
20	39386	39586	39629	39516	39257	38871	38370	37764	37059	36262	35392	34477	33551	32650	31799	31014	30303	29669	29120
	-21.7	-19.3	-15.4	-10.5	-5.0	0.4	5.2	9.0	11.3	12.0	11.0	8.4	4.4	-0.4	-5.7	-10.7	-14.8	-17.4	-18.1
15	40590	40784	40817	40690	40411	39996	39463	38825	38092	37279	36408	35510	34621	33773	32988	32275	31633	31056	30544
	-12.4	-9.6	-5.9	-1.6	2.8	6.8	10.2	12.5	13.8	13.8	12.5	10.0	6.4	1.7	-3.6	-9.1	-14.1	-18.0	-20.1
10	40932	41153	41217	41120	40870	40482	39976	39369	38679	37923	37127	36321	35536	34800	34129	33529	32989	32498	32047
	2.6	5.0	7.6	10.0	12.0	13.5	14.3	14.5	14.2	13.3	12.0	10.1	7.5	4.0	-0.4	-5.6	-11.0	-15.8	-19.2
5	40384	40677	40820	40807	40641	40337	39916	39400	38812	38174	37511	36850	36217	35631	35104	34637	34217	33825	33445
	20.1	21.6	22.3	22.1	21.0	19.1	16.8	14.5	12.3	10.6	9.3	8.3	7.1	5.3	2.4	-1.7	-6.8	-12.2	-16.8
0	38986	39389	39655	39776	39748	39581	39296	38918	38475	37993	37498	37011	36550	36130	35757	35427	35127	34833	34525
	36.0	36.3	34.8	31.8	27.6	22.6	17.4	12.6	8.7	6.0	4.7	4.4	4.7	4.7	3.6	0.8	-3.5	-8.9	-14.4

H-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	38986	39389	39655	39776	39748	39581	39296	38918	38475	37993	37498	37011	36550	36130	35757	35427	35127	34833	34525
	36.0	36.3	34.8	31.8	27.6	22.6	17.4	12.6	8.7	6.0	4.7	4.4	4.7	4.7	3.6	0.8	-3.5	-8.9	-14.4
-5	36847	37378	37793	38078	38225	38234	38121	37911	37636	37326	37007	36697	36410	36153	35926	35726	35536	35334	35096
	46.2	45.2	42.0	36.8	30.3	23.1	15.8	9.3	4.2	0.7	-0.8	-0.7	0.6	1.9	2.3	0.9	-2.5	-7.6	-13.3
-10	34137	34779	35336	35790	36122	36321	36394	36363	36260	36117	35963	35817	35688	35578	35485	35401	35312	35194	35024
	47.9	46.0	41.9	35.8	28.4	20.4	12.6	5.5	-0.1	-4.0	-5.9	-5.9	-4.4	-2.5	-1.2	-1.6	-4.1	-8.6	-14.2
-15	31070	31772	32427	33016	33510	33886	34137	34275	34331	34339	34330	34323	34329	34346	34371	34393	34397	34362	34265
	40.4	38.3	34.3	28.7	22.2	15.2	8.3	2.0	-3.2	-7.1	-9.3	-9.8	-8.8	-7.1	-5.7	-5.6	-7.5	-11.4	-16.5
-20	27882	28561	29237	29894	30495	31005	31401	31685	31878	32015	32127	32237	32356	32483	32613	32734	32831	32883	32871
	25.3	23.7	20.9	17.2	12.9	8.3	3.8	-0.6	-4.7	-8.0	-10.4	-11.5	-11.4	-10.5	-9.6	-9.6	-11.2	-14.4	-19.0
-25	24801	25353	25950	26581	27209	27787	28279	28672	28978	29223	29439	29650	29868	30094	30323	30542	30735	30885	30973
	5.8	5.3	4.4	3.4	2.2	0.9	-0.6	-2.5	-4.7	-7.1	-9.3	-10.9	-11.7	-11.7	-11.6	-12.0	-13.5	-16.3	-20.2
-30	22013	22334	22742	23239	23796	24360	24886	25346	25738	26078	26390	26696	27010	27334	27661	27982	28280	28538	28740
	-13.8	-13.1	-11.9	-10.2	-8.3	-6.4	-4.8	-4.1	-4.3	-5.4	-7.0	-8.6	-9.9	-10.6	-11.1	-11.8	-13.4	-15.9	-19.3
-35	19647	19647	19760	20011	20388	20846	21334	21813	22264	22688	23097	23506	23924	24353	24788	25219	25629	26005	26331
	-29.5	-27.9	-25.1	-21.4	-17.2	-13.0	-9.2	-6.4	-4.8	-4.5	-5.1	-6.1	-7.1	-7.9	-8.5	-9.4	-11.0	-13.4	-16.5
-40	17762	17386	17120	17018	17101	17347	17714	18154	18631	19128	19638	20162	20701	21253	21810	22361	22894	23393	23844
	-38.3	-36.3	-33.1	-28.8	-23.9	-18.8	-14.0	-10.1	-7.3	-5.8	-5.1	-5.0	-5.1	-5.1	-5.3	-6.0	-7.3	-9.6	-12.5
-45	16363	15609	14920	14382	14056	13968	14103	14422	14875	15421	16031	16682	17361	18055	18751	19437	20100	20725	21302
	-39.0	-37.2	-34.6	-31.3	-27.5	-23.4	-19.3	-15.6	-12.4	-9.9	-8.0	-6.3	-4.9	-3.8	-3.1	-3.0	-3.9	-5.8	-8.6
-50	15424	14353	13270	12267	11442	10877	10625	10686	11022	11567	12257	13039	13871	14724	15575	16407	17206	17960	18659
	-32.4	-30.9	-29.3	-27.9	-26.8	-25.7	-24.2	-22.2	-19.7	-16.7	-13.5	-10.3	-7.2	-4.5	-2.6	-1.6	-1.8	-3.2	-5.5
-55	14896	13631	12275	10896	9578	8432	7581	7138	7154	7580	8304	9208	10202	11225	12242	13228	14167	15050	15871
	-21.0	-19.4	-18.2	-18.1	-19.3	-21.9	-25.2	-27.6	-27.6	-25.1	-20.7	-15.6	-10.7	-6.6	-3.4	-1.5	-0.9	-1.6	-3.1
-60	14702	13403	11970	10437	8847	7259	5755	4469	3646	3570	4212	5250	6435	7649	8838	9977	11053	12061	13001
	-7.7	-5.8	-4.2	-3.7	-4.6	-7.5	-13.1	-21.6	-30.9	-33.5	-27.4	-19.2	-12.1	-6.6	-2.7	-0.3	0.9	1.0	0.2
-65	14741	13553	12238	10814	9302	7728	6115	4487	2867	1273	296	1786	3224	4594	5893	7120	8275	9362	10384
	4.5	6.7	8.8	10.4	11.4	11.7	11.2	10.1	8.5	7.5	8.6	2.2	3.8	5.6	7.1	8.0	8.3	8.1	7.5
-70	14903	13924	12855	11711	10510	9274	8031	6816	5677	4690	3967	3649	3806	4351	5128	6018	6953	7896	8830
	13.9	16.0	18.2	20.2	22.1	24.0	25.9	28.0	30.7	34.2	37.8	39.5	37.6	33.5	29.5	26.3	23.8	21.8	20.2
-75	15109	14387	13617	12810	11981	11146	10327	9545	8829	8207	7710	7365	7191	7194	7365	7683	8119	8647	9241
	19.6	21.3	23.1	24.8	26.6	28.3	30.0	31.6	33.2	34.8	36.1	37.0	37.4	37.1	36.2	34.9	33.3	31.6	29.8
-80	15353	14896	14423	13940	13456	12980	12520	12088	11693	11346	11057	10832	10680	10603	10602	10676	10822	11032	11301
	21.5	22.6	23.8	25.0	26.1	27.2	28.2	29.2	30.0	30.7	31.3	31.8	32.0	32.0	31.8	31.4	30.9	30.1	29.2
-85	15709	15500	15291	15084	14882	14688	14505	14335	14181	14045	13931	13839	13772	13730	13714	13725	13762	13825	13912
	19.7	20.3	20.9	21.5	22.0	22.5	22.9	23.3	23.6	23.8	24.0	24.2	24.2	24.2	24.1	23.9	23.6	23.2	22.8
-90	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303	16303
	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0

Plots and Tables of IGRF 1990

X Component

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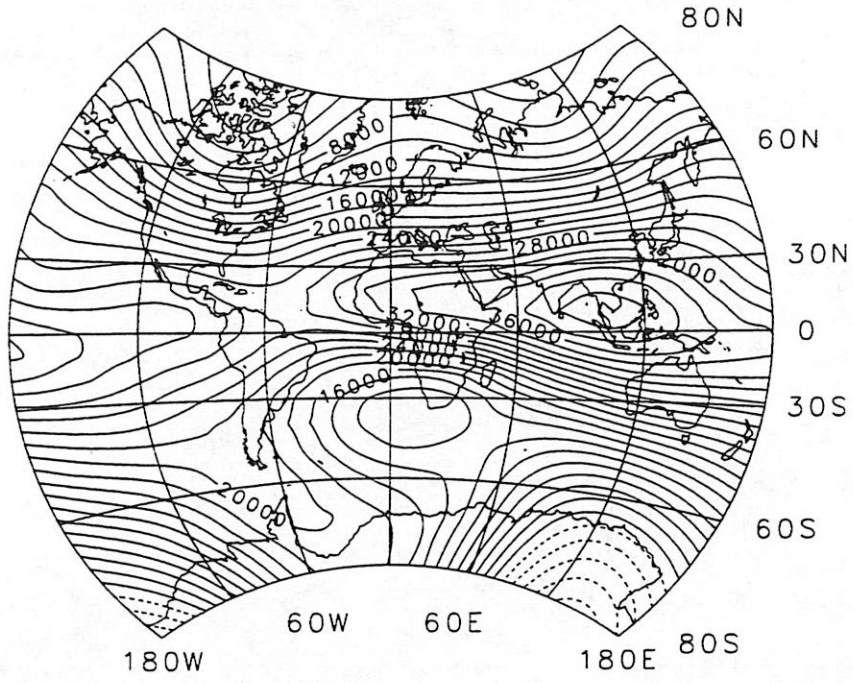
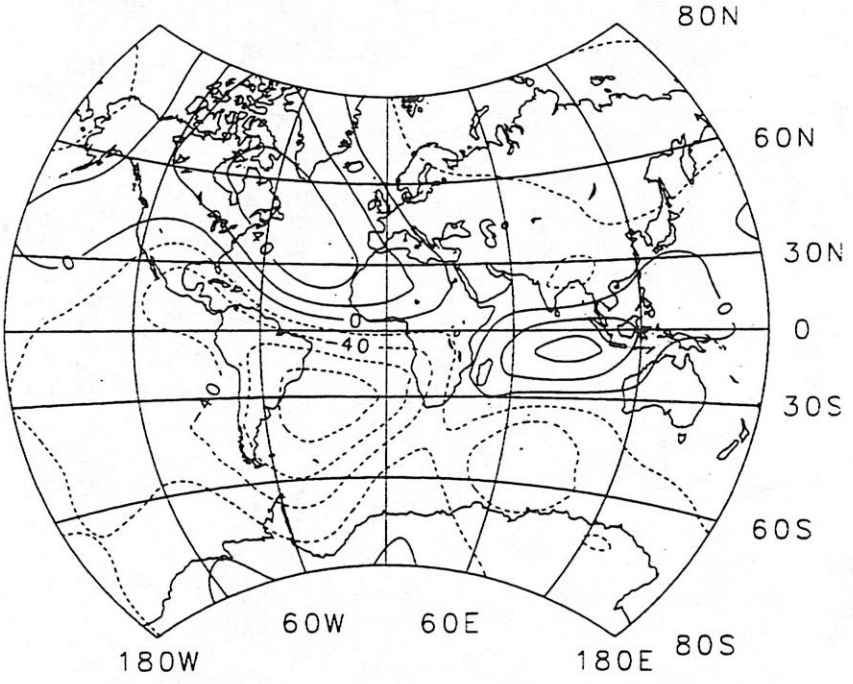
IGRF 1990 - X - COMPONENT

Figure 21 (**X**, top) Figure 22 ($\dot{\mathbf{X}}$, bottom)





X-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	-1280	-1374	-1461	-1540	-1609	-1668	-1716	-1752	-1774	-1782	-1774	-1749	-1707	-1647	-1569	-1472	-1357	-1225	-1075
	6.0	7.4	8.8	10.1	11.4	12.6	13.7	14.8	15.7	16.5	17.1	17.7	18.1	18.4	18.5	18.4	18.2	17.8	17.2
85	1151	1043	910	754	579	389	189	-14	-215	-407	-584	-738	-864	-957	-1011	-1024	-993	-916	-794
	-3.3	-2.1	-0.7	0.8	2.3	3.9	5.5	7.2	8.8	10.4	12.0	13.4	14.7	15.8	16.8	17.5	17.9	18.1	18.0
80	4507	4358	4144	3867	3536	3160	2750	2319	1879	1445	1031	648	310	27	-190	-336	-406	-396	-305
	-15.7	-14.5	-13.0	-11.2	-9.1	-6.8	-4.2	-1.5	1.3	4.2	7.1	9.9	12.6	15.1	17.3	19.1	20.6	21.7	22.3
75	8083	7879	7574	7175	6693	6143	5541	4903	4251	3602	2975	2390	1864	1411	1044	775	610	553	606
	-26.0	-24.6	-22.8	-20.5	-17.8	-14.6	-11.1	-7.3	-3.3	0.9	5.0	9.1	13.0	16.7	20.0	22.9	25.4	27.4	28.8
70	11681	11421	11039	10545	9951	9277	8539	7759	6958	6157	5380	4646	3977	3389	2899	2521	2264	2136	2138
	-31.4	-29.7	-27.6	-24.9	-21.6	-17.8	-13.6	-9.0	-4.2	0.8	5.7	10.5	15.1	19.4	23.4	27.0	30.2	32.9	35.1
65	15079	14774	14344	13801	13160	12435	11646	10811	9951	9088	8241	7431	6680	6005	5425	4957	4613	4406	4343
	-30.6	-28.7	-26.3	-23.3	-19.8	-15.8	-11.4	-6.7	-1.8	3.2	8.1	12.8	17.3	21.5	25.5	29.2	32.7	36.0	38.9
60	18084	17747	17303	16763	16138	15442	14689	13894	13071	12237	11409	10603	9837	9130	8501	7969	7553	7268	7127
	-24.2	-22.1	-19.6	-16.7	-13.4	-9.8	-5.9	-1.8	2.4	6.5	10.5	14.3	17.8	21.2	24.5	27.9	31.3	34.9	38.5
55	20568	20208	19773	19274	18719	18117	17473	16795	16090	15366	14635	13906	13194	12513	11884	11325	10860	10510	10295
	-14.6	-12.3	-9.9	-7.3	-4.7	-1.9	0.9	3.7	6.5	9.1	11.5	13.6	15.6	17.5	19.7	22.3	25.4	29.1	33.4
50	22489	22104	21689	21253	20800	20329	19839	19328	18794	18238	17660	17066	16464	15865	15284	14743	14265	13878	13606
	-4.8	-2.4	-0.1	1.9	3.7	5.2	6.6	7.7	8.7	9.4	9.9	10.1	10.2	10.5	11.2	12.7	15.3	19.1	24.0
45	23898	23482	23086	22716	22372	22046	21726	21401	21060	20695	20302	19879	19427	18951	18464	17983	17532	17140	16836
	2.1	4.6	6.8	8.4	9.3	9.7	9.6	9.1	8.2	7.1	5.7	4.0	2.3	0.9	0.1	0.5	2.4	6.1	11.6
40	24924	24472	24089	23778	23535	23343	23183	23035	22881	22707	22503	22261	21976	21649	21284	20894	20502	20132	19816
	4.5	7.2	9.3	10.7	11.1	10.6	9.3	7.4	5.1	2.4	-0.5	-3.6	-6.8	-9.8	-12.0	-12.7	-11.6	-8.2	-2.5
35	25750	25264	24888	24624	24463	24382	24355	24355	24360	24352	24318	24246	24124	23946	23710	23424	23102	22767	22450
	2.3	5.1	7.4	8.8	9.1	8.1	6.1	3.3	0.0	-3.6	-7.5	-11.6	-15.9	-20.0	-23.4	-25.3	-25.1	-22.3	-16.8
30	26564	26057	25687	25457	25354	25351	25418	25523	25644	25762	25861	25927	25943	25895	25774	25580	25321	25016	24694
	-2.9	-0.2	2.3	4.0	4.4	3.3	1.1	-2.1	-5.8	-9.8	-14.2	-18.8	-23.7	-28.5	-32.8	-35.8	-36.7	-34.9	-30.1
25	27519	27011	26651	26442	26369	26405	26517	26676	26860	27051	27235	27393	27506	27551	27513	27383	27166	26876	26538
	-8.8	-6.4	-3.9	-2.1	-1.5	-2.4	-4.6	-7.7	-11.5	-15.6	-19.9	-24.6	-29.5	-34.7	-39.5	-43.4	-45.4	-44.8	-41.3
20	28693	28205	27860	27657	27583	27613	27720	27876	28064	28270	28479	28675	28832	28925	28931	28834	28634	28342	27981
	-13.3	-11.7	-9.6	-7.9	-7.3	-8.0	-10.0	-13.0	-16.6	-20.4	-24.5	-28.8	-33.5	-38.4	-43.4	-47.7	-50.7	-51.4	-49.4
15	30067	29617	29286	29073	28967	28949	28998	29096	29229	29389	29565	29739	29888	29982	29993	29901	29702	29401	29020
	-15.2	-14.6	-13.5	-12.4	-12.2	-13.0	-15.0	-17.8	-21.1	-24.6	-28.1	-31.8	-35.8	-40.1	-44.6	-48.9	-52.3	-54.1	-53.8
10	31526	31123	30803	30564	30400	30298	30248	30239	30268	30330	30418	30520	30611	30664	30651	30548	30343	30040	29652
	-14.4	-15.3	-15.5	-15.7	-16.2	-17.4	-19.5	-22.2	-25.2	-28.3	-31.3	-34.2	-37.1	-40.3	-43.7	-47.3	-50.6	-53.1	-54.3
5	32883	32529	32216	31941	31702	31496	31322	31181	31074	31004	30968	30958	30956	30940	30882	30758	30553	30259	29883
	-12.3	-14.7	-16.5	-18.1	-19.6	-21.5	-23.7	-26.3	-29.1	-31.7	-34.1	-36.1	-37.8	-39.5	-41.4	-43.7	-46.2	-48.9	-51.2
0	33923	33613	33305	32994	32681	32373	32078	31804	31559	31349	31177	31040	30928	30825	30712	30563	30358	30083	29732
	-10.4	-14.1	-17.4	-20.4	-22.9	-25.4	-27.8	-30.3	-32.7	-34.8	-36.5	-37.6	-38.1	-38.3	-38.5	-39.1	-40.4	-42.6	-45.5

X-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	33923	33613	33305	32994	32681	32373	32078	31804	31559	31349	31177	31040	30928	30825	30712	30563	30358	30083	29732
	-10.4	-14.1	-17.4	-20.4	-22.9	-25.4	-27.8	-30.3	-32.7	-34.8	-36.5	-37.6	-38.1	-38.3	-38.5	-39.1	-40.4	-42.6	-45.5
-5	34445	34177	33878	33543	33178	32794	32407	32030	31675	31348	31056	30801	30581	30390	30214	30034	29824	29563	29236
	-10.0	-14.6	-19.0	-23.0	-26.3	-29.1	-31.4	-33.6	-35.6	-37.2	-38.3	-38.6	-38.1	-36.9	-35.5	-34.5	-34.5	-35.9	-38.8
-10	34310	34087	33811	33478	33096	32682	32254	31828	31414	31019	30648	30305	29998	29726	29486	29261	29030	28767	28448
	-11.7	-16.6	-21.4	-25.8	-29.4	-32.1	-34.2	-35.9	-37.3	-38.4	-39.0	-38.9	-37.8	-35.7	-33.3	-31.1	-29.9	-30.4	-32.9
-15	33468	33299	33069	32773	32422	32033	31625	31213	30803	30398	30001	29615	29250	28914	28610	28330	28057	27766	27432
	-14.8	-19.4	-24.1	-28.3	-31.6	-34.0	-35.5	-36.6	-37.5	-38.2	-38.6	-38.3	-37.1	-34.9	-32.2	-29.4	-27.6	-27.5	-29.5
-20	31965	31869	31711	31490	31216	30905	30573	30232	29883	29523	29150	28765	28378	27999	27639	27299	26970	26634	26269
	-18.2	-22.1	-26.2	-29.8	-32.6	-34.4	-35.3	-35.9	-36.4	-36.9	-37.2	-37.1	-36.3	-34.6	-32.3	-29.8	-28.0	-27.6	-29.3
-25	29928	29924	29865	29751	29590	29396	29179	28947	28697	28419	28108	27760	27383	26989	26594	26206	25826	25448	25054
	-20.3	-23.6	-26.9	-29.8	-32.0	-33.3	-33.9	-34.1	-34.4	-34.8	-35.3	-35.7	-35.6	-34.8	-33.4	-31.8	-30.6	-30.5	-32.0
-30	27526	27630	27689	27702	27674	27614	27529	27421	27283	27104	26873	26588	26251	25876	25479	25078	24682	24290	23895
	-20.5	-23.1	-25.8	-28.2	-30.0	-31.1	-31.7	-32.0	-32.3	-32.8	-33.6	-34.4	-35.0	-35.2	-34.9	-34.5	-34.3	-34.8	-36.5
-35	24915	25135	25320	25466	25573	25646	25688	25697	25666	25585	25444	25238	24971	24656	24309	23950	23592	23243	22896
	-18.7	-20.9	-23.3	-25.6	-27.4	-28.7	-29.6	-30.1	-30.6	-31.3	-32.2	-33.3	-34.4	-35.3	-36.0	-36.6	-37.5	-38.8	-40.9
-40	22191	22527	22833	23103	23334	23525	23678	23790	23856	23869	23823	23715	23551	23342	23104	22854	22605	22364	22125
	-16.0	-18.1	-20.4	-22.8	-24.9	-26.7	-28.0	-29.0	-29.8	-30.5	-31.3	-32.3	-33.4	-34.5	-35.7	-37.0	-38.6	-40.7	-43.4
-45	19362	19805	20221	20599	20937	21230	21479	21682	21840	21950	22013	22029	22005	21951	21880	21804	21730	21659	21582
	-13.8	-15.8	-18.1	-20.7	-23.2	-25.4	-27.1	-28.4	-29.2	-29.8	-30.3	-30.8	-31.4	-32.2	-33.4	-34.9	-36.9	-39.5	-42.8
-50	16352	16892	17403	17876	18306	18691	19031	19329	19589	19814	20008	20179	20333	20477	20619	20764	20911	21054	21176
	-13.4	-15.1	-17.3	-19.8	-22.3	-24.6	-26.4	-27.7	-28.3	-28.5	-28.4	-28.2	-28.0	-28.2	-28.9	-30.3	-32.3	-35.2	-38.9
-55	13050	13673	14268	14827	15347	15826	16268	16677	17061	17428	17786	18142	18502	18871	19251	19638	20024	20395	20730
	-15.1	-16.2	-17.9	-19.9	-22.0	-23.9	-25.3	-26.1	-26.2	-25.8	-25.0	-24.0	-23.1	-22.6	-22.8	-23.7	-25.6	-28.6	-32.4
-60	9362	10058	10731	11375	11991	12577	13140	13686	14223	14760	15306	15867	16448	17048	17664	18286	18901	19490	20028
	-18.5	-18.7	-19.5	-20.5	-21.6	-22.5	-23.1	-23.1	-22.5	-21.4	-20.0	-18.4	-17.0	-16.0	-15.7	-16.4	-18.1	-20.8	-24.6
-65	5283	6038	6783	7516	8237	8946	9650	10354	11065	11790	12536	13306	14100	14916	15744	16573	17387	18164	18883
	-22.1	-21.3	-20.9	-20.7	-20.5	-20.2	-19.7	-18.7	-17.4	-15.7	-13.9	-12.1	-10.5	-9.3	-8.9	-9.4	-10.9	-13.3	-16.7
-70	922	1717	2526	3346	4175	5015	5867	6736	7625	8538	9476	10440	11424	12424	13429	14427	15401	16333	17206
	-24.3	-22.7	-21.2	-19.8	-18.4	-16.9	-15.4	-13.6	-11.8	-9.8	-7.8	-6.0	-4.5	-3.6	-3.2	-3.6	-4.9	-6.9	-9.7
-75	-3505	-2692	-1837	-945	-18	940	1931	2953	4004	5083	6188	7315	8456	9605	10750	11880	12982	14041	15042
	-24.1	-21.9	-19.7	-17.5	-15.3	-13.1	-11.0	-8.8	-6.7	-4.7	-2.8	-1.3	-0.1	0.7	0.9	0.6	-0.3	-1.8	-3.8
-80	-7722	-6919	-6045	-5108	-4111	-3061	-1963	-822	355	1566	2802	4056	5319	6584	7840	9076	10283	11448	12561
	-21.0	-18.8	-16.5	-14.1	-11.8	-9.5	-7.2	-5.1	-3.1	-1.2	0.4	1.7	2.7	3.4	3.7	3.7	3.3	2.6	1.6
-85	-11449	-10681	-9821	-8875	-7850	-6755	-5596	-4383	-3124	-1826	-501	844	2198	3553	4899	6224	7521	8779	9989
	-16.0	-14.2	-12.2	-10.3	-8.3	-6.4	-4.5	-2.7	-1.0	0.6	2.0	3.2	4.3	5.2	5.9	6.4	6.7	6.9	6.9
-90	-14458	-13747	-12931	-12016	-11010	-9920	-8755	-7523	-6233	-4897	-3523	-2122	-705	716	2133	3533	4907	6243	7532
	-10.3	-9.2	-7.9	-6.7	-5.3	-4.0	-2.6	-1.2	0.3	1.7	3.1	4.5	5.9	7.2	8.4	9.6	10.7	11.8	12.7

IGRF 1990 X-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	-1075	-909	-729	-535	-330	-116	105	331	559	786	1011	1230	1440	1639	1825	1996	2150	2285	2400
	17.2	16.5	15.7	14.7	13.5	12.2	10.8	9.3	7.7	6.0	4.3	2.5	0.7	-1.2	-3.0	-4.8	-6.6	-8.3	-9.9
85	-794	-626	-415	-165	120	437	779	1139	1511	1888	2263	2630	2981	3309	3611	3880	4112	4304	4452
	18.0	17.7	17.0	16.0	14.8	13.3	11.6	9.6	7.5	5.2	2.8	0.4	-2.1	-4.6	-7.0	-9.4	-11.7	-13.8	-15.8
80	-305	-136	106	419	793	1219	1688	2187	2705	3232	3754	4263	4748	5199	5609	5971	6279	6529	6717
	22.3	22.5	22.2	21.4	20.2	18.6	16.5	14.1	11.4	8.4	5.3	2.1	-1.2	-4.5	-7.7	-10.8	-13.7	-16.4	-18.9
75	606	767	1029	1385	1823	2330	2892	3492	4115	4744	5366	5966	6532	7055	7525	7935	8282	8562	8772
	28.8	29.7	29.9	29.5	28.6	27.0	24.8	22.2	19.1	15.6	11.9	7.9	3.9	-0.1	-4.0	-7.8	-11.3	-14.5	-17.5
70	2138	2271	2528	2899	3370	3926	4546	5210	5897	6587	7262	7906	8506	9050	9532	9947	10291	10564	10766
	35.1	36.7	37.7	38.0	37.6	36.4	34.5	32.0	28.8	25.0	20.9	16.4	11.8	7.2	2.6	-1.7	-5.9	-9.6	-13.0
65	4343	4424	4647	5002	5475	6046	6691	7385	8101	8816	9508	10158	10752	11280	11737	12119	12427	12662	12828
	38.9	41.4	43.3	44.6	45.1	44.7	43.5	41.3	38.4	34.7	30.4	25.7	20.7	15.6	10.6	5.6	0.9	-3.4	-7.3
60	7127	7139	7304	7616	8061	8617	9257	9951	10669	11379	12059	12687	13250	13739	14149	14480	14735	14917	15034
	38.5	42.0	45.1	47.7	49.4	50.2	49.9	48.6	46.2	42.9	38.8	34.2	29.1	23.8	18.3	12.9	7.7	2.7	-1.7
55	10295	10231	10324	10573	10965	11481	12090	12759	13452	14138	14787	15380	15902	16345	16708	16991	17197	17333	17407
	33.4	38.0	42.5	46.6	49.9	52.2	53.2	52.9	51.4	48.8	45.3	41.0	36.1	30.8	25.1	19.4	13.7	8.3	3.2
50	13606	13472	13489	13662	13984	14436	14991	15613	16265	16912	17526	18085	18575	18989	19323	19580	19763	19877	19931
	24.0	29.7	35.8	41.6	46.7	50.6	53.1	54.2	53.9	52.3	49.6	46.0	41.6	36.5	31.0	25.1	19.1	13.2	7.6
45	16836	16645	16589	16680	16916	17286	17765	18323	18923	19532	20120	20665	21150	21567	21910	22178	22373	22499	22565
	11.6	18.3	25.9	33.5	40.4	46.2	50.4	53.1	54.1	53.8	52.2	49.5	45.8	41.3	36.0	30.2	24.1	18.0	12.1
40	19816	19583	19458	19461	19599	19870	20259	20741	21288	21868	22452	23014	23535	24000	24397	24719	24964	25136	25244
	-2.5	5.1	13.9	23.1	31.8	39.5	45.6	50.0	52.7	53.8	53.5	51.9	49.1	45.2	40.3	34.8	28.8	22.8	17.0
35	22450	22180	21987	21897	21928	22089	22378	22782	23279	23844	24448	25063	25660	26215	26706	27117	27442	27685	27858
	-16.8	-8.9	0.7	11.2	21.5	30.9	38.9	45.1	49.6	52.4	53.5	53.0	51.1	47.9	43.6	38.6	33.1	27.6	22.2
30	24694	24384	24121	23936	23857	23905	24092	24417	24870	25429	26067	26751	27444	28109	28712	29231	29652	29980	30232
	-30.1	-22.5	-12.7	-1.6	9.8	20.7	30.3	38.3	44.6	48.9	51.4	52.1	51.2	48.7	45.1	40.8	36.1	31.4	26.8
25	26538	26184	25850	25573	25389	25330	25417	25663	26065	26610	27269	28007	28778	29537	30240	30855	31369	31787	32127
	-41.3	-34.7	-25.5	-14.6	-2.9	8.8	19.6	29.1	36.8	42.6	46.4	48.2	48.1	46.5	43.8	40.4	36.8	33.2	29.5
20	27981	27583	27184	26827	26551	26393	26385	26545	26878	27374	28008	28744	29534	30327	31078	31753	32338	32837	33268
	-49.4	-44.5	-36.8	-27.1	-16.0	-4.5	6.7	16.9	25.7	32.6	37.4	40.2	41.1	40.5	38.8	36.5	34.1	31.7	29.1
15	29020	28587	28141	27721	27369	27126	27022	27080	27308	27700	28236	28882	29596	30333	31052	31725	32340	32901	33418
	-53.8	-51.0	-45.7	-38.1	-28.8	-18.5	-8.0	2.1	11.1	18.6	24.2	27.8	29.7	30.1	29.6	28.6	27.4	26.1	24.4
10	29652	29205	28731	28270	27860	27537	27332	27265	27345	27570	27924	28383	28916	29495	30092	30690	31283	31869	32449
	-54.3	-53.8	-51.2	-46.5	-40.0	-32.1	-23.3	-14.4	-6.0	1.3	7.2	11.4	14.2	15.8	16.5	16.8	16.7	16.3	15.3
5	29883	29442	28963	28478	28019	27619	27303	27087	26981	26984	27087	27280	27549	27885	28281	28735	29244	29804	30399
	-51.2	-52.7	-53.0	-51.7	-48.6	-43.9	-37.9	-31.2	-24.3	-17.8	-12.2	-7.6	-4.1	-1.5	0.4	1.8	2.6	2.8	2.2
0	29732	29312	28840	28340	27838	27358	26922	26543	26230	25983	25803	25692	25655	25704	25851	26107	26475	26944	27485
	-45.5	-48.6	-51.5	-53.4	-54.0	-52.9	-50.3	-46.4	-41.8	-36.8	-32.0	-27.6	-23.6	-20.3	-17.5	-15.3	-13.9	-13.3	-13.6

