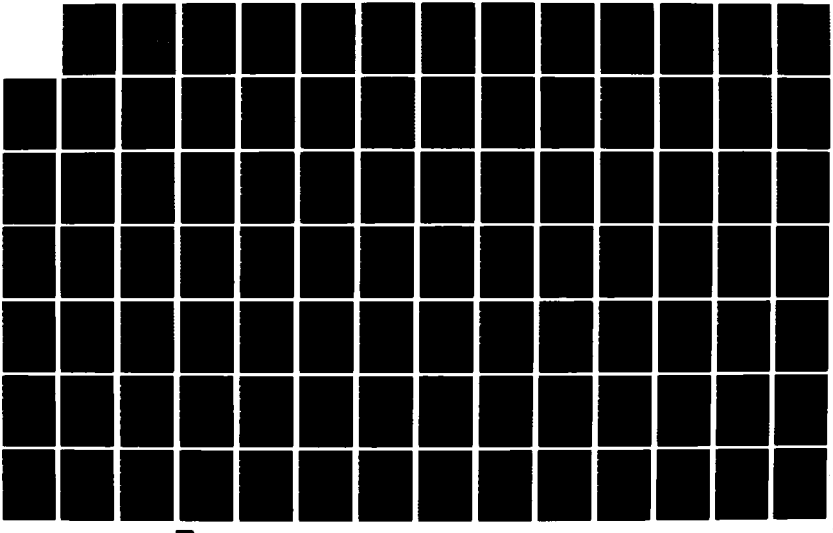

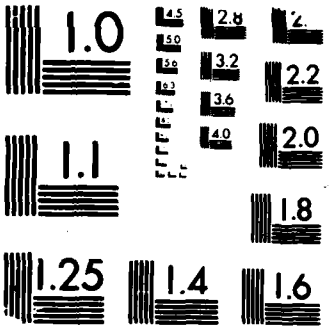

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

Naval Oceanographic Office

Bay St Louis
NSTL,
Mississippi 39522-5001

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DOD 1985 WORLD MAGNETIC MODEL - CHARTS AND GRID VALUES

LANA G. CAGLE
GEOMAGNETICS DIVISION

Approved for public release;
distribution unlimited.

Prepared under the authority of
Commander,
Naval Oceanography Command

Provided in this publication are a list of the 1985 World Chart Magnetic Model (WC-85) coefficients, 5°-grid tables and small-scale charts of main field and annual change values for the northward, eastward, and vertical components, total and horizontal intensities, declination and inclination of the geomagnetic field.

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FIELD	GROUP	SUB-GROUP	1985 World Chart Model (WC-85), WC-85 spherical harmonic coefficients; magnetic-field components; declination; inclination; horizontal intensity; total intensity; secular variation

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ACKNOWLEDGMENT

The author thanks John M. Quinn for his useful notes and discussions on world magnetic modeling.

1.0 GENERAL INFORMATION

1.1 As a result of the combined efforts of the U.S. Naval Oceanographic Office (NAVOCEANO) and the British Geological Survey (BGS), the new Department of Defense (DOD) magnetic model, WC-85, is available. WC-85 has been adopted as the official model by United States and United Kingdom defense establishments, and by the International Hydrographic Bureau. The U.S. models the Earth's main magnetic field; the U.K. models the secular variation or the slow changes in the main field over time. John M. Quinn of NAVOCEANO and David R. Barraclough and David J. Kerridge of BGS coordinated the WC-85 modeling effort.

1.2 The WC-85 model is defined by a set of spherical harmonic coefficients to degree and order 12 which describes the main magnetic field of the Earth at the base epoch of 1985.0 and by a set of spherical harmonic coefficients to degree and order 8 which predicts the slow annual changes of the Earth's main magnetic field for 1985.0 to 1990.0. The main field coefficients at any epoch other than the base epoch are adjusted linearly with time using the secular variation coefficients. The model gives a global description of the northward (X), eastward (Y), and downward vertical (Z) magnetic field components, total and horizontal intensities (F and H), the declination (D) and the inclination (I) of the geomagnetic field for altitudes to 800 km. Because the Earth's magnetic field changes with time, the model is updated every five years. Thus, WC-85 supersedes WC-80 and will be superseded by WC-90.

1.3 The WC-85 main field model is based on magnetic-vector observations from the MAGSAT satellite and from NAVOCEANO's Project MAGNET aircraft surveys. The secular-variation model is based on historical data and annual means of magnetic-vector observations from worldwide magnetic observatories (Quinn et al., 1986).

1.4 The WC-85 model represents a very smooth interpretation of the Earth's main magnetic field and can resolve only core-related features with wavelengths of about 3500 km or longer. Therefore, model values may not be sufficient for some uses in surface and air navigation where declination anomalies and local magnetic features appear (Vega and Jack, 1986).

2.0 EXPLANATION

2.1 The World Magnetic Model describes the geomagnetic potential $V(r, \theta, \phi, t)$ by the following mathematical expression (Quinn, 1986):

$$V(r, \theta, \phi, t) = a \sum_{n=1}^{12} \sum_{m=0}^{n} (r/a)^{n+1} \left\{ g_n^m(t) \cos m\phi + h_n^m(t) \sin m\phi \right\} p_n^m(\cos \theta),$$

where in spherical coordinates a is the mean radius of the Earth (6371.2 km), r is the radial distance from the Earth's center, θ is the colatitude, ϕ is the longitude, t is the time, $P_n^m(\cos \theta)$ are the Schmidt quasi-normalized

associated Legendre functions, and g_n^m and h_n^m are the spherical harmonic coefficients. The secular variation of the geomagnetic potential is the time derivative of the above expression truncated to degree and order 8. The northward (X), eastward (Y) and vertically down (Z) components of the magnetic induction $\vec{\beta}(r, \theta, \phi, t) = -\vec{\nabla}V$ are given as follows (Quinn et al., 1986):

$$X = -\beta_\theta = (1/r)\ \partial V/\partial\theta;$$

$$Y = \beta_\phi = -(r \sin\theta)^{-1}\ \partial V/\partial\phi;$$

$$Z = -\beta_r = \partial V/\partial r\ .$$

2.2 The ASCII FORTRAN Subroutine GEOMAG is available that computes the elements of inclination, declination, and total intensity for any geodetic position above the International Astronomical Union (1966) reference ellipsoid and epoch within the 5-year lifespan of the model. In geodetic coordinates D, I, F, and H are related to the X, Y, and Z components of the magnetic induction as follows:

$$D = \tan^{-1}(Y/X) \qquad F = \sqrt{X^2 + Y^2 + Z^2}$$

$$I = \sin^{-1}(Z/F) \qquad H = \sqrt{X^2 + Y^2}\ .$$

The program uses any set of Schmidt normalized spherical harmonic coefficients, not to exceed degree and order 12, such as IGRF-80, DGRF-75, WC-85, and others.

2.3 Tables of grid values of X, Y, Z, D, I, H and F at every 5-degree grid intersection of latitude and longitude for 1985.0 at the Earth's surface are provided. Annual change values (i.e., main field values at the base epoch plus one year minus main field values at the base epoch) are given as the second entry for each point. The D and I values are given in degrees decimal and their rates of annual change in minutes per year. Positive values equal east declination and downward inclination; negative values equal west declination and upward inclination. X, Y, Z, H, and F are in units of nanoteslas for the main field values and nanoteslas per year for the secular variation values. Positive values for Z are taken downward; negative values are taken upward. For example, WC-85 model values at 10°N and 140°E are as follows:

	Main Field	Annual Change
X	37039 nT	1.5 nT yr^{-1}
Y	1092 nT	- 2.5 nT yr^{-1}
Z	2308 nT	-14.3 nT yr^{-1}
D	1.7°	- .2' yr^{-1}
I	3.6°	- 1.3' yr^{-1}
H	37055 nT	1.4 nT yr^{-1}
F	37127 nT	.5 nT yr^{-1}

Small-scale magnetic contour charts of X, Y, Z, D, I, H, and F, and of their corresponding annual changes are also provided. The map projection is Mercator.

2.4 The main field model for 1985 gives the following positions for the magnetic dip-poles at 1985.0 (Quinn et al., 1986):

North dip-pole 77.5°N 102.7°W

South dip-pole 65.2°S 139.2°E

2.5 For more information on the availability of the WC-85 coefficients and GEOMAG subroutine on magnetic tape, write to:

Commanding Officer
U.S. Naval Oceanographic Office
Bay St. Louis
NSTL, MS 39522-5001

Attention: DOD Geomagnetic Data Library

3.0 REFERENCES

Quinn, J.M., "The World Magnetic Model," unpublished document, 1986.

Quinn, J.M., D.J. Kerridge, and D.R. Barraclough, "World Magnetic Charts for 1985 - Spherical Harmonic Models of the Geomagnetic Field and Its Secular Variation," Geophysical Journal of the Royal Astronomical Society, 87, pp. 1143-1157, 1986.

Vega, B.D., and H.C. Jack, Prototype Magnetic-Declination Anomaly Chart," Proceedings of the Marine Data Systems International Symposium, New Orleans, Louisiana, April 30 - May 2, 1986, pp. 347-351.

TABLE 1. SPHERICAL HARMONIC COEFFICIENTS - WC-85.

n	m	MAIN FIELD		SECULAR CHANGE	
		g_n^m	h_n^m	$\dot{g}_n^m$	$\dot{h}_n^m$
1	0	-29879.8	.0	21.9	.0
1	1	-1903.3	5490.5	10.6	-31.5
2	0	-2070.6	.0	-11.2	.0
2	1	3040.8	-2189.1	1.8	-9.7
2	2	1696.7	-312.0	9.3	-19.9
3	0	1303.9	.0	8.3	.0
3	1	-2203.0	-310.3	-2.0	6.1
3	2	1241.7	282.6	-.6	1.3
3	3	839.4	-299.2	2.4	-13.0
4	0	933.8	.0	-1.2	.0
4	1	781.8	227.2	.1	1.3
4	2	359.0	-246.7	-9.7	3.6
4	3	-424.5	72.5	-1.7	2.5
4	4	164.5	-299.1	-9.3	.6
5	0	-216.4	.0	1.4	.0
5	1	353.0	43.4	-.5	-.9
5	2	254.3	148.2	-1.2	.6
5	3	-93.7	-154.8	-2.2	.3
5	4	-157.5	-71.8	.9	2.4
5	5	-45.2	91.5	.0	-1.4
6	0	53.2	.0	3.1	.0
6	1	63.8	-12.3	.0	.7
6	2	51.3	87.9	1.8	-2.1
6	3	-188.4	67.8	-.2	-1.4
6	4	3.3	-51.1	-.4	-4.3
6	5	20.3	-4.0	2.4	-.7
6	6	-101.7	20.8	1.8	.0
7	0	76.9	.0	-.1	.0
7	1	-60.7	-80.1	-.8	.0
7	2	.7	-25.9	-1.2	1.2
7	3	25.4	-.9	1.1	2.0
7	4	-8.1	21.6	.0	2.6
7	5	6.9	18.5	.6	.9
7	6	7.0	-20.0	-1.8	.8
7	7	-4.4	-7.7	-1.2	.4
8	0	18.4	.0	.2	.0
8	1	5.1	3.8	.0	-.6
8	2	1.2	-20.2	.7	-1.5
8	3	-12.0	5.0	.1	.1
8	4	-9.1	-24.2	.2	-1.1
8	5	.1	12.2	-.3	.4
8	6	4.7	7.6	-.1	-2.0
8	7	6.5	-16.3	.2	.9
8	8	-9.5	-10.9	-2.2	1.5

TABLE 1. SPHERICAL HARMONIC COEFFICIENTS - WC-85 (Con.).

n	m	MAIN FIELD		SECULAR CHANGE	
		g_n^m	h_n^m	$\dot{g}_n^m$	$\dot{h}_n^m$
9	0	5.7	.0	.0	.0
9	1	10.9	-20.8	.0	.0
9	2	.9	15.8	.0	.0
9	3	-12.2	9.0	.0	.0
9	4	9.5	-5.0	.0	.0
9	5	-3.3	-6.4	.0	.0
9	6	-1.0	9.1	.0	.0
9	7	6.5	9.9	.0	.0
9	8	1.5	-5.8	.0	.0
9	9	-4.8	2.3	.0	.0
10	0	-3.4	.0	.0	.0
10	1	-4.7	1.2	.0	.0
10	2	2.5	.4	.0	.0
10	3	-5.5	2.5	.0	.0
10	4	-2.1	5.6	.0	.0
10	5	4.6	-4.4	.0	.0
10	6	3.2	-.5	.0	.0
10	7	.6	-1.6	.0	.0
10	8	1.9	3.7	.0	.0
10	9	2.8	-.5	.0	.0
10	10	-.2	-6.1	.0	.0
11	0	2.3	.0	.0	.0
11	1	-.8	1.3	.0	.0
11	2	-2.0	2.0	.0	.0
11	3	2.1	-1.1	.0	.0
11	4	.2	-2.8	.0	.0
11	5	-.4	.7	.0	.0
11	6	-.4	-.1	.0	.0
11	7	1.6	-2.4	.0	.0
11	8	1.5	-.4	.0	.0
11	9	-.7	-1.5	.0	.0
11	10	2.3	-1.5	.0	.0
11	11	3.5	.7	.0	.0
12	0	-1.8	.0	.0	.0
12	1	.0	.3	.0	.0
12	2	.1	.6	.0	.0
12	3	-.3	2.5	.0	.0
12	4	.5	-1.7	.0	.0
12	5	.5	.3	.0	.0
12	6	-.6	.2	.0	.0
12	7	-.4	-.1	.0	.0
12	8	.0	.1	.0	.0
12	9	-.5	.1	.0	.0
12	10	.0	-1.4	.0	.0
12	11	.7	.4	.0	.0
12	12	-.2	.7	.0	.0