X-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	29732	29312	28840	28340	27838	27358	26922	26543	26230	25983	25803	25692	25655	25704	25851	26107	26475	26944	27485
	-45.5	-48.6	-51.5	-53.4	-54.0	-52.9	-50.3	-46.4	-41.8	-36.8	-32.0	-27.6	-23.6	-20.3	-17.5	-15.3	-13.9	-13.3	-13.6
-5	29236	28838	28375	27861	27314	26754	26199	25658	25141	24654	24203	23801	23469	23233	23120	23151	23331	23644	24055
	-38.8	-42.9	-47.7	-52.3	-56.1	-58.5	-59.4	-58.7	-56.7	-53.7	-50.2	-46.4	-42.6	-39.0	-35.8	-33.2	-31.5	-30.6	-30.6
-10	28448	28059	27597	27065	26475	25842	25179	24498	23809	23121	22448	21810	21235	20757	20410	20217	20184	20292	20507
	-32.9	-37.4	-43.2	-49.7	-55.9	-61.2	-65.0	-67.2	-67.9	-67.1	-65.3	-62.7	-59.5	-56.2	-53.1	-50.5	-48.6	-47.5	-46.9
-15	27432	27036	26564	26013	25388	24698	23954	23168	22354	21525	20699	19899	19155	18502	17969	17578	17333	17218	17206
	-29.5	-33.8	-39.9	-47.2	-54.7	-61.8	-67.8	-72.3	-75.2	-76.6	-76.6	-75.4	-73.3	-70.8	-68.2	-65.9	-64.0	-62.4	-60.8
-20	26269	25853	25370	24808	24165	23444	22653	21805	20916	20004	19092	18202	17362	16599	15937	15392	14964	14646	14422
	-29.3	-33.1	-38.9	-46.0	-53.9	-61.7	-68.8	-74.7	-79.3	-82.4	-84.1	-84.4	-83.6	-82.1	-80.2	-78.1	-76.1	-73.8	-70.9
-25	25054	24625	24141	23587	22950	22228	21425	20555	19634	18687	17737	16808	15924	15105	14367	13718	13160	12693	12315
	-32.0	-35.4	-40.5	-47.0	-54.4	-62.0	-69.3	-75.8	-81.3	-85.5	-88.4	-89.9	-90.3	-89.6	-88.3	-86.3	-83.8	-80.6	-76.1
-30	23895	23479	23022	22501	21899	21206	20422	19559	18636	17681	16720	15780	14882	14040	13266	12565	11940	11397	10947
	-36.5	-39.6	-44.1	-49.8	-56.3	-63.2	-70.1	-76.5	-82.1	-86.7	-90.2	-92.4	-93.3	-93.1	-91.8	-89.6	-86.3	-81.9	-76.0
-35	22896	22536	22142	21687	21147	20508	19766	18930	18024	17075	16116	15175	14275	13431	12651	11941	11307	10759	10315
	-40.9	-44.0	-48.2	-53.3	-59.0	-65.1	-71.3	-77.1	-82.4	-86.8	-90.1	-92.2	-93.0	-92.4	-90.6	-87.6	-83.3	-77.7	-70.8
-40	22125	21872	21580	21222	20769	20204	19522	18731	17854	16924	15976	15043	14150	13316	12552	11866	11266	10763	10375
	-43.4	-46.9	-51.1	-55.9	-61.2	-66.7	-72.2	-77.4	-81.9	-85.6	-88.1	-89.4	-89.3	-87.8	-84.9	-80.7	-75.3	-68.8	-61.3
-45	21582	21481	21327	21092	20748	20276	19672	18945	18119	17228	16310	15401	14531	13723	12992	12350	11806	11369	11051
	-42.8	-46.8	-51.3	-56.3	-61.6	-66.8	-71.9	-76.3	-80.0	-82.7	-84.0	-84.0	-82.5	-79.6	-75.3	-69.9	-63.5	-56.5	-49.0
-50	21176	21256	21266	21175	20959	20603	20102	19468	18725	17907	17052	16199	15380	14620	13941	13353	12867	12488	12221
	-38.9	-43.3	-48.3	-53.7	-59.1	-64.3	-69.1	-73.0	-75.9	-77.5	-77.6	-76.2	-73.2	-68.8	-63.3	-56.8	-49.9	-42.8	-36.0
-55	20730	21004	21190	21259	21192	20977	20611	20109	19492	18794	18050	17296	16565	15884	15273	14745	14308	13964	13712
	-32.4	-37.1	-42.4	-48.0	-53.5	-58.8	-63.3	-66.8	-68.9	-69.6	-68.7	-66.1	-62.0	-56.7	-50.3	-43.4	-36.4	-29.7	-23.9
-60	20028	20492	20856	21096	21197	21150	20957	20629	20187	19658	19074	18467	17865	17293	16769	16305	15908	15575	15302
	-24.6	-29.2	-34.4	-39.9	-45.3	-50.3	-54.5	-57.5	-59.1	-59.2	-57.6	-54.5	-50.0	-44.3	-38.0	-31.3	-24.8	-19.0	-14.3
-65	18883	19522	20058	20474	20758	20904	20914	20797	20570	20254	19873	19451	19013	18576	18155	17760	17395	17057	16740
	-16.7	-20.9	-25.6	-30.6	-35.4	-39.8	-43.3	-45.8	-47.0	-46.8	-45.1	-42.1	-37.8	-32.7	-27.1	-21.4	-16.0	-11.3	-7.7
-70	17206	18000	18699	19289	19762	20113	20342	20456	20466	20385	20229	20014	19756	19467	19158	18835	18499	18149	17779
	-9.7	-13.1	-16.9	-20.9	-24.7	-28.1	-30.9	-32.8	-33.6	-33.3	-32.0	-29.5	-26.2	-22.3	-18.0	-13.7	-9.7	-6.3	-3.7
-75	15042	15973	16821	17576	18231	18780	19224	19564	19804	19951	20012	19997	19912	19765	19561	19303	18992	18627	18203
	-3.8	-6.1	-8.7	-11.4	-14.0	-16.3	-18.1	-19.4	-19.9	-19.8	-18.9	-17.4	-15.3	-12.8	-10.1	-7.4	-4.8	-2.7	-1.1
-80	12561	13612	14591	15491	16305	17027	17654	18184	18617	18953	19192	19338	19391	19354	19228	19015	18714	18325	17847
	1.6	0.4	-0.9	-2.3	-3.6	-4.8	-5.8	-6.4	-6.8	-6.8	-6.4	-5.7	-4.8	-3.7	-2.5	-1.2	-0.1	0.8	1.5
-85	9989	11142	12230	13245	14180	15029	15785	16445	17004	17459	17807	18046	18175	18192	18097	17891	17573	17145	16608
	6.9	6.9	6.7	6.5	6.2	6.0	5.7	5.5	5.4	5.3	5.3	5.3	5.4	5.5	5.5	5.6	5.6	5.5	5.2
-90	7532	8763	9928	11018	12023	12937	13752	14463	15064	15550	15917	16164	16287	16287	16163	15915	15547	15060	14458
	12.7	13.6	14.3	14.9	15.5	15.9	16.2	16.3	16.4	16.3	16.1	15.7	15.3	14.7	14.0	13.2	12.4	11.4	10.3

X-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	2400	2494	2566	2615	2643	2648	2631	2594	2538	2463	2371	2264	2143	2011	1869	1719	1562	1401	1237
	-9.9	-11.5	-12.9	-14.2	-15.5	-16.6	-17.5	-18.3	-19.0	-19.5	-19.9	-20.1	-20.2	-20.1	-19.9	-19.6	-19.1	-18.5	-17.8
85	4452	4556	4613	4625	4593	4517	4402	4250	4066	3855	3622	3374	3116	2855	2597	2348	2113	1897	1705
	-15.8	-17.6	-19.2	-20.7	-21.9	-22.9	-23.7	-24.3	-24.7	-25.0	-25.0	-24.9	-24.6	-24.2	-23.7	-23.0	-22.3	-21.5	-20.6
80	6717	6843	6904	6901	6836	6712	6531	6299	6023	5708	5363	4998	4621	4244	3878	3532	3219	2947	2725
	-18.9	-21.0	-23.0	-24.6	-26.0	-27.2	-28.1	-28.8	-29.2	-29.5	-29.6	-29.6	-29.4	-29.1	-28.7	-28.1	-27.5	-26.9	-26.1
75	8772	8911	8981	8983	8917	8787	8597	8351	8053	7711	7332	6926	6504	6078	5661	5269	4916	4616	4382
	-17.5	-20.1	-22.3	-24.3	-25.9	-27.3	-28.4	-29.3	-30.0	-30.6	-31.1	-31.4	-31.7	-31.9	-32.0	-32.0	-31.9	-31.8	-31.5
70	10766	10899	10966	10969	10913	10800	10634	10418	10155	9850	9508	9136	8743	8341	7942	7563	7220	6932	6714
	-13.0	-16.0	-18.6	-20.9	-22.7	-24.3	-25.5	-26.6	-27.5	-28.3	-29.1	-29.8	-30.5	-31.2	-31.9	-32.6	-33.2	-33.9	-34.4
65	12828	12930	12974	12967	12914	12820	12690	12526	12330	12104	11849	11568	11267	10952	10635	10330	10052	9819	9651
	-7.3	-10.8	-13.8	-16.2	-18.3	-19.9	-21.2	-22.2	-23.0	-23.7	-24.4	-25.1	-25.9	-26.8	-27.9	-29.1	-30.4	-31.8	-33.2
60	15034	15093	15103	15074	15015	14933	14836	14725	14604	14471	14326	14167	13995	13813	13626	13443	13276	13140	13051
	-1.7	-5.7	-9.1	-11.9	-14.1	-15.7	-16.8	-17.6	-18.0	-18.2	-18.4	-18.7	-19.1	-19.8	-20.9	-22.3	-24.1	-26.1	-28.3
55	17407	17428	17407	17357	17290	17216	17143	17077	17021	16974	16936	16902	16871	16840	16807	16775	16749	16735	16745
	3.2	-1.3	-5.2	-8.4	-10.8	-12.5	-13.5	-13.9	-13.8	-13.3	-12.7	-12.2	-11.9	-12.1	-12.8	-14.2	-16.1	-18.5	-21.3
50	19931	19936	19904	19848	19783	19719	19666	19632	19623	19642	19688	19762	19858	19971	20094	20220	20344	20463	20579
	7.6	2.6	-1.8	-5.5	-8.3	-10.2	-11.2	-11.5	-11.0	-10.0	-8.6	-7.3	-6.4	-5.9	-6.3	-7.4	-9.4	-11.9	-14.9
45	22565	22584	22567	22529	22483	22440	22409	22399	22419	22478	22581	22732	22928	23163	23423	23695	23960	24204	24418
	12.1	6.7	1.8	-2.3	-5.6	-8.0	-9.4	-9.9	-9.5	-8.3	-6.7	-5.0	-3.6	-2.9	-3.1	-4.2	-6.2	-8.8	-11.7
40	25244	25303	25328	25333	25326	25317	25313	25323	25360	25439	25574	25773	26040	26366	26735	27124	27505	27852	28144
	17.0	11.5	6.4	1.9	-2.0	-5.2	-7.4	-8.6	-8.8	-8.0	-6.7	-5.3	-4.1	-3.6	-4.1	-5.5	-7.5	-10.0	-12.6
35	27858	27979	28066	28130	28180	28219	28249	28281	28330	28419	28569	28797	29109	29498	29944	30417	30881	31298	31639
	22.2	16.9	11.9	7.1	2.6	-1.5	-4.8	-7.1	-8.3	-8.6	-8.1	-7.4	-7.0	-7.3	-8.4	-10.2	-12.6	-14.9	-16.8
30	30232	30430	30593	30733	30852	30948	31021	31079	31143	31242	31405	31654	31999	32430	32926	33450	33960	34413	34774
	26.8	22.1	17.4	12.5	7.5	2.5	-1.9	-5.5	-8.0	-9.4	-10.0	-10.3	-10.8	-11.9	-13.8	-16.2	-18.7	-20.7	-21.8
25	32127	32413	32666	32893	33091	33253	33375	33468	33557	33677	33862	34138	34514	34979	35506	36056	36585	37047	37403
	29.5	25.7	21.5	16.6	11.2	5.6	0.2	-4.4	-7.8	-10.1	-11.4	-12.4	-13.5	-15.2	-17.5	-20.2	-22.6	-24.2	-24.3
20	33268	33654	34008	34331	34615	34847	35026	35166	35296	35456	35684	36005	36422	36923	37477	38044	38578	39037	39381
	29.1	26.1	22.4	17.7	12.2	6.3	0.5	-4.4	-8.1	-10.5	-11.8	-12.7	-13.7	-15.2	-17.2	-19.5	-21.3	-22.2	-21.5
15	33418	33904	34362	34783	35153	35458	35700	35900	36093	36320	36619	37009	37490	38043	38634	39225	39772	40236	40580
	24.4	22.1	18.9	14.5	9.3	3.6	-1.7	-6.0	-8.9	-10.4	-10.7	-10.5	-10.4	-10.7	-11.6	-12.7	-13.5	-13.4	-12.1
10	32449	33018	33565	34069	34511	34882	35191	35465	35745	36070	36473	36964	37536	38166	38818	39456	40042	40539	40915
	15.3	13.5	10.6	6.8	2.2	-2.4	-6.3	-9.0	-10.1	-9.6	-8.0	-5.8	-3.7	-2.1	-1.1	-0.4	0.2	1.3	2.9
5	30399	31008	31601	32150	32635	33055	33428	33789	34179	34632	35170	35793	36486	37220	37962	38679	39337	39905	40356
	2.2	0.7	-1.7	-4.7	-7.9	-10.7	-12.3	-12.5	-10.9	-7.8	-3.7	0.9	5.3	9.2	12.4	15.0	17.1	18.9	20.5
0	27485	28063	28635	29170	29655	30098	30528	30982	31499	32102	32798	33575	34409	35268	36122	36942	37701	38375	38938
	-13.6	-14.8	-16.4	-18.1	-19.4	-19.5	-18.2	-15.3	-10.7	-4.9	1.7	8.4	14.9	20.7	25.8	29.9	33.1	35.3	36.4

X-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	27485	28063	28635	29170	29655	30098	30528	30982	31499	32102	32798	33575	34409	35268	36122	36942	37701	38375	38938
	-13.6	-14.8	-16.4	-18.1	-19.4	-19.5	-18.2	-15.3	-10.7	-4.9	1.7	8.4	14.9	20.7	25.8	29.9	33.1	35.3	36.4
-5	24055	24518	24991	25448	25885	26323	26798	27347	27996	28754	29612	30544	31519	32505	33474	34403	35274	36067	36762
	-30.6	-31.1	-31.5	-31.3	-30.0	-27.0	-22.4	-16.3	-8.9	-0.9	7.4	15.5	23.0	29.8	35.8	40.7	44.3	46.4	46.8
-10	20507	20786	21095	21422	21777	22190	22699	23333	24103	25000	25996	27056	28144	29228	30287	31304	32267	33164	33982
	-46.9	-46.3	-45.0	-42.3	-38.0	-31.8	-24.0	-15.1	-5.7	3.6	12.3	20.4	27.7	34.2	39.8	44.5	47.7	49.3	48.9
-15	17206	17267	17385	17564	17827	18211	18745	19447	20308	21301	22384	23515	24656	25781	26874	27926	28933	29890	30790
	-60.8	-58.6	-55.1	-49.7	-42.4	-33.2	-22.9	-12.3	-2.0	7.1	15.1	21.7	27.4	32.3	36.6	40.0	42.3	43.2	42.2
-20	14422	14282	14229	14282	14474	14838	15392	16135	17040	18065	19160	20280	21392	22476	23526	24539	25520	26470	27389
	-70.9	-66.8	-60.9	-53.0	-43.1	-31.9	-20.2	-9.1	0.6	8.4	14.3	18.5	21.6	24.2	26.3	28.0	29.1	29.3	28.2
-25	12315	12034	11871	11853	12013	12374	12939	13687	14578	15559	16579	17596	18588	19543	20463	21357	22232	23100	23965
	-76.1	-70.1	-62.2	-52.4	-41.0	-29.0	-17.4	-7.2	0.8	6.2	9.2	10.5	10.7	10.6	10.6	10.8	10.9	10.6	9.9
-30	10947	10609	10412	10385	10553	10923	11482	12193	13006	13867	14728	15558	16346	17092	17806	18505	19203	19917	20654
	-76.0	-68.5	-59.3	-48.7	-37.2	-25.9	-15.8	-7.8	-2.6	-0.2	-0.2	-1.7	-4.0	-6.2	-7.8	-8.7	-9.1	-9.1	-8.9
-35	10315	9996	9830	9840	10036	10409	10931	11556	12230	12904	13540	14121	14644	15121	15573	16020	16485	16986	17536
	-70.8	-62.5	-53.1	-42.9	-32.8	-23.6	-16.3	-11.4	-9.4	-10.0	-12.7	-16.4	-20.4	-23.7	-26.1	-27.2	-27.3	-26.5	-25.2
-40	10375	10121	10017	10073	10284	10630	11071	11558	12042	12482	12852	13145	13371	13549	13706	13868	14062	14309	14624
	-61.3	-53.1	-44.5	-36.1	-28.5	-22.4	-18.6	-17.2	-18.3	-21.6	-26.1	-31.2	-35.8	-39.4	-41.5	-42.1	-41.4	-39.7	-37.1
-45	11051	10862	10807	10882	11069	11338	11648	11951	12208	12386	12471	12466	12386	12257	12110	11974	11877	11845	11895
	-49.0	-41.7	-34.7	-28.8	-24.4	-21.8	-21.5	-23.4	-27.2	-32.3	-38.0	-43.5	-48.0	-51.0	-52.3	-52.0	-50.3	-47.6	-44.1
-50	12221	12066	12017	12057	12163	12301	12432	12516	12523	12429	12231	11934	11560	11135	10690	10257	9867	9545	9314
	-36.0	-29.9	-25.1	-21.8	-20.4	-21.0	-23.7	-28.0	-33.6	-39.8	-45.9	-51.1	-54.9	-57.1	-57.5	-56.3	-54.0	-50.7	-47.0
-55	13712	13544	13445	13394	13366	13327	13246	13091	12841	12482	12012	11444	10796	10095	9372	8658	7984	7379	6867
	-23.9	-19.4	-16.5	-15.4	-16.4	-19.2	-23.8	-29.5	-35.9	-42.3	-48.1	-52.8	-55.9	-57.3	-57.2	-55.7	-53.2	-50.1	-46.8
-60	15302	15077	14883	14699	14500	14260	13953	13557	13059	12449	11732	10918	10025	9078	8106	7139	6207	5339	4562
	-14.3	-11.1	-9.7	-10.1	-12.3	-16.2	-21.3	-27.3	-33.5	-39.5	-44.7	-48.7	-51.3	-52.5	-52.4	-51.2	-49.3	-47.0	-44.6
-65	16740	16433	16119	15781	15399	14953	14426	13804	13078	12246	11311	10284	9182	8029	6848	5668	4518	3427	2421
	-7.7	-5.5	-4.9	-5.9	-8.3	-12.1	-16.8	-22.0	-27.4	-32.5	-36.8	-40.3	-42.7	-44.0	-44.4	-44.1	-43.3	-42.2	-41.2
-70	17779	17381	16942	16450	15893	15256	14531	13709	12786	11764	10649	9451	8186	6873	5535	4197	2885	1624	441
	-3.7	-2.3	-1.9	-2.8	-4.8	-7.7	-11.3	-15.3	-19.4	-23.3	-26.9	-29.9	-32.2	-34.0	-35.1	-35.8	-36.2	-36.5	-36.7
-75	18203	17717	17161	16530	15816	15014	14119	13131	12050	10880	9629	8308	6930	5514	4078	2643	1232	-133	-1430
	-1.1	-0.2	0.0	-0.6	-1.8	-3.7	-6.0	-8.7	-11.6	-14.5	-17.2	-19.8	-22.1	-24.1	-25.9	-27.5	-28.9	-30.2	-31.4
-80	17847	17279	16620	15868	15024	14087	13060	11945	10748	9475	8136	6742	5306	3842	2366	896	-549	-1955	-3302
	1.5	1.9	1.8	1.4	0.6	-0.5	-2.0	-3.7	-5.6	-7.7	-9.8	-11.9	-14.0	-16.1	-18.1	-20.0	-21.9	-23.6	-25.3
-85	16608	15965	15218	14371	13427	12392	11272	10075	8807	7478	6099	4680	3234	1772	307	-1145	-2574	-3965	-5304
	5.2	4.9	4.4	3.7	2.9	1.9	0.7	-0.6	-2.1	-3.6	-5.3	-7.0	-8.7	-10.5	-12.3	-14.0	-15.8	-17.4	-18.9
-90	14458	13747	12931	12016	11010	9920	8755	7523	6233	4897	3523	2122	705	-716	-2133	-3533	-4907	-6243	-7532
	10.3	9.2	7.9	6.7	5.3	4.0	2.6	1.2	-0.3	-1.7	-3.1	-4.5	-5.9	-7.2	-8.4	-9.6	-10.7	-11.8	-12.7

X-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	1237	1072	906	742	579	419	262	108	-40	-185	-326	-462	-593	-720	-843	-960	-1072	-1179	-1280
	-17.8	-17.0	-16.1	-15.1	-14.0	-12.8	-11.6	-10.3	-8.9	-7.5	-6.1	-4.6	-3.1	-1.6	-0.1	1.5	3.0	4.5	6.0
85	1705	1539	1402	1294	1216	1166	1142	1140	1156	1184	1221	1259	1293	1318	1328	1319	1288	1233	1151
	-20.6	-19.7	-18.8	-17.8	-16.9	-15.9	-15.0	-14.1	-13.1	-12.2	-11.4	-10.5	-9.6	-8.7	-7.7	-6.7	-5.7	-4.5	-3.3
80	2725	2560	2456	2415	2438	2521	2658	2842	3062	3307	3563	3816	4053	4260	4427	4541	4596	4586	4507
	-26.1	-25.4	-24.6	-23.9	-23.1	-22.4	-21.8	-21.2	-20.7	-20.3	-19.9	-19.6	-19.3	-18.9	-18.6	-18.1	-17.5	-16.7	-15.7
75	4382	4226	4155	4175	4287	4485	4763	5109	5506	5936	6378	6813	7217	7572	7859	8063	8173	8181	8083
	-31.5	-31.3	-30.9	-30.5	-30.1	-29.7	-29.3	-28.9	-28.7	-28.4	-28.3	-28.3	-28.3	-28.2	-28.2	-28.0	-27.6	-27.0	-26.0
70	6714	6583	6551	6624	6805	7091	7473	7935	8457	9016	9585	10138	10648	11089	11442	11687	11813	11812	11681
	-34.4	-34.8	-35.2	-35.4	-35.4	-35.4	-35.3	-35.1	-34.9	-34.7	-34.5	-34.4	-34.3	-34.2	-34.0	-33.8	-33.3	-32.5	-31.4
65	9651	9565	9575	9691	9918	10255	10691	11210	11790	12404	13022	13613	14149	14604	14955	15186	15287	15251	15079
	-33.2	-34.6	-35.8	-36.7	-37.5	-38.0	-38.2	-38.1	-37.9	-37.5	-37.0	-36.5	-35.9	-35.3	-34.7	-34.0	-33.2	-32.1	-30.6
60	13051	13026	13080	13227	13471	13815	14250	14760	15324	15913	16497	17044	17527	17919	18202	18364	18398	18303	18084
	-28.3	-30.5	-32.5	-34.4	-35.9	-36.9	-37.5	-37.6	-37.2	-36.6	-35.6	-34.5	-33.2	-31.9	-30.6	-29.2	-27.7	-26.1	-24.2
55	16745	16791	16888	17047	17279	17586	17965	18404	18881	19371	19845	20274	20630	20893	21048	21091	21020	20843	20568
	-21.3	-24.1	-26.9	-29.4	-31.5	-32.9	-33.7	-33.9	-33.4	-32.4	-31.0	-29.2	-27.3	-25.3	-23.3	-21.2	-19.0	-16.8	-14.6
50	20579	20697	20826	20980	21170	21402	21678	21991	22323	22653	22955	23204	23376	23456	23437	23320	23113	22831	22489
	-14.9	-18.1	-21.1	-23.8	-26.0	-27.4	-28.2	-28.1	-27.4	-26.1	-24.3	-22.3	-20.0	-17.7	-15.2	-12.6	-10.0	-7.4	-4.8
45	24418	24597	24747	24878	25001	25129	25268	25415	25561	25687	25773	25799	25748	25611	25387	25086	24722	24318	23898
	-11.7	-14.6	-17.3	-19.5	-21.0	-21.9	-22.0	-21.4	-20.3	-18.8	-17.0	-15.0	-13.0	-10.9	-8.6	-6.1	-3.5	-0.7	2.1
40	28144	28368	28521	28612	28653	28660	28643	28605	28541	28440	28287	28069	27778	27410	26973	26480	25956	25427	24924
	-12.6	-14.8	-16.4	-17.4	-17.6	-17.1	-16.1	-14.6	-13.0	-11.3	-9.8	-8.4	-7.3	-6.1	-4.8	-3.1	-0.9	1.7	4.5
35	31639	31884	32023	32063	32015	31897	31723	31498	31224	30894	30502	30044	29519	28932	28297	27632	26965	26326	25750
	-16.8	-17.9	-18.0	-17.2	-15.5	-13.3	-10.7	-8.2	-6.0	-4.3	-3.2	-2.9	-3.1	-3.6	-3.8	-3.5	-2.3	-0.3	2.3
30	34774	35015	35126	35107	34973	34739	34421	34028	33564	33029	32425	31756	31030	30263	29471	28676	27905	27190	26564
	-21.8	-21.6	-20.0	-17.2	-13.6	-9.7	-5.7	-2.2	0.5	2.1	2.5	1.7	-0.1	-2.4	-4.5	-5.9	-6.2	-5.1	-2.9
25	37403	37625	37699	37625	37416	37086	36653	36126	35514	34820	34054	33228	32362	31475	30587	29722	28903	28159	27519
	-24.3	-22.9	-19.8	-15.6	-10.6	-5.4	-0.6	3.4	6.2	7.5	7.3	5.4	2.3	-1.6	-5.4	-8.5	-10.2	-10.3	-8.8
20	39381	39582	39625	39511	39248	38855	38346	37734	37029	36241	35383	34476	33544	32612	31703	30836	30031	29309	28693
	-21.5	-19.2	-15.4	-10.5	-5.2	0.0	4.6	8.3	10.7	11.6	10.8	8.3	4.5	-0.3	-5.3	-9.6	-12.6	-13.8	-13.3
15	40580	40778	40814	40688	40408	39992	39457	38818	38087	37278	36408	35501	34584	33684	32823	32018	31281	30626	30067
	-12.1	-9.5	-5.9	-1.7	2.6	6.5	9.8	12.2	13.5	13.7	12.6	10.1	6.3	1.5	-3.6	-8.4	-12.2	-14.5	-15.2
10	40915	41146	41215	41120	40870	40482	39976	39369	38679	37920	37113	36281	35451	34648	33891	33195	32566	32008	31526
	2.9	5.1	7.5	10.0	12.0	13.4	14.2	14.4	14.2	13.5	12.2	10.1	7.2	3.4	-1.0	-5.5	-9.4	-12.5	-14.4
5	40356	40665	40817	40806	40641	40336	39914	39396	38804	38155	37469	36769	36076	35414	34797	34236	33732	33283	32883
	20.5	21.6	22.2	22.1	21.0	19.3	17.0	14.7	12.6	10.9	9.5	8.1	6.5	4.2	1.3	-2.1	-5.8	-9.3	-12.3
0	38938	39369	39651	39776	39746	39576	39288	38905	38451	37950	37422	36884	36356	35852	35387	34966	34587	34244	33923
	36.4	36.3	34.7	31.8	27.7	22.8	17.7	13.0	9.1	6.4	4.9	4.2	3.8	3.2	2.0	-0.1	-3.0	-6.6	-10.4

X-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	38938	39369	39651	39776	39746	39576	39288	38905	38451	37950	37422	36884	36356	35852	35387	34966	34587	34244	33923
	36.4	36.3	34.7	31.8	27.7	22.8	17.7	13.0	9.1	6.4	4.9	4.2	3.8	3.2	2.0	-0.1	-3.0	-6.6	-10.4
-5	36762	37340	37782	38078	38223	38227	38106	37887	37595	37259	36897	36528	36165	35820	35500	35209	34944	34695	34445
	46.8	45.3	41.9	36.8	30.4	23.3	16.1	9.7	4.6	1.1	-0.7	-1.0	-0.5	0.2	0.4	-0.4	-2.5	-5.8	-10.0
-10	33982	34703	35310	35786	36121	36314	36376	36330	36204	36028	35824	35610	35397	35193	35002	34827	34662	34496	34310
	48.9	46.5	42.0	35.8	28.4	20.5	12.7	5.7	0.1	-3.8	-5.8	-6.2	-5.5	-4.2	-3.2	-3.2	-4.6	-7.6	-11.7
-15	30790	31621	32364	33000	33510	33882	34119	34238	34265	34231	34163	34080	33994	33909	33830	33754	33677	33588	33468
	42.2	39.4	34.8	29.0	22.2	15.1	8.2	2.0	-3.2	-7.1	-9.4	-10.2	-9.9	-8.9	-7.9	-7.6	-8.6	-11.1	-14.8
-20	27389	28270	29096	29844	30487	31005	31389	31649	31807	31893	31936	31959	31974	31989	32003	32017	32023	32011	31965
	28.2	25.8	22.3	18.0	13.2	8.3	3.5	-1.0	-5.0	-8.3	-10.7	-12.1	-12.6	-12.4	-12.0	-12.0	-12.9	-15.0	-18.2
-25	23965	24823	25661	26454	27171	27784	28275	28644	28907	29091	29226	29334	29434	29532	29630	29727	29817	29888	29928
	9.9	8.7	7.0	5.1	3.1	1.1	-0.9	-3.0	-5.3	-7.6	-9.9	-11.8	-13.2	-13.9	-14.4	-14.9	-15.9	-17.7	-20.3
-30	20654	21417	22194	22960	23685	24335	24886	25330	25674	25940	26153	26339	26514	26689	26867	27047	27223	27387	27526
	-8.9	-8.6	-8.1	-7.4	-6.5	-5.6	-4.8	-4.6	-5.0	-6.3	-8.1	-10.1	-11.9	-13.4	-14.5	-15.5	-16.7	-18.3	-20.5
-35	17536	18138	18786	19459	20128	20758	21323	21809	22213	22550	22840	23102	23355	23609	23869	24136	24405	24668	24915
	-25.2	-23.2	-20.8	-18.0	-14.8	-11.6	-8.7	-6.6	-5.6	-5.6	-6.6	-8.3	-10.0	-11.7	-13.1	-14.2	-15.4	-16.8	-18.7
-40	14624	15016	15481	16004	16560	17121	17658	18153	18599	18999	19364	19709	20047	20389	20740	21100	21468	21834	22191
	-37.1	-33.8	-30.1	-25.9	-21.5	-17.1	-13.2	-10.0	-8.0	-7.1	-7.2	-8.0	-9.1	-10.3	-11.3	-12.2	-13.2	-14.4	-16.0
-45	11895	12040	12281	12610	13009	13456	13927	14400	14864	15313	15750	16180	16611	17050	17499	17960	18429	18899	19362
	-44.1	-40.2	-35.9	-31.4	-26.8	-22.4	-18.5	-15.2	-12.8	-11.2	-10.5	-10.3	-10.5	-10.7	-10.9	-11.1	-11.6	-12.4	-13.8
-50	9314	9190	9181	9284	9492	9788	10154	10570	11021	11495	11986	12492	13012	13547	14096	14657	15225	15793	16352
	-47.0	-43.0	-39.0	-35.1	-31.3	-27.8	-24.6	-21.8	-19.6	-17.9	-16.5	-15.4	-14.5	-13.7	-12.9	-12.3	-12.1	-12.4	-13.4
-55	6867	6468	6195	6055	6046	6160	6384	6702	7098	7558	8068	8619	9204	9816	10449	11097	11752	12406	13050
	-46.8	-43.5	-40.4	-37.6	-35.1	-32.9	-30.9	-29.0	-27.4	-25.7	-24.1	-22.5	-20.8	-19.0	-17.4	-16.0	-15.1	-14.8	-15.1
-60	4562	3900	3369	2981	2743	2651	2699	2877	3169	3561	4037	4583	5185	5832	6513	7216	7932	8651	9362
	-44.6	-42.5	-40.7	-39.2	-38.0	-37.1	-36.2	-35.4	-34.4	-33.1	-31.6	-29.8	-27.8	-25.6	-23.4	-21.4	-19.9	-18.9	-18.5
-65	2421	1525	758	137	-329	-637	-788	-788	-648	-382	-3	471	1028	1650	2324	3036	3773	4526	5283
	-41.2	-40.4	-39.8	-39.6	-39.5	-39.6	-39.7	-39.6	-39.2	-38.4	-37.2	-35.6	-33.6	-31.4	-29.1	-26.9	-24.9	-23.3	-22.1
-70	441	-640	-1602	-2426	-3100	-3618	-3975	-4176	-4224	-4131	-3906	-3565	-3121	-2588	-1982	-1316	-603	146	922
	-36.7	-37.1	-37.6	-38.3	-39.0	-39.7	-40.3	-40.7	-40.7	-40.4	-39.5	-38.3	-36.7	-34.7	-32.6	-30.4	-28.2	-26.2	-24.3
-75	-1430	-2639	-3741	-4720	-5564	-6264	-6814	-7212	-7460	-7563	-7528	-7363	-7079	-6687	-6199	-5627	-4980	-4270	-3505
	-31.4	-32.6	-33.8	-35.0	-36.1	-37.1	-38.0	-38.5	-38.8	-38.6	-38.1	-37.2	-36.0	-34.4	-32.6	-30.6	-28.5	-26.3	-24.1
-80	-3302	-4573	-5754	-6831	-7792	-8627	-9330	-9896	-10324	-10612	-10764	-10782	-10672	-10441	-10095	-9642	-9091	-8448	-7722
	-25.3	-26.9	-28.4	-29.8	-31.0	-32.0	-32.8	-33.3	-33.6	-33.6	-33.2	-32.6	-31.6	-30.4	-28.9	-27.2	-25.3	-23.2	-21.0
-85	-5304	-6579	-7779	-8891	-9906	-10816	-11613	-12290	-12842	-13268	-13565	-13731	-13769	-13679	-13465	-13130	-12679	-12117	-11449
	-18.9	-20.4	-21.7	-22.9	-23.9	-24.7	-25.3	-25.7	-25.9	-25.9	-25.6	-25.1	-24.4	-23.4	-22.3	-20.9	-19.4	-17.8	-16.0
-90	-7532	-8763	-9928	-11018	-12023	-12937	-13752	-14463	-15064	-15550	-15917	-16164	-16287	-16287	-16163	-15915	-15547	-15060	-14458
	-12.7	-13.6	-14.3	-14.9	-15.5	-15.9	-16.2	-16.3	-16.4	-16.3	-16.1	-15.7	-15.3	-14.7	-14.0	-13.2	-12.4	-11.4	-10.3

Plots and Tables of IGRF 1990

Y Component

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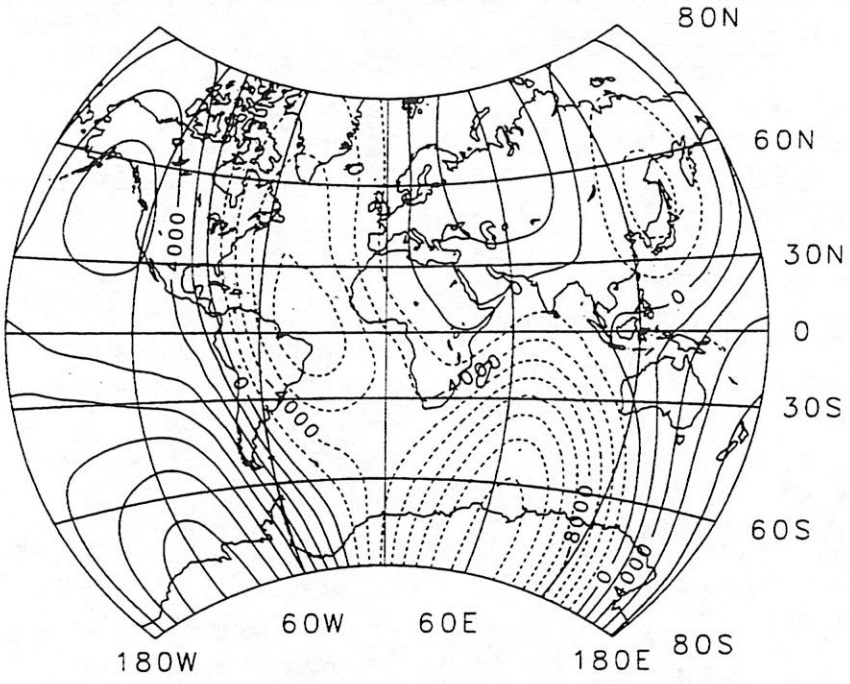
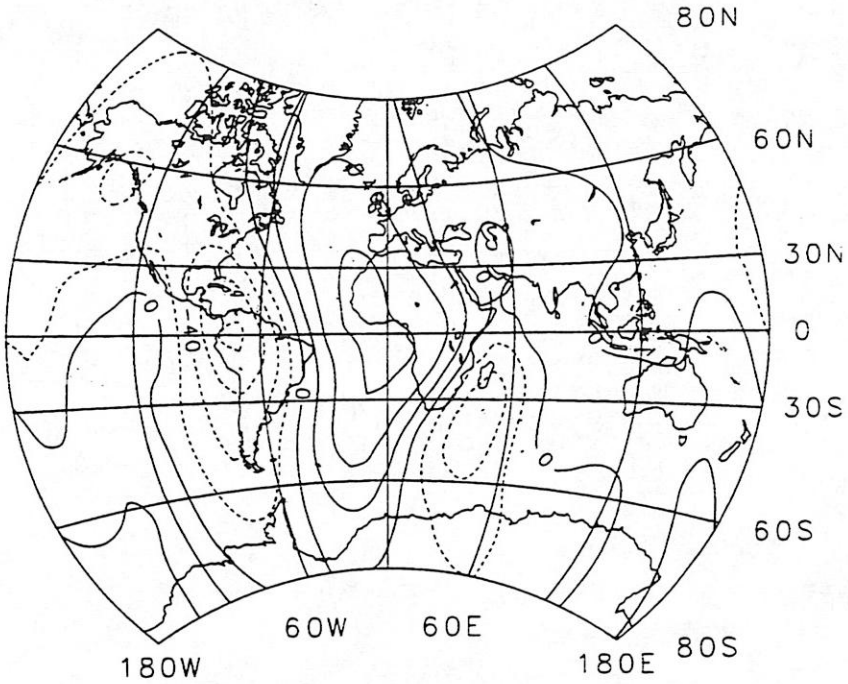
IGRF 1990 - Y - COMPONENT

Figure 23 (**Y**, top) Figure 24 ($\dot{\mathbf{Y}}$, bottom)





Y-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	1134	1011	880	741	593	438	276	106	-68	-248	-432	-618	-804	-990	-1172	-1349	-1519	-1680	-1828
	-17.1	-16.5	-15.7	-14.9	-13.9	-12.9	-11.7	-10.4	-9.0	-7.6	-6.0	-4.4	-2.8	-1.1	0.7	2.4	4.2	5.9	7.6
85	1098	1157	1204	1233	1237	1214	1160	1071	946	786	590	362	105	-177	-479	-795	-1118	-1441	-1757
	-15.7	-15.8	-15.8	-15.7	-15.5	-15.1	-14.6	-13.9	-13.0	-11.9	-10.7	-9.2	-7.5	-5.6	-3.6	-1.4	0.9	3.2	5.6
80	1141	1443	1723	1968	2167	2307	2382	2384	2310	2159	1933	1636	1273	855	390	-108	-627	-1155	-1677
	-14.6	-15.7	-16.7	-17.7	-18.5	-19.2	-19.6	-19.7	-19.5	-18.8	-17.8	-16.4	-14.6	-12.5	-10.0	-7.2	-4.2	-1.0	2.4
75	1273	1812	2318	2771	3150	3441	3631	3711	3676	3525	3260	2888	2418	1863	1238	562	-147	-871	-1588
	-14.2	-16.2	-18.3	-20.4	-22.4	-24.1	-25.4	-26.3	-26.6	-26.4	-25.6	-24.2	-22.2	-19.8	-16.8	-13.4	-9.6	-5.6	-1.4
70	1471	2220	2922	3552	4086	4505	4792	4936	4933	4781	4482	4046	3483	2811	2046	1212	332	-567	-1463
	-14.5	-17.4	-20.4	-23.5	-26.5	-29.1	-31.2	-32.7	-33.5	-33.5	-32.7	-31.3	-29.1	-26.3	-23.0	-19.2	-14.9	-10.4	-5.5
65	1707	2618	3471	4236	4886	5400	5762	5959	5985	5839	5524	5049	4425	3668	2800	1844	825	-226	-1279
	-15.3	-18.8	-22.6	-26.5	-30.1	-33.4	-36.0	-37.9	-38.9	-39.0	-38.1	-36.5	-34.2	-31.2	-27.8	-23.9	-19.6	-15.0	-9.9
60	1962	2977	3922	4768	5489	6063	6475	6713	6769	6642	6334	5851	5205	4409	3483	2447	1328	159	-1027
	-16.6	-20.4	-24.5	-28.8	-32.8	-36.4	-39.2	-41.2	-42.1	-42.1	-41.0	-39.2	-36.8	-33.9	-30.8	-27.3	-23.5	-19.3	-14.7
55	2231	3286	4262	5131	5874	6471	6907	7172	7258	7162	6883	6427	5799	5009	4071	3003	1827	575	-714
	-18.2	-21.9	-25.9	-30.1	-34.0	-37.5	-40.3	-42.1	-42.8	-42.4	-41.2	-39.2	-36.9	-34.3	-31.8	-29.2	-26.6	-23.5	-19.8
50	2522	3555	4499	5337	6054	6636	7072	7350	7462	7404	7173	6769	6193	5449	4542	3485	2294	997	-366
	-20.0	-23.2	-26.7	-30.3	-33.8	-36.8	-39.1	-40.6	-41.0	-40.3	-38.8	-36.7	-34.5	-32.6	-31.0	-29.9	-28.9	-27.5	-25.3
45	2847	3802	4662	5418	6066	6599	7009	7286	7419	7401	7226	6890	6388	5718	4877	3867	2698	1394	-7
	-21.8	-24.4	-27.1	-29.8	-32.3	-34.5	-36.2	-37.1	-37.1	-36.1	-34.4	-32.3	-30.3	-29.1	-28.8	-29.4	-30.5	-31.4	-31.2
40	3216	4049	4778	5411	5955	6412	6776	7037	7182	7200	7081	6818	6402	5823	5069	4135	3022	1746	339
	-23.8	-25.7	-27.4	-28.9	-30.2	-31.3	-32.1	-32.4	-32.0	-30.7	-28.7	-26.5	-24.8	-24.3	-25.3	-27.9	-31.5	-35.0	-37.2
35	3627	4306	4874	5355	5769	6129	6432	6666	6813	6857	6788	6594	6264	5784	5133	4296	3264	2046	669
	-25.6	-27.1	-27.9	-28.1	-27.9	-27.7	-27.5	-27.1	-26.2	-24.6	-22.5	-20.2	-18.7	-18.8	-21.1	-25.6	-31.7	-38.1	-43.1
30	4069	4577	4966	5278	5550	5802	6035	6232	6370	6430	6399	6265	6017	5636	5096	4371	3442	2308	989
	-27.3	-28.8	-28.8	-27.6	-26.0	-24.4	-23.0	-21.9	-20.5	-18.7	-16.3	-13.9	-12.4	-12.8	-16.1	-22.4	-31.0	-40.4	-48.3
25	4523	4856	5065	5207	5335	5478	5637	5791	5912	5976	5969	5883	5709	5426	5001	4397	3586	2554	1314
	-28.7	-30.4	-30.0	-27.7	-24.6	-21.5	-19.0	-17.0	-15.3	-13.2	-10.7	-8.0	-6.3	-6.9	-10.8	-18.6	-29.4	-41.5	-52.5
20	4965	5137	5180	5165	5159	5199	5287	5396	5492	5547	5551	5501	5391	5200	4889	4411	3725	2807	1658
	-29.4	-31.8	-31.2	-28.1	-23.6	-19.1	-15.5	-12.8	-10.7	-8.4	-5.7	-2.8	-0.7	-1.2	-5.5	-14.3	-26.9	-41.4	-55.2
15	5379	5416	5319	5174	5055	5008	5032	5096	5160	5197	5198	5169	5110	5000	4796	4442	3882	3079	2025
	-29.2	-32.5	-32.1	-28.4	-22.9	-17.2	-12.5	-9.1	-6.7	-4.3	-1.5	1.6	3.9	3.8	-0.6	-9.9	-23.7	-40.2	-56.3
10	5757	5693	5495	5253	5052	4938	4909	4931	4960	4969	4956	4932	4906	4861	4751	4508	4065	3372	2409
	-28.0	-32.2	-32.1	-28.1	-21.9	-15.3	-9.8	-5.9	-3.3	-0.9	1.8	5.0	7.5	7.6	3.5	-5.9	-20.3	-37.9	-55.8
5	6100	5974	5717	5421	5170	5012	4945	4931	4924	4899	4859	4825	4812	4809	4767	4614	4271	3677	2800
	-25.6	-30.6	-30.9	-26.9	-20.4	-13.3	-7.3	-3.1	-0.3	1.8	4.4	7.3	9.8	10.1	6.3	-2.8	-17.2	-35.2	-53.9
0	6419	6270	5995	5683	5416	5239	5148	5104	5063	5002	4927	4868	4847	4858	4855	4763	4498	3987	3187
	-22.3	-27.6	-28.4	-24.7	-18.3	-11.0	-4.8	-0.5	2.2	4.1	6.1	8.6	10.8	11.0	7.5	-1.2	-14.9	-32.5	-51.1

Y-COMPONENT

LATITUDE \ LONGITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	6419	6270	5995	5683	5416	5239	5148	5104	5063	5002	4927	4868	4847	4858	4855	4763	4498	3987	3187
	-22.3	-27.6	-28.4	-24.7	-18.3	-11.0	-4.8	-0.5	2.2	4.1	6.1	8.6	10.8	11.0	7.5	-1.2	-14.9	-32.5	-51.1
-5	6727	6588	6332	6038	5783	5607	5505	5441	5370	5273	5161	5067	5019	5018	5023	4962	4749	4303	3572
	-18.2	-23.7	-24.7	-21.6	-15.5	-8.6	-2.5	1.8	4.3	5.8	7.2	8.9	10.5	10.4	7.0	-1.0	-13.8	-30.2	-47.9
-10	7035	6933	6720	6469	6246	6086	5984	5906	5813	5688	5543	5412	5327	5295	5284	5227	5041	4643	3972
	-13.8	-19.1	-20.5	-17.9	-12.6	-6.2	-0.4	3.6	5.9	7.0	7.8	8.6	9.3	8.6	5.1	-2.3	-13.9	-28.7	-44.8
-15	7349	7298	7146	6951	6770	6634	6538	6455	6349	6208	6041	5882	5763	5694	5653	5583	5405	5038	4415
	-9.4	-14.4	-16.1	-14.2	-9.7	-4.1	1.2	5.0	7.1	7.9	8.1	8.1	7.7	6.1	2.4	-4.6	-15.0	-28.0	-42.2
-20	7665	7674	7587	7451	7316	7206	7121	7038	6932	6790	6621	6453	6315	6219	6149	6057	5875	5523	4933
	-5.5	-10.1	-12.0	-10.9	-7.3	-2.5	2.3	5.9	8.0	8.7	8.4	7.7	6.3	3.8	-0.5	-7.3	-16.7	-28.1	-40.3
-25	7974	8043	8019	7940	7847	7763	7692	7619	7526	7403	7256	7105	6973	6870	6783	6673	6479	6127	5551
	-2.0	-6.3	-8.5	-8.1	-5.4	-1.4	2.9	6.5	8.7	9.5	9.1	7.8	5.6	2.2	-2.8	-9.7	-18.4	-28.5	-38.9
-30	8262	8387	8420	8394	8341	8284	8233	8180	8115	8031	7931	7825	7727	7643	7557	7436	7225	6860	6277
	1.0	-3.1	-5.6	-5.8	-3.9	-0.5	3.4	7.0	9.5	10.6	10.3	8.7	5.8	1.6	-4.1	-11.2	-19.7	-28.9	-38.0
-35	8515	8692	8778	8800	8788	8765	8743	8724	8704	8679	8645	8607	8568	8522	8453	8328	8097	7705	7096
	3.8	-0.3	-2.9	-3.6	-2.3	0.5	4.2	7.8	10.6	12.1	12.0	10.4	7.1	2.2	-4.1	-11.7	-20.1	-28.9	-37.2
-40	8724	8949	9087	9161	9197	9219	9241	9273	9313	9359	9406	9448	9478	9481	9436	9307	9053	8624	7977
	6.6	2.7	0.0	-1.0	-0.2	2.3	5.7	9.2	12.2	14.0	14.2	12.5	9.0	3.7	-3.1	-11.1	-19.6	-28.2	-36.1
-45	8881	9160	9356	9491	9588	9670	9755	9852	9964	10089	10217	10337	10432	10480	10453	10318	10035	9564	8876
	9.6	6.0	3.4	2.3	2.9	4.9	8.0	11.4	14.3	16.1	16.3	14.7	11.0	5.5	-1.5	-9.7	-18.3	-26.8	-34.4
-50	8986	9329	9597	9808	9983	10144	10306	10481	10670	10870	11070	11252	11394	11470	11449	11297	10981	10472	9748
	12.9	9.9	7.6	6.6	7.0	8.6	11.2	14.1	16.6	18.1	18.2	16.4	12.7	7.2	0.1	-7.9	-16.4	-24.6	-31.8
-55	9034	9462	9820	10126	10397	10652	10903	11160	11423	11687	11939	12159	12323	12403	12369	12192	11844	11304	10561
	16.3	14.1	12.3	11.5	11.8	13.0	14.9	17.0	18.8	19.7	19.3	17.3	13.6	8.2	1.5	-6.1	-14.1	-21.7	-28.4
-60	9020	9557	10028	10446	10829	11188	11533	11870	12197	12508	12788	13020	13179	13241	13180	12971	12595	12038	11297
	19.5	18.1	17.0	16.5	16.7	17.4	18.6	19.8	20.6	20.7	19.6	17.3	13.6	8.5	2.3	-4.5	-11.5	-18.2	-23.9
-65	8939	9606	10208	10755	11257	11724	12162	12571	12949	13289	13578	13799	13935	13964	13867	13627	13232	12674	11954
	21.8	21.3	20.9	20.7	20.8	21.1	21.4	21.7	21.5	20.8	19.1	16.5	12.8	8.3	2.9	-2.8	-8.7	-14.1	-18.8
-70	8782	9594	10338	11020	11646	12219	12743	13216	13634	13990	14274	14475	14579	14572	14442	14178	13775	13229	12544
	22.9	23.1	23.2	23.3	23.3	23.2	22.9	22.4	21.5	20.1	18.0	15.3	11.9	8.0	3.6	-0.9	-5.4	-9.5	-12.9
-75	8550	9507	10392	11206	11949	12623	13226	13756	14208	14578	14858	15041	15120	15085	14932	14656	14255	13730	13084
	22.4	23.1	23.6	23.7	23.7	23.4	22.8	21.8	20.6	18.9	16.8	14.3	11.4	8.3	5.0	1.7	-1.5	-4.4	-6.8
-80	8251	9336	10346	11278	12127	12893	13570	14155	14646	15037	15325	15505	15574	15530	15371	15095	14703	14199	13585
	20.3	21.2	21.8	22.1	22.1	21.7	21.1	20.2	19.0	17.5	15.8	13.9	11.7	9.5	7.3	5.0	2.9	1.0	-0.6
-85	7903	9084	10190	11216	12155	13000	13748	14393	14932	15361	15676	15877	15961	15929	15779	15514	15135	14645	14048
	17.0	17.8	18.4	18.8	19.0	18.9	18.6	18.1	17.4	16.5	15.5	14.3	13.1	11.8	10.4	9.0	7.7	6.4	5.2
-90	7532	8763	9928	11018	12023	12937	13752	14463	15064	15550	15917	16164	16287	16287	16163	15915	15547	15060	14458
	12.7	13.6	14.3	14.9	15.5	15.9	16.2	16.3	16.4	16.3	16.1	15.7	15.3	14.7	14.0	13.2	12.4	11.4	10.3

Y-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	-1828	-1964	-2084	-2186	-2269	-2332	-2373	-2392	-2387	-2359	-2308	-2234	-2138	-2020	-1883	-1728	-1557	-1371	-1174
	7.6	9.2	10.8	12.3	13.7	15.0	16.2	17.2	18.1	18.9	19.4	19.8	20.1	20.1	20.0	19.7	19.2	18.6	17.9
85	-1757	-2059	-2339	-2592	-2812	-2993	-3131	-3224	-3268	-3262	-3207	-3103	-2953	-2759	-2525	-2255	-1955	-1630	-1287
	5.6	8.0	10.3	12.5	14.7	16.6	18.4	20.0	21.3	22.4	23.2	23.7	23.9	23.8	23.4	22.8	22.0	20.9	19.6
80	-1677	-2179	-2649	-3076	-3449	-3759	-3999	-4164	-4252	-4262	-4194	-4052	-3839	-3561	-3225	-2839	-2410	-1949	-1464
	2.4	5.8	9.1	12.4	15.5	18.4	21.1	23.4	25.3	26.8	27.9	28.5	28.7	28.4	27.8	26.8	25.5	23.9	22.0
75	-1588	-2279	-2925	-3509	-4017	-4437	-4760	-4980	-5095	-5105	-5014	-4828	-4553	-4201	-3779	-3300	-2775	-2215	-1630
	-1.4	3.0	7.3	11.6	15.8	19.7	23.2	26.3	28.9	30.9	32.4	33.2	33.4	33.1	32.2	30.8	29.0	26.9	24.6
70	-1463	-2328	-3136	-3866	-4497	-5014	-5407	-5667	-5795	-5793	-5668	-5431	-5093	-4668	-4172	-3617	-3018	-2389	-1740
	-5.5	-0.4	4.7	9.9	15.1	19.9	24.5	28.5	31.9	34.6	36.5	37.7	38.0	37.6	36.6	34.9	32.7	30.1	27.3
65	-1279	-2302	-3262	-4129	-4878	-5487	-5942	-6235	-6365	-6341	-6173	-5877	-5472	-4976	-4409	-3789	-3133	-2454	-1768
	-9.9	-4.5	1.2	7.1	13.1	19.0	24.5	29.6	33.9	37.5	40.0	41.6	42.3	42.0	40.9	39.0	36.5	33.5	30.3
60	-1027	-2191	-3292	-4293	-5158	-5857	-6372	-6693	-6822	-6768	-6550	-6191	-5717	-5151	-4519	-3841	-3137	-2423	-1714
	-14.7	-9.4	-3.5	3.0	9.8	16.6	23.3	29.5	34.9	39.4	42.8	45.0	46.1	46.1	45.1	43.1	40.5	37.2	33.5
55	-714	-2000	-3231	-4360	-5339	-6130	-6706	-7056	-7180	-7096	-6827	-6405	-5864	-5233	-4542	-3814	-3070	-2329	-1607
	-19.8	-15.1	-9.3	-2.6	5.0	12.9	20.8	28.2	34.8	40.3	44.6	47.6	49.3	49.7	49.0	47.3	44.6	41.1	37.1
50	-366	-1748	-3092	-4338	-5427	-6309	-6950	-7332	-7458	-7348	-7034	-6557	-5957	-5271	-4529	-3759	-2982	-2219	-1487
	-25.3	-21.7	-16.4	-9.5	-1.3	7.7	16.9	25.7	33.5	40.1	45.4	49.2	51.7	52.8	52.7	51.3	48.8	45.3	41.0
45	-7	-1457	-2891	-4238	-5428	-6401	-7110	-7534	-7673	-7553	-7211	-6694	-6050	-5320	-4537	-3730	-2923	-2139	-1396
	-31.2	-29.0	-24.6	-17.7	-8.9	1.2	11.7	21.8	30.9	38.7	45.0	49.9	53.3	55.3	55.9	55.1	53.0	49.6	45.1
40	339	-1144	-2639	-4066	-5347	-6407	-7194	-7675	-7851	-7745	-7400	-6867	-6198	-5436	-4618	-3774	-2934	-2123	-1365
	-37.2	-37.0	-33.7	-27.1	-17.8	-6.7	5.2	16.7	27.1	36.1	43.6	49.6	54.1	57.2	58.7	58.6	56.9	53.6	49.1
35	669	-815	-2342	-3827	-5186	-6334	-7210	-7772	-8014	-7957	-7643	-7123	-6448	-5664	-4811	-3924	-3040	-2192	-1412
	-43.1	-45.2	-43.3	-37.3	-27.8	-15.8	-2.7	10.2	22.0	32.4	41.2	48.5	54.3	58.5	61.0	61.6	60.3	57.2	52.7
30	989	-468	-2000	-3525	-4951	-6190	-7169	-7840	-8183	-8214	-7967	-7488	-6827	-6028	-5136	-4194	-3252	-2356	-1545
	-48.3	-53.0	-53.0	-48.0	-38.6	-25.9	-11.8	2.4	15.7	27.6	37.9	46.7	53.9	59.3	62.7	63.9	62.9	60.0	55.6
25	1314	-95	-1614	-3164	-4652	-5986	-7084	-7887	-8365	-8518	-8371	-7960	-7329	-6520	-5585	-4579	-3568	-2615	-1767
	-52.5	-60.0	-62.2	-58.6	-49.6	-36.8	-21.8	-6.4	8.4	21.8	33.8	44.2	52.9	59.6	63.9	65.6	64.8	61.9	57.7
20	1658	308	-1187	-2754	-4301	-5734	-6961	-7913	-8546	-8845	-8821	-8498	-7909	-7099	-6123	-5054	-3975	-2965	-2082
	-55.2	-65.5	-70.1	-68.2	-60.3	-47.6	-32.2	-15.8	0.3	15.3	29.1	41.3	51.5	59.4	64.4	66.4	65.7	62.9	59.0
15	2025	739	-729	-2310	-3913	-5442	-6799	-7902	-8695	-9147	-9254	-9027	-8493	-7694	-6693	-5578	-4450	-3401	-2493
	-56.3	-69.1	-76.2	-76.3	-69.7	-57.8	-42.4	-25.4	-8.1	8.5	23.9	37.8	49.6	58.5	64.2	66.5	65.8	63.2	59.8
10	2409	1187	-252	-1843	-3497	-5113	-6588	-7830	-8769	-9363	-9594	-9463	-8992	-8224	-7228	-6104	-4962	-3904	-2991
	-55.8	-70.7	-79.9	-82.1	-77.1	-66.3	-51.4	-34.3	-16.2	1.6	18.5	33.9	47.0	56.9	63.2	65.7	65.3	63.0	60.3
5	2800	1639	230	-1363	-3055	-4741	-6311	-7666	-8724	-9434	-9770	-9728	-9327	-8614	-7663	-6577	-5472	-4445	-3552
	-53.9	-70.1	-81.1	-85.1	-81.9	-72.6	-58.6	-41.7	-23.5	-4.8	13.2	29.8	43.9	54.6	61.4	64.4	64.4	62.7	60.8
0	3187	2088	716	-869	-2582	-4315	-5952	-7385	-8527	-9321	-9736	-9770	-9446	-8813	-7947	-6951	-5931	-4976	-4127
	-51.1	-67.8	-79.7	-85.2	-83.7	-75.9	-63.3	-47.2	-29.2	-10.3	8.3	25.5	40.3	51.7	59.1	62.7	63.3	62.5	61.4