TABLE 2. WC-85 MAIN FIELD AND ANNUAL CHANGE GRID VALUES

NORTH COMPONENT (X) IGRF-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
90	1670 2.9	1971 .0	2057 -2.9	2128 -5.8	2183 -8.7	2221 -11.5	2242 -14.2	2246 -16.8	2233 -19.2	2203 -21.5	2156 -23.7	2092 -25.7	90
85	4510 -10.1	4625 -13.5	4692 -16.8	4714 -20.0	4690 -22.9	4622 -25.7	4513 -28.2	4367 -30.5	4187 -32.6	3980 -34.3	3750 -35.9	3503 -37.1	85
80	6805 -19.4	6941 -23.0	7012 -26.5	7018 -29.6	6960 -32.5	6843 -35.1	6668 -37.4	6442 -39.4	6169 -41.1	5858 -42.4	5515 -43.5	5151 -44.3	80
75	8672 -24.1	9020 -27.7	9097 -31.1	9104 -34.1	9044 -36.8	8919 -39.1	8734 -41.0	8492 -42.6	8199 -43.8	7861 -44.8	7486 -45.5	7084 -46.0	75
70	10857 -24.2	10997 -27.9	11069 -31.2	11077 -34.1	11025 -36.5	10917 -38.4	10755 -39.9	10543 -41.1	10285 -41.9	9985 -42.5	9648 -42.9	9282 -43.2	70
65	12888 -20.5	13001 -24.6	13055 -28.1	13056 -31.0	13011 -33.4	12924 -35.1	12800 -36.4	12640 -37.2	12446 -37.7	12224 -37.9	11971 -38.1	11693 -38.3	65
60	15053 -13.9	15130 -18.9	15158 -23.1	15144 -26.6	15099 -29.3	15030 -31.2	14941 -32.6	14836 -33.3	14716 -33.7	14581 -33.9	14431 -33.9	14268 -34.1	60
55	17390 -5.7	17436 -11.9	17439 -17.3	17410 -21.8	17363 -25.4	17305 -28.1	17243 -30.1	17182 -31.3	17124 -32.0	17070 -32.3	17021 -32.4	16976 -32.6	55
50	19892 3.1	19923 -4.6	19913 -11.3	19879 -17.1	19833 -22.1	19785 -26.1	19743 -29.3	19713 -31.6	19701 -33.0	19711 -33.8	19746 -34.2	19808 -34.5	50
45	22517 11.5	22555 2.8	22555 -5.1	22533 -12.3	22501 -18.8	22470 -24.6	22446 -29.6	22439 -33.5	22456 -36.4	22510 -37.8	22609 -38.6	22758 -39.1	45
40	25185 18.8	25259 9.8	25294 1.4	25308 -6.8	25311 -14.8	25311 -22.5	25313 -29.6	25325 -35.6	25361 -39.9	25441 -42.7	25583 -44.1	25795 -44.8	40
35	27775 24.3	27911 16.0	28008 7.8	28084 -.6	28146 -9.6	28196 -19.1	28234 -28.3	28269 -36.4	28321 -42.7	28415 -46.6	28581 -48.7	28835 -49.7	35
30	30112 27.4	30331 20.6	30514 13.6	30674 5.7	30814 -3.7	30930 -14.3	31018 -25.3	31086 -35.3	31155 -43.3	31261 -48.5	31441 -51.4	31718 -52.8	30
25	31971 27.6	32287 22.8	32569 17.6	32825 10.8	33054 1.8	33246 -9.2	33395 -21.0	33506 -32.3	33604 -41.5	33730 -47.8	33926 -51.4	34222 -53.3	25
20	33100 24.6	33516 21.8	33902 18.4	34257 13.1	34576 5.3	34845 -4.9	35058 -16.5	35223 -27.9	35366 -37.5	35533 -44.4	35761 -48.7	36084 -51.2	20
15	33276 16.4	33765 17.0	34268 15.0	34715 11.4	35113 5.3	35451 -3.1	35727 -13.0	35956 -23.1	36165 -32.0	36396 -38.8	36686 -43.3	37062 -46.3	15
10	32371 9.3	32951 8.3	33510 7.2	34029 4.9	34488 1.1	34880 -4.4	35214 -11.2	35511 -18.5	35804 -25.3	36129 -30.9	36515 -35.1	36979 -38.2	10
5	30408 -2.3	31016 -3.5	31615 -4.6	32171 -5.6	32663 -6.9	33090 -8.8	33472 -11.2	33840 -14.2	34232 -17.5	34676 -20.8	35190 -23.6	35776 -26.4	5
0	27583 -15.3	28157 -17.4	28735 -18.6	29278 -18.5	29765 -17.2	30204 -14.9	30623 -12.3	31064 -10.0	31563 -8.6	32143 -8.4	32805 -9.3	33538 -10.6	0
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT

NORTH COMPONENT (X) WC-85

E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
90	2013 -27.4	1919 -29.0	1810 -30.3	1687 -31.5	1551 -32.3	1403 -33.0	1245 -33.3	1078 -33.5	902 -33.3	719 -33.0	531 -32.3	338 -31.4	90
85	3245 -38.1	2983 -38.9	2724 -39.5	2472 -39.8	2234 -39.9	2014 -39.8	1818 -39.6	1647 -39.2	1505 -38.7	1392 -38.0	1308 -37.3	1253 -36.4	85
80	4775 -44.8	4397 -45.1	4028 -45.3	3680 -45.2	3362 -45.0	3086 -44.7	2858 -44.2	2687 -43.7	2576 -43.1	2530 -42.5	2548 -41.9	2626 -41.2	80
75	6665 -46.3	6240 -46.5	5824 -46.6	5431 -46.6	5075 -46.6	4771 -46.5	4533 -46.3	4372 -46.2	4296 -46.1	4311 -45.9	4419 -45.7	4615 -45.6	75
70	8894 -43.5	8496 -43.8	8101 -44.1	7726 -44.4	7386 -44.9	7099 -45.4	6882 -46.0	6749 -46.6	6714 -47.3	6785 -47.9	6965 -48.5	7250 -49.0	70
65	11395 -38.6	11085 -39.1	10775 -39.7	10477 -40.5	10208 -41.5	9985 -42.7	9824 -44.0	9743 -45.4	9757 -46.9	9875 -48.4	10104 -49.8	10442 -51.0	65
60	14094 -34.5	13912 -35.1	13730 -36.0	13556 -37.2	13402 -38.6	13281 -40.2	13208 -41.9	13197 -43.8	13264 -45.6	13418 -47.5	13669 -49.3	14016 -50.8	60
55	16936 -33.0	16899 -33.8	16868 -35.0	16843 -36.4	16831 -37.9	16837 -39.5	16869 -41.1	16937 -42.6	17052 -44.1	17226 -45.5	17467 -46.8	17779 -47.9	55
50	19895 -35.0	20001 -36.0	20122 -37.3	20253 -38.9	20388 -40.4	20527 -41.7	20666 -42.5	20809 -42.8	20961 -42.9	21132 -42.8	21331 -42.6	21568 -42.3	50
45	22954 -39.7	23189 -40.8	23450 -42.4	23724 -44.2	23996 -45.7	24255 -46.5	24490 -46.2	24693 -44.8	24863 -42.6	25006 -39.9	25135 -37.2	25263 -34.7	45
40	26078 -45.5	26417 -46.8	26795 -48.8	27187 -50.9	27573 -52.6	27928 -53.0	28234 -51.5	28474 -48.1	28641 -43.2	28737 -37.4	28775 -31.5	28774 -26.1	40
35	29177 -50.6	29593 -52.2	30056 -54.6	30536 -57.3	31000 -59.4	31420 -59.5	31767 -57.1	32020 -51.8	32164 -44.2	32199 -35.2	32138 -26.1	32002 -17.7	35
30	32098 -53.9	32561 -55.8	33078 -58.6	33609 -61.9	34118 -64.3	34570 -64.5	34930 -61.3	35172 -54.5	35279 -44.7	35249 -33.0	35094 -21.2	34835 -10.4	30
25	34623 -54.7	35113 -56.9	35657 -60.0	36214 -63.5	36740 -66.1	37198 -66.1	37549 -62.3	37766 -54.4	37830 -43.1	37740 -29.8	37507 -16.4	37153 -4.3	25
20	36510 -53.0	37020 -55.3	37582 -58.4	38151 -61.6	38682 -63.6	39135 -63.0	39471 -58.5	39661 -50.0	39690 -38.2	39557 -24.5	39276 -10.9	38865 .9	20
15	37530 -48.5	38074 -50.7	38660 -53.2	39248 -55.4	39792 -56.2	40249 -54.3	40582 -49.1	40765 -40.3	40783 -28.9	40641 -16.2	40350 -4.2	39930 5.8	15
10	37522 -40.6	38125 -42.5	38761 -43.9	39390 -44.4	39970 -43.3	40460 -39.8	40623 -33.7	41035 -25.2	41087 -15.2	40982 -4.9	40733 4.1	40356 10.8	10
5	36427 -28.5	37123 -29.6	37838 -29.7	38539 -28.2	39188 -25.0	39747 -19.9	40184 -13.4	40477 -5.8	40616 1.6	40605 8.4	40454 13.2	40176 15.6	5
0	34323 -11.8	35136 -11.8	35955 -10.4	36752 -7.1	37497 -2.2	38160 3.7	38711 9.9	39133 15.4	39413 19.5	39551 21.6	39550 21.5	39418 19.2	0
E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

NORTH COMPONENT (X) WMC-85

LAT	E. LONG 120	125	130	135	140	145	150	155	160	165	170	175	E. LONG LAT
90	144 -30.3	-52 -29.0	-248 -27.4	-442 -25.6	-632 -23.7	-817 -21.5	-997 -19.2	-1168 -16.7	-1331 -14.1	-1484 -11.4	-1625 -8.6	-1754 -5.8	90
85	1223 -35.5	1216 -34.5	1227 -33.4	1251 -32.3	1282 -31.0	1316 -29.7	1345 -28.4	1365 -26.9	1370 -25.3	1356 -23.6	1320 -21.8	1258 -19.8	85
80	2760 -40.6	2941 -40.0	3159 -39.4	3402 -38.8	3657 -38.3	3909 -37.8	4144 -37.2	4349 -36.7	4512 -36.0	4623 -35.3	4673 -34.4	4657 -33.3	80
75	4892 -45.4	5238 -45.2	5637 -45.1	6070 -44.9	6516 -44.8	6953 -44.8	7359 -44.7	7714 -44.7	7999 -44.7	8199 -44.6	8302 -44.3	8301 -43.8	75
70	7633 -49.4	8098 -49.7	8625 -49.8	9190 -49.8	9765 -49.8	10323 -49.7	10835 -49.7	11277 -49.7	11627 -49.7	11867 -49.7	11985 -49.6	11973 -49.2	70
65	10880 -51.9	11403 -52.5	11987 -52.6	12605 -52.5	13227 -52.0	13821 -51.4	14358 -50.9	14810 -50.3	15157 -50.0	15382 -49.6	15473 -49.3	15427 -48.6	65
60	14453 -51.9	14966 -52.4	15532 -52.4	16121 -51.7	16703 -50.5	17247 -49.0	17723 -47.5	18107 -46.2	18382 -45.1	18536 -44.2	18562 -43.4	18459 -42.3	60
55	18161 -48.6	18600 -48.7	19076 -48.0	19562 -46.6	20029 -44.5	20445 -42.0	20788 -39.6	21036 -37.5	21179 -35.8	21211 -34.5	21133 -33.4	20949 -32.0	55
50	21846 -41.9	22157 -40.9	22487 -39.4	22810 -37.1	23101 -34.2	23334 -31.1	23488 -28.2	23550 -25.7	23515 -23.9	23386 -22.7	23170 -21.6	22880 -20.2	50
45	25400 -32.3	25544 -30.0	25686 -27.3	25805 -24.4	25880 -21.1	25890 -18.0	25822 -15.2	25668 -13.2	25429 -12.0	25115 -11.4	24740 -10.8	24325 -9.6	45
40	28747 -21.4	28701 -17.3	28631 -13.7	28523 -10.4	28361 -7.5	28131 -5.0	27827 -3.3	27448 -2.6	27000 -2.7	26498 -3.2	25962 -3.3	25420 -2.5	40
35	31810 -10.7	31572 -5.1	31286 -.9	30950 2.2	30550 4.3	30084 5.3	29553 5.2	28963 4.0	28324 2.3	27654 .6	26977 -.3	26325 .4	35
30	34494 -1.5	34083 5.0	33605 9.2	33060 11.5	32448 12.1	31774 11.1	31049 8.8	30285 5.7	29496 2.3	28700 -.3	27923 -1.5	27199 -.5	30
25	36697 5.2	36153 11.8	35526 15.3	34821 16.2	34047 14.9	33220 11.8	32359 7.5	31480 2.7	30601 -1.6	29739 -4.5	28918 -5.2	28171 -3.5	25
20	38342 9.8	37720 15.2	37005 17.2	36208 16.3	35345 13.0	34440 8.1	33518 2.5	32599 -3.1	31701 -7.5	30840 -9.8	30037 -9.4	29318 -6.5	20
15	39395 12.6	38757 15.8	38025 15.7	37213 12.8	36344 7.9	35444 1.9	34542 -4.2	33660 -9.4	32814 -12.9	32017 -13.8	31287 -12.0	30640 -8.0	15
10	39866 14.3	39274 14.6	38592 12.1	37839 7.4	37039 1.5	36221 -4.7	35412 -10.2	34632 -14.1	33895 -15.6	33213 -15.0	32594 -11.8	32048 -7.2	10
5	39783 15.2	39291 12.4	38715 7.5	38078 1.6	37405 -4.6	36724 -10.0	36057 -14.0	35422 -15.9	34831 -15.5	34290 -13.0	33803 -9.1	33367 -4.8	5
0	39166 14.9	38813 9.2	38380 2.7	37893 -3.6	37380 -9.1	36864 -13.0	36363 -14.9	35890 -14.5	35455 -12.3	35060 -8.9	34702 -5.2	34374 -2.3	0
LAT	E. LONG 120	125	130	135	140	145	150	155	160	165	170	175	E. LONG LAT

NORTH COMPONENT (X) IGRF-85

LAT	E. LONG 180	185	190	195	200	205	210	215	220	225	230	235	E. LONG LAT
90	-1870 -2.9	-1971 .0	-2057 2.9	-2128 5.8	-2183 8.7	-2221 11.5	-2242 14.2	-2246 16.8	-2233 19.2	-2203 21.5	-2156 23.7	-2092 25.7	90
85	1171 -17.8	1057 -15.5	918 -13.1	756 -10.6	574 -7.9	378 -5.1	171 -2.2	-39 .7	-246 3.7	-445 6.7	-628 9.7	-788 12.6	85
80	4571 -32.0	4415 -30.3	4192 -28.4	3907 -26.1	3567 -23.5	3182 -20.5	2764 -17.3	2324 -13.8	1875 -10.1	1433 -6.3	1009 -2.5	618 1.4	80
75	8193 -42.9	7977 -41.6	7658 -39.8	7245 -37.4	6749 -34.6	6185 -31.2	5568 -27.4	4918 -23.3	4252 -18.9	3590 -14.4	2951 -9.8	2353 -5.3	75
70	11828 -48.4	11552 -47.0	11152 -44.9	10639 -42.1	10027 -38.7	9332 -34.7	8574 -30.2	7773 -25.5	6952 -20.5	6133 -15.6	5337 -10.9	4585 -6.3	70
65	15241 -47.5	14921 -45.6	14474 -43.0	13911 -39.4	13247 -35.2	12499 -30.4	11685 -25.2	10825 -20.1	9939 -15.1	9051 -10.5	8179 -6.4	7347 -2.8	65
60	18230 -40.7	17882 -38.2	17424 -34.8	16867 -30.4	16222 -25.2	15503 -19.7	14725 -14.2	13903 -9.1	13054 -4.6	12194 -1.4	11340 1.0	10511 2.6	60
55	20668 -29.9	20300 -26.9	19856 -22.7	19344 -17.5	18774 -11.7	18154 -5.8	17490 -.3	16792 4.0	16066 6.9	15323 8.3	14573 8.2	13827 7.0	55
50	22531 -17.9	22138 -14.4	21715 -9.7	21269 -4.0	20806 2.0	20325 7.8	19825 12.4	19305 15.4	18762 16.3	18197 15.1	17613 12.1	17015 8.1	50
45	23893 -7.3	23466 -3.6	23060 1.4	22683 7.1	22334 12.9	22005 17.7	21684 21.0	21361 22.0	21023 20.6	20663 16.9	20276 11.4	19859 4.9	45
40	24901 -.2	24435 3.7	24041 8.7	23725 14.1	23482 16.9	23293 22.3	23140 23.5	22999 22.4	22854 18.6	22692 13.2	22501 6.2	22272 -1.5	40
35	25734 2.9	25237 7.0	24854 11.9	24591 16.5	24434 19.9	24360 21.2	24339 20.2	24346 16.9	24359 11.7	24363 5.3	24342 -1.9	24286 -9.4	35
30	26565 2.5	26056 6.9	25691 11.6	25470 15.2	25375 16.8	25377 15.6	25446 12.4	25553 7.4	25677 1.4	25803 -4.7	25915 -10.7	25998 -16.5	30
25	27534 .3	27035 5.1	26692 9.4	26499 11.8	26436 11.4	26474 8.1	26583 2.8	26738 -3.4	26923 -9.3	27122 -14.2	27322 -18.1	27502 -21.3	25
20	28714 -1.9	28246 3.1	27924 6.7	27741 7.7	27676 5.4	27705 .3	27805 -6.3	27957 -12.9	28150 -18.1	28371 -21.2	28604 -22.5	28829 -23.2	20
15	30097 -2.9	29671 1.8	29363 4.4	29167 3.9	29066 .0	29046 -6.2	29090 -13.3	29191 -19.5	29340 -23.4	29526 -24.6	29735 -23.8	29945 -22.5	15
10	31581 -2.4	31198 1.2	30894 2.3	30665 .3	30501 -4.6	30398 -11.1	30351 -17.7	30356 -22.6	30415 -24.8	30512 -24.4	30638 -22.3	30773 -20.2	10
5	32980 -1.3	32636 .4	32328 -.5	32054 -3.9	31813 -9.2	31610 -15.0	31451 -20.0	31337 -22.9	31267 -23.2	31235 -21.5	31232 -18.9	31244 -17.1	5
0	34061 -1.1	33752 -2.1	33438 -5.3	33121 -9.9	32807 -14.9	32510 -19.1	32239 -21.6	32000 -21.9	31795 -20.2	31619 -17.5	31468 -14.9	31336 -13.9	0
LAT	E. LONG 180	185	190	195	200	205	210	215	220	225	230	235	E. LONG LAT