Y-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	3187	2088	716	-869	-2582	-4315	-5952	-7385	-8527	-9321	-9736	-9770	-9446	-8813	-7947	-6951	-5931	-4976	-4127
	-51.1	-67.8	-79.7	-85.2	-83.7	-75.9	-63.3	-47.2	-29.2	-10.3	8.3	25.5	40.3	51.7	59.1	62.7	63.3	62.5	61.4
-5	3572	2534	1208	-354	-2068	-3822	-5495	-6975	-8167	-9013	-9483	-9582	-9337	-8803	-8056	-7189	-6293	-5439	-4654
	-47.9	-64.1	-76.3	-82.6	-82.5	-76.3	-65.1	-50.3	-33.0	-14.5	4.1	21.6	36.8	48.6	56.6	60.9	62.4	62.5	62.2
-10	3972	2995	1721	194	-1501	-3254	-4939	-6438	-7655	-8529	-9038	-9190	-9024	-8599	-7987	-7269	-6516	-5776	-5064
	-44.8	-59.9	-71.5	-78.1	-78.8	-74.0	-64.3	-50.8	-34.7	-17.0	1.1	18.4	33.6	45.7	54.3	59.3	61.8	62.6	62.8
-15	4415	3494	2273	790	-874	-2611	-4291	-5794	-7020	-7911	-8447	-8648	-8557	-8238	-7759	-7187	-6573	-5946	-5309
	-42.2	-55.5	-66.0	-72.3	-73.4	-69.6	-61.2	-49.1	-34.3	-17.7	-0.4	16.3	31.3	43.5	52.5	58.2	61.4	62.7	62.9
-20	4933	4056	2883	1444	-186	-1899	-3567	-5065	-6297	-7201	-7765	-8011	-7991	-7767	-7405	-6958	-6463	-5934	-5372
	-40.3	-51.7	-60.7	-66.1	-67.3	-63.9	-56.5	-45.6	-32.0	-16.5	-0.2	15.7	30.3	42.4	51.6	57.7	61.1	62.4	61.9
-25	5551	4700	3560	2155	556	-1131	-2783	-4277	-5514	-6437	-7032	-7325	-7369	-7227	-6958	-6610	-6209	-5766	-5280
	-38.9	-48.6	-56.1	-60.4	-61.1	-58.0	-51.1	-41.0	-28.3	-13.8	1.5	16.7	30.7	42.4	51.4	57.5	60.6	61.2	59.5
-30	6277	5430	4303	2920	1346	-317	-1953	-3441	-4687	-5633	-6266	-6610	-6716	-6645	-6454	-6183	-5860	-5495	-5097
	-38.0	-46.2	-52.3	-55.6	-55.7	-52.3	-45.6	-35.9	-23.8	-10.0	4.6	19.0	32.2	43.4	51.9	57.3	59.6	59.0	55.4
-35	7096	6233	5102	3729	2175	535	-1079	-2559	-3813	-4786	-5463	-5864	-6037	-6037	-5917	-5719	-5472	-5194	-4905
	-37.2	-44.3	-49.4	-51.8	-51.1	-47.3	-40.4	-30.8	-19.0	-5.7	8.3	22.0	34.4	44.8	52.4	56.7	57.7	55.4	49.9
-40	7977	7084	5940	4571	3039	1428	-157	-1620	-2877	-3877	-4604	-5072	-5322	-5403	-5366	-5254	-5101	-4933	-4779
	-36.1	-42.5	-46.8	-48.5	-47.2	-43.0	-35.8	-26.1	-14.4	-1.5	11.9	24.9	36.4	45.7	52.1	55.2	54.6	50.6	43.1
-45	8876	7951	6795	5437	3936	2368	824	-610	-1864	-2889	-3669	-4215	-4558	-4742	-4814	-4816	-4787	-4760	-4768
	-34.4	-40.4	-44.2	-45.3	-43.6	-39.0	-31.6	-21.9	-10.5	2.1	14.8	26.9	37.4	45.5	50.5	52.2	50.2	44.6	35.8
-50	9748	8804	7650	6320	4867	3358	1871	476	-764	-1812	-2650	-3285	-3741	-4054	-4266	-4418	-4548	-4694	-4888
	-31.8	-37.4	-40.8	-41.7	-39.7	-35.0	-27.7	-18.3	-7.3	4.5	16.3	27.2	36.5	43.3	47.0	47.4	44.3	37.9	28.5
-55	10561	9617	8489	7209	5825	4394	2978	1634	411	-658	-1558	-2293	-2880	-3347	-3729	-4062	-4383	-4724	-5119
	-28.4	-33.4	-36.4	-37.0	-35.0	-30.5	-23.7	-15.0	-5.0	5.7	16.1	25.6	33.4	38.9	41.5	41.0	37.4	30.8	21.7
-60	11297	10378	9300	8093	6797	5456	4120	2833	1630	539	-426	-1269	-1999	-2637	-3210	-3746	-4276	-4826	-5422
	-23.9	-28.3	-30.8	-31.2	-29.4	-25.4	-19.5	-12.0	-3.4	5.6	14.3	22.1	28.3	32.5	34.2	33.2	29.7	23.7	15.7
-65	11954	11081	10073	8954	7755	6511	5256	4024	2840	1725	689	-263	-1142	-1957	-2727	-3473	-4214	-4970	-5759
	-18.8	-22.2	-24.2	-24.5	-23.0	-19.8	-15.1	-9.2	-2.5	4.5	11.2	17.1	21.7	24.7	25.7	24.7	21.6	16.8	10.4
-70	12544	11730	10799	9770	8666	7511	6328	5141	3969	2825	1720	658	-363	-1350	-2310	-3254	-4195	-5142	-6103
	-12.9	-15.5	-17.0	-17.2	-16.2	-14.0	-10.7	-6.6	-1.9	2.9	7.4	11.4	14.5	16.4	16.9	16.0	13.8	10.2	5.7
-75	13084	12325	11464	10513	9486	8400	7271	6113	4939	3761	2587	1422	269	-870	-1998	-3118	-4232	-5341	-6448
	-6.8	-8.6	-9.7	-10.0	-9.5	-8.3	-6.5	-4.2	-1.6	1.1	3.7	5.9	7.5	8.5	8.6	7.9	6.4	4.1	1.2
-80	13585	12868	12055	11154	10175	9127	8021	6868	5676	4455	3213	1957	692	-574	-1840	-3099	-4349	-5583	-6798
	-0.6	-1.9	-2.9	-3.4	-3.5	-3.3	-2.8	-2.1	-1.2	-0.3	0.5	1.2	1.7	1.8	1.5	0.8	-0.2	-1.6	-3.3
-85	14048	13349	12552	11665	10693	9644	8527	7350	6120	4846	3537	2201	848	-514	-1877	-3232	-4570	-5882	-7159
	5.2	4.1	3.1	2.2	1.5	0.8	0.2	-0.3	-0.8	-1.3	-1.7	-2.2	-2.8	-3.4	-4.2	-5.0	-5.9	-6.9	-8.0
-90	14458	13747	12931	12016	11010	9920	8755	7523	6233	4897	3523	2122	705	-716	-2133	-3533	-4907	-6243	-7532
	10.3	9.2	7.9	6.7	5.3	4.0	2.6	1.2	-0.3	-1.7	-3.1	-4.5	-5.9	-7.2	-8.4	-9.6	-10.7	-11.8	-12.7

Y-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	-1174	-967	-754	-536	-316	-97	119	329	533	727	911	1082	1239	1382	1511	1623	1720	1802	1868
	17.9	16.9	15.9	14.7	13.4	12.1	10.6	9.1	7.5	5.9	4.2	2.6	0.9	-0.7	-2.4	-3.9	-5.5	-7.0	-8.4
85	-1287	-932	-572	-212	139	477	796	1090	1354	1584	1778	1932	2047	2121	2156	2153	2116	2048	1954
	19.6	18.1	16.5	14.8	13.0	11.1	9.2	7.3	5.4	3.5	1.7	0.0	-1.7	-3.3	-4.7	-6.1	-7.3	-8.4	-9.4
80	-1464	-964	-460	38	524	985	1414	1803	2143	2427	2651	2809	2898	2917	2866	2749	2571	2339	2061
	22.0	20.0	17.8	15.6	13.3	11.1	8.8	6.6	4.5	2.5	0.6	-1.2	-2.8	-4.3	-5.7	-6.9	-7.9	-8.8	-9.6
75	-1630	-1033	-432	159	733	1280	1789	2250	2654	2991	3254	3433	3523	3519	3419	3225	2942	2577	2144
	24.6	22.1	19.5	16.9	14.3	11.8	9.4	7.1	5.0	3.0	1.2	-0.5	-2.0	-3.4	-4.7	-5.8	-6.9	-7.7	-8.4
70	-1740	-1085	-433	206	824	1412	1961	2462	2905	3281	3577	3784	3891	3889	3771	3535	3185	2726	2174
	27.3	24.3	21.3	18.3	15.5	12.8	10.3	8.1	6.0	4.2	2.6	1.2	-0.1	-1.3	-2.4	-3.5	-4.4	-5.3	-6.1
65	-1768	-1085	-415	233	854	1441	1989	2492	2942	3330	3645	3872	3999	4011	3898	3651	3269	2756	2127
	30.3	26.8	23.3	19.9	16.7	13.7	11.1	8.8	6.9	5.2	3.9	2.8	1.8	1.0	0.3	-0.4	-1.2	-1.9	-2.7
60	-1714	-1023	-358	272	866	1419	1932	2402	2825	3196	3503	3734	3872	3900	3802	3565	3182	2654	1991
	33.5	29.5	25.5	21.5	17.8	14.4	11.5	8.9	6.9	5.3	4.2	3.5	3.0	2.8	2.7	2.6	2.3	1.9	1.3
55	-1607	-917	-269	330	880	1380	1835	2246	2616	2942	3216	3427	3558	3591	3508	3292	2930	2420	1767
	37.1	32.6	28.0	23.4	19.0	14.9	11.4	8.4	6.0	4.3	3.3	3.0	3.1	3.6	4.4	5.1	5.6	5.8	5.6
50	-1487	-801	-172	392	895	1337	1726	2068	2369	2630	2848	3014	3115	3136	3058	2863	2538	2073	1467
	41.0	36.1	30.8	25.5	20.3	15.5	11.1	7.4	4.5	2.5	1.4	1.4	2.1	3.5	5.3	7.0	8.5	9.4	9.6
45	-1396	-713	-100	435	895	1286	1616	1892	2121	2308	2454	2554	2602	2588	2500	2322	2039	1639	1113
	45.1	39.8	34.1	28.1	22.2	16.4	11.2	6.6	2.9	0.3	-0.9	-0.8	0.6	2.9	5.7	8.6	11.0	12.6	13.1
40	-1365	-680	-79	434	865	1219	1505	1730	1896	2009	2072	2090	2064	1995	1880	1711	1473	1151	728
	49.1	43.6	37.5	31.1	24.6	18.2	12.0	6.4	1.8	-1.4	-3.0	-2.7	-0.8	2.4	6.3	10.1	13.2	15.1	15.7
35	-1412	-720	-125	374	789	1126	1390	1582	1700	1745	1723	1647	1533	1394	1240	1071	879	644	342
	52.7	47.2	41.0	34.5	27.8	20.9	14.0	7.5	1.9	-2.1	-4.1	-3.8	-1.4	2.6	7.3	11.8	15.2	17.1	17.1
30	-1545	-841	-246	248	660	999	1263	1443	1528	1512	1406	1232	1021	805	606	437	291	148	-22
	55.6	50.3	44.4	38.3	31.7	24.6	17.2	9.9	3.3	-1.6	-4.1	-3.8	-0.9	3.7	9.1	13.9	17.2	18.3	17.3
25	-1767	-1046	-448	50	473	832	1116	1302	1366	1297	1108	837	529	236	-4	-172	-267	-313	-350
	57.7	52.8	47.6	42.2	36.1	29.3	21.5	13.4	5.8	0.0	-3.1	-2.9	0.3	5.6	11.3	16.2	18.9	18.9	16.4
20	-2082	-1345	-738	-226	224	620	940	1144	1194	1075	807	440	43	-319	-593	-750	-790	-737	-638
	59.0	54.8	50.6	46.1	40.9	34.4	26.4	17.4	8.8	1.9	-1.8	-1.7	1.8	7.5	13.6	18.2	20.1	18.8	14.7
15	-2493	-1741	-1120	-582	-90	357	724	951	988	819	472	16	-462	-880	-1175	-1312	-1290	-1135	-902
	59.8	56.4	53.3	50.1	45.7	39.5	31.1	21.2	11.3	3.3	-1.2	-1.3	2.5	8.6	15.0	19.4	20.6	18.0	12.5
10	-2991	-2232	-1591	-1013	-465	43	458	703	720	494	67	-471	-1019	-1479	-1781	-1887	-1797	-1540	-1175
	60.3	57.9	55.9	53.7	50.1	43.9	34.8	23.7	12.4	3.1	-2.1	-2.5	1.6	8.2	14.9	19.3	20.0	16.7	10.2
5	-3552	-2794	-2128	-1502	-890	-322	131	379	359	65	-443	-1061	-1666	-2154	-2449	-2517	-2355	-1995	-1502
	60.8	59.4	58.4	56.9	53.4	46.8	36.6	24.1	11.2	0.7	-5.3	-5.8	-1.5	5.7	12.9	17.6	18.4	15.0	8.4
0	-4127	-3379	-2688	-2012	-1343	-731	-264	-42	-124	-501	-1097	-1787	-2439	-2942	-3222	-3244	-3009	-2550	-1933
	61.4	60.8	60.5	59.1	55.2	47.5	36.0	21.8	7.4	-4.3	-10.9	-11.4	-6.7	1.1	9.1	14.5	15.9	13.2	7.4

Y-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-4127	-3379	-2688	-2012	-1343	-731	-264	-42	-124	-501	-1097	-1787	-2439	-2942	-3222	-3244	-3009	-2550	-1933
	61.4	60.8	60.5	59.1	55.2	47.5	36.0	21.8	7.4	-4.3	-10.9	-11.4	-6.7	1.1	9.1	14.5	15.9	13.2	7.4
-5	-4654	-3925	-3215	-2500	-1797	-1174	-735	-579	-753	-1232	-1919	-2677	-3365	-3873	-4129	-4102	-3795	-3242	-2508
	62.2	62.1	61.8	59.9	54.8	45.6	32.3	16.5	0.8	-11.6	-18.5	-18.8	-13.5	-4.9	4.0	10.5	13.1	11.7	7.5
-10	-5064	-4364	-3652	-2926	-2228	-1645	-1286	-1242	-1541	-2138	-2920	-3739	-4455	-4958	-5185	-5108	-4733	-4092	-3251
	62.8	62.7	61.7	58.5	51.7	40.6	25.6	8.5	-7.9	-20.6	-27.2	-27.0	-20.9	-11.4	-1.4	6.4	10.5	10.9	8.6
-15	-5309	-4650	-3962	-3267	-2628	-2145	-1922	-2033	-2485	-3212	-4087	-4960	-5693	-6185	-6379	-6253	-5815	-5097	-4162
	62.9	62.1	59.7	54.6	45.7	32.7	16.2	-1.6	-18.0	-30.2	-35.9	-34.7	-27.7	-17.2	-6.2	2.9	8.6	10.8	10.5
-20	-5372	-4771	-4143	-3530	-3011	-2686	-2648	-2947	-3568	-4426	-5387	-6302	-7042	-7516	-7676	-7505	-7013	-6231	-5219
	61.9	59.7	55.3	47.9	36.8	22.1	4.8	-12.9	-28.5	-39.2	-43.5	-40.9	-32.8	-21.4	-9.5	0.6	7.6	11.4	12.8
-25	-5280	-4760	-4233	-3755	-3409	-3289	-3467	-3969	-4758	-5734	-6765	-7708	-8446	-8899	-9027	-8818	-8283	-7454	-6385
	59.5	55.4	48.6	38.8	25.7	9.8	-7.5	-24.3	-38.1	-46.7	-48.9	-44.7	-35.5	-23.3	-10.9	-0.2	7.6	12.3	14.8
-30	-5097	-4686	-4300	-4001	-3868	-3978	-4381	-5077	-6012	-7084	-8161	-9115	-9842	-10274	-10375	-10139	-9577	-8719	-7614
	55.4	49.1	39.9	27.9	13.3	-3.0	-19.6	-34.6	-45.9	-51.9	-51.8	-45.9	-35.7	-23.2	-10.7	0.1	8.0	13.1	15.9
-35	-4905	-4632	-4420	-4330	-4427	-4768	-5379	-6240	-7288	-8420	-9517	-10466	-11175	-11586	-11669	-11419	-10847	-9979	-8860
	49.9	41.3	30.0	16.3	0.9	-15.1	-30.2	-42.8	-51.2	-54.4	-52.1	-44.8	-33.9	-21.4	-9.3	0.9	8.4	13.2	15.7
-40	-4779	-4672	-4657	-4786	-5108	-5658	-6441	-7425	-8542	-9699	-10789	-11715	-12400	-12793	-12867	-12617	-12052	-11193	-10080
	43.1	32.7	19.9	5.4	-10.0	-24.9	-38.0	-48.0	-53.6	-54.3	-50.2	-41.9	-31.0	-19.1	-7.9	1.3	7.9	11.9	13.7
-45	-4768	-4848	-5039	-5380	-5904	-6625	-7535	-8595	-9740	-10887	-11946	-12836	-13492	-13869	-13942	-13703	-13159	-12326	-11236
	35.8	24.3	10.8	-3.7	-18.2	-31.5	-42.4	-49.9	-53.1	-52.0	-46.7	-38.2	-27.8	-17.1	-7.2	0.6	6.1	9.1	10.1
-50	-4888	-5166	-5557	-6090	-6781	-7631	-8623	-9716	-10852	-11962	-12971	-13815	-14437	-14798	-14873	-14653	-14139	-13345	-12294
	28.5	16.8	3.7	-10.0	-23.0	-34.4	-43.2	-48.5	-50.1	-47.9	-42.4	-34.5	-25.3	-16.1	-7.9	-1.6	2.6	4.7	5.1
-55	-5119	-5593	-6171	-6868	-7690	-8629	-9664	-10756	-11858	-12911	-13859	-14646	-15228	-15569	-15645	-15444	-14966	-14217	-13218
	21.7	10.8	-1.1	-13.1	-24.3	-33.7	-40.6	-44.4	-45.1	-42.8	-37.9	-31.2	-23.8	-16.4	-10.1	-5.2	-2.1	-0.7	-0.7
-60	-5422	-6084	-6828	-7660	-8580	-9574	-10623	-11691	-12740	-13726	-14602	-15325	-15859	-16172	-16242	-16057	-15612	-14914	-13977
	15.7	6.3	-3.7	-13.6	-22.6	-30.1	-35.5	-38.5	-38.9	-37.1	-33.5	-28.6	-23.1	-17.8	-13.2	-9.8	-7.5	-6.5	-6.4
-65	-5759	-6592	-7479	-8419	-9408	-10434	-11474	-12503	-13489	-14398	-15195	-15847	-16322	-16596	-16651	-16473	-16059	-15411	-14541
	10.4	3.1	-4.6	-12.3	-19.2	-25.0	-29.2	-31.7	-32.4	-31.6	-29.4	-26.4	-23.0	-19.6	-16.6	-14.3	-12.7	-11.8	-11.4
-70	-6103	-7086	-8090	-9114	-10151	-11186	-12203	-13181	-14096	-14923	-15634	-16205	-16612	-16838	-16865	-16686	-16295	-15696	-14896
	5.7	0.5	-5.0	-10.4	-15.4	-19.7	-23.0	-25.2	-26.4	-26.5	-25.8	-24.4	-22.8	-20.9	-19.2	-17.8	-16.6	-15.7	-15.0
-75	-6448	-7551	-8647	-9730	-10793	-11821	-12803	-13721	-14559	-15297	-15917	-16401	-16733	-16901	-16893	-16704	-16330	-15774	-15041
	1.2	-2.1	-5.6	-9.2	-12.6	-15.6	-18.1	-20.1	-21.5	-22.2	-22.5	-22.4	-21.9	-21.2	-20.4	-19.5	-18.6	-17.7	-16.7
-80	-6798	-7987	-9144	-10260	-11327	-12333	-13268	-14119	-14875	-15522	-16050	-16446	-16701	-16808	-16759	-16553	-16189	-15667	-14994
	-3.3	-5.3	-7.4	-9.5	-11.6	-13.5	-15.3	-16.8	-18.1	-19.1	-19.7	-20.1	-20.2	-20.1	-19.7	-19.2	-18.4	-17.5	-16.4
-85	-7159	-8393	-9574	-10694	-11742	-12710	-13588	-14369	-15044	-15605	-16045	-16359	-16542	-16590	-16501	-16275	-15912	-15414	-14786
	-8.0	-9.2	-10.4	-11.5	-12.7	-13.8	-14.8	-15.7	-16.5	-17.1	-17.5	-17.8	-17.8	-17.7	-17.4	-16.9	-16.2	-15.3	-14.2
-90	-7532	-8763	-9928	-11018	-12023	-12937	-13752	-14463	-15064	-15550	-15917	-16164	-16287	-16287	-16163	-15915	-15547	-15060	-14458
	-12.7	-13.6	-14.3	-14.9	-15.5	-15.9	-16.2	-16.3	-16.4	-16.3	-16.1	-15.7	-15.3	-14.7	-14.0	-13.2	-12.4	-11.4	-10.3

Y-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	1868	1920	1957	1981	1992	1991	1978	1955	1922	1880	1829	1770	1703	1628	1545	1454	1355	1249	1134
	-8.4	-9.7	-11.0	-12.2	-13.2	-14.2	-15.1	-15.9	-16.6	-17.2	-17.6	-18.0	-18.2	-18.3	-18.3	-18.2	-17.9	-17.6	-17.1
85	1954	1840	1711	1573	1433	1296	1168	1054	958	884	832	804	799	816	852	904	965	1032	1098
	-9.4	-10.3	-11.0	-11.7	-12.3	-12.7	-13.1	-13.5	-13.7	-14.0	-14.2	-14.4	-14.6	-14.8	-15.1	-15.3	-15.4	-15.6	-15.7
80	2061	1750	1418	1078	744	430	149	-86	-267	-386	-439	-423	-341	-196	3	250	530	832	1141
	-9.6	-10.2	-10.6	-10.9	-11.0	-11.0	-11.0	-10.9	-10.7	-10.6	-10.6	-10.6	-10.7	-11.0	-11.4	-12.0	-12.8	-13.7	-14.6
75	2144	1659	1140	609	88	-398	-829	-1186	-1451	-1611	-1660	-1594	-1418	-1137	-765	-317	185	723	1273
	-8.4	-9.0	-9.4	-9.6	-9.6	-9.5	-9.3	-8.9	-8.5	-8.1	-7.8	-7.6	-7.7	-8.0	-8.6	-9.5	-10.8	-12.4	-14.2
70	2174	1547	871	175	-510	-1152	-1719	-2182	-2519	-2710	-2746	-2624	-2350	-1934	-1396	-758	-48	705	1471
	-6.1	-6.8	-7.3	-7.7	-7.9	-8.0	-7.8	-7.5	-7.1	-6.6	-6.2	-5.9	-5.8	-6.1	-6.8	-8.0	-9.7	-11.9	-14.5
65	2127	1401	609	-215	-1031	-1798	-2473	-3021	-3409	-3616	-3629	-3445	-3074	-2533	-1845	-1043	-159	769	1707
	-2.7	-3.5	-4.3	-5.1	-5.7	-6.2	-6.4	-6.5	-6.4	-6.1	-5.8	-5.5	-5.4	-5.7	-6.4	-7.7	-9.7	-12.2	-15.3
60	1991	1214	353	-551	-1455	-2306	-3056	-3659	-4076	-4281	-4260	-4013	-3551	-2898	-2087	-1155	-142	909	1962
	1.3	0.4	-0.6	-1.7	-2.9	-4.1	-5.0	-5.7	-6.2	-6.4	-6.4	-6.4	-6.4	-6.7	-7.4	-8.7	-10.7	-13.3	-16.6
55	1767	987	110	-823	-1765	-2658	-3445	-4072	-4495	-4682	-4618	-4305	-3761	-3015	-2108	-1085	7	1126	2231
	5.6	4.8	3.6	2.0	0.1	-1.8	-3.6	-5.3	-6.5	-7.4	-7.9	-8.2	-8.4	-8.8	-9.5	-10.7	-12.5	-15.0	-18.2
50	1467	732	-109	-1020	-1951	-2842	-3630	-4252	-4659	-4813	-4700	-4322	-3705	-2885	-1910	-834	292	1424	2522
	9.6	9.0	7.6	5.5	3.0	0.2	-2.6	-5.1	-7.2	-8.8	-9.9	-10.5	-10.9	-11.4	-12.1	-13.2	-14.9	-17.2	-20.0
45	1113	462	-297	-1138	-2013	-2861	-3614	-4205	-4575	-4684	-4516	-4077	-3397	-2520	-1504	-408	712	1809	2847
	13.1	12.5	10.8	8.2	4.9	1.4	-2.2	-5.5	-8.2	-10.3	-11.7	-12.5	-13.1	-13.7	-14.5	-15.7	-17.4	-19.5	-21.8
40	728	196	-444	-1175	-1955	-2725	-3414	-3948	-4264	-4317	-4090	-3594	-2861	-1946	-911	175	1256	2280	3216
	15.7	14.7	12.5	9.2	5.3	1.1	-3.0	-6.7	-9.6	-11.7	-13.0	-13.7	-14.3	-14.9	-16.0	-17.5	-19.5	-21.6	-23.8
35	342	-49	-543	-1134	-1790	-2455	-3054	-3511	-3755	-3743	-3455	-2906	-2135	-1199	-168	887	1901	2824	3627
	17.1	15.4	12.3	8.3	3.7	-0.9	-5.2	-8.7	-11.2	-12.8	-13.4	-13.6	-13.8	-14.5	-15.9	-18.1	-20.7	-23.4	-25.6
30	-22	-260	-591	-1024	-1536	-2076	-2567	-2929	-3090	-3003	-2655	-2061	-1265	-327	680	1682	2611	3416	4069
	17.3	14.4	10.2	5.2	0.1	-4.6	-8.6	-11.4	-13.0	-13.4	-13.0	-12.1	-11.7	-12.2	-14.0	-17.0	-20.8	-24.5	-27.3
25	-350	-428	-589	-855	-1214	-1618	-1990	-2247	-2315	-2150	-1743	-1114	-308	612	1577	2511	3344	4022	4523
	16.4	12.0	6.4	0.5	-4.9	-9.5	-12.8	-14.6	-14.9	-13.7	-11.6	-9.4	-7.9	-8.1	-10.3	-14.4	-19.6	-24.8	-28.7
20	-638	-556	-546	-645	-849	-1114	-1364	-1511	-1485	-1244	-783	-129	670	1557	2465	3320	4053	4609	4965
	14.7	8.6	1.8	-4.8	-10.4	-14.6	-17.0	-17.6	-16.4	-13.6	-9.8	-6.0	-3.3	-3.0	-5.5	-10.6	-17.3	-24.2	-29.4
15	-902	-663	-486	-420	-472	-600	-730	-772	-656	-345	159	827	1610	2451	3292	4064	4701	5147	5379
	12.5	5.1	-2.7	-9.7	-15.2	-18.7	-20.3	-19.8	-17.3	-13.0	-7.7	-2.4	1.3	2.4	-0.2	-6.1	-14.2	-22.6	-29.2
10	-1175	-782	-443	-216	-119	-116	-131	-77	117	489	1028	1701	2458	3249	4021	4714	5265	5621	5757
	10.2	2.1	-6.0	-12.9	-17.9	-20.8	-21.7	-20.4	-17.1	-12.0	-5.8	0.5	5.3	7.0	4.8	-1.5	-10.5	-20.1	-28.0
5	-1502	-960	-461	-77	166	297	388	530	794	1214	1779	2451	3182	3925	4634	5257	5739	6029	6100
	8.4	0.4	-7.3	-13.6	-17.9	-20.2	-20.5	-19.1	-15.8	-10.7	-4.2	2.5	7.9	10.4	8.6	2.5	-6.7	-17.0	-25.6
0	-1933	-1247	-592	-51	339	598	794	1018	1342	1801	2386	3057	3766	4471	5129	5700	6132	6379	6419
	7.4	0.4	-6.3	-11.5	-14.8	-16.5	-16.7	-15.7	-13.1	-8.8	-3.0	3.4	9.0	12.0	11.0	5.6	-3.2	-13.4	-22.3

Y-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-1933	-1247	-592	-51	339	598	794	1018	1342	1801	2386	3057	3766	4471	5129	5700	6132	6379	6419
	7.4	0.4	-6.3	-11.5	-14.8	-16.5	-16.7	-15.7	-13.1	-8.8	-3.0	3.4	9.0	12.0	11.0	5.6	-3.2	-13.4	-22.3
-5	-2508	-1685	-879	-181	358	750	1056	1363	1746	2242	2845	3519	4216	4895	5521	6057	6460	6690	6727
	7.5	2.0	-3.0	-6.8	-9.1	-10.3	-10.8	-10.6	-9.3	-6.5	-2.0	3.5	8.8	12.1	11.9	7.6	-0.2	-9.6	-18.2
-10	-3251	-2301	-1351	-500	193	727	1154	1555	2004	2542	3169	3851	4548	5218	5830	6350	6743	6977	7035
	8.6	5.1	2.0	-0.3	-1.7	-2.6	-3.5	-4.4	-4.7	-3.7	-1.0	3.3	7.9	11.3	11.8	8.7	2.3	-6.0	-13.8
-15	-4162	-3099	-2017	-1017	-167	520	1084	1596	2126	2718	3377	4079	4786	5462	6075	6598	6999	7254	7349
	10.5	9.1	7.6	6.7	6.0	5.2	3.8	1.8	0.0	-0.7	0.4	3.2	7.0	10.2	11.3	9.3	4.3	-2.6	-9.4
-20	-5219	-4062	-2863	-1725	-718	132	850	1494	2126	2788	3494	4226	4955	5647	6276	6814	7237	7523	7665
	12.8	12.9	12.8	12.8	12.6	11.8	9.9	7.3	4.5	2.5	2.3	3.9	6.8	9.6	11.0	9.9	6.1	0.5	-5.5
-25	-6385	-5155	-3859	-2595	-1436	-418	467	1262	2018	2771	3539	4314	5073	5791	6443	7005	7457	7782	7974
	14.8	15.9	16.5	16.9	16.9	16.0	14.0	11.1	8.0	5.5	4.6	5.5	7.6	10.1	11.5	10.8	7.9	3.2	-2.0
-30	-7614	-6333	-4961	-3589	-2291	-1107	-46	914	1811	2675	3522	4352	5152	5902	6581	7172	7657	8022	8262
	15.9	17.3	18.0	18.3	18.2	17.3	15.5	12.9	10.2	8.1	7.2	7.9	9.6	11.6	12.8	12.3	9.8	5.7	1.0
-35	-8860	-7550	-6126	-4667	-3245	-1907	-675	456	1506	2496	3439	4338	5187	5975	6687	7309	7826	8229	8515
	15.7	16.8	17.1	17.0	16.6	15.7	14.4	12.7	11.0	9.8	9.7	10.6	12.3	14.1	15.0	14.4	12.0	8.2	3.8
-40	-10080	-8763	-7309	-5788	-4266	-2794	-1404	-108	1096	2220	3270	4252	5163	5997	6747	7402	7953	8394	8724
	13.7	14.1	13.8	13.2	12.6	11.9	11.3	10.7	10.4	10.7	11.6	13.2	15.2	16.8	17.5	16.7	14.4	10.8	6.6
-45	-11236	-9933	-8473	-6916	-5323	-3746	-2225	-784	566	1823	2988	4063	5047	5940	6736	7432	8023	8505	8881
	10.1	9.8	8.9	7.9	7.2	6.8	7.0	7.6	8.8	10.5	12.7	15.1	17.4	19.1	19.8	19.0	16.8	13.5	9.6
-50	-12294	-11024	-9581	-8017	-6387	-4742	-3126	-1569	-95	1284	2562	3735	4804	5767	6624	7373	8015	8551	8986
	5.1	4.4	3.2	2.1	1.5	1.6	2.5	4.1	6.5	9.4	12.7	15.8	18.6	20.6	21.4	20.8	19.0	16.2	12.9
-55	-13218	-11999	-10597	-9057	-7428	-5757	-4088	-2456	-890	588	1967	3239	4398	5444	6377	7199	7912	8521	9034
	-0.7	-1.4	-2.5	-3.4	-3.6	-3.0	-1.5	0.9	4.1	7.8	11.7	15.4	18.5	20.8	22.0	21.9	20.7	18.7	16.3
-60	-13977	-12823	-11486	-10002	-8411	-6758	-5082	-3420	-1803	-256	1203	2561	3811	4949	5974	6889	7696	8404	9020
	-6.4	-6.9	-7.5	-7.8	-7.5	-6.4	-4.4	-1.6	2.0	5.9	10.0	13.9	17.3	19.9	21.5	22.1	21.8	20.8	19.5
-65	-14541	-13467	-12214	-10813	-9296	-7702	-6064	-4418	-2792	-1214	296	1723	3055	4287	5415	6440	7364	8195	8939
	-11.4	-11.4	-11.3	-10.9	-10.0	-8.4	-6.1	-3.2	0.4	4.2	8.2	12.0	15.4	18.1	20.2	21.5	22.1	22.1	21.8
-70	-14896	-13909	-12755	-11457	-10042	-8539	-6978	-5387	-3793	-2221	-690	780	2179	3498	4729	5872	6926	7895	8782
	-15.0	-14.3	-13.6	-12.5	-11.1	-9.2	-6.8	-3.9	-0.6	2.9	6.5	10.0	13.2	16.0	18.4	20.2	21.5	22.3	22.9
-75	-15041	-14143	-13093	-11909	-10610	-9219	-7759	-6253	-4722	-3187	-1667	-178	1265	2653	3977	5231	6412	7519	8550
	-16.7	-15.6	-14.4	-12.8	-11.1	-9.0	-6.5	-3.8	-0.9	2.1	5.3	8.3	11.2	13.9	16.3	18.3	20.0	21.4	22.4
-80	-14994	-14177	-13225	-12152	-10971	-9697	-8348	-6939	-5489	-4014	-2528	-1048	414	1846	3239	4582	5869	7094	8251
	-16.4	-15.1	-13.6	-11.9	-10.0	-8.0	-5.7	-3.3	-0.8	1.8	4.5	7.0	9.5	11.9	14.1	16.0	17.7	19.2	20.3
-85	-14786	-14034	-13164	-12185	-11105	-9937	-8691	-7379	-6013	-4607	-3173	-1723	-269	1175	2601	3996	5351	6656	7903
	-14.2	-12.9	-11.5	-9.9	-8.2	-6.3	-4.4	-2.4	-0.3	1.8	3.9	5.9	7.9	9.8	11.6	13.2	14.6	15.9	17.0
-90	-14458	-13747	-12931	-12016	-11010	-9920	-8755	-7523	-6233	-4897	-3523	-2122	-705	716	2133	3533	4907	6243	7532
	-10.3	-9.2	-7.9	-6.7	-5.3	-4.0	-2.6	-1.2	0.3	1.7	3.1	4.5	5.9	7.2	8.4	9.6	10.7	11.8	12.7

Plots and Tables of IGRF 1990

Z Component

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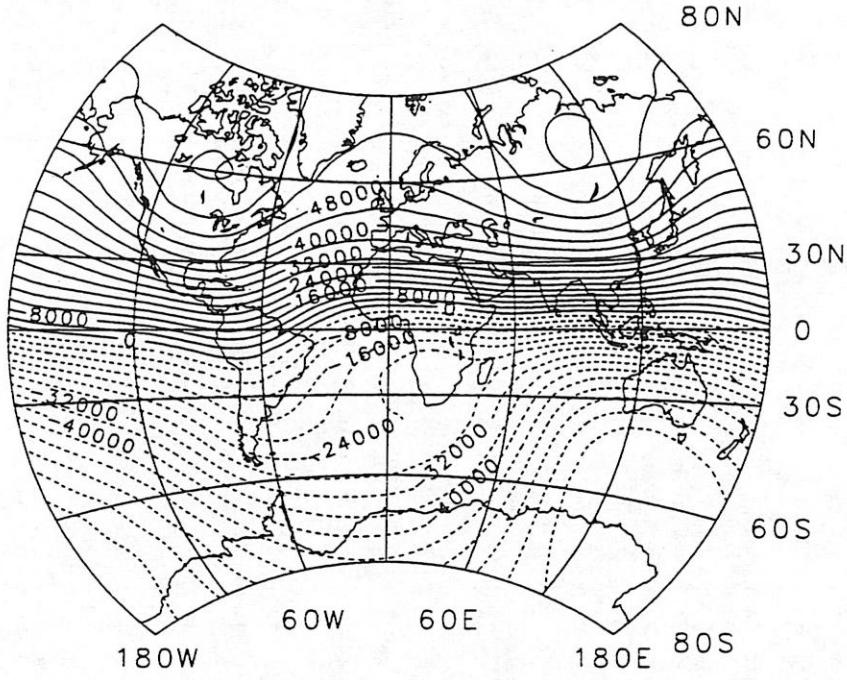
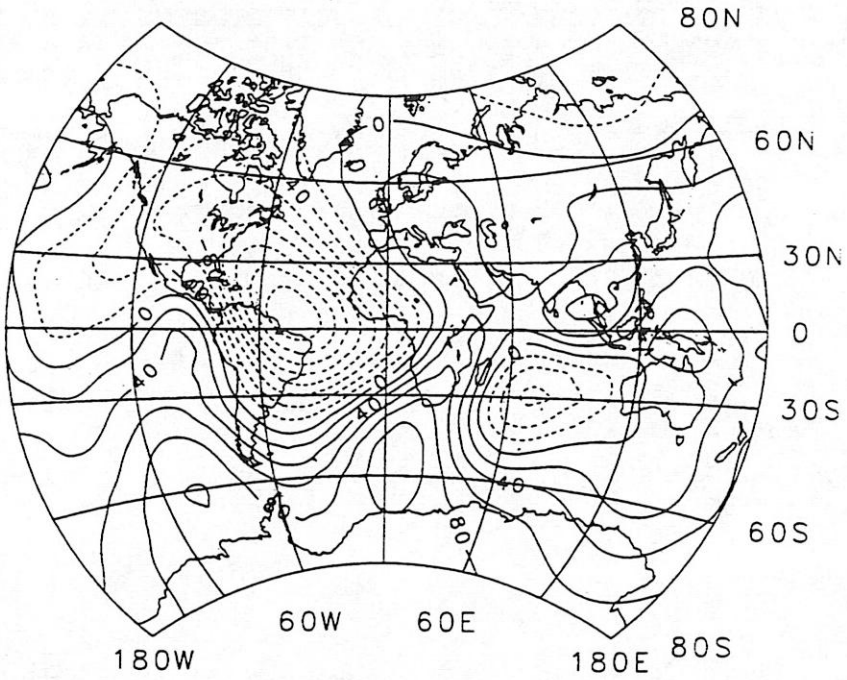
IGRF 1990 - Z - COMPONENT

Figure 25 (**Z**, top) Figure 26 ($\dot{\mathbf{Z}}$, bottom)





Z-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	56548	56542	56535	56526	56517	56506	56495	56483	56470	56456	56442	56427	56411	56396	56379	56363	56346	56329	56313
	-33.9	-33.9	-33.8	-33.7	-33.6	-33.6	-33.5	-33.3	-33.2	-33.1	-33.0	-32.9	-32.7	-32.6	-32.4	-32.3	-32.2	-32.0	-31.9
85	57097	57067	57038	57010	56983	56957	56930	56903	56874	56843	56809	56771	56728	56680	56626	56567	56502	56431	56354
	-37.3	-37.0	-36.7	-36.3	-36.0	-35.6	-35.2	-34.8	-34.4	-34.0	-33.6	-33.1	-32.7	-32.2	-31.7	-31.2	-30.6	-30.0	-29.5
80	57225	57180	57155	57150	57161	57187	57223	57265	57308	57348	57380	57400	57403	57386	57347	57284	57195	57081	56941
	-35.0	-34.4	-33.8	-33.3	-32.9	-32.5	-32.2	-32.0	-31.8	-31.7	-31.5	-31.3	-31.1	-30.8	-30.4	-29.9	-29.3	-28.5	-27.6
75	56563	56532	56557	56635	56760	56924	57117	57327	57545	57757	57953	58122	58255	58344	58381	58364	58288	58155	57964
	-25.7	-24.9	-24.3	-23.9	-23.9	-24.1	-24.6	-25.2	-26.1	-27.0	-27.9	-28.8	-29.6	-30.2	-30.6	-30.8	-30.6	-30.1	-29.3
70	55009	55022	55140	55354	55655	56025	56449	56905	57375	57838	58274	58665	58995	59249	59417	59491	59466	59340	59117
	-11.6	-10.8	-10.4	-10.6	-11.4	-12.8	-14.7	-17.0	-19.6	-22.3	-25.1	-27.7	-30.1	-32.2	-33.9	-35.1	-35.8	-35.9	-35.5
65	52572	52651	52886	53265	53770	54379	55067	55804	56563	57315	58031	58685	59254	59718	60060	60268	60332	60250	60023
	3.6	4.2	4.0	2.9	0.9	-2.0	-5.8	-10.1	-14.8	-19.7	-24.6	-29.2	-33.4	-37.1	-40.1	-42.6	-44.3	-45.4	-45.7
60	49367	49520	49876	50415	51117	51952	52889	53893	54930	55962	56956	57879	58701	59397	59942	60320	60516	60520	60329
	15.9	16.1	15.2	13.1	9.7	5.2	-0.4	-6.7	-13.4	-20.3	-27.1	-33.4	-39.1	-44.1	-48.4	-51.9	-54.6	-56.6	-57.9
55	45592	45820	46280	46951	47808	48819	49951	51166	52425	53689	54920	56082	57140	58065	58826	59398	59758	59889	59780
	22.6	22.1	20.4	17.3	12.9	7.1	0.1	-7.6	-15.9	-24.2	-32.2	-39.5	-46.0	-51.7	-56.5	-60.7	-64.3	-67.3	-69.8
50	41487	41787	42329	43090	44044	45162	46410	47752	49152	50570	51969	53312	54563	55687	56651	57421	57963	58248	58253
	22.6	21.3	18.8	15.1	10.0	3.5	-4.1	-12.5	-21.4	-30.2	-38.5	-45.9	-52.3	-57.8	-62.6	-66.9	-71.0	-75.1	-79.0
45	37286	37663	38268	39079	40070	41218	42497	43877	45326	46810	48293	49741	51119	52392	53521	54465	55180	55625	55761
	17.3	14.9	11.7	7.5	2.3	-4.1	-11.5	-19.7	-28.2	-36.5	-44.2	-50.8	-56.3	-60.8	-64.8	-68.8	-73.2	-78.3	-84.0
40	33171	33637	34296	35123	36100	37213	38446	39780	41193	42656	44139	45611	47040	48393	49629	50701	51558	52143	52408
	9.5	5.9	1.8	-2.7	-7.8	-13.6	-20.0	-27.1	-34.5	-41.6	-47.9	-53.1	-57.0	-59.9	-62.4	-65.5	-70.0	-76.1	-83.8
35	29232	29806	30518	31341	32265	33290	34417	35640	36946	38315	39722	41140	42543	43901	45177	46319	47271	47966	48343
	2.5	-2.6	-7.8	-12.8	-17.7	-22.6	-27.7	-33.3	-39.0	-44.4	-49.0	-52.3	-54.2	-55.0	-55.6	-57.4	-61.5	-68.5	-78.3
30	25453	26152	26918	27725	28571	29474	30452	31518	32667	33887	35157	36457	37766	39062	40313	41470	42471	43245	43719
	-1.0	-8.0	-14.6	-20.5	-25.4	-29.5	-33.3	-37.1	-41.0	-44.7	-47.5	-48.8	-48.5	-46.9	-45.4	-45.4	-48.6	-56.1	-67.8
25	21713	22545	23366	24151	24907	25671	26480	27364	28329	29367	30460	31594	32758	33941	35119	36249	37270	38104	38670
	-0.2	-9.1	-17.6	-24.7	-30.1	-33.7	-36.4	-38.6	-40.8	-42.8	-43.9	-43.4	-40.9	-37.0	-32.9	-30.8	-32.7	-40.1	-53.2
20	17821	18781	19655	20417	21085	21712	22356	23058	23836	24681	25581	26527	27519	28559	29639	30722	31751	32643	33309
	4.3	-6.4	-16.9	-25.6	-31.8	-35.4	-37.2	-38.1	-38.9	-39.4	-39.0	-36.9	-32.5	-26.3	-19.7	-15.2	-15.2	-21.8	-35.6
15	13562	14634	15558	16305	16903	17418	17923	18472	19085	19757	20474	21235	22054	22948	23925	24961	26000	26959	27738
	10.5	-1.6	-13.8	-24.1	-31.3	-35.0	-36.3	-36.2	-35.7	-35.0	-33.4	-30.0	-24.1	-15.9	-6.9	0.1	2.2	-3.0	-16.6
10	8759	9922	10893	11643	12204	12653	13072	13521	14021	14564	15139	15748	16418	17184	18071	19069	20126	21158	22057
	16.1	3.4	-9.9	-21.4	-29.3	-33.2	-34.0	-33.0	-31.4	-29.7	-27.2	-22.9	-15.9	-6.3	4.5	13.7	17.9	14.5	1.9
5	3317	4550	5571	6350	6923	7368	7773	8195	8655	9140	9635	10150	10718	11391	12211	13181	14259	15359	16371
	19.7	7.2	-6.4	-18.3	-26.4	-30.2	-30.5	-28.6	-26.1	-23.5	-20.3	-15.5	-7.9	2.4	14.2	24.8	30.7	29.1	18.1
0	-2745	-1455	-376	465	1103	1615	2083	2561	3062	3569	4064	4555	5082	5708	6488	7438	8529	9681	10783
	20.6	9.3	-3.5	-14.8	-22.5	-25.9	-25.5	-22.9	-19.5	-16.1	-12.4	-7.4	0.0	10.2	21.9	32.8	39.7	39.5	30.3

Z-COMPONENT

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	-2745	-1455	-376	465	1103	1615	2083	2561	3062	3569	4064	4555	5082	5708	6488	7438	8529	9681	10783
	20.6	9.3	-3.5	-14.8	-22.5	-25.9	-25.5	-22.9	-19.5	-16.1	-12.4	-7.4	0.0	10.2	21.9	32.8	39.7	39.5	30.3
-5	-9293	-7953	-6802	-5865	-5111	-4471	-3870	-3265	-2648	-2043	-1473	-933	-382	245	1013	1952	3045	4226	5390
	19.9	10.5	-0.7	-10.7	-17.4	-20.0	-18.9	-15.6	-11.5	-7.5	-3.6	1.3	8.1	17.2	27.8	37.9	44.7	45.2	37.7
-10	-16100	-14708	-13474	-12417	-11513	-10702	-9924	-9143	-8361	-7606	-6903	-6254	-5623	-4947	-4159	-3217	-2123	-928	277
	19.0	11.8	2.9	-5.3	-10.8	-12.6	-10.9	-7.1	-2.6	1.8	5.9	10.4	16.1	23.6	32.4	40.7	46.3	46.8	40.5
-15	-22886	-21443	-20119	-18934	-17867	-16874	-15907	-14941	-13981	-13055	-12192	-11399	-10647	-9880	-9034	-8062	-6951	-5734	-4486
	19.6	14.6	7.9	1.5	-2.8	-3.9	-2.0	1.9	6.6	11.2	15.3	19.4	24.1	29.9	36.3	42.4	46.2	45.9	40.1
-20	-29382	-27892	-26486	-25181	-23967	-22811	-21678	-20550	-19432	-18350	-17331	-16383	-15487	-14594	-13649	-12603	-11436	-10165	-8852
	22.5	19.4	14.5	9.5	6.2	5.3	7.0	10.6	15.2	19.8	24.0	28.0	31.9	36.2	40.5	44.2	46.0	44.5	38.8
-25	-35378	-33855	-32388	-30994	-29669	-28393	-27141	-25899	-24670	-23470	-22320	-21226	-20174	-19128	-18040	-16868	-15589	-14216	-12799
	27.4	25.5	22.0	18.0	15.1	14.0	15.2	18.3	22.5	27.2	31.6	35.7	39.5	42.9	45.8	47.7	47.7	44.9	38.8
-30	-40763	-39232	-37736	-36295	-34910	-33570	-32257	-30957	-29667	-28394	-27145	-25923	-24715	-23494	-22226	-20879	-19436	-17912	-16352
	33.0	32.1	29.4	26.0	23.1	21.6	22.2	24.6	28.5	33.3	38.2	42.9	47.1	50.4	52.7	53.5	52.3	48.6	42.0
-35	-45528	-44023	-42540	-41099	-39706	-38355	-37032	-35721	-34412	-33099	-31778	-30444	-29086	-27683	-26214	-24661	-23023	-21318	-19596
	37.9	37.5	35.4	32.4	29.6	27.9	27.9	30.0	33.7	38.7	44.3	49.9	54.9	58.9	61.4	61.9	60.2	55.9	49.0
-40	-49747	-48302	-46871	-45474	-44117	-42796	-41497	-40203	-38897	-37561	-36184	-34752	-33255	-31679	-30015	-28262	-26431	-24553	-22682
	40.8	41.1	39.6	37.2	34.7	33.1	33.1	35.1	38.9	44.3	50.6	57.1	63.1	68.0	71.2	72.1	70.5	66.2	59.3
-45	-53514	-52160	-50815	-49494	-48201	-46932	-45674	-44406	-43106	-41753	-40327	-38813	-37201	-35484	-33665	-31753	-29776	-27772	-25798
	41.7	42.6	42.0	40.5	38.9	38.0	38.5	40.8	45.0	50.8	57.6	64.8	71.6	77.3	81.1	82.6	81.5	77.6	71.0
-50	-56880	-55643	-54406	-53180	-51966	-50758	-49542	-48299	-47004	-45636	-44174	-42605	-40919	-39118	-37212	-35220	-33177	-31126	-29124
	41,2	43.0	43.5	43.3	43.0	43.3	44.8	47.8	52.4	58.4	65.4	72.8	79.8	85.8	89.9	91.9	91.2	87.9	82.1
-55	-59802	-58701	-57587	-56466	-55338	-54194	-53023	-51805	-50522	-49153	-47683	-46101	-44403	-42595	-40691	-38718	-36709	-34707	-32763
	41.0	43.7	45.4	46.7	47.9	49.5	52.1	55.8	60.7	66.7	73.4	80.3	86.9	92.4	96.4	98.4	98.1	95.5	90.6
-60	-62131	-61181	-60201	-59195	-58159	-57089	-55973	-54798	-53549	-52214	-50782	-49248	-47613	-45885	-44082	-42226	-40351	-38491	-36687
	42.8	46.0	48.7	51.2	53.7	56.5	59.9	64.0	68.9	74.4	80.3	86.3	91.8	96.4	99.7	101.4	101.3	99.4	95.6
-65	-63643	-62856	-62022	-61143	-60218	-59242	-58209	-57112	-55942	-54693	-53362	-51947	-50453	-48890	-47274	-45623	-43963	-42322	-40727
	47.3	50.6	53.9	57.0	60.2	63.6	67.3	71.4	75.8	80.5	85.3	89.9	94.0	97.5	99.9	101.2	101.1	99.8	97.2
-70	-64105	-63491	-62817	-62085	-61297	-60450	-59543	-58574	-57541	-56442	-55278	-54053	-52771	-51444	-50081	-48699	-47314	-45944	-44608
	54.4	57.5	60.5	63.7	66.8	70.1	73.5	77.0	80.6	84.2	87.6	90.8	93.7	95.9	97.5	98.4	98.4	97.6	96.1
-75	-63356	-62916	-62414	-61853	-61233	-60557	-59826	-59041	-58203	-57316	-56382	-55406	-54394	-53352	-52290	-51216	-50142	-49078	-48036
	63.2	65.5	67.8	70.3	72.8	75.4	77.9	80.5	83.0	85.4	87.6	89.7	91.4	92.8	93.8	94.4	94.5	94.3	93.6
-80	-61356	-61084	-60760	-60385	-59962	-59494	-58982	-58431	-57841	-57218	-56564	-55883	-55179	-54459	-53726	-52987	-52248	-51514	-50792
	71.9	73.2	74.6	76.1	77.6	79.2	80.7	82.2	83.7	85.0	86.3	87.4	88.4	89.2	89.9	90.3	90.6	90.7	90.7
-85	-58211	-58088	-57934	-57751	-57541	-57304	-57043	-56759	-56454	-56131	-55792	-55439	-55075	-54702	-54324	-53941	-53559	-53178	-52803
	79.1	79.6	80.2	80.8	81.4	82.0	82.6	83.2	83.8	84.4	84.9	85.4	85.9	86.3	86.6	87.0	87.2	87.5	87.7
-90	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146
	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4

Z-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	56313	56296	56280	56265	56250	56235	56222	56209	56197	56187	56178	56171	56165	56160	56158	56157	56158	56160	56165
	-31.9	-31.8	-31.6	-31.5	-31.4	-31.3	-31.2	-31.1	-31.0	-30.9	-30.8	-30.8	-30.7	-30.7	-30.7	-30.7	-30.7	-30.7	-30.7
85	56354	56273	56188	56099	56008	55917	55826	55736	55650	55568	55493	55425	55366	55316	55278	55251	55237	55236	55249
	-29.5	-28.8	-28.2	-27.6	-27.0	-26.4	-25.7	-25.2	-24.6	-24.1	-23.6	-23.2	-22.8	-22.5	-22.3	-22.1	-22.1	-22.1	-22.2
80	56941	56779	56595	56393	56176	55949	55716	55480	55248	55023	54809	54612	54434	54279	54151	54052	53984	53948	53947
	-27.6	-26.6	-25.5	-24.3	-23.0	-21.6	-20.2	-18.8	-17.4	-16.0	-14.7	-13.5	-12.4	-11.5	-10.7	-10.1	-9.7	-9.5	-9.5
75	57964	57720	57428	57093	56724	56329	55916	55496	55078	54670	54281	53918	53589	53298	53052	52855	52709	52617	52582
	-29.3	-28.2	-26.8	-25.1	-23.1	-20.9	-18.6	-16.1	-13.6	-11.0	-8.6	-6.2	-4.1	-2.2	-0.6	0.7	1.7	2.3	2.6
70	59117	58800	58399	57923	57387	56805	56192	55566	54940	54330	53750	53210	52721	52289	51923	51625	51400	51249	51175
	-35.5	-34.6	-33.1	-31.1	-28.6	-25.6	-22.3	-18.7	-14.9	-11.0	-7.1	-3.4	0.1	3.2	6.0	8.2	10.0	11.2	12.0
65	60023	59656	59160	58552	57849	57075	56255	55412	54572	53757	52987	52276	51637	51080	50611	50233	49949	49759	49662
	-45.7	-45.2	-44.0	-42.0	-39.2	-35.7	-31.5	-26.8	-21.7	-16.3	-10.9	-5.6	-0.6	4.0	8.1	11.6	14.4	16.5	18.0
60	60329	59948	59388	58667	57812	56854	55828	54772	53721	52709	51761	50898	50135	49482	48942	48519	48210	48013	47925
	-57.9	-58.3	-57.8	-56.2	-53.6	-49.9	-45.1	-39.5	-33.1	-26.3	-19.3	-12.4	-5.7	0.6	6.2	11.1	15.2	18.4	20.8
55	59780	59427	58840	58038	57053	55927	54709	53450	52201	51007	49904	48918	48063	47349	46777	46344	46047	45879	45832
	-69.8	-71.5	-72.2	-71.7	-69.7	-66.3	-61.3	-55.0	-47.6	-39.5	-31.0	-22.5	-14.1	-6.2	1.1	7.6	13.2	17.9	21.4
50	58253	57967	57390	56541	55456	54187	52797	51355	49929	48577	47346	46264	45350	44606	44032	43619	43360	43246	43264
	-79.0	-82.5	-85.1	-86.3	-85.7	-83.0	-78.3	-71.7	-63.6	-54.4	-44.7	-34.7	-24.8	-15.3	-6.3	1.9	9.3	15.6	20.7
45	55761	55565	55029	54167	53015	51635	50103	48506	46928	45442	44105	42950	41994	41237	40673	40290	40077	40023	40112
	-84.0	-89.8	-95.0	-98.6	-100.1	-98.8	-94.9	-88.4	-80.0	-70.1	-59.4	-48.4	-37.2	-26.2	-15.6	-5.5	3.8	12.0	18.9
40	52408	52313	51840	50995	49814	48362	46726	45005	43300	41698	40263	39036	38031	37248	36678	36309	36129	36122	36271
	-83.8	-92.4	-100.8	-107.7	-112.0	-112.9	-110.3	-104.6	-96.3	-86.3	-75.1	-63.4	-51.2	-38.9	-26.7	-14.8	-3.5	6.7	15.5
35	48343	48351	47958	47163	45994	44514	42815	41003	39190	37473	35926	34594	33499	32643	32021	31625	31442	31456	31643
	-78.3	-90.1	-102.2	-113.0	-120.9	-124.8	-124.4	-120.2	-112.8	-103.1	-92.0	-79.9	-67.0	-53.6	-39.8	-26.1	-12.9	-0.8	9.8
30	43719	43831	43539	42826	41711	40249	38526	36650	34735	32887	31189	29695	28438	27433	26687	26201	25967	25966	26162
	-67.8	-82.8	-99.0	-114.3	-126.4	-134.2	-136.9	-135.0	-129.2	-120.7	-110.1	-98.0	-84.6	-70.2	-55.0	-39.6	-24.7	-10.9	1.1
25	38670	38897	38726	38129	37109	35705	33991	32067	30048	28042	26140	24412	22908	21666	20715	20070	19732	19674	19846
	-53.2	-71.0	-91.3	-111.2	-128.2	-140.4	-147.1	-148.4	-145.2	-138.4	-128.9	-117.1	-103.4	-88.1	-71.6	-54.8	-38.5	-23.6	-10.6
20	33309	33666	33641	33190	32296	30979	29297	27337	25207	23017	20868	18848	17030	15482	14258	13396	12902	12742	12848
	-35.6	-55.6	-79.3	-103.7	-125.6	-142.7	-153.9	-159.3	-159.3	-155.0	-147.1	-136.0	-122.2	-106.1	-88.5	-70.6	-53.4	-37.9	-24.5
15	27738	28240	28380	28094	27345	26134	24498	22513	20277	17900	15493	13163	11009	9128	7603	6489	5799	5490	5478
	-16.6	-37.8	-64.1	-92.1	-118.4	-140.3	-156.3	-166.1	-169.9	-168.6	-162.6	-152.6	-138.9	-122.4	-104.1	-85.5	-67.9	-52.3	-38.9
10	22057	22713	23024	22908	22311	21214	19638	17645	15327	12795	10169	7570	5122	2943	1137	-225	-1133	-1633	-1823
	1.9	-19.3	-46.8	-77.2	-106.9	-132.9	-153.3	-167.4	-175.1	-177.0	-173.3	-164.6	-151.5	-135.0	-116.5	-97.8	-80.3	-64.9	-51.7
5	16371	17171	17645	17694	17247	16270	14771	12802	10453	7836	5077	2310	-331	-2715	-4731	-6306	-7428	-8150	-8570
	18.1	-2.1	-29.4	-60.6	-92.2	-121.0	-144.8	-162.5	-173.7	-178.6	-177.4	-170.4	-158.3	-142.4	-124.3	-105.9	-88.9	-73.9	-60.8
0	10783	11706	12324	12525	12225	11377	9980	8084	5775	3169	397	-2404	-5100	-7561	-9682	-11399	-12705	-13652	-14326
	30.3	12.0	-13.8	-44.2	-75.9	-105.7	-131.4	-151.5	-165.4	-172.9	-174.0	-168.8	-158.2	-143.5	-126.4	-108.8	-92.4	-77.7	-64.4