NORTH COMPONENT (X) IGRF-85

E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
90	-2013 27.4	-1919 29.0	-1810 30.3	-1687 31.5	-1551 32.3	-1403 33.0	-1245 33.3	-1078 33.5	-902 33.3	-719 33.0	-531 32.3	-338 31.4	90
85	-920 15.4	-1018 18.0	-1078 20.3	-1096 22.5	-1068 24.3	-995 25.8	-874 26.9	-708 27.7	-497 28.1	-245 28.0	43 27.6	364 26.7	85
80	271 5.1	-21 8.7	-248 12.1	-403 15.1	-481 17.8	-478 20.1	-394 21.8	-229 23.1	12 23.9	325 24.1	701 23.8	1131 22.9	80
75	1613 -.8	1347 3.3	968 7.3	686 10.8	509 14.0	442 16.7	486 18.9	640 20.6	899 21.7	1255 22.1	1697 21.9	2211 21.1	75
70	3897 -2.0	3292 2.1	2785 5.9	2391 9.5	2119 12.7	1978 15.6	1971 18.1	2097 20.2	2351 21.6	2723 22.4	3201 22.6	3767 22.0	70
65	6573 .4	5877 3.5	5278 6.4	4791 9.4	4432 12.4	4212 15.4	4137 18.4	4212 21.0	4432 23.2	4789 24.8	5268 25.7	5848 25.9	65
60	9723 3.8	8996 5.0	8348 6.4	7799 8.4	7367 11.0	7068 14.3	6916 18.0	6918 21.8	7077 25.4	7385 28.3	7829 30.5	8387 31.8	60
55	13099 5.5	12404 4.2	11760 3.8	11188 4.6	10708 7.0	10343 10.8	10113 15.6	10032 21.0	10109 26.4	10343 31.2	10722 35.1	11225 38.0	55
50	16408 3.7	15803 .0	15216 -2.3	14665 -2.4	14175 -.2	13770 4.2	13476 10.3	13316 17.4	13304 24.7	13446 31.5	13737 37.3	14162 42.0	50
45	19413 -1.6	18942 -7.2	18455 -10.8	17970 -11.8	17508 -9.8	17097 -5.0	16765 2.1	16539 10.5	16441 19.3	16486 27.7	16676 35.2	17004 41.6	45
40	22001 -9.1	21684 -15.5	21326 -20.0	20937 -21.6	20537 -20.1	20149 -15.5	19804 -8.3	19531 .6	19357 10.2	19304 19.5	19386 28.0	19604 35.6	40
35	24181 -16.5	24018 -22.8	23795 -27.4	23515 -29.7	23191 -29.1	22844 -25.6	22501 -19.3	22193 -11.1	21951 -1.9	21802 7.4	21771 16.3	21872 24.7	35
30	26034 -22.0	26007 -27.2	25905 -31.7	25723 -34.8	25469 -35.8	25159 -34.2	24818 -29.9	24477 -23.4	24170 -15.3	23930 -6.7	23788 2.1	23771 10.7	30
25	27640 -24.6	27713 -28.4	27700 -32.7	27589 -36.8	27381 -39.8	27089 -40.7	26738 -39.0	26360 -34.6	25990 -28.1	25666 -20.4	25423 -12.0	25296 -3.2	25
20	29020 -24.4	29145 -27.1	29178 -31.5	29102 -36.9	28911 -42.0	28616 -45.4	28243 -46.1	27824 -43.6	27398 -38.5	27004 -31.4	26680 -23.2	26462 -14.4	20
15	30128 -22.4	30253 -24.7	30289 -29.6	30214 -36.2	30018 -43.2	29710 -48.5	29313 -51.0	28862 -49.8	28395 -45.4	27952 -36.5	27570 -30.2	27283 -21.3	15
10	30892 -19.9	30967 -22.5	30968 -28.2	30871 -35.9	30664 -43.9	30349 -50.3	29944 -53.5	29481 -52.8	28996 -48.4	28527 -41.3	28107 -32.8	27766 -23.9	10
5	31254 -17.5	31242 -21.0	31184 -27.4	31057 -35.6	30844 -43.9	30540 -50.3	30153 -53.5	29705 -52.6	29224 -48.1	28745 -41.0	28297 -32.6	27905 -24.2	5
0	31217 -15.4	31101 -19.7	30973 -26.4	30814 -34.4	30603 -42.0	30326 -47.8	29977 -50.4	29562 -49.6	29100 -45.5	28617 -39.1	28138 -31.8	27684 -24.8	0
E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

NORTH COMPONENT (X) IGRF-85

LAT \ E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG \ LAT
90	-144 30.3	52 29.0	248 27.4	442 25.6	632 23.7	817 21.5	997 19.2	1168 16.7	1331 14.1	1484 11.4	1625 8.6	1754 5.8	90
85	711 25.4	1078 23.8	1457 21.8	1844 19.4	2229 16.8	2606 13.9	2968 10.8	3308 7.5	3622 4.0	3903 .5	4147 -3.0	4351 -6.6	85
80	1607 21.5	2115 19.6	2645 17.3	3185 14.5	3723 11.4	4247 7.9	4748 4.3	5216 .4	5642 -3.6	6019 -7.6	6341 -11.6	6604 -15.6	80
75	2784 19.6	3399 17.6	4039 15.1	4689 12.1	5331 8.7	5953 5.0	6540 1.0	7083 -3.2	7572 -7.5	7999 -11.8	8360 -16.0	8652 -20.2	75
70	4402 20.7	5084 18.9	5793 16.4	6507 13.4	7207 10.0	7876 6.2	8500 2.0	9068 -2.3	9570 -6.8	10003 -11.3	10362 -15.8	10646 -20.1	70
65	6507 25.2	7217 23.8	7953 21.7	8690 19.1	9405 15.9	10079 12.2	10698 8.1	11251 3.6	11730 -1.2	12134 -6.2	12459 -11.1	12709 -16.0	65
60	9032 32.2	9734 31.8	10461 30.6	11186 28.6	11882 26.0	12531 22.8	13118 18.8	13633 14.1	14071 8.8	14430 3.2	14716 -2.7	14916 -8.5	60
55	11825 39.9	12489 40.8	13181 41.0	13870 40.3	14530 38.7	15141 36.2	15687 32.6	16162 27.8	16559 22.0	16878 15.3	17120 8.2	17288 1.1	55
50	14693 45.6	15297 48.3	15940 50.2	16586 51.2	17208 51.2	17786 49.9	18304 47.0	18754 42.3	19131 36.0	19432 28.3	19656 19.9	19807 11.3	50
45	17449 46.9	17982 51.5	18570 55.5	19178 58.7	19778 60.7	20345 61.0	20863 59.2	21321 54.9	21710 48.3	22024 40.0	22261 30.6	22423 20.9	45
40	19950 42.5	20404 48.9	20938 55.0	21520 60.5	22120 64.8	22709 67.1	23264 66.7	23768 63.2	24207 56.9	24570 48.3	24853 38.5	25055 28.5	40
35	22110 32.7	22478 40.7	22959 48.7	23525 56.3	24145 62.8	24783 67.1	25409 68.2	25994 65.8	26516 60.1	26958 52.0	27313 42.7	27582 33.2	35
30	23897 19.5	24174 28.5	24598 37.9	25149 47.2	25794 55.3	26493 61.2	27203 63.7	27884 62.5	28504 57.8	29041 50.8	29484 42.7	29837 34.7	30
25	25315 5.9	25499 15.4	25857 25.5	26378 35.5	27030 44.4	27771 51.2	28547 54.6	29307 54.4	30012 50.9	30633 45.3	31162 38.8	31602 32.8	25
20	26385 -5.3	26477 4.2	26754 14.0	27212 23.7	27827 32.4	28555 39.0	29339 42.8	30123 43.2	30864 40.6	31533 36.6	32124 31.9	32641 27.8	20
15	27124 -12.4	27122 -3.5	27294 5.2	27644 13.6	28154 20.9	28785 26.6	29487 29.9	30208 30.6	30909 29.0	31566 26.1	32175 22.9	32741 20.2	15
10	27532 -15.5	27426 -7.8	27464 -.9	27652 5.3	27979 10.5	28419 14.5	28937 16.9	29496 17.6	30069 16.6	30642 14.7	31214 12.4	31790 10.5	10
5	27588 -16.8	27362 -10.7	27235 -6.0	27212 -2.4	27291 .4	27462 2.5	27711 3.8	28024 4.3	28391 3.9	28811 2.8	29289 1.1	29825 -.7	5
0	27271 -19.0	26905 -15.0	26590 -12.7	26330 -11.6	26128 -11.1	25992 -10.7	25930 -10.2	25951 -9.7	26067 -9.4	26287 -9.8	26619 -11.1	27058 -13.0	0
LAT \ E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG \ LAT

NORTH COMPONENT (X) IGRF-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
0	27583 -15.3	28157 -17.4	28735 -18.6	29278 -16.5	29765 -17.2	30204 -14.9	30623 -12.3	31064 -10.0	31563 -8.6	32143 -6.4	32805 -9.3	33538 -10.6	0
-5	24232 -28.7	24695 -31.4	25178 -32.7	25646 -31.6	26084 -27.7	26508 -21.2	26956 -13.4	27469 -5.5	28080 1.1	28800 5.4	29615 7.7	30499 8.4	-5
-10	20758 -41.3	21036 -43.8	21354 -44.7	21688 -42.4	22038 -36.1	22428 -26.1	22896 -13.6	23479 -.7	24197 10.7	25045 19.3	25995 25.0	27009 28.3	-10
-15	17530 -51.7	17562 -53.2	17693 -52.9	17862 -49.2	18105 -41.0	18452 -28.4	18936 -14.8	19580 3.6	20387 18.6	21332 30.8	22375 39.5	23468 45.4	-15
-20	14816 -59.3	14649 -58.6	14564 -56.5	14582 -51.3	14730 -41.9	15043 -28.3	15541 -11.6	16230 6.2	17089 22.6	18079 36.8	19147 47.6	20246 55.4	-20
-25	12756 -63.5	12432 -59.9	12213 -55.7	12134 -49.2	12231 -39.5	12531 -26.5	13042 -10.9	13747 5.7	14607 21.5	15569 35.2	16579 46.2	17593 54.5	-25
-30	11389 -64.4	11002 -58.0	10741 -51.6	10643 -44.4	10740 -35.3	11049 -24.4	11561 -11.9	12243 1.2	13041 13.8	13899 25.0	14765 34.3	15604 41.7	-30
-35	10707 -62.8	10346 -54.0	10123 -46.1	10070 -38.6	10205 -31.1	10528 -23.2	11016 -15.1	11625 -7.0	12297 .7	12978 7.6	13627 13.5	14222 18.6	-35
-40	10684 -59.6	10399 -49.4	10256 -40.7	10269 -33.6	10440 -28.0	10755 -23.6	11177 -20.2	11660 -17.5	12150 -15.3	12602 -13.4	12987 -11.6	13294 -9.8	-40
-45	11276 -55.9	11068 -45.3	10992 -36.6	11044 -30.4	11211 -26.6	11466 -25.3	11771 -25.8	12079 -27.7	12346 -30.3	12538 -33.0	12639 -35.2	12648 -36.4	-45
-50	12391 -52.3	12221 -42.2	12159 -34.1	12189 -28.7	12289 -26.4	12425 -26.9	12560 -30.0	12655 -34.8	12675 -40.5	12599 -46.3	12417 -51.2	12137 -54.8	-50
-55	13856 -48.9	13671 -39.9	13560 -32.6	13504 -27.9	13475 -26.1	13442 -27.3	13370 -31.0	13230 -36.7	12998 -43.3	12658 -50.1	12209 -56.1	11660 -60.7	-55
-60	15424 -45.4	15181 -37.6	14976 -31.1	14788 -26.6	14592 -24.6	14360 -25.1	14067 -27.9	13689 -32.5	13212 -38.0	12625 -43.9	11931 -49.2	11138 -53.5	-60
-65	16816 -41.0	16494 -34.2	16173 -28.3	15835 -23.6	15460 -21.1	15027 -20.2	14517 -21.0	13916 -23.3	13214 -26.6	12405 -30.2	11493 -33.6	10488 -36.7	-65
-70	17779 -34.7	17374 -28.9	16935 -23.5	16449 -18.9	15903 -15.4	15283 -13.1	14578 -11.9	13778 -11.8	12879 -12.5	11680 -13.7	10787 -15.2	9609 -16.6	-70
-75	18120 -26.3	17635 -21.4	17085 -16.7	16463 -12.3	15764 -8.5	14979 -5.3	14105 -2.8	13138 -1.0	12079 .1	10930 .6	9698 .8	8395 .6	-75
-80	17713 -16.2	17149 -12.5	16497 -8.7	15755 -5.1	14924 -1.7	14002 1.3	12991 4.0	11894 6.2	10714 8.0	9459 9.2	8137 10.0	6758 10.3	-80
-85	16473 -5.6	15834 -3.3	15092 -1.0	14252 1.3	13317 3.5	12292 5.5	11184 7.2	9998 8.8	8743 10.0	7428 11.0	6062 11.6	4657 11.8	-65
-90	14359 4.0	13652 4.6	12841 5.2	11932 5.7	10933 6.2	9850 6.6	8692 7.0	7469 7.3	6188 7.6	4860 7.8	3495 7.9	2104 8.0	-90
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT

NORTH COMPONENT (X) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
0	34323 -11.8	35136 -11.8	35955 -10.4	36752 -7.1	37497 -2.2	38160 3.7	38711 9.9	39133 15.4	39413 19.5	39551 21.6	39550 21.5	39418 19.2	0
-5	31423 8.8	32359 10.0	33288 12.8	34189 17.3	35041 22.9	35822 28.4	36510 32.8	37088 35.2	37544 34.9	37866 31.9	38050 26.8	38096 20.1	-5
-10	28049 30.7	29088 33.3	30108 37.0	31095 41.7	32038 46.6	32924 50.4	33740 51.7	34471 49.8	35102 44.7	35614 36.7	35991 27.1	36223 17.0	-10
-15	24574 49.7	25665 53.5	26727 57.6	27754 61.6	28744 64.7	29694 65.5	30597 62.9	31443 56.4	32214 46.5	32885 34.3	33429 21.4	33830 9.3	-15
-20	21339 61.1	22406 65.7	23439 69.5	24438 72.2	25409 72.8	26357 70.2	27281 63.6	28176 53.1	29023 39.6	29794 24.6	30457 10.2	30986 -2.1	-20
-25	18583 60.8	19537 65.5	20455 68.7	21347 69.9	22222 68.2	23091 62.8	23959 53.3	24824 40.2	25676 25.0	26469 9.3	27187 -4.7	27794 -15.5	-25
-30	16402 47.4	17157 51.6	17881 54.0	18587 54.0	19290 50.9	20006 44.0	20743 33.6	21502 20.2	22271 5.6	23027 -6.5	23736 -20.2	24369 -26.1	-30
-35	14759 22.7	15251 25.8	15715 27.5	16173 27.0	16644 23.8	17145 17.5	17688 6.3	18278 -3.0	18906 -14.7	19559 -25.3	20204 -33.2	20813 -37.5	-35
-40	13534 -7.8	13725 -6.0	13893 -4.9	14065 -5.0	14262 -7.1	14505 -11.2	14810 -17.4	15184 -24.6	15626 -31.6	16124 -37.8	16657 -41.5	17198 -42.2	-40
-45	12561 -36.7	12464 -36.2	12325 -35.3	12195 -34.7	12100 -34.6	12061 -35.9	12099 -38.0	12226 -40.6	12445 -42.9	12753 -44.3	13133 -44.1	13565 -42.1	-45
-50	11776 -56.9	11363 -57.3	10927 -56.5	10499 -54.9	10109 -53.1	9781 -51.3	9539 -49.8	9400 -48.3	9374 -46.6	9462 -44.5	9656 -41.8	9941 -38.4	-50
-55	11029 -63.5	10342 -64.5	9629 -63.7	8921 -61.6	8247 -58.6	7637 -55.0	7117 -51.3	6708 -47.4	6424 -43.6	6274 -39.9	6256 -36.4	6361 -33.1	-55
-60	10264 -56.2	9333 -57.3	8372 -56.7	7410 -54.7	6479 -51.7	5609 -47.9	4828 -43.8	4159 -39.8	3621 -36.0	3228 -32.7	2983 -30.0	2885 -28.1	-60
-65	9405 -38.8	8266 -39.7	7095 -39.4	5921 -38.2	4773 -36.2	3681 -33.7	2673 -31.0	1773 -28.5	1003 -26.4	378 -25.0	-92 -24.3	-404 -24.4	-65
-70	8360 -17.7	7060 -18.4	5732 -18.7	4399 -18.6	3089 -18.1	1829 -17.6	646 -17.2	-438 -17.0	-1401 -17.3	-2226 -18.1	-2901 -19.6	-3420 -21.6	-70
-75	7032 .1	5628 -.5	4201 -1.2	2773 -2.1	1367 -3.1	5 -4.4	-1291 -5.9	-2498 -7.7	-3599 -9.9	-4577 -12.5	-5420 -15.4	-6118 -18.5	-75
-80	5336 10.2	3885 9.6	2420 8.6	960 7.3	-479 5.6	-1878 3.5	-3219 1.2	-4485 -1.5	-5662 -4.3	-6734 -7.4	-7692 -10.5	-8524 -13.6	-80
-85	3223 11.7	1773 11.3	320 10.5	-1122 9.4	-2540 8.1	-3921 6.5	-5252 4.7	-6519 2.7	-7711 .6	-8817 -1.6	-9826 -3.8	-10731 -5.9	-85
-90	697 8.0	-716 8.0	-2123 7.9	-3514 7.7	-4878 7.5	-6205 7.3	-7485 6.9	-8708 6.6	-9865 6.1	-10946 5.7	-11945 5.1	-12852 4.6	-90
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

NORTH COMPONENT (X) WDC-85

LAT	E. LONG 120	125	130	135	140	145	150	155	160	165	170	175	E. LONG LAT
0	39166 14.9	38813 9.2	38380 2.7	37893 -3.6	37380 -9.1	36864 -13.0	36363 -14.9	35890 -14.5	35455 -12.3	35060 -8.9	34702 -5.2	34374 -2.3	0
-5	38013 12.5	37622 4.9	37549 -2.2	37226 -8.0	36880 -12.0	36531 -13.8	36193 -13.5	35876 -11.2	35586 -7.8	35323 -4.4	35082 -2.0	34848 -1.5	-5
-10	36316 7.3	36291 -1.0	36179 -7.4	36014 -11.7	35824 -13.6	35627 -13.3	35434 -11.0	35251 -7.5	35084 -4.0	34932 -1.5	34788 -1.3	34634 -4.0	-10
-15	34086 -.8	34216 -8.4	34252 -13.1	34229 -15.1	34174 -14.7	34104 -12.4	34030 -8.9	33957 -5.1	33889 -2.3	33828 -1.7	33765 -4.2	33685 -10.0	-15
-20	31376 -11.3	31638 -16.9	31802 -19.1	31899 -18.6	31956 -16.0	31990 -12.2	32011 -8.1	32027 -4.9	32041 -3.5	32057 -5.1	32069 -10.1	32064 -18.5	-20
-25	28278 -22.3	28644 -25.2	28912 -24.7	29109 -21.7	29259 -17.5	29378 -12.9	29479 -9.1	29571 -7.0	29660 -7.3	29751 -10.9	29840 -17.8	29917 -27.6	-25
-30	24907 -31.9	25345 -31.8	25695 -28.6	25974 -24.2	26204 -19.0	26399 -14.5	26573 -11.5	26739 -10.7	26904 -12.6	27074 -17.5	27249 -25.2	27418 -35.2	-30
-35	21363 -38.2	21843 -35.6	22253 -31.0	22602 -25.5	22904 -20.4	23174 -16.7	23425 -14.8	23669 -15.2	23919 -18.0	24178 -23.3	24447 -30.6	24718 -39.4	-35
-40	17722 -40.3	18212 -36.2	18660 -31.0	19066 -25.8	19437 -21.6	19783 -19.0	20118 -18.3	20453 -19.5	20797 -22.6	21155 -27.2	21527 -33.0	21904 -39.5	-40
-45	14024 -38.6	14491 -34.1	14952 -29.5	15398 -25.5	15831 -22.7	16256 -21.5	16680 -21.7	17112 -23.3	17559 -25.8	18022 -29.0	18499 -32.5	18981 -36.2	-45
-50	10297 -34.6	10703 -30.9	11144 -27.8	11607 -25.5	12086 -24.4	12579 -24.4	13088 -25.3	13615 -26.6	14163 -28.0	14728 -29.3	15305 -30.3	15885 -31.2	-50
-55	6575 -30.3	6882 -28.2	7264 -26.9	7707 -26.6	8200 -27.0	8735 -27.9	9305 -28.9	9908 -29.7	10536 -29.9	11188 -29.3	11849 -28.0	12512 -26.2	-55
-60	2925 -27.1	3092 -26.9	3370 -27.5	3746 -28.7	4205 -30.2	4734 -31.7	5322 -32.6	5958 -32.6	6633 -31.6	7334 -29.5	8052 -26.4	8773 -22.8	-60
-65	-560 -25.3	-568 -26.9	-438 -29.0	-182 -31.2	183 -33.3	646 -34.8	1190 -35.4	1801 -34.8	2467 -33.0	3172 -30.0	3905 -25.9	4654 -21.4	-65
-70	-3780 -24.1	-3983 -26.9	-4036 -29.7	-3948 -32.4	-3731 -34.5	-3398 -35.8	-2963 -36.1	-2440 -35.2	-1843 -33.1	-1186 -29.9	-482 -25.8	258 -21.1	-70
-75	-6668 -21.8	-7066 -24.9	-7315 -27.9	-7420 -30.4	-7388 -32.2	-7227 -33.3	-6949 -33.4	-6565 -32.5	-6085 -30.6	-5523 -27.9	-4887 -24.5	-4189 -20.6	-75
-80	-9225 -16.6	-9790 -19.4	-10217 -21.8	-10505 -23.8	-10658 -25.3	-10678 -26.1	-10572 -26.3	-10346 -25.7	-10006 -24.6	-9563 -22.8	-9021 -20.6	-8389 -18.0	-80
-85	-11524 -7.8	-12198 -9.7	-12749 -11.3	-13173 -12.6	-13470 -13.7	-13637 -14.4	-13677 -14.8	-13591 -14.9	-13380 -14.6	-13050 -14.1	-12605 -13.3	-12049 -12.3	-85
-90	-13662 4.0	-14367 3.4	-14964 2.7	-15446 2.1	-15811 1.4	-16055 .7	-16178 .0	-16177 -.7	-16053 -1.4	-15807 -2.1	-15440 -2.8	-14956 -3.4	-90
LAT	E. LONG 120	125	130	135	140	145	150	155	160	165	170	175	E. LONG LAT

NORTH COMPONENT (X) IGRF-85

LAT	E. LONG 180	185	190	195	200	205	210	215	220	225	230	235	E. LONG LAT
0	34061 -1.1	33752 -2.1	33438 -5.3	33121 -9.9	32807 -14.9	32510 -19.1	32239 -21.6	32000 -21.9	31795 -20.2	31619 -17.5	31468 -14.9	31336 -13.9	0
-5	34602 -3.5	34326 -7.6	34019 -13.0	33676 -18.4	33314 -22.6	32947 -24.6	32591 -24.1	32252 -21.5	31932 -17.7	31631 -14.0	31347 -11.5	31084 -11.1	-5
-10	34452 -9.4	34221 -16.5	33936 -23.8	33600 -29.6	33229 -32.6	32838 -32.2	32443 -28.8	32051 -23.4	31666 -17.5	31286 -12.6	30915 -9.8	30558 -9.3	-10
-15	33569 -16.4	33398 -27.9	33166 -36.5	32876 -42.4	32543 -44.2	32181 -41.6	31805 -36.0	31420 -26.4	31030 -20.9	30634 -14.8	30233 -11.0	29834 -9.4	-15
-20	32024 -29.0	31933 -40.0	31764 -49.3	31580 -54.9	31330 -55.9	31047 -52.4	30742 -45.4	30421 -36.8	30083 -28.3	29727 -21.2	29351 -16.1	28959 -12.6	-20
-25	29967 -39.1	29976 -50.4	29935 -59.5	29845 -64.9	29712 -65.7	29544 -62.2	29348 -55.5	29127 -47.3	28880 -39.1	28602 -31.8	28289 -25.6	27941 -20.0	-25
-30	27571 -46.2	27692 -56.7	27775 -65.0	27814 -70.1	27812 -71.4	27774 -69.2	27703 -64.4	27599 -58.3	27458 -51.7	27275 -45.3	27044 -38.9	26763 -32.0	-30
-35	24980 -48.7	25220 -57.4	25426 -64.6	25595 -69.5	25723 -71.8	25812 -71.8	25862 -70.1	25870 -67.3	25834 -63.6	25748 -59.6	25607 -54.3	25409 -47.3	-35
-40	22276 -46.3	22629 -52.7	22953 -58.4	23239 -63.0	23485 -66.6	23686 -69.2	23843 -71.1	23952 -72.3	24013 -72.7	24021 -71.8	23975 -68.9	23877 -63.5	-40
-45	19458 -40.1	19916 -43.9	20344 -47.9	20734 -52.0	21080 -56.5	21379 -61.4	21629 -66.5	21831 -71.5	21984 -75.9	22090 -78.7	22152 -79.1	22176 -76.6	-45
-50	16457 -32.0	17008 -33.3	17527 -35.4	18007 -38.8	18442 -43.5	18830 -49.6	19170 -56.9	19466 -64.7	19720 -72.1	19940 -78.2	20132 -82.0	20304 -82.8	-50
-55	13165 -24.5	13796 -23.5	14396 -23.8	14959 -25.8	15480 -29.9	15959 -36.0	16398 -43.8	16802 -52.6	17176 -61.6	17536 -69.7	17885 -76.0	18235 -79.7	-55
-60	9488 -19.3	10186 -16.4	10859 -15.0	11503 -15.4	12114 -18.0	12696 -22.6	13251 -29.6	13786 -37.7	14310 -46.4	14834 -54.8	15365 -62.0	15914 -67.5	-60
-65	5407 -16.8	6157 -12.8	6896 -10.0	7622 -8.8	8333 -9.5	9031 -12.2	9721 -16.8	10410 -22.8	11104 -29.6	11812 -36.7	12541 -43.3	13296 -49.0	-65
-70	1024 -16.4	1808 -12.0	2605 -8.4	3411 -6.0	4226 -5.0	5050 -5.6	5886 -7.5	6738 -10.8	7610 -15.0	8506 -19.7	9429 -24.6	10380 -29.2	-70
-75	-3437 -16.5	-2638 -12.5	-1797 -9.0	-920 -6.1	-9 -4.1	934 -3.0	1910 -2.9	2916 -3.7	3953 -5.4	5020 -7.6	6115 -10.3	7233 -13.3	-75
-80	-7673 -15.2	-6882 -12.4	-6021 -9.7	-5096 -7.2	-4112 -5.1	-3075 -3.5	-1989 -2.5	-858 -1.9	310 -1.9	1513 -2.4	2742 -3.4	3990 -4.7	-80
-85	-11388 -11.2	-10628 -10.0	-9776 -8.7	-8838 -7.5	-7822 -6.4	-6735 -5.4	-5584 -4.6	-4379 -4.0	-3127 -3.6	-1836 -3.5	-517 -3.6	822 -3.9	-85
-90	-14359 -4.0	-13652 -4.6	-12841 -5.2	-11932 -5.7	-10933 -6.2	-9850 -6.6	-8692 -7.0	-7466 -7.3	-6188 -7.6	-4860 -7.8	-3495 -7.9	-2104 -8.0	-90
LAT	E. LONG 180	185	190	195	200	205	210	215	220	225	230	235	E. LONG LAT

NORTH COMPONENT (X) WC-85

LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
0	31217 -15.4	31101 -19.7	30973 -26.4	30814 -34.4	30603 -42.0	30326 -47.8	29977 -50.4	29562 -49.6	29100 -45.5	28617 -39.1	28138 -31.8	27684 -24.8	0
-5	30843 -13.3	30625 -17.8	30426 -24.0	30232 -30.8	30022 -37.1	29771 -41.8	29461 -44.3	29082 -44.2	28639 -41.8	28148 -37.6	27629 -32.8	27102 -28.3	-5
-10	30224 -11.1	29923 -14.6	29657 -19.2	29419 -24.0	29192 -28.6	28947 -32.5	28656 -35.5	28297 -37.4	27861 -38.1	27354 -37.9	26791 -37.0	26188 -36.2	-10
-15	29448 -9.6	29087 -10.9	28760 -12.7	28467 -14.8	28197 -17.6	27925 -21.1	27622 -25.4	27258 -30.3	26816 -35.5	26291 -40.3	25690 -44.6	25026 -48.2	-15
-20	28560 -10.2	28166 -8.2	27789 -6.6	27437 -5.8	27107 -6.7	26763 -10.0	26441 -16.0	26055 -24.4	25601 -34.4	25066 -44.6	24446 -54.1	23749 -62.3	-20
-25	27562 -14.6	27164 -9.2	26760 -4.0	26363 -.3	25979 .6	25604 -2.4	25223 -9.9	24815 -21.2	24356 -35.1	23830 -49.7	23220 -63.5	22524 -75.4	-25
-30	26434 -24.2	26065 -15.9	25671 -7.8	25267 -1.5	24867 1.1	24474 -1.2	24084 -9.0	23682 -21.7	23245 -37.6	22750 -54.6	22176 -70.8	21510 -84.7	-30
-35	25156 -38.7	24856 -28.8	24523 -18.9	24171 -10.9	23816 -6.6	23467 -7.6	23123 -14.3	22773 -26.2	22394 -41.6	21961 -58.4	21447 -74.5	20834 -88.6	-35
-40	23730 -55.6	23542 -45.9	23325 -35.7	23093 -26.9	22856 -21.4	22622 -20.6	22389 -24.9	22144 -34.1	21865 -46.6	21524 -60.7	21092 -74.6	20549 -86.9	-40
-45	22167 -71.1	22134 -63.2	22086 -54.2	22032 -45.8	21977 -39.6	21920 -36.8	21855 -38.2	21764 -43.5	21623 -51.7	21404 -61.5	21078 -71.6	20626 -81.0	-45
-50	20466 -80.5	20624 -75.6	20785 -69.0	20950 -61.9	21117 -55.9	21278 -51.8	21417 -50.5	21513 -52.0	21540 -55.7	21468 -61.0	21273 -67.1	20939 -73.3	-50
-55	18593 -80.7	18967 -79.0	19356 -75.3	19757 -70.4	20161 -65.4	20551 -61.2	20907 -56.3	21203 -57.1	21412 -57.5	21508 -59.2	21468 -62.0	21281 -65.5	-55
-60	16485 -70.8	17081 -71.9	17699 -71.0	18330 -68.6	18959 -65.5	19566 -62.2	20128 -59.3	20619 -57.1	21012 -56.0	21285 -55.9	21420 -56.9	21406 -58.7	-60
-65	14079 -53.3	14888 -56.1	15715 -57.4	16550 -57.4	17376 -56.4	18172 -54.9	18915 -53.3	19581 -51.9	20149 -51.0	20598 -50.8	20915 -51.4	21093 -52.7	-65
-70	11355 -33.2	12351 -36.5	13357 -39.0	14361 -40.6	15346 -41.6	16295 -42.1	17189 -42.3	18006 -42.5	18731 -42.9	19348 -43.6	19846 -44.8	20219 -46.4	-70
-75	8370 -16.2	9517 -19.0	10664 -21.6	11800 -23.9	12911 -26.0	13981 -27.9	14997 -29.6	15943 -31.3	16806 -32.9	17575 -34.7	18243 -36.5	18802 -38.4	-75
-80	5251 -6.3	6514 -8.1	7770 -10.1	9009 -12.1	10218 -14.2	11387 -16.3	12505 -18.5	13560 -20.6	14544 -22.6	15446 -24.6	16261 -26.5	16983 -28.3	-80
-85	2171 -4.5	3521 -5.2	4862 -6.2	6184 -7.2	7476 -8.4	8730 -9.6	9936 -10.9	11085 -12.2	12166 -13.4	13178 -14.6	14107 -15.6	14950 -16.5	-85
-90	-697 -8.0	716 -8.0	2123 -7.9	3514 -7.7	4878 -7.5	6205 -7.3	7485 -6.9	8708 -6.6	9865 -6.1	10947 -5.7	11945 -5.1	12852 -4.6	-90
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