Z-COMPONENT

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	10783	11706	12324	12525	12225	11377	9980	8084	5775	3169	397	-2404	-5100	-7561	-9682	-11399	-12705	-13652	-14326
	30.3	12.0	-13.8	-44.2	-75.9	-105.7	-131.4	-151.5	-165.4	-172.9	-174.0	-168.8	-158.2	-143.5	-126.4	-108.8	-92.4	-77.7	-64.4
-5	5390	6408	7149	7492	7340	6638	5380	3612	1422	-1070	-3733	-6433	-9041	-11445	-13556	-15328	-16761	-17899	-18808
	37.7	21.6	-1.6	-29.7	-59.7	-88.8	-114.7	-135.8	-151.3	-160.6	-163.5	-160.1	-151.2	-138.0	-122.3	-105.8	-89.9	-75.3	-61.3
-10	277	1371	2222	2702	2707	2174	1092	-494	-2495	-4789	-7244	-9733	-12141	-14376	-16376	-18114	-19596	-20855	-21930
	40.5	26.8	6.5	-18.3	-45.4	-72.2	-96.6	-117.3	-133.0	-143.1	-147.3	-145.4	-138.1	-126.5	-112.2	-96.6	-81.2	-66.2	-51.3
-15	-4486	-3318	-2359	-1736	-1561	-1902	-2776	-4140	-5904	-7946	-10136	-12350	-14493	-16492	-18310	-19935	-21378	-22660	-23793
	40.1	28.3	11.1	-10.2	-33.5	-57.1	-79.0	-98.0	-112.8	-122.8	-127.3	-126.3	-120.2	-109.8	-96.5	-81.6	-66.2	-50.6	-34.8
-20	-8852	-7595	-6514	-5739	-5382	-5516	-6163	-7283	-8788	-10558	-12463	-14389	-16249	-17988	-19585	-21039	-22362	-23563	-24634
	38.8	28.3	13.7	-4.3	-24.0	-44.1	-62.9	-79.4	-92.5	-101.3	-105.4	-104.4	-98.7	-88.9	-76.1	-61.4	-45.7	-29.5	-13.0
-25	-12799	-11425	-10209	-9273	-8730	-8655	-9071	-9944	-11190	-12690	-14321	-15973	-17565	-19051	-20417	-21665	-22806	-23841	-24752
	38.8	29.1	16.2	0.9	-15.8	-32.6	-48.4	-62.2	-73.0	-80.1	-82.9	-81.2	-75.1	-65.1	-52.1	-37.1	-21.0	-4.4	12.1
-30	-16352	-14837	-13475	-12381	-11660	-11385	-11581	-12215	-13209	-14453	-15829	-17230	-18579	-19832	-20973	-22003	-22930	-23751	-24452
	42.0	32.6	20.8	7.2	-7.2	-21.6	-34.8	-46.1	-54.6	-59.7	-60.7	-57.6	-50.4	-39.6	-25.9	-10.4	6.1	22.6	38.4
-35	-19596	-17934	-16431	-15193	-14313	-13858	-13847	-14254	-15005	-16000	-17130	-18295	-19419	-20455	-21384	-22203	-22916	-23521	-24012
	49.0	39.7	28.5	15.9	2.9	-9.7	-21.1	-30.3	-36.7	-39.7	-38.9	-34.1	-25.5	-13.6	0.8	16.7	33.1	49.0	63.3
-40	-22682	-20892	-19273	-17917	-16905	-16290	-16089	-16274	-16783	-17527	-18407	-19334	-20234	-21062	-21792	-22417	-22939	-23362	-23690
	59.3	50.1	39.2	27.3	15.2	3.7	-6.2	-13.9	-18.6	-19.9	-17.4	-11.2	-1.4	11.3	26.1	41.9	57.7	72.3	84.5
-45	-25798	-23926	-22233	-20797	-19683	-18931	-18551	-18518	-18780	-19260	-19877	-20552	-21221	-21839	-22380	-22834	-23204	-23496	-23725
	71.0	62.3	51.9	40.7	29.4	18.9	10.0	3.6	0.1	0.1	3.6	10.7	21.0	33.7	48.1	63.1	77.6	90.2	100.1
-50	-29124	-27235	-25523	-24051	-22867	-21999	-21453	-21207	-21218	-21427	-21769	-22181	-22610	-23017	-23378	-23685	-23938	-24150	-24339
	82.1	74.2	64.8	54.5	44.3	35.0	27.2	21.8	19.2	19.8	23.8	30.8	40.7	52.5	65.6	78.9	91.3	101.7	109.3
-55	-32763	-30930	-29259	-27797	-26578	-25622	-24931	-24487	-24260	-24206	-24278	-24430	-24622	-24825	-25019	-25198	-25364	-25529	-25713
	90.6	84.0	75.9	67.2	58.6	50.6	44.2	39.7	37.8	38.6	42.3	48.5	57.0	67.1	77.9	88.8	98.7	106.7	112.2
-60	-36687	-34981	-33410	-32007	-30795	-29789	-28989	-28383	-27953	-27669	-27502	-27422	-27401	-27421	-27468	-27539	-27637	-27772	-27960
	95.6	90.5	84.2	77.4	70.7	64.5	59.5	56.1	54.7	55.4	58.3	63.1	69.6	77.3	85.4	93.5	100.7	106.5	110.2
-65	-40727	-39208	-37791	-36497	-35344	-34339	-33486	-32779	-32207	-31756	-31410	-31151	-30966	-30842	-30774	-30760	-30803	-30912	-31096
	97.2	93.6	89.3	84.5	79.9	75.6	72.1	69.8	68.8	69.2	71.1	74.4	78.7	83.8	89.2	94.5	99.2	103.0	105.4
-70	-44608	-43324	-42109	-40978	-39940	-39003	-38171	-37442	-36815	-36284	-35841	-35482	-35199	-34988	-34848	-34778	-34782	-34864	-35033
	96.1	94.0	91.4	88.7	85.9	83.4	81.3	79.9	79.2	79.4	80.5	82.3	84.7	87.5	90.6	93.6	96.2	98.4	99.8
-75	-48036	-47025	-46057	-45139	-44280	-43484	-42756	-42099	-41513	-40999	-40556	-40184	-39882	-39650	-39489	-39399	-39383	-39444	-39586
	93.6	92.7	91.6	90.3	89.0	87.8	86.9	86.2	85.9	85.9	86.3	87.1	88.2	89.4	90.8	92.1	93.3	94.2	94.9
-80	-50792	-50088	-49406	-48753	-48133	-47550	-47008	-46509	-46058	-45655	-45304	-45004	-44759	-44569	-44436	-44361	-44345	-44390	-44498
	90.7	90.5	90.3	90.0	89.7	89.3	89.1	88.9	88.8	88.8	88.9	89.1	89.4	89.8	90.1	90.5	90.8	91.0	91.2
-85	-52803	-52435	-52078	-51734	-51406	-51095	-50804	-50535	-50290	-50071	-49880	-49717	-49584	-49482	-49412	-49374	-49370	-49399	-49463
	87.7	87.8	87.9	88.0	88.1	88.2	88.2	88.2	88.3	88.3	88.3	88.3	88.3	88.3	88.3	88.3	88.2	88.1	88.0
-90	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146
	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4

Z-COMPONENT

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	56165	56171	56179	56188	56199	56212	56225	56240	56256	56273	56291	56310	56328	56347	56366	56385	56403	56421	56439
	-30.7	-30.8	-30.8	-30.9	-31.0	-31.1	-31.2	-31.3	-31.5	-31.6	-31.7	-31.9	-32.0	-32.2	-32.3	-32.5	-32.6	-32.8	-32.9
85	55249	55275	55314	55367	55432	55509	55597	55695	55801	55914	56032	56153	56276	56399	56520	56637	56748	56851	56947
	-22.2	-22.4	-22.7	-23.0	-23.4	-23.9	-24.5	-25.1	-25.8	-26.5	-27.3	-28.1	-28.9	-29.7	-30.5	-31.4	-32.2	-33.0	-33.7
80	53947	53981	54050	54154	54292	54462	54662	54890	55142	55414	55702	56001	56305	56608	56904	57188	57454	57695	57907
	-9.5	-9.7	-10.1	-10.7	-11.4	-12.3	-13.3	-14.5	-15.8	-17.1	-18.6	-20.1	-21.6	-23.2	-24.8	-26.4	-28.0	-29.5	-31.0
75	52582	52604	52684	52823	53018	53269	53573	53926	54325	54764	55234	55729	56238	56751	57254	57737	58186	58589	58935
	2.6	2.5	2.2	1.6	0.7	-0.3	-1.6	-3.0	-4.5	-6.1	-7.9	-9.7	-11.6	-13.5	-15.5	-17.5	-19.5	-21.5	-23.5
70	51175	51178	51259	51416	51649	51957	52339	52790	53307	53884	54514	55185	55886	56600	57309	57992	58630	59200	59683
	12.0	12.3	12.2	11.7	10.9	9.9	8.6	7.3	5.8	4.2	2.6	1.0	-0.7	-2.5	-4.3	-6.2	-8.2	-10.2	-12.3
65	49662	49658	49744	49919	50180	50527	50958	51470	52063	52731	53470	54268	55114	55987	56864	57719	58521	59240	59843
	18.0	18.8	19.0	18.8	18.2	17.3	16.2	14.9	13.7	12.4	11.1	9.8	8.6	7.3	6.0	4.7	3.2	1.7	0.1
60	47925	47940	48054	48261	48556	48935	49397	49941	50567	51275	52062	52923	53845	54811	55794	56761	57677	58500	59188
	20.8	22.3	23.1	23.3	22.9	22.1	21.1	19.9	18.7	17.5	16.4	15.4	14.5	13.7	13.0	12.4	11.8	11.2	10.5
55	45832	45898	46067	46328	46670	47088	47576	48133	48763	49469	50252	51112	52040	53022	54033	55038	55997	56863	57587
	21.4	24.0	25.6	26.2	26.2	25.5	24.3	22.9	21.4	19.8	18.3	17.1	16.1	15.4	15.1	15.2	15.5	16.1	16.8
50	43264	43403	43646	43977	44381	44845	45362	45929	46550	47229	47973	48785	49661	50590	51552	52516	53442	54281	54984
	20.7	24.6	27.2	28.6	28.9	28.3	27.0	25.1	22.8	20.3	17.8	15.6	13.9	12.8	12.5	13.0	14.2	16.1	18.3
45	40112	40328	40649	41055	41523	42038	42589	43170	43784	44434	45126	45865	46650	47475	48325	49177	49997	50745	51372
	18.9	24.3	28.2	30.6	31.5	31.2	29.7	27.1	23.9	20.1	16.2	12.6	9.6	7.7	7.0	7.7	9.7	12.8	16.7
40	36271	36553	36942	37411	37935	38497	39082	39685	40304	40937	41585	42249	42928	43618	44312	44998	45656	46258	46765
	15.5	22.6	28.0	31.6	33.4	33.6	32.2	29.3	25.2	20.2	14.8	9.6	5.2	2.4	1.4	2.4	5.3	9.6	15.0
35	31643	31971	32407	32918	33479	34074	34691	35325	35965	36603	37226	37828	38401	38944	39459	39948	40408	40830	41192
	9.8	18.5	25.4	30.3	33.4	34.6	33.9	31.3	26.9	21.1	14.6	8.2	2.9	-0.5	-1.4	0.2	4.2	9.8	16.4
30	26162	26511	26968	27494	28068	28680	29324	29993	30673	31337	31960	32516	32994	33394	33725	34007	34258	34491	34701
	1.1	11.2	19.3	25.7	30.3	33.2	34.0	32.5	28.7	22.9	16.1	9.2	3.7	0.5	0.4	3.3	8.6	15.5	22.9
25	19846	20186	20632	21144	21704	22313	22976	23686	24417	25127	25766	26295	26690	26956	27112	27197	27250	27306	27381
	-10.6	0.4	9.6	17.5	24.0	29.1	32.2	32.7	30.4	25.5	19.1	12.6	7.7	5.6	6.9	11.6	18.6	26.7	34.4
20	12848	13137	13533	13993	14509	15095	15767	16518	17308	18072	18736	19243	19565	19707	19706	19615	19496	19403	19372
	-24.5	-13.0	-2.9	6.5	15.3	23.1	29.1	32.3	32.1	28.8	23.4	17.7	13.8	13.2	16.4	23.1	31.8	40.8	48.5
15	5478	5660	5953	6315	6751	7292	7962	8749	9595	10408	11091	11572	11818	11843	11697	11453	11190	10980	10874
	-38.9	-27.2	-16.2	-5.2	6.0	16.9	26.1	32.2	34.2	32.4	28.0	23.2	20.2	20.9	25.8	34.1	44.2	53.8	60.9
10	-1823	-1813	-1686	-1472	-1151	-677	-24	784	1668	2509	3187	3618	3771	3671	3384	2998	2607	2298	2136
	-51.7	-39.8	-27.9	-15.1	-1.3	12.6	24.9	33.5	37.3	36.4	32.3	27.4	24.6	25.8	31.5	40.8	51.4	61.0	67.2
5	-8570	-8791	-8884	-8861	-8681	-8293	-7673	-6864	-5974	-5147	-4520	-4183	-4159	-4410	-4856	-5395	-5920	-6333	-6560
	-60.8	-48.4	-35.3	-20.6	-4.2	12.3	26.8	37.0	41.4	40.2	35.1	29.1	25.2	25.5	30.8	39.7	50.1	59.0	64.3
0	-14326	-14811	-15151	-15332	-15301	-15004	-14433	-13657	-12810	-12059	-11551	-11372	-11535	-11986	-12631	-13358	-14051	-14603	-14931
	-64.4	-51.1	-36.5	-19.9	-1.5	16.8	32.3	42.6	46.1	43.1	35.7	27.1	20.7	18.9	22.3	29.8	38.9	46.8	51.3

Z-COMPONENT

LATITUDE \ LONGITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	-14326	-14811	-15151	-15332	-15301	-15004	-14433	-13657	-12810	-12059	-11551	-11372	-11535	-11986	-12631	-13358	-14051	-14603	-14931
	-64.4	-51.1	-36.5	-19.9	-1.5	16.8	32.3	42.6	46.1	43.1	35.7	27.1	20.7	18.9	22.3	29.8	38.9	46.8	51.3
-5	-18808	-19540	-20105	-20466	-20561	-20347	-19840	-19136	-18396	-17799	-17492	-17551	-17973	-18689	-19592	-20561	-21476	-22225	-22715
	-61.3	-46.8	-30.7	-12.5	7.0	25.7	40.6	49.3	50.3	44.1	33.1	20.8	11.0	6.1	6.8	12.0	19.3	26.0	30.0
-10	-21930	-22836	-23554	-24030	-24203	-24051	-23619	-23033	-22470	-22111	-22093	-22474	-23230	-24277	-25500	-26773	-27971	-28980	-29703
	-51.3	-35.5	-18.2	0.8	20.1	37.5	50.1	55.5	52.5	42.1	27.0	10.8	-2.7	-11.0	-13.3	-10.5	-5.1	0.6	4.8
-15	-23793	-24762	-25527	-26026	-26217	-26104	-25763	-25342	-25024	-24979	-25325	-26093	-27242	-28674	-30265	-31888	-33419	-34743	-35760
	-34.8	-18.1	-0.3	18.2	35.7	50.1	58.6	59.4	51.7	36.8	17.6	-2.0	-18.6	-29.5	-34.2	-33.4	-29.3	-24.1	-19.4
-20	-24634	-25544	-26244	-26683	-26842	-26756	-26528	-26315	-26295	-26619	-27372	-28565	-30132	-31968	-33944	-35936	-37821	-39487	-40836
	-13.0	3.9	21.0	37.4	51.6	61.4	64.6	60.0	47.4	28.5	6.3	-15.6	-33.8	-46.1	-52.0	-52.2	-48.7	-43.4	-37.7
-25	-24752	-25507	-26062	-26389	-26497	-26448	-26362	-26395	-26706	-27416	-28582	-30188	-32156	-34373	-36713	-39053	-41279	-43282	-44968
	12.1	28.3	43.4	56.5	65.9	70.1	67.4	57.4	40.6	18.8	-5.0	-27.4	-45.6	-57.7	-63.3	-63.4	-59.7	-53.8	-47.2
-30	-24452	-25006	-25391	-25605	-25682	-25704	-25794	-26096	-26741	-27819	-29358	-31324	-33631	-36166	-38808	-41442	-43960	-46262	-48258
	38.4	52.8	64.9	73.5	77.6	75.9	67.7	53.1	33.2	10.0	-13.7	-34.9	-51.4	-61.9	-66.2	-65.3	-60.8	-54.3	-47.1
-35	-24012	-24381	-24627	-24772	-24869	-25009	-25306	-25881	-26835	-28228	-30066	-32304	-34855	-37614	-40469	-43315	-46053	-48589	-50843
	63.3	75.2	83.5	87.6	86.4	79.5	66.9	49.1	27.7	4.8	-17.2	-36.0	-49.8	-57.8	-60.2	-58.0	-52.7	-45.8	-38.7
-40	-23690	-23931	-24106	-24252	-24432	-24732	-25249	-26077	-27289	-28920	-30962	-33365	-36050	-38925	-41891	-44853	-47722	-50414	-52853
	84.5	93.4	98.2	98.1	92.7	82.1	66.7	47.7	26.6	5.3	-14.0	-29.6	-40.3	-45.7	-46.3	-43.0	-37.5	-30.9	-24.6
-45	-23725	-23913	-24089	-24302	-24611	-25090	-25816	-26855	-28255	-30034	-32175	-34635	-37346	-40229	-43201	-46180	-49087	-51846	-54387
	100.1	106.3	108.0	104.9	97.0	84.6	68.6	50.1	30.8	12.3	-3.7	-16.0	-23.9	-27.2	-26.6	-23.2	-18.1	-12.7	-7.8
-50	-24339	-24532	-24764	-25080	-25532	-26177	-27070	-28255	-29762	-31595	-33739	-36156	-38792	-41584	-44464	-47363	-50213	-52945	-55497
	109.3	113.1	112.9	108.4	99.7	87.6	72.8	56.5	40.1	25.0	12.4	3.0	-2.7	-4.9	-4.1	-1.3	2.5	6.2	9.1
-55	-25713	-25941	-26246	-26664	-27236	-28002	-28998	-30252	-31778	-33578	-35636	-37923	-40397	-43010	-45709	-48436	-51133	-53742	-56208
	112.2	114.5	113.4	108.8	101.0	90.6	78.5	65.4	52.7	41.1	31.5	24.5	20.2	18.4	18.6	20.1	22.0	23.7	24.6
-60	-27960	-28222	-28584	-29072	-29713	-30534	-31557	-32798	-34262	-35948	-37843	-39924	-42162	-44519	-46953	-49420	-51873	-54264	-56546
	110.2	111.6	110.5	106.8	100.9	93.2	84.3	74.9	65.7	57.5	50.5	45.3	41.8	39.8	39.0	39.0	39.1	39.0	38.2
-65	-31096	-31372	-31755	-32263	-32913	-33719	-34694	-35845	-37174	-38676	-40341	-42153	-44089	-46121	-48220	-50350	-52476	-54561	-56568
	105.4	106.3	105.5	103.2	99.4	94.4	88.7	82.7	76.7	71.2	66.4	62.5	59.5	57.3	55.7	54.4	53.2	51.7	49.8
-70	-35033	-35295	-35661	-36139	-36739	-37467	-38329	-39326	-40457	-41718	-43099	-44589	-46171	-47826	-49532	-51264	-52997	-54705	-56361
	99.8	100.4	100.0	98.8	96.8	94.1	90.9	87.5	83.9	80.5	77.4	74.6	72.1	69.9	67.9	66.0	64.1	62.0	59.8
-75	-39586	-39812	-40126	-40532	-41033	-41632	-42328	-43120	-44007	-44983	-46041	-47172	-48365	-49607	-50884	-52180	-53478	-54763	-56016
	94.9	95.2	95.0	94.5	93.6	92.3	90.7	89.0	87.1	85.1	83.2	81.3	79.4	77.5	75.7	73.9	72.1	70.2	68.2
-80	-44498	-44669	-44903	-45203	-45567	-45995	-46485	-47036	-47644	-48306	-49016	-49768	-50557	-51373	-52210	-53058	-53908	-54751	-55579
	91.2	91.2	91.0	90.7	90.3	89.7	88.9	88.1	87.1	86.1	85.0	83.9	82.7	81.4	80.2	78.9	77.6	76.3	75.0
-85	-49463	-49559	-49689	-49852	-50047	-50273	-50528	-50811	-51119	-51451	-51805	-52176	-52562	-52960	-53366	-53778	-54190	-54600	-55003
	88.0	87.9	87.7	87.5	87.2	86.9	86.6	86.2	85.7	85.3	84.8	84.3	83.7	83.2	82.6	82.0	81.4	80.9	80.3
-90	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146
	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4

Z-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	56439	56455	56471	56486	56499	56512	56523	56533	56541	56548	56553	56558	56560	56562	56562	56560	56557	56554	56548
	-32.9	-33.1	-33.2	-33.3	-33.4	-33.6	-33.7	-33.7	-33.8	-33.9	-33.9	-34.0	-34.0	-34.0	-34.0	-34.0	-34.0	-34.0	-33.9
85	56947	57032	57107	57171	57224	57264	57294	57313	57321	57320	57312	57296	57275	57250	57221	57191	57159	57128	57097
	-33.7	-34.5	-35.2	-35.8	-36.3	-36.9	-37.3	-37.6	-37.9	-38.2	-38.3	-38.4	-38.4	-38.3	-38.2	-38.1	-37.8	-37.6	-37.3
80	57907	58087	58230	58336	58403	58432	58425	58385	58315	58222	58110	57985	57854	57722	57596	57479	57376	57291	57225
	-31.0	-32.5	-33.8	-35.0	-36.1	-37.0	-37.8	-38.4	-38.8	-39.0	-39.0	-38.9	-38.6	-38.2	-37.6	-37.0	-36.4	-35.7	-35.0
75	58935	59215	59421	59548	59596	59564	59459	59287	59058	58785	58481	58161	57839	57530	57247	57001	56801	56654	56563
	-23.5	-25.5	-27.3	-29.0	-30.5	-31.8	-32.8	-33.6	-34.0	-34.1	-33.9	-33.4	-32.6	-31.6	-30.5	-29.2	-28.0	-26.8	-25.7
70	59683	60061	60320	60451	60450	60318	60065	59703	59251	58732	58170	57592	57024	56491	56016	55617	55311	55106	55009
	-12.3	-14.4	-16.4	-18.3	-20.0	-21.6	-22.8	-23.7	-24.1	-24.2	-23.7	-22.9	-21.6	-20.1	-18.3	-16.4	-14.6	-13.0	-11.6
65	59843	60305	60601	60716	60644	60386	59954	59368	58658	57858	57006	56142	55307	54536	53862	53312	52905	52657	52572
	0.1	-1.6	-3.3	-5.0	-6.7	-8.2	-9.5	-10.4	-10.9	-11.0	-10.5	-9.6	-8.1	-6.2	-4.1	-1.8	0.4	2.2	3.6
60	59188	59705	60017	60102	59946	59552	58934	58120	57149	56068	54930	53791	52702	51711	50860	50182	49698	49425	49367
	10.5	9.8	8.9	7.9	6.9	5.8	4.8	3.9	3.3	3.0	3.2	3.9	5.2	6.9	8.9	11.1	13.2	14.9	15.9
55	57587	58122	58426	58468	58230	57710	56923	55903	54699	53371	51986	50612	49315	48152	47171	46406	45882	45610	45592
	16.8	17.4	18.0	18.4	18.4	18.2	17.7	17.0	16.3	15.7	15.3	15.3	15.8	16.8	18.1	19.6	21.0	22.1	22.6
50	54984	55497	55771	55767	55459	54839	53922	52745	51363	49847	48279	46739	45303	44036	42991	42200	41684	41448	41487
	18.3	20.7	23.1	25.1	26.7	27.6	27.9	27.5	26.7	25.5	24.3	23.3	22.6	22.4	22.4	22.8	23.1	23.1	22.6
45	51372	51825	52053	52006	51652	50973	49981	48711	47224	45601	43933	42313	40825	39540	38510	37765	37318	37164	37286
	16.7	21.0	25.1	28.9	31.9	33.9	34.9	34.7	33.6	31.9	29.8	27.6	25.7	24.0	22.7	21.5	20.4	19.1	17.3
40	46765	47131	47302	47225	46855	46167	45163	43876	42370	40732	39061	37458	36016	34806	33880	33261	32950	32931	33171
	15.0	20.8	26.4	31.4	35.3	37.9	39.0	38.7	37.2	34.8	31.8	28.8	25.8	23.1	20.7	18.2	15.6	12.8	9.5
35	41192	41455	41571	41481	41131	40485	39535	38310	36873	35316	33744	32264	30968	29929	29193	28776	28669	28837	29232
	16.4	23.1	29.4	34.6	38.5	40.6	41.1	40.0	37.6	34.5	31.0	27.5	24.3	21.4	18.5	15.4	11.7	7.4	2.5
30	34701	34865	34939	34860	34567	34011	33176	32086	30803	29420	28046	26786	25730	24947	24476	24327	24475	24872	25453
	22.9	29.9	35.7	39.9	42.3	42.8	41.6	39.0	35.4	31.4	27.7	24.5	22.0	20.0	17.8	14.9	10.9	5.4	-1.0
25	27381	27465	27520	27482	27282	26861	26193	25299	24241	23112	22018	21058	20316	19852	19697	19853	20285	20933	21713
	34.4	40.8	45.1	47.1	46.8	44.6	40.8	36.0	30.8	26.1	22.4	20.1	19.3	19.2	18.9	17.3	13.7	7.7	-0.2
20	19372	19406	19473	19508	19434	19183	18724	18071	17287	16465	15705	15097	14711	14596	14774	15240	15955	16847	17821
	48.5	53.6	55.6	54.5	50.8	45.2	38.4	31.2	24.4	19.0	15.6	14.6	15.9	18.5	21.0	21.6	19.2	13.2	4.3
15	10874	10888	10995	11130	11208	11153	10925	10538	10052	9557	9148	8903	8877	9104	9598	10349	11315	12420	13562
	60.9	64.3	63.7	59.5	52.5	43.8	34.4	25.1	16.9	10.9	7.8	8.2	11.7	17.1	22.6	25.9	25.3	20.0	10.5
10	2136	2146	2307	2554	2795	2945	2955	2833	2638	2458	2380	2471	2771	3301	4065	5049	6215	7486	8759
	67.2	69.0	66.2	59.6	50.3	39.6	28.5	18.1	9.3	3.0	0.2	1.5	6.6	14.3	22.4	28.2	29.6	25.5	16.1
5	-6560	-6563	-6359	-6012	-5620	-5280	-5050	-4929	-4865	-4772	-4570	-4201	-3636	-2867	-1896	-738	567	1953	3317
	64.3	64.9	60.8	53.1	43.2	32.3	21.4	11.3	2.7	-3.5	-6.1	-4.5	1.3	10.1	19.9	27.6	30.8	28.1	19.7
0	-14931	-14988	-14781	-14377	-13876	-13385	-12975	-12657	-12385	-12081	-11668	-11094	-10338	-9399	-8287	-7016	-5622	-4168	-2745
	51.3	51.4	47.4	40.4	31.9	22.8	13.9	5.6	-1.7	-7.2	-9.9	-8.6	-3.2	5.5	15.6	24.3	28.9	27.7	20.6

Z-COMPONENT

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	-14931	-14988	-14781	-14377	-13876	-13385	-12975	-12657	-12385	-12081	-11668	-11094	-10338	-9399	-8287	-7016	-5622	-4168	-2745
	51.3	51.4	47.4	40.4	31.9	22.8	13.9	5.6	-1.7	-7.2	-9.9	-8.6	-3.2	5.5	15.6	24.3	28.9	27.7	20.6
-5	-22715	-22890	-22752	-22360	-21818	-21241	-20712	-20256	-19838	-19390	-18838	-18134	-17260	-16218	-15020	-13686	-12246	-10755	-9293
	30.0	30.6	28.0	23.4	18.0	12.5	7.1	1.8	-3.3	-7.7	-10.3	-9.9	-5.8	1.7	11.0	19.6	24.9	25.1	19.9
-10	-29703	-30075	-30089	-29798	-29302	-28721	-28146	-27618	-27118	-26586	-25958	-25186	-24252	-23160	-21922	-20558	-19097	-17588	-16100
	4.8	6.6	6.4	5.3	4.0	2.9	1.8	0.3	-2.2	-5.1	-7.5	-8.0	-5.5	0.0	7.8	15.5	21.0	22.4	19.0
-15	-35760	-36401	-36650	-36548	-36189	-35689	-35146	-34612	-34083	-33517	-32858	-32062	-31110	-30003	-28754	-27383	-25917	-24399	-22886
	-19.4	-15.8	-13.1	-10.6	-7.7	-4.5	-1.4	0.6	0.9	-0.4	-2.4	-3.5	-2.5	1.2	7.1	13.8	19.1	21.3	19.6
-20	-40836	-41797	-42343	-42504	-42362	-42021	-41578	-41093	-40580	-40013	-39349	-38553	-37605	-36505	-35263	-33898	-32436	-30914	-29382
	-37.7	-32.4	-27.2	-21.6	-15.5	-8.9	-2.8	1.9	4.3	4.5	3.3	2.1	2.4	4.8	9.4	15.0	20.0	22.8	22.5
-25	-44968	-46266	-47143	-47614	-47742	-47617	-47327	-46936	-46470	-45923	-45268	-44481	-43545	-42460	-41235	-39886	-38437	-36920	-35378
	-47.2	-40.5	-33.7	-26.4	-18.6	-10.5	-3.0	2.9	6.7	8.1	7.9	7.2	7.6	9.7	13.6	18.7	23.5	26.6	27.4
-30	-48258	-49879	-51086	-51881	-52305	-52428	-52325	-52057	-51662	-51149	-50510	-49734	-48813	-47747	-46544	-45219	-43793	-42296	-40763
	-47.1	-39.8	-32.6	-25.1	-17.5	-9.8	-2.7	3.0	6.9	9.0	9.8	10.3	11.5	14.1	18.2	23.3	28.1	31.6	33.0
-35	-50843	-52744	-54251	-55352	-56068	-56447	-56548	-56426	-56121	-55658	-55046	-54287	-53383	-52339	-51165	-49874	-48486	-47027	-45528
	-38.7	-31.8	-25.3	-19.2	-13.3	-7.6	-2.4	1.9	5.1	7.3	8.9	10.6	13.1	16.8	21.6	27.1	32.2	36.0	37.9
-40	-52853	-54973	-56727	-58092	-59073	-59697	-60004	-60042	-59849	-59458	-58892	-58166	-57293	-56283	-55150	-53909	-52579	-51182	-49747
	-24.6	-18.9	-14.3	-10.4	-7.2	-4.3	-1.8	0.3	2.2	4.0	6.0	8.7	12.4	17.2	22.9	28.9	34.4	38.6	40.8
-45	-54387	-56647	-58578	-60148	-61350	-62191	-62698	-62904	-62846	-62559	-62072	-61410	-60595	-59645	-58578	-57410	-56163	-54856	-53514
	-7.8	-4.1	-1.7	-0.4	-0.1	-0.1	-0.4	-0.4	0.0	1.0	3.0	6.2	10.6	16.1	22.3	28.7	34.4	38.9	41.7
-50	-55497	-57809	-59835	-61538	-62901	-63920	-64607	-64985	-65083	-64933	-64566	-64013	-63299	-62449	-61483	-60424	-59290	-58101	-56880
	9.1	10.7	10.9	9.8	7.8	5.4	3.1	1.2	0.3	0.5	2.1	5.2	9.6	15.1	21.3	27.6	33.3	38.0	41.2
-55	-56208	-58477	-60507	-62259	-63713	-64856	-65691	-66230	-66494	-66508	-66302	-65903	-65339	-64636	-63817	-62905	-61920	-60880	-59802
	24.6	24.3	22.7	20.0	16.6	12.8	9.3	6.4	4.5	4.0	5.0	7.5	11.3	16.2	21.7	27.4	32.8	37.4	41.0
-60	-56546	-58675	-60612	-62323	-63787	-64987	-65920	-66590	-67010	-67197	-67173	-66961	-66587	-66073	-65443	-64716	-63911	-63045	-62131
	38.2	36.4	33.8	30.3	26.4	22.3	18.5	15.3	13.1	12.1	12.4	14.1	17.0	20.8	25.3	30.0	34.7	39.0	42.8
-65	-56568	-58462	-60212	-61790	-63176	-64355	-65319	-66067	-66605	-66942	-67093	-67074	-66902	-66597	-66176	-65656	-65052	-64378	-63643
	49.8	47.4	44.4	41.0	37.3	33.6	30.2	27.4	25.3	24.2	24.0	24.9	26.8	29.4	32.7	36.2	40.0	43.7	47.3
-70	-56361	-57940	-59419	-60778	-62000	-63073	-63987	-64739	-65330	-65762	-66044	-66183	-66190	-66078	-65858	-65540	-65137	-64656	-64105
	59.8	57.3	54.6	51.7	48.8	46.0	43.4	41.2	39.6	38.6	38.2	38.6	39.6	41.2	43.3	45.8	48.6	51.5	54.4
-75	-56016	-57223	-58367	-59435	-60416	-61300	-62079	-62749	-63308	-63754	-64090	-64319	-64445	-64474	-64411	-64262	-64033	-63729	-63356
	68.2	66.2	64.1	62.1	60.1	58.2	56.5	55.1	54.0	53.3	53.0	53.1	53.6	54.5	55.7	57.3	59.0	61.0	63.2
-80	-55579	-56381	-57151	-57879	-58560	-59186	-59753	-60256	-60694	-61062	-61362	-61592	-61752	-61845	-61871	-61833	-61733	-61574	-61356
	75.0	73.7	72.5	71.3	70.2	69.2	68.3	67.5	66.9	66.6	66.4	66.4	66.6	67.1	67.7	68.5	69.5	70.6	71.9
-85	-55003	-55397	-55778	-56142	-56487	-56809	-57107	-57377	-57617	-57828	-58005	-58150	-58261	-58338	-58380	-58388	-58362	-58303	-58211
	80.3	79.8	79.3	78.8	78.4	78.0	77.7	77.4	77.2	77.1	77.1	77.1	77.2	77.3	77.6	77.9	78.2	78.7	79.1
-90	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146	-54146
	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4