NORTH COMPONENT (X) WMC-85

LAT	E. LONG 300	305	310	315	320	325	330	335	340	345	350	355	E. LONG LAT
0	27271 -19.0	26905 -15.0	26590 -12.7	26330 -11.6	26128 -11.1	25992 -10.7	25930 -10.2	25951 -9.7	26067 -9.4	26287 -9.8	26619 -11.1	27058 -13.0	0
-5	26579 -25.0	26065 -23.4	25559 -23.4	25066 -24.3	24595 -25.6	24166 -26.3	23806 -26.1	23542 -25.2	23402 -24.0	23432 -23.4	23551 -24.0	23837 -25.9	-5
-10	25558 -36.1	24905 -37.0	24233 -38.9	23545 -41.4	22856 -43.5	22194 -44.7	21594 -44.3	21096 -42.5	20732 -40.0	20521 -36.1	20467 -37.5	20555 -38.7	-10
-15	24310 -51.6	23551 -55.0	22755 -58.4	21930 -61.7	21097 -64.1	20282 -65.0	19526 -63.9	18865 -60.9	18330 -57.0	17936 -53.3	17683 -50.9	17556 -50.5	-15
-20	22984 -69.0	22161 -74.6	21292 -79.1	20392 -82.7	19482 -84.9	18591 -85.2	17752 -83.2	16996 -79.1	16347 -73.6	15812 -67.9	15388 -63.3	15060 -60.5	-20
-25	21747 -84.8	20901 -92.0	20002 -97.3	19071 -100.9	18132 -102.7	17212 -102.4	16339 -99.8	15537 -94.7	14818 -87.9	14167 -80.4	13638 -73.4	13161 -67.7	-25
-30	20753 -95.7	19914 -103.8	19013 -109.4	18074 -113.0	17126 -114.7	16196 -114.2	15309 -111.3	14483 -105.8	13726 -98.2	13041 -89.3	12422 -80.2	11870 -71.7	-30
-35	20116 -99.7	19302 -107.9	18413 -113.7	17477 -117.4	16525 -119.2	15587 -118.9	14689 -116.3	13847 -111.1	13073 -103.4	12369 -93.8	11736 -83.3	11178 -72.7	-35
-40	19887 -96.9	19114 -104.6	18251 -110.2	17327 -114.1	16378 -116.4	15437 -116.8	14532 -115.0	13684 -110.5	12909 -103.4	12214 -93.9	11605 -82.7	11091 -71.0	-40
-45	20041 -89.1	19330 -95.7	18516 -101.1	17628 -105.2	16703 -108.0	15778 -109.3	14885 -108.5	14050 -105.2	13293 -99.0	12627 -90.2	12063 -79.4	11610 -67.6	-45
-50	20460 -79.1	19845 -84.5	19116 -89.3	18303 -93.5	17443 -96.9	16572 -98.9	15725 -99.0	14932 -96.8	14216 -91.6	13594 -84.1	13078 -74.4	12676 -63.4	-50
-55	20944 -69.4	20466 -73.6	19668 -77.8	19179 -81.9	18433 -85.4	17665 -87.8	16908 -86.5	16193 -87.1	15543 -83.2	14976 -76.8	14504 -68.5	14131 -58.8	-55
-60	21244 -61.4	20944 -64.6	20522 -68.2	20005 -71.8	19422 -75.1	18804 -77.3	18181 -78.2	17579 -77.2	17019 -74.1	16518 -68.9	16085 -62.0	15722 -53.9	-60
-65	21131 -54.8	21038 -57.4	20826 -60.4	20520 -63.4	20138 -65.9	19707 -67.7	19250 -68.2	18798 -67.3	18338 -64.6	17912 -60.3	17517 -54.6	17154 -48.0	-65
-70	20467 -46.3	20595 -50.6	20613 -52.9	20533 -55.1	20372 -56.8	20145 -57.8	19870 -57.9	19561 -56.7	19230 -54.3	18884 -50.6	18528 -46.0	18161 -40.5	-70
-75	19252 -40.4	19595 -42.3	19833 -44.0	19975 -45.4	20027 -46.3	19999 -46.5	19900 -46.0	19737 -44.6	19517 -42.3	19245 -39.3	18922 -35.4	18548 -31.0	-75
-80	17607 -29.9	18133 -31.2	18556 -32.3	18885 -32.9	19115 -33.1	19249 -32.8	19292 -32.0	19244 -30.6	19109 -28.6	18858 -26.1	18581 -23.1	18190 -19.8	-80
-85	15700 -17.3	16354 -17.6	16906 -18.0	17353 -18.3	17694 -17.7	17927 -17.1	18049 -16.2	18061 -15.0	17963 -13.6	17753 -11.8	17435 -9.9	17007 -7.8	-85
-90	13662 -4.0	14367 -3.4	14964 -2.7	15446 -2.1	15811 -1.4	16055 -.7	16178 .0	16177 .7	16053 1.4	15807 2.1	15440 2.8	14956 3.4	-90
LAT	E. LONG 300	305	310	315	320	325	330	335	340	345	350	355	E. LONG LAT

EAST COMPONENT (Y) IGRF-85

E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
90	-1245 33.3	-1078 33.5	-902 33.3	-719 33.0	-531 32.3	-338 31.4	-144 30.3	52 29.0	248 27.4	442 25.6	632 23.7	817 21.5	90
85	-1399 36.9	-1039 36.3	-673 35.4	-307 34.2	53 32.7	399 31.0	726 29.0	1029 26.9	1303 24.6	1543 22.1	1747 19.6	1911 17.0	85
80	-1586 39.4	-1079 36.3	-567 36.7	-59 34.9	435 32.7	906 30.3	1346 27.7	1744 25.0	2095 22.2	2391 19.3	2626 16.5	2795 13.6	80
75	-1753 41.1	-1145 39.4	-535 37.3	67 34.8	651 32.1	1206 29.1	1723 26.1	2193 23.0	2606 19.9	2953 16.9	3226 14.0	3417 11.2	75
70	-1857 42.3	-1189 40.1	-526 37.4	123 34.3	749 31.0	1343 27.6	1898 24.2	2405 20.9	2855 17.7	3238 14.7	3543 12.0	3760 9.5	70
65	-1885 43.9	-1187 41.0	-506 37.7	152 33.9	780 30.0	1373 26.1	1927 22.3	2436 18.8	2893 15.6	3287 12.7	3608 10.3	3842 8.3	65
60	-1844 46.6	-1137 43.0	-460 38.9	181 34.3	783 29.6	1345 25.1	1868 20.8	2348 17.0	2781 13.7	3160 11.0	3474 9.0	3709 7.5	60
55	-1761 50.8	-1053 46.5	-392 41.5	219 36.0	780 30.5	1294 25.2	1765 20.3	2196 16.0	2583 12.5	2922 9.8	3205 8.0	3418 7.0	55
50	-1668 56.6	-961 51.6	-317 45.8	261 39.5	777 33.1	1238 27.0	1651 21.3	2021 16.4	2348 12.3	2628 9.3	2857 7.5	3024 6.7	50
45	-1598 63.6	-889 57.9	-259 51.4	290 44.5	765 37.6	1179 30.9	1539 24.4	1850 18.5	2110 13.4	2319 9.6	2473 7.4	2572 6.7	45
40	-1578 70.8	-862 64.6	-242 57.8	284 50.8	730 43.9	1109 36.9	1430 29.7	1692 22.6	1889 16.0	2020 10.9	2086 7.8	2098 6.9	40
35	-1632 77.2	-904 70.8	-289 64.1	223 57.8	650 51.6	1013 44.9	1315 37.2	1546 28.7	1692 20.2	1746 13.1	1716 8.7	1627 7.3	35
30	-1775 82.1	-1032 75.6	-417 69.7	87 64.7	510 60.1	876 54.3	1182 46.5	1405 36.6	1516 25.9	1500 16.4	1373 10.1	1176 8.0	30
25	-2015 85.0	-1257 78.6	-639 73.9	-133 71.0	301 68.6	688 64.4	1019 56.9	1255 45.8	1348 32.7	1275 20.5	1056 12.1	751 9.0	25
20	-2354 86.0	-1581 79.9	-955 76.6	-437 76.1	21 76.4	445 74.3	818 67.5	1081 55.5	1169 40.2	1049 25.3	748 14.7	342 10.5	20
15	-2784 85.8	-2001 79.9	-1361 78.0	-819 79.9	-323 82.9	151 83.0	572 77.1	867 64.6	954 47.6	795 30.4	420 17.8	-75 12.5	15
10	-3291 85.3	-2505 79.5	-1847 78.6	-1267 82.3	-719 87.4	-190 89.4	279 84.6	598 72.0	677 53.9	477 35.3	35 21.1	-538 14.8	10
5	-3848 85.5	-3070 79.6	-2390 78.9	-1763 83.4	-1154 89.6	-568 92.7	-64 88.7	261 76.4	313 58.2	60 39.0	-449 24.2	-1091 17.2	5
0	-4414 87.1	-3657 80.7	-2957 79.4	-2279 83.3	-1608 89.1	-975 92.2	-457 88.5	-157 76.8	-160 59.3	-485 40.7	-1067 26.2	-1773 19.0	0
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG

EAST COMPONENT (Y) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
90	997 19.2	1168 16.7	1331 14.1	1484 11.4	1625 8.6	1754 5.8	1870 2.9	1971 .0	2057 -2.9	2128 -5.8	2183 -8.7	2221 -11.5	90
85	2036 14.4	2119 11.8	2163 9.2	2169 6.7	2140 4.2	2080 1.7	1993 -.6	1884 -2.9	1760 -5.0	1627 -7.1	1491 -9.1	1357 -10.9	85
80	2895 10.9	2925 8.3	2885 5.7	2778 3.4	2609 1.1	2384 -.9	2112 -2.8	1805 -4.6	1476 -6.1	1137 -7.6	803 -8.8	488 -10.0	80
75	3518 8.6	3526 6.1	3439 3.9	3256 1.8	2983 -.1	2627 -1.7	2200 -3.2	1719 -4.6	1201 -5.7	668 -6.7	144 -7.6	-348 -8.4	75
70	3877 7.2	3886 5.2	3780 3.4	3557 1.8	3218 .5	2770 -.7	2226 -1.8	1604 -2.8	929 -3.6	230 -4.4	-462 -5.2	-1113 -5.9	70
65	3976 6.6	3996 5.2	3891 4.0	3654 3.0	3283 2.2	2782 1.5	2163 .9	1445 .3	656 -.4	-170 -1.1	-993 -2.0	-1769 -3.0	65
60	3849 6.4	3878 5.7	3781 5.2	3547 4.8	3170 4.5	2651 4.3	2000 4.0	1233 3.7	380 3.2	-522 2.5	-1428 1.4	-2287 .0	60
55	3545 6.5	3572 6.5	3480 6.6	3256 6.7	2892 6.7	2385 6.6	1741 6.5	974 6.2	111 5.6	-814 5.1	-1752 3.9	-2648 2.1	55
50	3118 6.9	3125 7.4	3029 8.0	2817 8.4	2478 8.4	2007 8.0	1406 7.5	685 7.0	-136 6.4	-1032 5.6	-1951 4.4	-2839 2.5	50
45	2611 7.3	2582 8.5	2473 9.6	2271 10.0	1966 9.5	1550 8.2	1023 6.7	386 5.2	-350 4.1	-1165 3.2	-2020 2.1	-2859 .4	45
40	2063 7.9	1982 9.8	1852 11.4	1659 11.6	1394 10.2	1050 7.4	620 4.0	101 .8	-511 -1.4	-1206 -2.6	-1959 -3.4	-2716 -4.5	40
35	1503 8.7	1361 11.4	1203 13.6	1020 13.7	802 11.0	540 6.0	226 -.2	-153 -5.8	-612 -9.8	-1158 -11.7	-1780 -12.1	-2429 -12.0	35
30	955 9.7	744 13.3	556 16.3	385 16.2	219 12.0	49 4.3	-139 -5.3	-363 -14.2	-652 -20.6	-1031 -23.4	-1502 -23.3	-2026 -21.6	30
25	431 11.0	150 15.5	-67 19.3	-224 19.0	-332 13.2	-406 2.4	-460 -11.0	-522 -23.7	-635 -32.7	-841 -36.6	-1155 -35.6	-1543 -32.2	25
20	-72 12.5	-419 17.9	-663 22.3	-801 21.7	-848 14.1	-820 .1	-737 -17.2	-636 -33.6	-575 -45.2	-610 -50.0	-769 -48.4	-1021 -42.5	20
15	-574 14.3	-980 20.0	-1244 24.7	-1360 23.5	-1342 14.1	-1208 -2.9	-987 -23.8	-726 -43.4	-496 -57.1	-369 -62.5	-379 -59.7	-500 -51.3	15
10	-1108 16.2	-1562 21.7	-1841 26.0	-1930 23.9	-1843 12.6	-1602 -7.0	-1242 -30.6	-826 -52.6	-436 -67.6	-156 -72.8	-28 -68.4	-25 -57.3	10
5	-1718 17.9	-2208 22.7	-2492 26.0	-2550 22.4	-2393 9.2	-2046 -12.3	-1552 -37.6	-986 -60.6	-443 -75.7	-18 -79.9	242 -73.5	365 -59.8	5
0	-2446 19.0	-2959 22.6	-3239 24.3	-3263 19.0	-3037 4.3	-2589 -18.3	-1969 -44.1	-1261 -66.8	-573 -80.7	-7 -83.0	387 -74.4	631 -58.3	0
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

EAST COMPONENT (Y) *C-85

LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
90	2242 -14.2	2246 -16.8	2233 -19.2	2203 -21.5	2156 -23.7	2092 -25.7	2013 -27.4	1919 -29.0	1810 -30.3	1687 -31.5	1551 -32.3	1403 -33.0	90
85	1232 -12.7	1121 -14.4	1027 -16.1	953 -17.6	903 -19.1	877 -20.6	873 -22.0	891 -23.3	928 -24.6	985 -25.9	1062 -27.1	1110 -28.2	85
80	207 -11.0	-31 -12.0	-213 -12.9	-333 -13.8	-386 -14.7	-369 -15.6	-285 -16.6	-138 -17.7	66 -18.9	315 -20.3	599 -21.8	904 -23.4	80
75	-785 -9.0	-1147 -9.5	-1416 -10.0	-1579 -10.5	-1628 -10.9	-1560 -11.4	-1379 -12.1	-1091 -12.9	-711 -14.0	-255 -15.4	257 -17.1	803 -19.2	75
70	-1689 -6.6	-2162 -7.2	-2505 -7.7	-2700 -8.0	-2735 -8.4	-2609 -8.6	-2325 -9.0	-1898 -9.6	-1345 -10.5	-693 -11.9	32 -13.8	778 -16.4	70
65	-2456 -4.0	-3014 -5.1	-3411 -6.1	-3621 -6.9	-3631 -7.4	-3440 -7.7	-3057 -7.9	-2499 -8.1	-1794 -8.7	-973 -10.0	-71 -11.8	874 -14.9	65
60	-3048 -1.7	-3660 -3.6	-4084 -5.5	-4290 -7.0	-4263 -8.1	-4005 -8.6	-3528 -8.6	-2859 -8.5	-2030 -8.7	-1080 -9.5	-56 -11.5	1019 -14.8	60
55	-3441 -.3	-4075 -3.1	-4500 -6.0	-4684 -8.5	-4610 -10.3	-4283 -11.0	-3722 -10.9	-2962 -10.2	-2041 -9.7	-1006 -10.0	161 -11.9	1234 -15.5	55
50	-3628 -.4	-4253 -3.9	-4657 -7.7	-4802 -11.1	-4673 -13.4	-4278 -14.3	-3645 -13.7	-2813 -12.4	-1830 -11.0	-748 -10.8	388 -12.4	1531 -16.5	50
45	-3612 -2.4	-4203 -6.1	-4567 -10.4	-4661 -14.2	-4472 -16.7	-4012 -17.4	-3316 -16.2	-2431 -13.9	-1412 -11.7	-313 -11.0	812 -12.7	1919 -17.4	45
40	-3405 -6.5	-3940 -9.7	-4249 -13.6	-4285 -17.2	-4034 -19.4	-3514 -19.5	-2767 -17.4	-1846 -14.2	-811 -11.2	278 -10.2	1364 -12.4	2398 -16.2	40
35	-3031 -12.6	-3493 -14.4	-3733 -17.1	-3703 -19.7	-3391 -20.9	-2820 -19.8	-2036 -16.7	-1096 -12.5	-65 -9.1	994 -8.4	2017 -11.0	2953 -18.8	35
30	-2524 -20.0	-2896 -19.6	-3057 -20.2	-2956 -20.9	-2586 -20.5	-1974 -18.1	-1169 -13.8	-230 -9.0	779 -5.7	1790 -5.9	2734 -10.7	3552 -19.9	30
25	-1925 -27.9	-2198 -24.5	-2270 -22.3	-2095 -20.6	-1671 -18.2	-1030 -14.3	-222 -9.0	697 -4.1	1667 -1.6	2615 -3.4	3467 -10.4	4159 -21.7	25
20	-1263 -35.1	-1449 -28.3	-1430 -22.9	-1181 -16.6	-710 -14.1	-53 -8.8	743 -3.1	1628 1.4	2544 2.4	3419 -1.7	4172 -11.2	4737 -24.6	20
15	-646 -40.5	-706 -30.2	-596 -21.7	-279 -14.9	231 -8.7	894 -2.5	1666 3.0	2505 6.4	3356 5.4	4156 -1.3	4813 -13.4	5262 -28.5	15
10	-58 -43.3	-19 -29.8	176 -18.6	553 -9.7	1092 -2.5	1752 3.8	2493 8.4	3282 10.0	4072 6.7	4795 -2.5	5367 -16.7	5721 -33.0	10
5	439 -42.9	572 -26.9	841 -13.7	1268 -3.7	1828 3.7	2481 9.2	3191 12.3	3932 11.6	4664 6.1	5323 -5.2	5826 -20.8	6113 -37.2	5
0	613 -39.4	1037 -21.7	1374 -7.6	1843 2.5	2419 9.1	3063 13.0	3747 14.1	4448 11.4	5134 3.8	5744 -8.8	6204 -24.7	6451 -40.3	0
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

EAST COMPONENT (Y) WMC-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
90	1245 -33.3	1078 -33.5	902 -33.3	719 -33.0	531 -32.3	338 -31.4	144 -30.3	-52 -29.0	-248 -27.4	-442 -25.6	-632 -23.7	-817 -21.5	90
85	1176 -29.2	1235 -30.1	1281 -30.9	1309 -31.4	1312 -31.8	1286 -32.0	1231 -31.9	1139 -31.5	1012 -30.6	847 -29.9	648 -28.5	415 -26.9	85
80	1216 -25.1	1520 -26.8	1802 -28.6	2048 -30.3	2246 -31.8	2387 -33.1	2460 -34.1	2461 -34.7	2386 -34.9	2233 -34.7	2005 -33.9	1705 -32.7	80
75	1359 -21.7	1904 -24.3	2413 -27.1	2868 -29.9	3248 -32.6	3538 -35.0	3727 -37.0	3806 -38.5	3769 -39.4	3616 -39.6	3350 -39.2	2976 -38.1	75
70	1575 -19.5	2333 -23.1	3042 -27.0	3676 -30.9	4211 -34.6	4629 -37.9	4914 -40.6	5056 -42.6	5051 -43.7	4896 -43.9	4596 -43.4	4158 -42.1	70
65	1826 -18.8	2751 -23.3	3613 -28.3	4384 -33.2	5039 -37.8	5554 -41.7	5916 -44.6	6111 -46.3	6134 -47.0	5985 -46.6	5667 -45.4	5188 -43.6	65
60	2088 -19.3	3118 -24.9	4077 -30.9	4934 -36.8	5663 -42.0	6243 -45.9	6658 -48.3	6895 -49.1	6948 -48.5	6817 -46.7	6504 -44.4	6016 -41.8	60
55	2355 -20.8	3427 -27.4	4419 -34.5	5305 -41.2	6060 -46.6	6666 -50.0	7107 -51.2	7373 -50.2	7456 -47.6	7355 -43.8	7069 -39.9	6605 -36.5	55
50	2643 -22.7	3693 -30.5	4655 -38.6	5510 -45.8	6241 -51.0	6833 -53.4	7274 -52.7	7553 -49.3	7662 -44.6	7597 -37.9	7358 -32.3	6945 -28.0	50
45	2970 -24.8	3941 -33.7	4816 -42.7	5586 -50.1	6245 -54.6	6786 -55.3	7199 -52.2	7475 -46.1	7603 -38.6	7578 -29.6	7393 -22.3	7049 -17.5	45
40	3347 -26.9	4193 -37.0	4932 -46.5	5573 -53.6	6122 -56.7	6582 -55.4	6946 -49.7	7204 -40.9	7343 -30.4	7351 -20.0	7222 -11.6	6951 -6.6	40
35	3768 -29.0	4454 -40.2	5025 -49.8	5506 -55.9	5921 -57.2	6281 -53.4	6583 -45.2	6812 -34.1	6950 -21.9	6983 -10.5	6902 -1.6	6700 3.2	35
30	4214 -31.6	4722 -43.4	5107 -52.5	5415 -56.9	5686 -55.7	5940 -49.3	6172 -39.0	6364 -26.5	6491 -13.7	6536 -2.3	6490 6.2	6345 10.6	30
25	4661 -34.8	4987 -46.7	5186 -54.5	5325 -56.4	5457 -52.4	5608 -43.4	5770 -31.6	5918 -16.7	6023 -6.6	6065 3.6	6037 11.1	5936 15.0	25
20	5086 -38.7	5243 -50.1	5275 -55.8	5263 -54.7	5272 -47.5	5328 -36.2	5422 -23.6	5521 -11.5	5592 -1.2	5617 6.9	5593 12.9	5522 16.5	20
15	5478 -43.0	5493 -53.1	5389 -56.1	5255 -51.7	5164 -41.4	5139 -28.4	5167 -15.7	5213 -5.4	5242 2.2	5239 7.8	5206 12.2	5155 15.8	15
10	5833 -47.1	5746 -55.4	5544 -55.4	5326 -47.7	5159 -34.9	5069 -20.8	5038 -6.9	5030 -.8	5013 3.9	4976 6.8	4927 10.0	4883 14.2	10
5	6160 -50.3	6013 -56.3	5758 -53.5	5491 -43.1	5277 -28.6	5139 -14.3	5058 -3.7	5001 1.9	4940 3.8	4868 4.8	4796 7.4	4752 12.8	5
0	6471 -51.6	6306 -55.2	6039 -50.2	5757 -38.2	5522 -23.2	5353 -9.7	5234 -.9	5138 2.4	5040 2.2	4938 2.1	4846 5.1	4788 12.4	0
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT

EAST COMPONENT (Y) WMC-85

LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
90	-997 -19.2	-1168 -16.7	-1331 -14.1	-1484 -11.4	-1625 -8.6	-1754 -5.8	-1870 -2.9	-1971 .0	-2057 2.9	-2128 5.8	-2183 8.7	-2221 11.5	90
85	152 -24.9	-137 -22.6	-446 -19.9	-769 -17.0	-1101 -13.9	-1433 -10.5	-1758 -6.9	-2070 -3.3	-2361 .5	-2625 4.3	-2856 8.1	-3048 11.9	85
80	1339 -30.9	917 -28.6	447 -25.9	-58 -22.6	-586 -19.0	-1124 -15.0	-1657 -10.8	-2173 -6.3	-2656 -1.7	-3100 3.0	-3489 7.7	-3815 12.3	80
75	2504 -36.4	1947 -34.0	1318 -31.0	636 -27.4	-83 -23.4	-818 -18.9	-1549 -14.0	-2257 -8.9	-2923 -3.5	-3530 1.9	-4061 7.4	-4504 12.7	75
70	3594 -40.2	2919 -37.6	2150 -34.5	1309 -30.8	419 -26.6	-496 -21.9	-1410 -16.8	-2297 -11.2	-3132 -5.4	-3890 .7	-4551 6.7	-5099 12.7	70
65	4561 -41.4	3801 -38.8	2927 -35.9	1961 -32.6	929 -28.8	-140 -24.5	-1216 -19.5	-2266 -14.0	-3257 -7.9	-4159 -1.4	-4942 5.2	-5586 11.8	65
60	5364 -39.3	4562 -37.1	3627 -35.0	2580 -32.9	1446 -30.4	256 -27.2	-955 -23.0	-2148 -17.9	-3284 -11.8	-4320 -5.0	-5222 2.2	-5957 9.5	60
55	5970 -34.0	5172 -32.6	4225 -32.1	3146 -32.1	1956 -31.8	685 -30.6	-629 -27.9	-1943 -23.5	-3207 -17.6	-4370 -10.4	-5384 -2.5	-6211 5.5	55
50	6361 -25.8	5610 -25.9	4697 -27.8	3632 -30.7	2432 -33.4	1122 -34.9	-259 -34.2	-1663 -30.9	-3035 -25.2	-4312 -17.6	-5435 -9.0	-6353 -.1	50
45	6541 -16.0	5867 -17.9	5024 -22.6	4014 -28.9	2845 -35.2	1539 -39.8	130 -41.5	-1332 -39.6	-2785 -34.2	-4159 -26.2	-5383 -16.8	-6394 -7.2	45
40	6531 -5.9	5952 -9.8	5204 -17.3	4278 -27.0	3176 -36.9	1910 -44.7	510 -48.9	-973 -48.5	-2477 -43.6	-3926 -35.3	-5239 -25.3	-6345 -15.2	40
35	6367 3.1	5890 -2.3	5250 -12.1	4430 -24.7	3420 -37.7	2225 -48.7	870 -55.3	-601 -56.5	-2125 -52.4	-3624 -44.1	-5013 -33.9	-6212 -23.5	35
30	6093 10.0	5717 3.9	5192 -7.1	4491 -21.6	3594 -37.1	2495 -50.7	1212 -59.8	-218 -62.9	-1735 -59.9	-3262 -52.1	-4713 -42.0	-6004 -32.0	30
25	5756 14.5	5478 8.7	5071 -2.3	4499 -17.4	3729 -34.5	2744 -50.3	1550 -62.0	180 -67.3	-1311 -65.8	-2850 -59.1	-4353 -49.7	-5734 -40.2	25
20	5404 16.7	5218 12.4	4931 2.8	4493 -11.9	3859 -29.8	2998 -47.6	1904 -61.9	602 -69.8	-856 -70.6	-2401 -65.4	-3956 -57.0	-5418 -48.2	20
15	5087 17.6	4987 15.8	4814 8.4	4509 -5.1	4011 -23.3	3275 -43.0	2282 -60.2	1048 -71.4	-379 -74.5	-1931 -71.6	-3524 -64.3	-5074 -56.2	15
10	4854 18.2	4824 19.4	4751 14.8	4567 2.8	4197 -15.7	3578 -37.5	2679 -56.0	1507 -72.7	106 -79.4	-1454 -78.2	-3096 -71.9	-4715 -64.0	10
5	4744 19.4	4762 23.8	4763 21.9	4674 11.2	4410 -7.9	3894 -32.1	3081 -56.1	1966 -74.6	589 -84.5	-979 -85.4	-2652 -79.9	-4338 -71.7	5
0	4781 21.8	4818 29.0	4858 29.4	4830 19.5	4643 -.6	4209 -27.3	3471 -54.8	2413 -77.1	1066 -89.9	-502 -92.7	-2199 -87.6	-3930 -78.7	0
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