Plots and Tables of IGRF 1990

Total Field F

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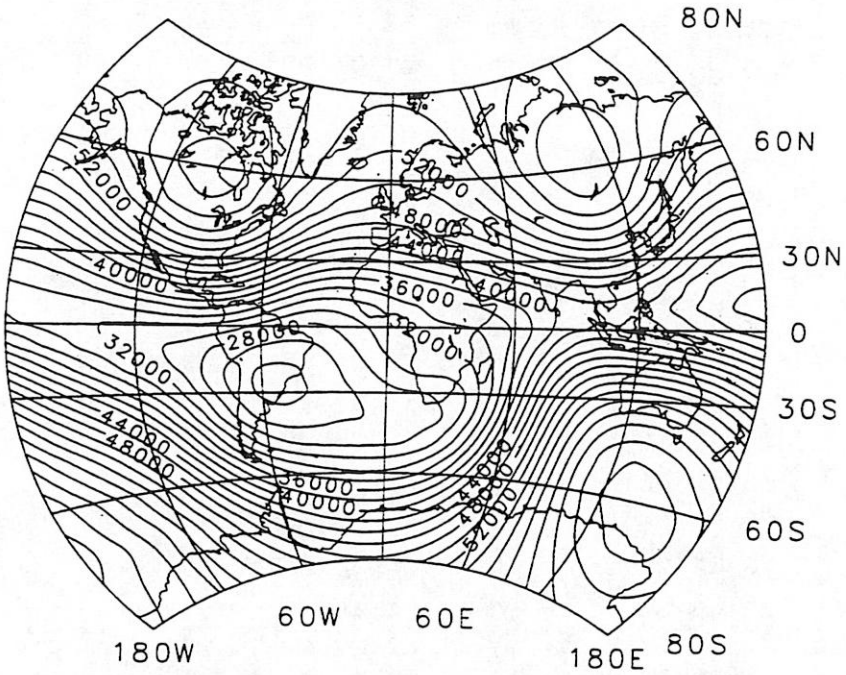
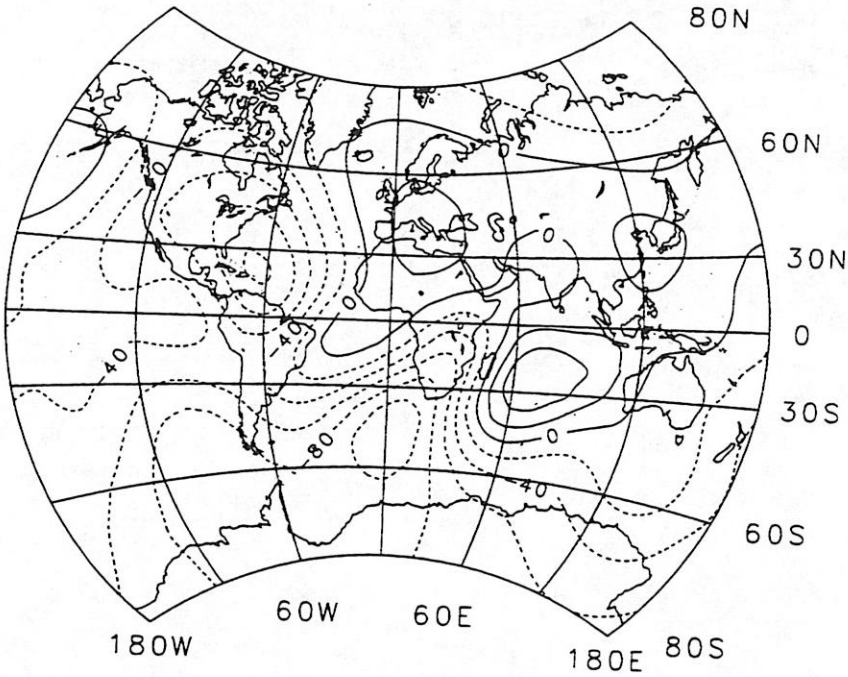
IGRF 1990 - TOTAL FIELD F

Figure 27 (**F**, top) Figure 28 ($\dot{\mathbf{F}}$, bottom)





TOTAL FIELD

LONGITUDE: LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
90	56574	56568	56560	56552	56543	56533	56522	56510	56498	56485	56471	56457	56443	56428	56413	56398	56383	56368	56353
	-34.4	-34.3	-34.3	-34.2	-34.1	-34.0	-33.9	-33.8	-33.7	-33.6	-33.5	-33.3	-33.2	-33.1	-33.0	-32.8	-32.7	-32.6	-32.4
85	57119	57088	57058	57028	57000	56971	56942	56913	56882	56850	56815	56777	56735	56688	56637	56582	56522	56457	56387
	-37.7	-37.4	-37.0	-36.7	-36.3	-35.9	-35.5	-35.1	-34.7	-34.3	-33.8	-33.4	-32.9	-32.4	-31.9	-31.4	-30.9	-30.4	-29.9
80	57414	57364	57331	57314	57312	57321	57338	57361	57385	57407	57422	57427	57418	57393	57349	57285	57200	57094	56967
	-36.4	-35.8	-35.2	-34.6	-34.1	-33.6	-33.2	-32.8	-32.5	-32.2	-31.9	-31.6	-31.3	-30.9	-30.5	-30.0	-29.4	-28.6	-27.8
75	57152	57107	57109	57155	57240	57358	57500	57656	57819	57977	58121	58243	58335	58390	58404	58372	58292	58164	57989
	-29.5	-28.5	-27.8	-27.3	-27.0	-26.9	-27.1	-27.4	-27.9	-28.4	-29.0	-29.6	-30.1	-30.4	-30.6	-30.6	-30.3	-29.8	-29.0
70	56255	56239	56310	56462	56685	56967	57292	57644	58006	58361	58694	58988	59231	59413	59523	59557	59510	59382	59174
	-18.3	-17.3	-16.7	-16.5	-16.9	-17.8	-19.1	-20.8	-22.7	-24.8	-26.9	-28.9	-30.7	-32.2	-33.4	-34.3	-34.7	-34.6	-34.1
65	54718	54747	54906	55187	55572	56044	56579	57153	57743	58324	58873	59369	59794	60131	60370	60499	60514	60412	60193
	-5.5	-4.6	-4.4	-5.0	-6.5	-8.7	-11.6	-15.1	-18.8	-22.8	-26.7	-30.3	-33.7	-36.6	-38.9	-40.7	-42.0	-42.6	-42.5
60	52611	52689	52937	53343	53884	54536	55272	56059	56868	57668	58432	59132	59747	60256	60643	60894	61000	60955	60757
	6.0	6.5	6.1	4.5	1.9	-1.9	-6.5	-11.8	-17.4	-23.2	-28.8	-34.0	-38.7	-42.8	-46.1	-48.8	-50.8	-52.1	-52.7
55	50066	50186	50507	51012	51677	52473	53368	54328	55317	56302	57252	58137	58930	59609	60152	60543	60765	60807	60664
	13.8	13.8	12.6	10.2	6.4	1.3	-4.8	-11.6	-18.8	-26.0	-32.9	-39.2	-44.8	-49.6	-53.6	-56.8	-59.5	-61.5	-62.8
50	47258	47407	47775	48342	49084	49969	50965	52037	53149	54266	55355	56385	57328	58159	58852	59386	59737	59887	59822
	16.5	15.9	14.1	10.9	6.3	0.4	-6.6	-14.3	-22.4	-30.4	-38.0	-44.7	-50.6	-55.6	-59.7	-63.3	-66.4	-69.1	-71.3
45	44379	44546	44935	45525	46291	47207	48240	49358	50527	51713	52883	54007	55058	56006	56826	57487	57961	58222	58247
	14.3	13.0	10.7	7.1	2.2	-3.9	-11.1	-19.0	-27.3	-35.4	-42.9	-49.4	-55.0	-59.6	-63.5	-67.0	-70.3	-73.8	-77.1
40	41616	41794	42182	42759	43504	44394	45403	46504	47666	48857	50048	51209	52314	53333	54237	54994	55567	55922	56030
	8.4	6.4	3.7	0.1	-4.6	-10.3	-17.0	-24.5	-32.2	-39.7	-46.6	-52.4	-57.2	-60.9	-64.2	-67.4	-70.9	-75.0	-79.5
35	39125	39310	39680	40215	40900	41717	42650	43678	44776	45914	47067	48206	49306	50341	51278	52083	52715	53135	53306
	1.1	-1.7	-4.8	-8.3	-12.5	-17.4	-23.1	-29.4	-36.1	-42.6	-48.5	-53.3	-56.9	-59.6	-61.9	-64.6	-68.1	-72.9	-78.6
30	37014	37200	37538	38008	38600	39307	40122	41032	42016	43051	44111	45173	46212	47204	48119	48920	49566	50013	50221
	-5.8	-9.3	-12.7	-16.1	-19.7	-23.6	-28.1	-33.1	-38.5	-43.8	-48.5	-52.1	-54.5	-56.0	-57.3	-59.2	-62.6	-67.8	-74.8
25	35344	35517	35804	36188	36663	37232	37896	38652	39484	40372	41293	42227	43154	44051	44892	45642	46259	46698	46919
	-10.7	-14.8	-18.6	-22.0	-25.1	-28.1	-31.4	-35.2	-39.4	-43.5	-47.0	-49.5	-50.7	-51.0	-51.2	-52.3	-55.3	-60.8	-68.7
20	34140	34273	34487	34763	35100	35510	36002	36577	37228	37936	38682	39448	40220	40980	41705	42364	42917	43321	43534
	-13.2	-17.9	-22.0	-25.5	-28.3	-30.7	-33.1	-35.8	-39.0	-42.1	-44.6	-46.1	-46.4	-45.6	-44.8	-45.0	-47.4	-52.8	-61.1
15	33420	33476	33586	33732	33917	34155	34460	34839	35287	35792	36336	36907	37494	38086	38665	39203	39665	40009	40195
	-14.1	-18.9	-23.2	-26.7	-29.4	-31.4	-33.3	-35.4	-37.7	-40.1	-41.9	-42.7	-42.2	-40.7	-39.0	-38.3	-40.0	-44.9	-53.2
10	33223	33159	33131	33126	33146	33203	33315	33490	33724	34010	34337	34695	35081	35486	35897	36292	36638	36898	37034
	-14.3	-18.9	-23.0	-26.4	-29.0	-30.8	-32.5	-34.2	-36.2	-38.1	-39.4	-39.8	-38.8	-36.8	-34.6	-33.3	-34.3	-38.4	-46.0
5	33609	33385	33190	33014	32859	32733	32649	32615	32631	32692	32794	32934	33111	33319	33549	33780	33986	34132	34188
	-14.7	-18.8	-22.4	-25.4	-27.7	-29.5	-31.1	-32.8	-34.7	-36.4	-37.5	-37.6	-36.5	-34.4	-32.1	-30.5	-30.8	-34.0	-40.5
0	34634	34224	33842	33483	33146	32835	32555	32313	32109	31946	31825	31747	31715	31724	31763	31814	31853	31853	31787
	-15.9	-19.3	-22.1	-24.5	-26.4	-28.1	-29.8	-31.7	-33.6	-35.3	-36.4	-36.5	-35.5	-33.7	-31.6	-30.0	-30.0	-32.3	-37.4

TOTAL FIELD

LONGITUDE: / LATITUDE	-180	-175	-170	-165	-160	-155	-150	-145	-140	-135	-130	-125	-120	-115	-110	-105	-100	-95	-90
0	34634	34224	33842	33483	33146	32835	32555	32313	32109	31946	31825	31747	31715	31724	31763	31814	31853	31853	31787
	-15.9	-19.3	-22.1	-24.5	-26.4	-28.1	-29.8	-31.7	-33.6	-35.3	-36.4	-36.5	-35.5	-33.7	-31.6	-30.0	-30.0	-32.3	-37.4
-5	36306	35704	35130	34584	34064	33569	33098	32652	32236	31854	31517	31229	30992	30803	30646	30504	30353	30172	29943
	-18.0	-20.7	-22.7	-24.2	-25.6	-27.2	-29.0	-31.1	-33.3	-35.2	-36.4	-36.7	-36.0	-34.6	-33.0	-31.7	-31.6	-33.1	-36.8
-10	38547	37766	37012	36288	35594	34924	34273	33638	33024	32441	31901	31414	30982	30597	30243	29898	29541	29154	28725
	-20.9	-23.1	-24.3	-25.2	-26.0	-27.3	-29.1	-31.3	-33.8	-35.9	-37.4	-38.1	-37.9	-37.1	-36.0	-35.2	-35.1	-36.0	-38.4
-15	41205	40273	39362	38482	37633	36809	35999	35201	34418	33660	32942	32274	31657	31082	30531	29979	29406	28796	28145
	-24.7	-26.5	-27.2	-27.4	-27.7	-28.5	-30.1	-32.4	-35.0	-37.4	-39.4	-40.6	-41.0	-40.9	-40.5	-40.1	-40.0	-40.5	-41.8
-20	44089	43040	42007	41003	40030	39082	38149	37226	36313	35418	34553	33727	32939	32181	31433	30672	29878	29038	28156
	-29.1	-30.7	-31.1	-30.8	-30.4	-30.7	-31.9	-33.9	-36.5	-39.3	-41.8	-43.8	-45.1	-45.8	-46.1	-46.2	-46.2	-46.3	-46.5
-25	47021	45895	44779	43690	42631	41600	40586	39582	38584	37594	36618	35660	34719	33786	32843	31872	30855	29787	28676
	-33.9	-35.3	-35.4	-34.6	-33.7	-33.3	-34.0	-35.7	-38.3	-41.4	-44.6	-47.5	-49.9	-51.7	-52.8	-53.4	-53.6	-53.4	-52.8
-30	49876	48712	47556	46424	45323	44251	43199	42156	41114	40066	39012	37949	36873	35776	34646	33468	32236	30950	29627
	-38.1	-39.4	-39.3	-38.2	-36.8	-35.9	-36.1	-37.5	-40.1	-43.6	-47.6	-51.6	-55.2	-58.2	-60.4	-61.8	-62.2	-61.8	-60.7
-35	52594	51433	50277	49143	48039	46965	45909	44860	43803	42725	41617	40471	39281	38038	36736	35371	33944	32466	30961
	-41.0	-42.4	-42.2	-41.0	-39.5	-38.4	-38.3	-39.6	-42.3	-46.3	-51.0	-56.1	-61.0	-65.2	-68.6	-70.7	-71.7	-71.3	-69.8
-40	55166	54043	52923	51823	50748	49698	48663	47626	46570	45477	44331	43121	41838	40476	39035	37519	35938	34313	32674
	-42.2	-43.8	-43.9	-42.9	-41.6	-40.7	-40.8	-42.3	-45.3	-49.7	-55.1	-61.0	-66.9	-72.3	-76.6	-79.6	-81.1	-81.0	-79.4
-45	57597	56540	55485	54443	53419	52410	51406	50389	49340	48238	47066	45811	44463	43021	41489	39877	38203	36495	34787
	-41.9	-43.9	-44.5	-44.2	-43.7	-43.4	-44.0	-46.0	-49.4	-54.1	-60.0	-66.4	-72.9	-78.9	-83.8	-87.4	-89.3	-89.5	-88.0
-50	59862	58894	57922	56955	55993	55033	54063	53068	52028	50925	49742	48466	47092	45619	44056	42417	40725	39010	37306
	-40.9	-43.4	-44.8	-45.5	-46.0	-46.7	-48.2	-50.8	-54.6	-59.6	-65.5	-71.9	-78.4	-84.4	-89.5	-93.2	-95.3	-95.8	-94.5
-55	61872	61011	60136	59252	58360	57454	56524	55556	54535	53445	52274	51012	49657	48211	46684	45093	43460	41813	40183
	-40.5	-43.5	-45.7	-47.5	-49.1	-50.9	-53.2	-56.4	-60.5	-65.4	-71.0	-77.0	-82.9	-88.4	-93.0	-96.5	-98.5	-99.0	-98.1
-60	63477	62735	61967	61176	60362	59519	58640	57714	56732	55683	54558	53354	52069	50709	49284	47809	46304	44792	43298
	-41.8	-45.1	-47.9	-50.5	-53.0	-55.7	-58.7	-62.2	-66.3	-70.8	-75.8	-80.9	-85.9	-90.4	-94.2	-97.1	-98.8	-99.3	-98.7
-65	64484	63872	63222	62535	61812	61050	60244	59388	58477	57506	56471	55371	54208	52988	51720	50417	49093	47767	46456
	-45.4	-48.6	-51.7	-54.7	-57.6	-60.7	-63.9	-67.4	-71.1	-75.0	-79.1	-83.1	-86.9	-90.4	-93.2	-95.4	-96.7	-97.2	-96.8
-70	64710	64235	63712	63144	62533	61876	61174	60423	59623	58773	57872	56923	55928	54892	53824	52733	51629	50523	49429
	-51.2	-54.0	-56.8	-59.6	-62.4	-65.3	-68.3	-71.3	-74.4	-77.5	-80.5	-83.5	-86.2	-88.6	-90.6	-92.1	-93.1	-93.5	-93.4
-75	64026	63687	63300	62867	62388	61866	61301	60694	60046	59359	58635	57876	57086	56270	55433	54581	53721	52861	52009
	-58.2	-60.3	-62.4	-64.7	-66.9	-69.2	-71.5	-73.8	-76.0	-78.2	-80.3	-82.3	-84.1	-85.6	-87.0	-88.0	-88.7	-89.1	-89.3
-80	62388	62180	61930	61641	61314	60952	60555	60126	59668	59181	58670	58135	57581	57011	56429	55838	55243	54648	54057
	-65.4	-66.6	-68.0	-69.4	-70.8	-72.2	-73.7	-75.1	-76.5	-77.8	-79.1	-80.2	-81.3	-82.2	-83.1	-83.8	-84.3	-84.7	-85.0
-85	59851	59757	59638	59496	59332	59147	58942	58719	58479	58224	57955	57674	57384	57085	56781	56472	56162	55852	55545
	-71.7	-72.2	-72.7	-73.3	-73.9	-74.6	-75.2	-75.8	-76.4	-77.0	-77.6	-78.1	-78.6	-79.1	-79.5	-79.9	-80.2	-80.5	-80.8
-90	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547
	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5

TOTAL FIELD

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
90	56353	56338	56324	56310	56296	56284	56272	56261	56251	56242	56235	56229	56224	56221	56219	56219	56220	56223	56228
	-32.4	-32.3	-32.2	-32.1	-32.0	-31.9	-31.8	-31.7	-31.6	-31.6	-31.5	-31.5	-31.4	-31.4	-31.4	-31.4	-31.4	-31.5	-31.5
85	56387	56314	56238	56159	56079	55999	55919	55841	55766	55696	55632	55574	55524	55484	55453	55433	55424	55428	55443
	-29.9	-29.3	-28.8	-28.2	-27.6	-27.1	-26.6	-26.1	-25.6	-25.2	-24.8	-24.4	-24.1	-23.9	-23.7	-23.7	-23.6	-23.7	-23.8
80	56967	56821	56657	56478	56288	56089	55885	55679	55477	55282	55098	54927	54775	54644	54536	54454	54401	54377	54384
	-27.8	-26.9	-25.9	-24.8	-23.6	-22.4	-21.2	-19.9	-18.7	-17.5	-16.4	-15.4	-14.4	-13.7	-13.1	-12.6	-12.4	-12.3	-12.4
75	57989	57771	57512	57218	56895	56551	56193	55829	55466	55113	54776	54462	54177	53927	53717	53549	53428	53355	53334
	-29.0	-27.9	-26.6	-25.0	-23.3	-21.3	-19.2	-17.0	-14.7	-12.5	-10.3	-8.3	-6.4	-4.8	-3.4	-2.4	-1.6	-1.2	-1.1
70	59174	58890	58537	58124	57662	57161	56635	56096	55559	55034	54534	54068	53645	53272	52955	52699	52507	52381	52324
	-34.1	-33.1	-31.7	-29.8	-27.4	-24.7	-21.7	-18.4	-15.0	-11.5	-8.0	-4.7	-1.6	1.1	3.4	5.3	6.7	7.7	8.2
65	60193	59864	59432	58910	58312	57656	56962	56249	55537	54843	54186	53577	53028	52547	52141	51813	51567	51403	51322
	-42.5	-41.8	-40.5	-38.5	-35.8	-32.5	-28.6	-24.3	-19.6	-14.8	-9.9	-5.2	-0.7	3.3	6.8	9.7	12.0	13.5	14.5
60	60757	60412	59926	59315	58599	57801	56948	56070	55194	54346	53549	52819	52171	51611	51147	50779	50509	50335	50257
	-52.7	-52.5	-51.6	-49.7	-46.9	-43.3	-38.7	-33.5	-27.6	-21.5	-15.2	-9.0	-3.1	2.3	7.0	11.0	14.2	16.6	18.2
55	60664	60334	59826	59154	58342	57421	56429	55403	54383	53404	52495	51677	50964	50363	49878	49508	49249	49099	49053
	-62.8	-63.4	-63.2	-61.8	-59.3	-55.5	-50.5	-44.5	-37.6	-30.2	-22.6	-15.0	-7.7	-1.0	5.0	10.2	14.4	17.7	20.0
50	59822	59537	59035	58330	57449	56431	55323	54175	53039	51959	50973	50105	49367	48766	48298	47960	47745	47647	47658
	-71.3	-73.0	-73.7	-73.2	-71.2	-67.7	-62.5	-55.8	-48.1	-39.6	-30.7	-21.9	-13.4	-5.5	1.7	8.0	13.3	17.6	20.7
45	58247	58023	57548	56835	55913	54827	53633	52396	51178	50035	49011	48131	47407	46839	46421	46142	45992	45963	46045
	-77.1	-80.0	-82.1	-82.9	-81.8	-78.7	-73.5	-66.4	-57.9	-48.5	-38.7	-28.8	-19.3	-10.4	-2.1	5.2	11.6	16.9	21.0
40	56030	55870	55434	54733	53798	52676	51434	50146	48885	47717	46690	45832	45151	44643	44293	44087	44012	44058	44212
	-79.5	-84.0	-87.8	-90.1	-90.3	-88.0	-83.0	-75.8	-66.8	-56.6	-46.0	-35.3	-25.0	-15.2	-6.0	2.3	9.7	15.9	20.9
35	53306	53201	52810	52138	51217	50096	48845	47546	46282	45123	44123	43309	42687	42248	41973	41843	41844	41961	42182
	-78.6	-84.9	-90.6	-94.8	-96.5	-95.3	-90.9	-83.7	-74.3	-63.7	-52.4	-41.1	-30.0	-19.5	-9.6	-0.5	7.6	14.6	20.2
30	50221	50160	49814	49187	48306	47221	46001	44731	43497	42375	41421	40663	40106	39737	39534	39478	39549	39731	40010
	-74.8	-82.8	-90.6	-96.8	-100.4	-100.5	-96.9	-90.1	-80.7	-69.6	-57.8	-45.8	-34.1	-23.0	-12.5	-2.9	5.7	13.0	18.8
25	46919	46889	46589	46020	45203	44184	43030	41822	40648	39585	38690	37996	37506	37207	37077	37092	37231	37474	37804
	-68.7	-78.1	-87.9	-96.2	-101.7	-103.4	-101.0	-94.7	-85.4	-74.1	-61.7	-49.0	-36.6	-24.8	-13.9	-4.1	4.4	11.4	16.8
20	43534	43523	43268	42765	42029	41100	40037	38917	37827	36842	36025	35407	34998	34783	34737	34832	35043	35347	35724
	-61.1	-71.6	-82.9	-93.1	-100.4	-103.8	-102.6	-97.1	-88.0	-76.3	-63.2	-49.6	-36.4	-24.0	-13.0	-3.5	4.4	10.5	14.8
15	40195	40191	39973	39535	38886	38058	37102	36092	35107	34226	33511	32999	32700	32598	32663	32859	33156	33529	33956
	-53.2	-64.1	-76.2	-87.7	-96.5	-101.3	-101.3	-96.4	-87.5	-75.4	-61.4	-46.8	-32.8	-20.0	-9.2	-0.5	6.0	10.6	13.4
10	37034	37016	36819	36433	35863	35135	34294	33407	32551	31804	31228	30862	30713	30761	30969	31292	31694	32148	32637
	-46.0	-56.5	-68.7	-80.5	-90.1	-95.7	-96.5	-92.2	-83.2	-70.6	-55.7	-40.3	-25.6	-13.0	-2.9	4.4	9.1	11.8	12.6
5	34188	34123	33915	33555	33044	32404	31677	30926	30222	29640	29240	29054	29087	29311	29680	30145	30665	31216	31783
	-40.5	-49.9	-61.1	-72.4	-81.8	-87.5	-88.5	-84.2	-75.0	-61.9	-46.5	-30.7	-16.2	-4.3	4.4	9.8	12.5	13.0	11.7
0	31787	31632	31371	30997	30513	29942	29323	28713	28179	27785	27582	27592	27811	28205	28726	29323	29959	30612	31269
	-37.4	-45.1	-54.6	-64.3	-72.5	-77.5	-78.0	-73.4	-64.0	-50.7	-35.4	-20.0	-6.5	3.8	10.5	13.8	14.4	12.8	9.4