EAST COMPONENT (Y) *C-85

LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
90	-2242 14.2	-2246 16.8	-2233 19.2	-2203 21.5	-2156 23.7	-2092 25.7	-2013 27.4	-1919 29.0	-1810 30.3	-1687 31.5	-1551 32.3	-1403 33.0	90
85	-3197 15.5	-3299 19.0	-3352 22.2	-3355 25.2	-3307 27.9	-3210 30.3	-3064 32.4	-2874 34.1	-2641 35.4	-2372 36.3	-2072 36.9	-1745 37.1	85
80	-4071 16.8	-4252 21.0	-4354 24.9	-4376 28.4	-4318 31.6	-4183 34.3	-3975 36.5	-3700 38.3	-3364 39.5	-2976 40.2	-2544 40.4	-2078 40.1	80
75	-4849 17.8	-5090 22.7	-5223 27.1	-5248 31.1	-5168 34.5	-4989 37.5	-4717 39.8	-4363 41.5	-3938 42.6	-3452 43.1	-2918 43.0	-2348 42.3	75
70	-5519 18.4	-5805 23.7	-5954 28.6	-5968 33.0	-5854 36.7	-5621 39.9	-5263 42.3	-4852 44.1	-4346 45.1	-3778 45.5	-3165 45.1	-2520 44.0	70
65	-6072 18.1	-6393 23.9	-6547 29.3	-6540 34.0	-6383 38.2	-6091 41.6	-5683 44.4	-5179 46.4	-4599 47.6	-3961 48.0	-3286 47.5	-2588 46.1	65
60	-6505 16.4	-6856 22.9	-7009 28.8	-6975 34.0	-6771 38.7	-6420 42.8	-5946 46.2	-5374 48.9	-4728 50.6	-4032 51.3	-3307 50.8	-2572 49.2	60
55	-6821 13.2	-7202 20.3	-7355 26.8	-7296 32.7	-7048 38.1	-6643 43.2	-6110 47.8	-5480 51.6	-4779 54.4	-4035 55.8	-3269 55.6	-2505 53.9	55
50	-7030 8.3	-7448 16.0	-7610 23.0	-7534 29.6	-7253 36.1	-6804 42.6	-6224 48.9	-5548 54.5	-4804 58.9	-4018 61.5	-3218 61.9	-2426 60.2	50
45	-7147 1.8	-7616 9.9	-7802 17.4	-7728 24.7	-7431 32.4	-6955 40.8	-6343 49.3	-5631 57.4	-4851 63.9	-4029 68.0	-3194 69.3	-2374 67.6	45
40	-7184 -5.9	-7726 2.3	-7963 9.9	-7917 17.8	-7629 26.9	-7146 37.4	-6517 46.8	-5779 59.8	-4966 68.9	-4107 74.8	-3232 76.9	-2377 75.3	40
35	-7152 -14.4	-7791 -6.6	-8112 .8	-8131 9.2	-7884 19.7	-7419 32.7	-6787 47.2	-6030 61.5	-5182 73.4	-4278 81.2	-3357 83.9	-2460 82.2	35
30	-7058 -23.4	-7820 -16.2	-8262 -9.3	-8384 -.7	-8214 11.2	-7795 26.8	-7175 44.6	-6401 62.4	-5515 77.1	-4559 86.4	-3581 89.7	-2636 87.6	30
25	-6911 -32.3	-7818 -26.1	-8411 -19.7	-8673 -10.9	-8614 2.3	-8266 20.3	-7673 41.4	-6886 62.4	-5958 79.6	-4944 90.4	-3906 93.7	-2911 91.0	25
20	-6720 -41.1	-7783 -35.6	-8546 -29.7	-8972 -20.7	-9048 -6.3	-8791 13.9	-8239 37.9	-7446 61.8	-6479 81.2	-5411 93.0	-4316 96.2	-3278 92.7	20
15	-6497 -49.4	-7711 -44.2	-8644 -38.5	-9238 -29.1	-9459 -13.6	-9304 8.4	-8803 34.7	-8017 61.0	-7026 82.1	-5919 94.5	-4790 97.4	-3724 93.1	15
10	-6243 -57.1	-7590 -51.5	-8673 -45.4	-9418 -35.5	-9774 -19.1	-9720 4.3	-9282 34.3	-8521 60.2	-7532 82.5	-6419 95.4	-5288 98.1	-4226 93.2	10
5	-5950 -63.9	-7399 -57.3	-8596 -50.2	-9460 -39.6	-9925 -22.5	-9964 1.7	-9594 30.7	-8884 59.6	-7934 82.7	-6860 96.2	-5771 99.0	-4751 93.7	5
0	-5599 -69.5	-7114 -61.3	-8384 -52.9	-9324 -41.3	-9867 -23.8	-9983 .7	-9689 29.9	-9054 59.1	-8184 82.9	-7197 96.9	-6198 100.3	-5260 95.3	0
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT

EAST COMPONENT (Y) WMC-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
0	-4414 87.1	-3657 80.7	-2957 79.4	-2279 83.3	-1608 89.1	-975 92.2	-457 86.5	-157 76.8	-160 59.3	-485 40.7	-1067 26.2	-1773 19.0	0
-5	-4933 90.0	-4208 82.9	-3496 80.2	-2775 82.0	-2059 85.9	-1404 87.5	-906 83.5	-668 72.5	-760 56.4	-1182 39.5	-1847 26.3	-2613 19.7	-5
-10	-5339 94.1	-4657 86.1	-3948 81.0	-3210 79.5	-2484 79.9	-1850 78.9	-1418 73.7	-1285 63.2	-1503 49.1	-2043 34.8	-2801 23.8	-3625 18.4	-10
-15	-5580 98.3	-4948 89.4	-4266 81.5	-3552 75.8	-2868 71.7	-2314 67.0	-2002 59.8	-2020 49.6	-2393 37.6	-3067 26.3	-3922 18.3	-4801 14.9	-15
-20	-5632 101.6	-5058 91.9	-4435 81.1	-3796 71.0	-3218 61.8	-2807 52.9	-2671 43.3	-2876 33.0	-3423 23.0	-4237 14.8	-5184 10.1	-6108 9.2	-20
-25	-5517 102.9	-5014 92.7	-4484 79.4	-3973 65.2	-3563 51.3	-3353 38.2	-3433 26.1	-3846 15.4	-4571 6.9	-5514 1.6	-6539 .1	-7495 1.8	-25
-30	-5300 101.6	-4888 91.3	-4487 76.3	-4150 59.0	-3953 41.3	-3979 24.7	-4293 10.2	-4914 -1.1	-5799 -8.5	-6848 -11.5	-7926 -10.4	-8898 -6.1	-30
-35	-5073 97.5	-4777 87.6	-4537 71.9	-4404 52.8	-4441 32.8	-4709 13.9	-5247 -2.1	-6050 -14.0	-7060 -20.8	-8179 -22.5	-9283 -19.5	-10251 -13.3	-35
-40	-4919 91.0	-4771 82.0	-4714 66.7	-4795 47.5	-5061 26.8	-5551 7.1	-6277 -9.6	-7217 -21.7	-8308 -28.3	-9458 -29.4	-10557 -25.6	-11504 -18.5	-40
-45	-4892 82.8	-4918 75.1	-5056 61.4	-5344 43.5	-5815 23.9	-6485 4.8	-7351 -11.5	-8377 -23.4	-9503 -30.0	-10646 -31.2	-11715 -27.7	-12626 -20.8	-45
-50	-4999 73.8	-5217 67.8	-5550 56.4	-6028 41.1	-6668 23.8	-7472 6.7	-8426 -8.2	-9492 -19.4	-10613 -26.0	-11721 -27.9	-12742 -25.5	-13607 -19.9	-50
-55	-5211 64.8	-5627 60.7	-6147 52.0	-6789 39.9	-7562 25.9	-8459 11.7	-9460 -1.1	-10530 -11.2	-11620 -17.8	-12674 -20.6	-13633 -19.9	-14442 -16.4	-55
-60	-5486 56.4	-6095 54.0	-6785 48.0	-7566 39.3	-8441 28.8	-9398 17.8	-10417 7.5	-11467 -1.1	-12509 -7.4	-13497 -11.1	-14386 -12.3	-15130 -11.4	-60
-65	-5787 48.6	-6574 47.6	-7414 44.1	-8311 38.4	-9262 31.2	-10255 23.2	-11273 15.4	-12288 8.3	-13270 2.4	-14184 -1.9	-14994 -4.7	-15664 -6.2	-65
-70	-6099 41.2	-7043 41.2	-8010 39.4	-8999 36.1	-10004 31.5	-11015 26.1	-12015 20.4	-12983 14.8	-13896 9.6	-14727 5.0	-15449 1.1	-16035 -2.1	-70
-75	-6422 33.7	-7495 34.2	-8562 33.4	-9619 31.6	-10658 28.9	-11668 25.4	-12637 21.4	-13547 17.1	-14382 12.8	-15122 8.4	-15749 4.2	-16242 .3	-75
-80	-6762 25.7	-7930 26.0	-9067 25.7	-10164 24.7	-11214 23.1	-12206 20.8	-13130 18.2	-13974 15.1	-14725 11.7	-15371 8.2	-15900 4.5	-16300 .9	-80
-85	-7120 16.7	-8340 16.8	-9508 16.4	-10615 15.7	-11651 14.7	-12609 13.4	-13479 11.7	-14252 9.8	-14921 7.7	-15478 5.4	-15916 3.0	-16229 .6	-85
-90	-7485 6.9	-8708 6.6	-9865 6.1	-10947 5.7	-11945 5.1	-12852 4.6	-13662 4.0	-14367 3.4	-14964 2.7	-15446 2.1	-15811 1.4	-16055 .7	-90
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT

EAST COMPONENT (Y) IGRF-85

E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
0	-2446 19.0	-2959 22.6	-3239 24.3	-3263 19.0	-3037 4.3	-2589 -18.3	-1969 -44.1	-1261 -66.8	-573 -80.7	-7 -83.0	387 -74.4	631 -58.3	0
-5	-3321 19.2	-3646 21.4	-4115 21.3	-4102 14.4	-3811 -1.4	-3271 -24.1	-2536 -49.1	-1698 -70.1	-872 -81.6	-165 -81.8	367 -71.0	743 -53.2	-5
-10	-4360 17.9	-4886 19.1	-5135 17.5	-5083 9.3	-4733 -6.7	-4113 -28.5	-3279 -51.4	-2326 -69.7	-1370 -78.5	-521 -76.1	159 -63.6	681 -44.9	-10
-15	-5553 15.1	-6071 15.8	-6295 13.4	-6203 4.9	-5800 -10.4	-5113 -30.2	-4198 -50.0	-3145 -64.9	-2069 -70.7	-1079 -66.3	-241 -53.0	441 -34.7	-15
-20	-6870 10.7	-7373 11.9	-7566 9.8	-7436 2.0	-6987 -11.4	-6247 -28.2	-5267 -44.4	-4132 -55.7	-2948 -58.9	-1820 -53.2	-820 -40.4	34 -23.8	-20
-25	-8257 5.3	-8740 7.9	-8904 7.0	-8739 1.2	-8253 -9.4	-7473 -22.5	-6444 -34.8	-5241 -42.9	-3963 -44.2	-2708 -38.5	-1549 -27.3	-520 -13.7	-25
-30	-9650 -.5	-10112 4.0	-10250 5.2	-10059 2.2	-9548 -4.9	-8740 -14.1	-7677 -22.7	-6425 -28.1	-5069 -28.5	-3702 -23.8	-2397 -15.4	-1200 -5.8	-30
-35	-10986 -5.9	-11429 .6	-11550 4.3	-11344 4.3	-10820 .9	-10000 -4.6	-8918 -10.1	-7634 -13.7	-6221 -14.1	-4763 -11.3	-3333 -6.4	-1983 -1.1	-35
-40	-12217 -9.9	-12643 -2.0	-12755 3.8	-12548 6.5	-12026 6.2	-11208 3.8	-10126 .6	-8829 -2.0	-7382 -3.1	-5858 -2.7	-4329 -1.4	-2851 -.1	-40
-45	-13311 -12.2	-13722 -3.8	-13834 3.1	-13635 7.6	-13130 9.4	-12330 9.0	-11265 7.2	-9976 4.9	-8519 2.7	-6959 .9	-5363 -.6	-3787 -2.7	-45
-50	-14257 -12.6	-14653 -4.9	-14765 1.8	-14582 6.6	-14102 9.3	-13335 9.8	-12303 8.5	-11043 6.1	-9602 2.9	-8037 -.6	-6478 -4.3	-4768 -8.1	-50
-55	-15052 -11.3	-15426 -5.6	-15537 -.4	-15369 3.5	-14919 5.7	-14193 6.0	-13209 4.7	-11996 1.9	-10597 -1.9	-9058 -6.2	-7432 -10.8	-5769 -15.1	-55
-60	-15690 -9.1	-16033 -6.2	-16134 -3.4	-15977 -1.4	-15556 -.5	-14876 -1.1	-13950 -2.9	-12803 -6.0	-11469 -9.8	-9987 -14.1	-8401 -18.3	-6755 -22.0	-60
-65	-16163 -6.7	-16462 -6.6	-16542 -6.5	-16387 -6.8	-15992 -7.6	-15360 -9.3	-14500 -11.7	-13432 -14.8	-12183 -18.2	-10784 -21.7	-9272 -24.8	-7685 -27.1	-65
-70	-16461 -4.7	-16706 -7.0	-16753 -9.1	-16591 -11.3	-16216 -13.6	-15629 -16.1	-14838 -18.8	-13858 -21.6	-12709 -24.3	-11416 -26.7	-10006 -28.4	-8509 -29.3	-70
-75	-16587 -3.5	-16768 -7.0	-16774 -10.4	-16597 -13.5	-16235 -16.6	-15690 -19.4	-14966 -22.0	-14075 -24.3	-13032 -26.2	-11854 -27.5	-10562 -28.1	-9179 -27.8	-75
-80	-16560 -2.7	-16674 -6.2	-16633 -9.6	-16436 -12.7	-16079 -15.5	-15566 -18.0	-14902 -20.1	-14093 -21.8	-13149 -22.9	-12084 -23.5	-10912 -23.5	-9647 -22.8	-80
-85	-16413 -1.8	-16463 -4.2	-16377 -6.5	-16154 -8.6	-15796 -10.5	-15305 -12.2	-14684 -13.5	-13939 -14.6	-13077 -15.3	-12106 -15.6	-11036 -15.6	-9877 -15.3	-85
-90	-16178 .0	-16177 -.7	-16053 -1.4	-15807 -2.1	-15440 -2.8	-14956 -3.4	-14359 -4.0	-13652 -4.6	-12841 -5.2	-11932 -5.7	-10933 -6.2	-9850 -6.6	-90
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	LAT / E. LONG

EAST COMPONENT (Y) WDC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
0	813 -39.4	1037 -21.7	1374 -7.6	1843 2.5	2419 9.1	3063 13.0	3747 14.1	4448 11.4	5134 3.6	5744 -8.8	6204 -24.7	6451 -40.3	0
-5	1041 -33.0	1358 -14.8	1762 -1.0	2270 8.1	2860 13.1	3501 14.9	4167 13.8	4843 9.2	5497 .4	6076 -12.4	6513 -27.3	6751 -41.2	-5
-10	1109 -24.8	1530 -7.4	2006 5.1	2557 12.3	3167 15.1	3812 14.7	4474 11.7	5138 5.8	5777 -3.1	6344 -14.9	6778 -27.8	7031 -39.2	-10
-15	1017 -15.9	1557 -.5	2117 9.7	2720 14.5	3360 15.1	4023 12.7	4695 6.3	5363 2.2	6003 -5.9	6572 -15.6	7019 -25.6	7301 -34.1	-15
-20	772 -7.7	1447 4.9	2107 12.2	2777 14.4	3463 12.9	4157 9.2	4854 4.4	5540 -1.0	6194 -7.1	6778 -13.8	7247 -20.5	7565 -25.9	-20
-25	389 -1.2	1212 7.7	1989 12.0	2744 11.9	3492 9.0	4234 4.8	4969 .7	5685 -3.0	6363 -6.3	6968 -9.6	7463 -12.7	7817 -15.5	-25
-30	-119 2.5	862 7.7	1769 9.0	2629 7.3	3456 3.8	4262 .3	5048 -2.3	5803 -3.4	6510 -3.6	7139 -3.2	7660 -3.1	8048 -3.6	-30
-35	-738 3.0	401 4.7	1450 3.8	2428 1.2	3353 -1.8	4238 -3.9	5084 -4.1	5886 -2.3	6626 .9	7281 4.4	7826 7.3	8244 8.4	-35
-40	-1460 .3	-168 -.7	1025 -3.0	2133 -5.5	3169 -7.3	4143 -7.1	5060 -4.6	5914 .1	6691 6.2	7375 12.4	7946 17.2	8394 19.4	-40
-45	-2273 -5.0	-845 -7.6	487 -10.2	1726 -11.9	2879 -11.8	3951 -9.3	4946 -4.1	5858 3.2	6679 11.5	7398 19.6	8001 25.7	8486 28.5	-45
-50	-3164 -11.8	-1626 -14.9	-172 -16.8	1189 -17.1	2455 -14.9	3628 -10.1	4705 -2.9	5685 6.3	6560 16.1	7325 25.1	7975 31.8	8509 34.8	-50
-55	-4113 -18.8	-2500 -21.2	-954 -22.0	508 -20.5	1875 -16.5	3143 -10.0	4306 -1.3	5361 8.7	6304 19.0	7134 28.2	7849 34.9	8455 38.1	-55
-60	-5092 -24.7	-3445 -25.8	-1845 -25.0	-314 -21.9	1133 -16.6	2484 -9.1	3730 .1	4868 10.1	5894 19.9	6809 28.6	7614 34.9	8316 38.1	-60
-65	-6057 -26.3	-4423 -27.9	-2811 -25.7	-1247 -21.5	250 -15.5	1666 -7.9	2989 .8	4213 9.9	5334 18.7	6351 26.3	7268 31.9	8091 35.0	-65
-70	-6956 -29.0	-5375 -27.3	-3794 -24.2	-2234 -19.7	-717 -13.8	741 -7.0	2127 .5	3433 8.2	4653 15.4	5785 21.6	6828 26.4	7787 29.2	-70
-75	-7728 -26.6	-6231 -24.3	-4711 -21.1	-3188 -17.0	-1680 -12.0	-205 -6.5	1226 -.7	2601 5.1	3912 10.5	5154 15.2	6324 18.9	7420 21.4	-75
-80	-8307 -21.5	-6909 -19.5	-5470 -16.9	-4005 -13.9	-2532 -10.4	-1063 -6.6	388 -2.8	1809 1.0	3190 4.5	4522 7.7	5799 10.3	7015 12.2	-80
-85	-8640 -14.6	-7339 -13.6	-5984 -12.3	-4588 -10.7	-3164 -9.0	-1724 -7.2	-281 -5.4	1154 -3.5	2570 -1.8	3956 -.2	5303 1.2	6600 2.4	-85
-90	-8692 -7.0	-7469 -7.3	-6188 -7.6	-4860 -7.8	-3496 -7.9	-2104 -8.0	-697 -8.0	716 -8.0	2123 -7.9	3514 -7.7	4878 -7.5	6205 -7.3	-90
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	LAT / E. LONG