TOTAL FIELD

LONGITUDE: / LATITUDE	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
0	31787	31632	31371	30997	30513	29942	29323	28713	28179	27785	27582	27592	27811	28205	28726	29323	29959	30612	31269
	-37.4	-45.1	-54.6	-64.3	-72.5	-77.5	-78.0	-73.4	-64.0	-50.7	-35.4	-20.0	-6.5	3.8	10.5	13.8	14.4	12.8	9.4
-5	29943	29650	29287	28853	28359	27829	27304	26834	26473	26272	26262	26452	26828	27354	27985	28681	29409	30150	30888
	-36.8	-42.5	-49.7	-57.2	-63.5	-67.0	-66.5	-61.3	-51.7	-38.9	-24.5	-10.6	0.9	9.0	13.4	14.5	12.9	9.4	4.1
-10	28725	28252	27739	27200	26655	26137	25682	25335	25133	25105	25260	25591	26072	26673	27360	28102	28876	29666	30448
	-38.4	-42.2	-46.9	-51.8	-55.7	-57.3	-55.5	-49.8	-40.5	-28.7	-16.2	-4.7	4.2	9.7	11.7	10.6	7.2	1.8	-5.1
-15	28145	27462	26765	26083	25451	24909	24493	24238	24163	24270	24546	24966	25499	26119	26802	27533	28296	29074	29838
	-41.8	-43.7	-46.2	-48.5	-50.0	-49.6	-46.6	-40.6	-32.0	-22.0	-11.9	-3.3	2.7	5.4	5.0	1.9	-3.4	-10.3	-18.6
-20	28156	27249	26351	25504	24758	24159	23746	23541	23545	23739	24086	24547	25086	25680	26314	26981	27673	28372	29046
	-46.5	-47.0	-47.4	-47.6	-46.9	-44.8	-40.8	-34.8	-27.4	-19.4	-12.0	-6.5	-3.6	-3.6	-6.4	-11.6	-18.5	-26.6	-35.6
-25	28676	27550	26452	25436	24561	23880	23433	23231	23262	23488	23857	24317	24828	25364	25917	26481	27053	27618	28147
	-52.8	-52.0	-50.8	-49.0	-46.6	-43.1	-38.5	-32.9	-26.7	-20.9	-16.3	-13.8	-13.9	-16.6	-21.7	-28.7	-37.0	-46.0	-55.2
-30	29627	28300	27020	25848	24846	24071	23558	23315	23319	23521	23862	24281	24734	25191	25642	26082	26509	26911	27271
	-60.7	-58.8	-56.3	-53.1	-49.3	-44.8	-39.8	-34.7	-29.9	-26.1	-24.1	-24.3	-27.1	-32.2	-39.4	-48.0	-57.3	-66.7	-75.3
-35	30961	29468	28041	26740	25628	24757	24158	23834	23760	23885	24146	24482	24846	25204	25541	25851	26133	26381	26590
	-69.8	-67.2	-63.7	-59.5	-54.6	-49.5	-44.4	-39.8	-36.2	-34.3	-34.4	-36.9	-41.8	-48.9	-57.7	-67.4	-77.2	-86.3	-93.9
-40	32674	31065	29537	28147	26951	25993	25298	24866	24672	24671	24805	25016	25258	25497	25714	25902	26060	26191	26300
	-79.4	-76.4	-72.3	-67.4	-62.0	-56.6	-51.6	-47.5	-44.9	-44.3	-46.0	-50.2	-56.6	-64.9	-74.4	-84.4	-94.0	-102.3	-108.1
-45	34787	33122	31549	30116	28868	27841	27052	26499	26162	26002	25972	26026	26120	26225	26322	26403	26471	26533	26604
	-88.0	-85.0	-80.8	-75.7	-70.2	-64.8	-60.1	-56.6	-54.8	-55.1	-57.6	-62.5	-69.5	-78.0	-87.4	-96.8	-105.4	-112.1	-116.1
-50	37306	35652	34091	32661	31398	30327	29459	28791	28309	27983	27780	27662	27600	27568	27552	27546	27555	27590	27671
	-94.5	-91.8	-87.8	-83.0	-77.9	-72.9	-68.7	-65.7	-64.4	-65.1	-67.8	-72.6	-79.0	-86.7	-95.0	-103.0	-109.9	-114.8	-117.0
-55	40183	38605	37110	35729	34488	33404	32484	31728	31123	30652	30292	30020	29815	29661	29548	29476	29449	29480	29587
	-98.1	-95.8	-92.4	-88.3	-83.9	-79.8	-76.2	-73.8	-72.7	-73.3	-75.6	-79.5	-84.8	-90.9	-97.3	-103.3	-108.2	-111.4	-112.3
-60	43298	41848	40468	39179	37998	36939	36007	35202	34518	33946	33472	33084	32772	32526	32342	32223	32174	32205	32331
	-98.7	-96.9	-94.4	-91.2	-87.8	-84.6	-81.9	-79.9	-79.0	-79.3	-80.9	-83.6	-87.2	-91.3	-95.6	-99.6	-102.7	-104.5	-104.7
-65	46456	45179	43954	42795	41716	40725	39829	39027	38321	37705	37175	36726	36355	36057	35834	35689	35626	35654	35782
	-96.8	-95.7	-94.0	-91.9	-89.6	-87.3	-85.4	-84.0	-83.2	-83.2	-84.0	-85.5	-87.5	-89.9	-92.3	-94.5	-96.1	-97.0	-96.9
-70	49429	48358	47323	46332	45396	44522	43713	42975	42308	41714	41192	40742	40365	40062	39834	39684	39618	39640	39757
	-93.4	-92.9	-91.9	-90.7	-89.4	-88.1	-86.9	-86.0	-85.4	-85.2	-85.4	-86.0	-86.8	-87.8	-88.9	-89.8	-90.5	-90.7	-90.5
-75	52009	51171	50355	49568	48816	48105	47440	46823	46259	45750	45299	44907	44578	44312	44113	43984	43928	43947	44045
	-89.3	-89.2	-88.9	-88.4	-87.8	-87.2	-86.6	-86.1	-85.8	-85.5	-85.4	-85.5	-85.7	-85.9	-86.1	-86.3	-86.3	-86.2	-85.9
-80	54057	53476	52908	52357	51828	51325	50850	50408	50002	49633	49306	49022	48784	48593	48453	48364	48328	48347	48423
	-85.0	-85.2	-85.2	-85.2	-85.1	-85.0	-84.8	-84.6	-84.5	-84.3	-84.2	-84.0	-83.9	-83.8	-83.7	-83.5	-83.3	-83.1	-82.7
-85	55545	55243	54948	54662	54387	54125	53879	53650	53439	53249	53081	52936	52816	52722	52655	52615	52603	52620	52665
	-80.8	-81.0	-81.1	-81.3	-81.4	-81.4	-81.5	-81.5	-81.4	-81.4	-81.3	-81.2	-81.1	-81.0	-80.8	-80.6	-80.4	-80.2	-79.9
-90	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547
	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5

TOTAL FIELD

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
90	56228	56234	56242	56251	56262	56274	56287	56301	56316	56332	56349	56365	56383	56400	56417	56434	56451	56468	56483
	-31.5	-31.6	-31.6	-31.7	-31.8	-31.9	-32.0	-32.1	-32.2	-32.3	-32.5	-32.6	-32.7	-32.9	-33.0	-33.2	-33.3	-33.4	-33.6
85	55443	55470	55509	55560	55622	55695	55777	55868	55965	56069	56177	56288	56400	56511	56621	56726	56826	56920	57006
	-23.8	-24.1	-24.3	-24.7	-25.1	-25.6	-26.1	-26.7	-27.4	-28.0	-28.8	-29.5	-30.2	-31.0	-31.8	-32.5	-33.2	-34.0	-34.6
80	54384	54422	54492	54592	54723	54883	55069	55279	55511	55760	56022	56293	56568	56842	57108	57363	57601	57817	58008
	-12.4	-12.6	-13.1	-13.7	-14.5	-15.3	-16.3	-17.5	-18.6	-19.9	-21.3	-22.6	-24.0	-25.5	-26.9	-28.4	-29.8	-31.2	-32.6
75	53334	53364	53446	53581	53768	54004	54288	54615	54983	55385	55814	56263	56723	57184	57635	58066	58467	58827	59136
	-1.1	-1.3	-1.7	-2.4	-3.4	-4.5	-5.7	-7.1	-8.6	-10.2	-11.8	-13.5	-15.2	-17.0	-18.8	-20.6	-22.5	-24.3	-26.1
70	52324	52337	52420	52573	52796	53087	53444	53864	54343	54875	55452	56065	56700	57343	57979	58590	59159	59667	60099
	8.2	8.2	7.8	7.2	6.2	5.1	3.8	2.3	0.9	-0.7	-2.2	-3.8	-5.4	-7.1	-8.8	-10.6	-12.4	-14.3	-16.3
65	51322	51325	51410	51576	51823	52148	52552	53031	53584	54205	54888	55623	56395	57189	57981	58750	59468	60111	60654
	14.5	14.9	14.8	14.2	13.3	12.2	11.0	9.7	8.4	7.1	5.8	4.6	3.3	2.1	0.8	-0.6	-2.0	-3.6	-5.3
60	50257	50270	50373	50561	50832	51183	51613	52122	52709	53374	54111	54914	55769	56659	57559	58441	59271	60016	60643
	18.2	19.0	19.2	18.8	18.0	17.0	15.8	14.5	13.3	12.2	11.1	10.2	9.4	8.6	7.8	7.1	6.2	5.3	4.2
55	49053	49104	49247	49474	49778	50155	50603	51123	51715	52383	53126	53943	54822	55748	56695	57632	58522	59324	59998
	20.0	21.3	21.9	21.8	21.1	20.0	18.7	17.3	15.9	14.6	13.5	12.5	11.8	11.2	10.9	10.7	10.5	10.4	10.3
50	47658	47769	47970	48250	48598	49007	49471	49992	50573	51218	51934	52722	53575	54480	55414	56347	57239	58048	58727
	20.7	22.8	23.9	24.0	23.4	22.3	20.7	18.8	16.9	15.0	13.3	11.8	10.7	10.0	9.7	9.8	10.3	11.1	12.2
45	46045	46226	46493	46832	47228	47670	48152	48672	49236	49849	50520	51253	52045	52888	53761	54637	55479	56246	56891
	21.0	23.9	25.5	26.0	25.5	24.2	22.2	19.8	17.0	14.2	11.4	9.0	7.0	5.7	5.2	5.5	6.5	8.2	10.3
40	44212	44462	44791	45183	45621	46091	46588	47108	47657	48239	48864	49534	50250	51006	51786	52568	53321	54008	54586
	20.9	24.5	26.6	27.5	27.1	25.7	23.4	20.3	16.8	12.9	8.9	5.3	2.3	0.2	-0.7	-0.4	1.0	3.4	6.6
35	42182	42491	42871	43302	43768	44256	44760	45279	45815	46373	46957	47570	48211	48875	49550	50221	50865	51450	51941
	20.2	24.3	26.8	27.9	27.7	26.2	23.7	20.2	16.0	11.3	6.5	1.9	-2.0	-4.7	-6.0	-5.8	-4.1	-1.1	2.9
30	40010	40367	40783	41237	41715	42206	42706	43216	43738	44276	44829	45396	45974	46557	47137	47703	48239	48723	49126
	18.8	23.0	25.6	26.7	26.4	25.0	22.4	18.9	14.5	9.6	4.3	-0.7	-4.9	-7.9	-9.2	-8.9	-7.0	-3.6	0.7
25	37804	38199	38639	39103	39577	40054	40534	41022	41523	42038	42565	43099	43633	44161	44674	45164	45619	46023	46355
	16.8	20.6	22.8	23.5	23.0	21.5	19.0	15.7	11.7	7.2	2.4	-2.2	-6.0	-8.6	-9.8	-9.2	-7.1	-3.8	0.6
20	35724	36152	36609	37074	37533	37981	38423	38869	39330	39811	40312	40827	41345	41855	42346	42809	43232	43599	43892
	14.8	17.5	18.7	18.6	17.4	15.5	13.1	10.2	7.1	3.8	0.4	-2.8	-5.5	-7.3	-7.8	-7.1	-5.1	-2.0	1.9
15	33956	34418	34892	35357	35795	36202	36585	36963	37359	37791	38265	38776	39311	39853	40383	40884	41337	41723	42022
	13.4	14.5	14.1	12.5	10.1	7.3	4.6	2.3	0.5	-1.0	-2.1	-3.1	-3.9	-4.2	-4.1	-3.3	-1.7	0.7	3.8
10	32637	33143	33645	34116	34533	34889	35194	35481	35791	36161	36612	37144	37739	38370	39006	39615	40167	40633	40988
	12.6	11.7	9.4	5.8	1.6	-2.5	-5.9	-7.8	-8.1	-7.0	-5.1	-3.1	-1.3	0.1	1.0	1.7	2.7	4.1	6.1
5	31783	32351	32895	33382	33782	34081	34298	34482	34699	35012	35462	36053	36760	37543	38350	39134	39849	40454	40914
	11.7	8.7	4.2	-1.6	-8.0	-13.8	-17.9	-19.3	-17.8	-13.7	-8.1	-2.4	2.5	5.8	7.5	8.2	8.3	8.7	9.6
0	31269	31911	32507	33015	33397	33638	33769	33859	34004	34296	34790	35493	36372	37365	38402	39417	40347	41139	41747
	9.4	4.3	-2.4	-10.4	-18.7	-26.0	-30.6	-31.2	-27.3	-19.7	-9.9	-0.1	8.0	13.4	16.1	16.7	16.2	15.6	15.3

TOTAL FIELD

LONGITUDE: / LATITUDE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	31269	31911	32507	33015	33397	33638	33769	33859	34004	34296	34790	35493	36372	37365	38402	39417	40347	41139	41747
	9.4	4.3	-2.4	-10.4	-18.7	-26.0	-30.6	-31.2	-27.3	-19.7	-9.9	-0.1	8.0	13.4	16.1	16.7	16.2	15.6	15.3
-5	30888	31597	32235	32752	33106	33291	33351	33382	33507	33840	34446	35329	36439	37694	39005	40289	41472	42488	43286
	4.1	-2.9	-11.4	-21.1	-30.8	-38.7	-42.9	-41.9	-35.1	-23.5	-9.4	4.4	15.7	23.2	26.9	27.6	26.5	24.9	23.6
-10	30448	31187	31830	32325	32634	32765	32784	32810	32989	33444	34241	35371	36763	38318	39931	41507	42965	44232	45250
	-5.1	-13.6	-23.4	-33.9	-43.8	-51.1	-53.7	-50.0	-39.6	-23.9	-5.7	11.6	25.4	34.5	38.9	39.5	38.0	35.6	33.0
-15	29838	30544	31137	31568	31813	31900	31919	32008	32323	32985	34045	35474	37182	39053	40974	42846	44584	46114	47372
	-18.6	-27.9	-38.1	-48.3	-57.0	-62.2	-61.8	-54.3	-39.9	-20.3	1.1	20.7	36.0	45.8	50.2	50.5	48.3	44.9	41.1
-20	29046	29652	30139	30470	30644	30712	30784	31008	31536	32473	33843	35594	37619	39795	42007	44158	46161	47945	49447
	-35.6	-45.1	-54.7	-63.2	-69.2	-70.8	-66.2	-54.4	-35.9	-13.3	9.9	30.3	45.5	54.7	58.5	58.0	54.8	50.4	45.4
-25	28147	28602	28949	29171	29292	29384	29570	29997	30795	32041	33728	35782	38090	40530	42990	45376	47611	49624	51354
	-55.2	-64.0	-71.7	-77.3	-79.4	-76.4	-66.8	-50.6	-28.9	-4.7	18.6	37.9	51.6	59.2	61.4	59.7	55.5	50.0	44.1
-30	27271	27565	27778	27919	28033	28210	28572	29248	30338	31880	33844	36144	38667	41300	43941	46505	48918	51116	53042
	-75.3	-82.6	-87.7	-89.5	-86.9	-78.7	-64.5	-44.6	-21.3	2.7	24.3	41.1	52.1	57.4	57.8	54.7	49.5	43.4	37.1
-35	26590	26755	26882	27004	27181	27505	28086	29022	30377	32159	34321	36776	39423	42163	44905	47574	50102	52431	54507
	-93.9	-99.0	-100.9	-98.6	-91.3	-78.6	-60.8	-39.2	-16.0	6.0	24.5	38.1	46.1	49.0	47.6	43.4	37.6	31.4	25.4
-40	26300	26400	26516	26693	26996	27507	28312	29475	31028	32959	35217	37726	40400	43156	45916	48614	51190	53588	55758
	-108.1	-110.8	-109.6	-103.7	-92.9	-77.4	-58.1	-36.9	-15.7	3.2	18.1	28.3	33.6	34.5	32.0	27.3	21.7	16.0	11.1
-45	26604	26708	26879	27165	27624	28319	29307	30625	32284	34263	36517	38984	41595	44282	46982	49636	52189	54591	56795
	-116.1	-116.5	-112.8	-104.7	-92.3	-76.4	-58.1	-39.1	-21.2	-6.0	5.6	12.9	16.2	16.0	13.2	8.9	4.1	-0.3	-3.8
-50	27671	27823	28081	28486	29083	29913	31011	32395	34064	35998	38160	40503	42975	45521	48089	50628	53090	55429	57600
	-117.0	-115.9	-111.0	-102.5	-90.7	-76.5	-61.0	-45.5	-31.4	-19.8	-11.2	-6.0	-3.8	-4.3	-6.5	-9.7	-13.1	-15.8	-17.4
-55	29587	29794	30128	30620	31298	32190	33312	34673	36268	38079	40079	42233	44501	46842	49213	51570	53873	56078	58148
	-112.3	-110.5	-105.9	-98.5	-88.9	-77.8	-66.0	-54.5	-44.1	-35.6	-29.4	-25.5	-23.8	-23.8	-24.9	-26.6	-28.2	-29.1	-29.1
-60	32331	32571	32942	33465	34157	35034	36102	37365	38817	40443	42225	44136	46148	48227	50340	52452	54526	56529	58426
	-104.7	-103.0	-99.4	-94.1	-87.3	-79.6	-71.5	-63.6	-56.5	-50.6	-46.1	-43.1	-41.4	-40.6	-40.6	-40.7	-40.7	-40.1	-38.9
-65	35782	36023	36389	36889	37535	38333	39287	40395	41652	43048	44567	46192	47901	49670	51471	53279	55064	56799	58457
	-96.9	-95.7	-93.3	-89.9	-85.7	-81.0	-76.0	-71.1	-66.6	-62.7	-59.4	-57.0	-55.1	-53.8	-52.7	-51.7	-50.6	-49.0	-47.1
-70	39757	39976	40301	40740	41296	41972	42768	43683	44710	45842	47068	48375	49747	51167	52616	54074	55521	56935	58298
	-90.5	-89.7	-88.3	-86.5	-84.2	-81.5	-78.7	-75.9	-73.2	-70.7	-68.4	-66.4	-64.6	-63.0	-61.4	-59.9	-58.2	-56.3	-54.3
-75	44045	44225	44490	44842	45281	45808	46421	47118	47894	48742	49657	50628	51645	52696	53770	54852	55930	56989	58018
	-85.9	-85.4	-84.6	-83.6	-82.4	-81.1	-79.6	-78.0	-76.4	-74.8	-73.3	-71.7	-70.2	-68.7	-67.2	-65.7	-64.1	-62.4	-60.7
-80	48423	48555	48746	48994	49299	49660	50075	50542	51057	51616	52215	52847	53508	54189	54885	55587	56289	56982	57660
	-82.7	-82.3	-81.8	-81.2	-80.6	-79.8	-79.0	-78.1	-77.2	-76.3	-75.3	-74.2	-73.2	-72.1	-71.0	-69.9	-68.8	-67.7	-66.6
-85	52665	52740	52842	52973	53131	53315	53524	53756	54010	54283	54574	54880	55198	55526	55860	56198	56536	56872	57203
	-79.9	-79.6	-79.3	-79.0	-78.6	-78.2	-77.8	-77.4	-76.9	-76.4	-75.9	-75.4	-74.9	-74.4	-73.8	-73.3	-72.8	-72.3	-71.8
-90	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547
	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5

TOTAL FIELD

LONGITUDE: LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
90	56483	56498	56512	56525	56537	56548	56558	56566	56574	56579	56584	56587	56589	56590	56589	56587	56584	56580	56574
	-33.6	-33.7	-33.8	-33.9	-34.0	-34.1	-34.2	-34.3	-34.4	-34.4	-34.5	-34.5	-34.5	-34.5	-34.5	-34.5	-34.5	-34.4	-34.4
85	57006	57083	57150	57208	57255	57291	57317	57334	57341	57339	57331	57316	57295	57271	57243	57213	57182	57151	57119
	-34.6	-35.3	-35.9	-36.5	-37.0	-37.4	-37.8	-38.2	-38.4	-38.6	-38.7	-38.8	-38.8	-38.7	-38.6	-38.4	-38.2	-38.0	-37.7
80	58008	58169	58299	58396	58458	58488	58485	58454	58396	58317	58221	58112	57997	57880	57766	57659	57563	57480	57414
	-32.6	-33.9	-35.1	-36.2	-37.2	-38.1	-38.8	-39.4	-39.8	-40.0	-40.1	-40.0	-39.8	-39.4	-39.0	-38.4	-37.8	-37.1	-36.4
75	59136	59388	59577	59698	59750	59734	59655	59518	59332	59106	58851	58580	58305	58038	57789	57569	57386	57246	57152
	-26.1	-27.9	-29.6	-31.2	-32.6	-33.9	-34.9	-35.7	-36.3	-36.6	-36.5	-36.2	-35.7	-34.9	-33.9	-32.8	-31.7	-30.5	-29.5
70	60099	60441	60681	60813	60834	60745	60552	60267	59905	59481	59018	58536	58057	57602	57189	56837	56558	56362	56255
	-16.3	-18.2	-20.2	-22.1	-23.8	-25.4	-26.7	-27.8	-28.5	-28.8	-28.7	-28.2	-27.3	-26.0	-24.5	-22.9	-21.2	-19.6	-18.3
65	60654	61075	61356	61485	61459	61277	60950	60493	59928	59283	58587	57872	57171	56514	55930	55442	55070	54826	54718
	-5.3	-7.1	-8.9	-10.8	-12.6	-14.3	-15.7	-17.0	-17.8	-18.2	-18.1	-17.5	-16.4	-14.9	-13.0	-10.9	-8.8	-7.0	-5.5
60	60643	61121	61427	61542	61459	61177	60710	60077	59308	58440	57512	56569	55653	54804	54060	53449	52995	52713	52611
	4.2	3.1	1.8	0.4	-1.1	-2.5	-3.9	-5.1	-6.1	-6.6	-6.7	-6.2	-5.2	-3.6	-1.6	0.6	2.7	4.6	6.0
55	59998	60507	60818	60908	60765	60388	59790	58995	58041	56971	55837	54692	53588	52576	51697	50986	50468	50159	50066
	10.3	10.1	9.8	9.4	8.7	7.9	6.9	5.9	5.0	4.3	3.9	4.0	4.6	5.8	7.4	9.3	11.2	12.8	13.8
50	58727	59235	59533	59592	59394	58936	58230	57303	56197	54964	53665	52360	51113	49977	49002	48222	47664	47341	47258
	12.2	13.2	14.2	15.0	15.6	15.7	15.5	14.9	14.1	13.2	12.3	11.8	11.7	12.1	12.9	14.0	15.2	16.2	16.5
45	56891	57368	57637	57661	57419	56903	56122	55103	53893	52548	51135	49725	48386	47177	46150	45340	44770	44450	44379
	10.3	12.8	15.2	17.5	19.4	20.7	21.3	21.2	20.6	19.4	18.1	16.7	15.7	15.0	14.7	14.7	14.8	14.8	14.3
40	54586	55010	55237	55228	54956	54408	53589	52526	51264	49865	48401	46946	45573	44346	43315	42515	41964	41667	41616
	6.6	10.2	14.0	17.6	20.7	23.1	24.5	24.9	24.3	23.0	21.1	19.0	16.9	15.0	13.5	12.2	11.1	9.9	8.4
35	51941	52298	52478	52440	52153	51600	50781	49720	48463	47071	45618	44182	42836	41644	40657	39905	39404	39149	39125
	2.9	7.4	12.2	16.7	20.7	23.7	25.6	26.2	25.7	24.1	21.8	19.0	16.1	13.3	10.7	8.3	5.9	3.6	1.1
30	49126	49414	49547	49486	49197	48661	47876	46861	45661	44334	42954	41595	40330	39221	38316	37642	37209	37008	37014
	0.7	5.7	10.9	15.8	20.0	23.2	25.2	25.8	25.1	23.4	20.8	17.6	14.3	10.9	7.6	4.4	1.1	-2.3	-5.8
25	46355	46585	46678	46601	46322	45821	45094	44161	43060	41847	40589	39355	38212	37217	36415	35831	35469	35317	35344
	0.6	5.5	10.5	15.2	19.2	22.1	23.7	24.1	23.3	21.4	18.7	15.6	12.2	8.8	5.2	1.5	-2.4	-6.5	-10.7
20	43892	44086	44155	44069	43805	43347	42695	41865	40893	39826	38720	37637	36635	35764	35063	34557	34247	34119	34140
	1.9	6.3	10.7	14.8	18.1	20.4	21.5	21.6	20.6	18.8	16.4	13.5	10.4	7.1	3.7	0.0	-4.1	-8.6	-13.2
15	42022	42212	42272	42185	41936	41522	40948	40230	39396	38485	37540	36609	35741	34979	34356	33893	33596	33448	33420
	3.8	7.3	10.9	14.2	16.7	18.3	19.0	18.7	17.7	16.1	14.1	11.7	9.1	6.1	2.9	-0.8	-4.8	-9.3	-14.1
10	40988	41209	41282	41200	40966	40589	40085	39471	38769	38003	37203	36405	35644	34956	34370	33907	33570	33350	33223
	6.1	8.6	11.3	13.7	15.4	16.3	16.3	15.7	14.7	13.5	12.0	10.2	8.0	5.3	2.2	-1.3	-5.3	-9.7	-14.3
5	40914	41203	41312	41247	41028	40681	40234	39707	39115	38471	37789	37089	36399	35746	35155	34645	34222	33881	33609
	9.6	11.0	12.7	14.1	14.8	14.8	14.0	13.0	11.9	10.9	10.0	8.7	7.0	4.5	1.4	-2.3	-6.3	-10.5	-14.7
0	41747	42144	42321	42294	42100	41783	41382	40924	40419	39868	39271	38638	37984	37333	36705	36115	35574	35081	34634
	15.3	15.6	16.1	16.2	15.5	14.1	12.1	10.2	8.8	7.9	7.4	6.7	5.4	3.2	0.0	-3.9	-8.1	-12.2	-15.9

TOTAL FIELD

LONGITUDE: / LATITUDE	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180
0	41747	42144	42321	42294	42100	41783	41382	40924	40419	39868	39271	38638	37984	37333	36705	36115	35574	35081	34634
	15.3	15.6	16.1	16.2	15.5	14.1	12.1	10.2	8.8	7.9	7.4	6.7	5.4	3.2	0.0	-3.9	-8.1	-12.2	-15.9
-5	43286	43830	44113	44158	44014	43738	43384	42983	42544	42062	41525	40933	40294	39623	38940	38258	37587	36935	36306
	23.6	22.6	21.5	19.9	17.4	14.1	10.5	7.4	5.2	4.2	4.0	3.8	3.0	1.0	-2.1	-6.2	-10.5	-14.6	-18.0
-10	45250	45980	46411	46571	46512	46304	46008	45663	45278	44847	44353	43786	43149	42452	41710	40937	40145	39344	38547
	33.0	30.5	27.7	24.1	19.5	14.2	8.8	4.3	1.2	-0.2	-0.4	-0.2	-0.5	-2.1	-5.1	-9.2	-13.6	-17.7	-20.9
-15	47372	48317	48936	49252	49321	49214	48996	48711	48377	47985	47520	46969	46328	45605	44812	43962	43068	42143	41205
	41.1	37.1	32.6	27.2	20.7	13.7	6.8	1.0	-2.9	-4.8	-5.1	-4.8	-4.8	-6.2	-9.0	-13.0	-17.5	-21.6	-24.7
-20	49447	50623	51456	51964	52197	52221	52103	51890	51604	51244	50799	50255	49609	48865	48032	47123	46151	45133	44089
	45.4	40.1	34.2	27.6	20.1	12.1	4.5	-1.9	-6.3	-8.5	-9.2	-9.0	-9.2	-10.6	-13.4	-17.5	-22.0	-26.1	-29.1
-25	51354	52757	53813	54531	54952	55132	55132	55001	54765	54432	53999	53457	52804	52044	51184	50236	49214	48135	47021
	44.1	38.1	31.6	24.7	17.2	9.5	2.3	-3.8	-8.1	-10.6	-11.7	-12.1	-12.8	-14.7	-17.8	-22.1	-26.7	-30.9	-33.9
-30	53042	54651	55919	56848	57463	57811	57941	57900	57718	57413	56989	56446	55788	55018	54143	53176	52130	51023	49876
	37.1	31.0	24.9	18.8	12.5	6.2	0.4	-4.5	-8.1	-10.5	-12.0	-13.1	-14.8	-17.5	-21.3	-26.0	-30.9	-35.1	-38.1
-35	54507	56285	57738	58858	59660	60173	60439	60495	60376	60105	59695	59157	58499	57727	56853	55887	54843	53738	52594
	25.4	20.0	15.2	10.8	6.6	2.6	-1.0	-4.1	-6.5	-8.5	-10.2	-12.2	-14.8	-18.5	-23.2	-28.4	-33.6	-38.0	-41.0
-40	55758	57657	59254	60533	61498	62166	62564	62726	62682	62459	62080	61562	60918	60162	59306	58363	57347	56275	55166
	11.1	7.1	4.1	1.9	0.2	-1.1	-2.2	-3.2	-4.3	-5.6	-7.4	-9.9	-13.4	-17.9	-23.3	-29.0	-34.5	-39.0	-42.2
-45	56795	58758	60448	61844	62939	63740	64264	64536	64583	64432	64109	63636	63033	62318	61506	60612	59651	58640	57597
	-3.8	-5.9	-6.9	-6.9	-6.1	-5.0	-3.9	-3.1	-2.8	-3.4	-4.9	-7.7	-11.6	-16.5	-22.2	-28.1	-33.7	-38.5	-41.9
-50	57600	59564	61289	62749	63933	64839	65475	65858	66009	65955	65719	65327	64801	64161	63425	62612	61736	60814	59862
	-17.4	-17.8	-16.9	-15.1	-12.5	-9.7	-7.0	-4.8	-3.5	-3.4	-4.6	-7.1	-10.9	-15.8	-21.3	-27.0	-32.5	-37.2	-40.9
-55	58148	60045	61739	63206	64429	65402	66127	66613	66877	66939	66820	66543	66130	65603	64981	64281	63520	62713	61872
	-29.1	-28.0	-25.9	-22.8	-19.3	-15.5	-12.1	-9.3	-7.4	-6.8	-7.5	-9.5	-12.8	-17.1	-22.0	-27.1	-32.2	-36.7	-40.5
-60	58426	60186	61782	63191	64397	65391	66171	66740	67109	67291	67304	67167	66897	66515	66037	65480	64860	64188	63477
	-38.9	-36.8	-34.0	-30.5	-26.8	-23.0	-19.5	-16.7	-14.8	-13.9	-14.1	-15.6	-18.1	-21.4	-25.4	-29.7	-34.0	-38.1	-41.8
-65	58457	60013	61443	62729	63857	64817	65605	66220	66667	66954	67094	67097	66980	66755	66438	66041	65577	65055	64484
	-47.1	-44.6	-41.7	-38.6	-35.2	-32.0	-29.1	-26.6	-24.9	-24.0	-24.0	-24.9	-26.6	-29.0	-31.9	-35.2	-38.6	-42.1	-45.4
-70	58298	59590	60794	61896	62885	63751	64489	65097	65576	65929	66163	66283	66300	66221	66057	65816	65507	65136	64710
	-54.3	-52.0	-49.5	-47.0	-44.4	-42.0	-39.8	-38.1	-36.8	-36.0	-35.9	-36.4	-37.4	-38.9	-40.9	-43.2	-45.7	-48.4	-51.2
-75	58018	59004	59934	60800	61592	62305	62932	63471	63920	64280	64552	64739	64845	64874	64830	64719	64546	64313	64026
	-60.7	-59.0	-57.2	-55.4	-53.7	-52.2	-50.8	-49.7	-48.9	-48.4	-48.3	-48.5	-49.1	-50.0	-51.2	-52.7	-54.4	-56.2	-58.2
-80	57660	58316	58943	59534	60086	60592	61050	61457	61810	62108	62350	62537	62669	62747	62773	62748	62675	62554	62388
	-66.6	-65.5	-64.5	-63.5	-62.5	-61.7	-61.0	-60.5	-60.1	-59.8	-59.8	-59.9	-60.2	-60.7	-61.4	-62.2	-63.1	-64.2	-65.4
-85	57203	57525	57836	58133	58415	58677	58920	59140	59337	59509	59655	59774	59867	59932	59969	59980	59963	59920	59851
	-71.8	-71.4	-70.9	-70.6	-70.2	-69.9	-69.7	-69.5	-69.4	-69.3	-69.3	-69.4	-69.5	-69.7	-70.0	-70.3	-70.7	-71.2	-71.7
-90	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547	56547
	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5	-76.5

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DISKETTE

The diskette inserted in this Bulletin contains the IGRF and DGRF coefficients (file COEFFS.TXT) and the source file of a fortran program kindly provided by R.T. Baldwin for computing the field elements corresponding to these models (file FIDD.F).

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