EAST COMPONENT (Y) aC-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
0	6471 -51.6	6306 -55.2	6039 -50.2	5757 -38.2	5522 -23.2	5353 -9.7	5234 -.9	5138 2.4	5040 2.2	4938 2.1	4846 5.1	4788 12.4	0
-5	6778 -50.3	6631 -51.9	6385 -45.5	6117 -33.3	5882 -19.2	5700 -7.6	5558 -1.0	5435 .3	5312 -1.0	5187 -1.0	5074 3.4	4996 13.0	-5
-10	7089 -46.0	6986 -46.2	6783 -39.8	6549 -28.8	6333 -17.2	6152 -6.3	6001 -4.2	5864 -4.4	5727 -5.8	5588 -4.7	5459 1.9	5360 14.0	-10
-15	7406 -38.8	7359 -38.3	7214 -33.1	7025 -25.0	6838 -17.0	6670 -11.8	6522 -10.4	6383 -11.6	6243 -12.4	6100 -9.4	5964 -.2	5850 14.5	-15
-20	7721 -28.9	7735 -28.8	7650 -25.9	7511 -21.8	7358 -18.5	7211 -17.4	7074 -16.8	6943 -20.9	6811 -20.7	6678 -15.5	6549 -3.8	6434 13.1	-20
-25	8023 -17.4	8094 -18.3	8065 -18.5	7976 -19.0	7861 -20.8	7740 -24.2	7622 -28.3	7508 -31.2	7397 -30.3	7288 -23.2	7184 -9.4	7091 9.1	-25
-30	8297 -5.0	8419 -7.4	8442 -11.1	8401 -16.3	8324 -23.0	8235 -30.6	8145 -37.4	8060 -41.4	7982 -40.0	7914 -31.9	7855 -17.1	7807 2.1	-30
-35	8531 7.1	8699 3.0	8771 -3.8	8777 -13.1	8744 -24.1	8694 -35.2	8643 -44.5	8600 -49.7	8571 -48.7	8558 -40.6	8562 -25.9	8577 -7.1	-35
-40	8719 18.0	8932 12.6	9054 3.3	9111 -9.1	9129 -23.1	9130 -36.9	9132 -46.1	9145 -54.7	9178 -54.7	9235 -47.7	9311 -34.5	9399 -17.2	-40
-45	8854 26.9	9119 20.7	9299 10.1	9419 -3.9	9501 -19.5	9567 -34.8	9636 -47.3	9719 -55.1	9826 -56.7	9957 -51.8	10108 -41.0	10266 -26.3	-45
-50	8936 33.3	9266 27.0	9519 16.3	9716 2.2	9878 -13.5	10026 -28.9	10176 -41.9	10340 -50.7	10525 -54.0	10730 -51.6	10947 -44.0	11160 -32.7	-50
-55	8959 36.9	9376 31.3	9722 21.5	10015 8.7	10276 -5.8	10520 -20.1	10762 -32.6	11012 -41.8	11273 -46.7	11542 -46.8	11809 -42.6	12056 -35.1	-55
-60	8924 37.5	9450 33.0	9910 25.1	10319 14.5	10693 2.4	11044 -10.0	11384 -21.2	11718 -30.1	12047 -35.8	12365 -38.1	12662 -37.1	12918 -33.3	-60
-65	8826 35.1	9484 32.1	10077 26.5	10617 18.6	11114 9.3	11577 -.4	12013 -9.6	12424 -17.5	12809 -23.5	13159 -27.2	13465 -28.6	13709 -27.9	-65
-70	8665 29.9	9469 28.5	10206 25.0	10883 19.9	11506 13.6	12079 6.8	12605 -.2	13083 -6.5	13510 -12.0	13879 -16.1	14180 -19.9	14400 -20.4	-70
-75	8443 22.5	9393 22.2	10272 20.6	11083 17.9	11826 14.2	12501 10.0	13108 5.4	13644 .9	14105 -3.4	14486 -7.1	14778 -10.3	14976 -12.7	-75
-80	8164 13.4	9244 13.8	10249 13.5	11178 12.4	12026 10.8	12792 8.7	13471 6.3	14061 3.7	14556 1.0	14953 -1.7	15248 -4.1	15435 -6.4	-80
-85	7840 3.3	9014 3.9	10115 4.2	11137 4.2	12072 3.9	12915 3.4	13661 2.7	14305 1.8	14844 .6	15273 -.2	15589 -1.3	15791 -2.3	-85
-90	7485 -6.9	8708 -6.6	9865 -6.1	10947 -5.7	11945 -5.1	12852 -4.6	13662 -4.0	14367 -3.4	14964 -2.7	15446 -2.1	15811 -1.4	16055 -.7	-90
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT

EAST COMPONENT (Y) *C-85

LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
0	4761 21.8	4618 29.0	4858 29.4	4830 19.5	4643 -.6	4209 -27.3	3471 -54.8	2413 -77.1	1066 -89.9	-562 -92.7	-2199 -87.6	-3930 -78.7	0
-5	4972 25.1	4999 34.8	5043 36.7	5037 27.0	4893 5.7	4519 -23.4	3846 -54.0	2847 -79.4	1542 -94.8	-8 -99.0	-1712 -94.2	-3467 -84.3	-5
-10	5306 28.6	5305 40.2	5324 42.9	5309 33.2	5178 10.8	4841 -20.1	4224 -52.9	3287 -80.5	2035 -97.7	519 -103.0	-1171 -94.3	-2929 -87.7	-10
-15	5772 31.1	5733 44.0	5715 47.3	5671 37.6	5531 14.8	5213 -16.7	4639 -50.3	3759 -78.8	2566 -97.0	1098 -103.0	-564 -98.7	-2309 -87.9	-15
-20	6344 31.3	6281 45.1	6230 49.0	6155 39.8	5996 17.9	5679 -12.6	5131 -45.3	4296 -73.3	3154 -91.5	1734 -98.1	107 -94.6	-1617 -84.5	-20
-25	7013 28.3	6948 42.8	6882 47.5	6783 39.8	6602 20.2	6274 -7.6	5731 -37.7	4918 -63.7	3811 -81.1	2428 -88.1	834 -85.9	-866 -77.6	-25
-30	7766 21.7	7725 36.7	7666 42.7	7558 37.5	7358 21.5	7008 -2.0	6450 -27.8	5634 -50.7	4537 -66.6	3174 -74.0	1606 -73.5	-71 -67.8	-30
-35	8594 12.1	8597 27.3	8562 34.9	8457 32.8	8239 21.4	7860 3.5	7270 -17.1	6430 -36.0	5323 -49.9	3966 -57.4	2416 -59.0	764 -56.2	-35
-40	9482 .8	9536 15.8	9532 24.7	9433 25.9	9198 19.5	8786 7.4	8156 -7.5	7280 -22.0	6153 -33.6	4796 -41.0	3265 -44.3	1642 -44.5	-40
-45	10408 -10.5	10506 3.6	10526 13.4	10428 17.4	10174 15.5	9727 8.8	9057 -.7	8149 -11.0	7006 -20.1	5656 -27.1	4153 -31.6	2571 -34.0	-45
-50	11344 -19.8	11467 -7.5	11493 2.1	11385 7.8	11106 9.3	10627 6.9	9927 1.8	9000 -4.7	7858 -11.4	6532 -17.4	5074 -22.3	3549 -25.9	-50
-55	12256 -25.7	12380 -16.1	12392 -7.7	12259 -1.6	11951 1.6	11445 2.0	10729 .1	9803 -3.5	8685 -7.9	7406 -12.6	6014 -16.9	4563 -20.6	-55
-60	13109 -27.6	13209 -21.2	13189 -15.0	13021 -9.9	12682 -6.4	12158 -4.7	11442 -4.8	10539 -6.4	9468 -8.9	8259 -12.0	6950 -15.1	5587 -17.8	-60
-65	13872 -25.6	13933 -22.4	13870 -18.9	13663 -15.6	13298 -13.1	12765 -11.4	12064 -10.8	11202 -11.2	10196 -12.2	9070 -13.7	7857 -15.2	6590 -16.4	-65
-70	14526 -20.8	14543 -20.3	14437 -19.3	14196 -18.1	13812 -16.9	13282 -16.0	12608 -15.5	11797 -15.3	10863 -15.3	9825 -15.5	8706 -15.5	7531 -15.2	-70
-75	15069 -14.5	15049 -15.6	14911 -16.5	14647 -16.8	14256 -16.9	13737 -16.8	13095 -16.6	12335 -16.3	11469 -15.8	10509 -15.1	9470 -14.2	8370 -12.9	-75
-80	15512 -8.3	15475 -10.0	15321 -11.3	15050 -12.2	14662 -12.9	14159 -13.2	13545 -13.2	12827 -12.9	12010 -12.3	11104 -11.3	10119 -10.1	9065 -8.4	-80
-85	15877 -3.3	15845 -4.2	15697 -4.9	15433 -5.4	15055 -5.7	14566 -5.9	13970 -5.7	13271 -5.4	12475 -4.8	11588 -4.0	10618 -3.0	9571 -1.7	-85
-90	16178 .0	16177 .7	16053 1.4	15807 2.1	15440 2.8	14956 3.4	14359 4.0	13652 4.6	12841 5.2	11932 5.7	10933 6.2	9850 6.6	-90
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

EAST COMPONENT (Y) WDC-85

E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
0	-5599 -69.5	-7114 -61.3	-8384 -52.9	-9324 -41.3	-9867 -23.8	-9983 .7	-9689 29.9	-9054 59.1	-8184 82.9	-7197 96.9	-6198 100.3	-5260 95.3	0
-5	-5168 -73.5	-6717 -63.4	-8021 -53.6	-9000 -41.2	-9590 -23.5	-9768 .7	-9553 29.4	-9017 58.6	-8262 82.7	-7401 97.7	-6528 102.2	-5701 98.1	-5
-10	-4641 -75.4	-6200 -63.8	-7514 -52.7	-8505 -39.7	-912. -22.2	-9351 1.1	-9217 28.9	-8792 57.5	-8171 82.0	-7457 98.1	-6727 104.2	-6021 101.6	-10
-15	-4018 -75.0	-5575 -62.5	-6886 -50.7	-7880 -37.6	-8516 -20.8	-8790 1.3	-8736 27.8	-8423 55.6	-7936 80.3	-7366 97.7	-6772 105.7	-6140 105.0	-15
-20	-3314 -72.0	-4866 -59.7	-6174 -48.1	-7172 -35.5	-7829 -19.7	-8149 .8	-8171 25.8	-7960 52.6	-7594 77.3	-7144 95.9	-6661 106.0	-6160 107.3	-20
-25	-2549 -66.7	-4096 -55.7	-5406 -45.1	-6417 -33.7	-7103 -19.3	-7473 -.4	-7567 22.8	-7444 48.4	-7174 72.8	-6816 92.4	-6413 104.3	-5981 107.5	-25
-30	-1738 -59.5	-3279 -50.8	-4596 -42.0	-5629 -32.1	-6352 -19.3	-6777 -2.3	-6940 19.2	-6895 43.3	-6702 67.1	-6415 87.1	-6073 100.3	-5699 105.1	-30
-35	-883 -51.2	-2413 -45.3	-3738 -38.8	-4796 -30.7	-5564 -19.6	-6049 -4.3	-6283 15.3	-6314 37.7	-6194 60.4	-5974 80.1	-5695 94.0	-5387 99.9	-35
-40	25 -42.6	-1487 -39.6	-2813 -35.4	-3897 -29.1	-4712 -19.5	-5264 -5.9	-5578 11.7	-5694 32.2	-5660 53.3	-5525 72.1	-5331 85.8	-5118 92.4	-40
-45	996 -34.7	-487 -34.0	-1806 -31.6	-2910 -26.8	-3775 -18.6	-4401 -6.6	-4807 9.1	-5028 27.4	-5106 46.4	-5088 63.6	-5018 76.6	-4939 83.3	-45
-50	2030 -26.1	589 -28.9	-713 -27.6	-1834 -23.7	-2749 -16.7	-3456 -6.1	-3969 7.7	-4316 23.7	-4539 40.3	-4675 55.4	-4768 67.0	-4862 73.5	-50
-55	3114 -23.2	1726 -24.2	447 -23.3	-665 -19.9	-1650 -13.5	-2446 -4.3	-3081 7.6	-3578 21.2	-3966 35.1	-4288 47.9	-4576 57.9	-4872 63.8	-55
-60	4219 -19.6	2691 -20.1	1641 -18.8	498 -15.4	-519 -9.6	-1407 -1.5	-2173 6.5	-2831 19.6	-3408 31.0	-3930 41.4	-4430 49.7	-4939 54.9	-60
-65	5305 -16.9	4038 -16.3	2616 -14.3	1663 -10.7	592 -5.3	-391 1.7	-1290 9.9	-2114 18.6	-2881 27.7	-3610 35.8	-4323 42.4	-5042 46.8	-65
-70	6325 -14.4	5112 -12.6	3913 -9.9	2745 -6.1	1620 -1.2	543 4.6	-466 11.2	-1471 18.0	-2421 24.7	-3347 30.8	-4260 35.9	-5174 39.4	-70
-75	7225 -11.0	6052 -8.6	4864 -5.6	3674 -2.0	2493 2.3	1325 6.9	175 11.9	-957 16.8	-2072 21.6	-3172 25.9	-4262 29.5	-5344 32.2	-75
-80	7953 -6.4	6795 -4.0	5600 -1.3	4377 1.6	3136 4.8	1884 8.2	627 11.6	-629 14.9	-1881 17.9	-3124 20.6	-4354 22.9	-5569 24.6	-80
-85	8456 -.3	7282 1.3	6056 3.0	4787 4.8	3485 6.6	2157 8.5	813 10.2	-539 11.9	-1891 13.4	-3233 14.6	-4558 15.6	-5856 16.3	-85
-90	8692 7.0	7466 7.3	6188 7.6	4863 7.8	3495 7.9	2104 8.0	697 8.0	-716 8.0	-2123 7.9	-3514 7.7	-4878 7.5	-6205 7.3	-90
E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT

VERTICAL INTENSITY (Z) WC-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG
90	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	90
85	55401 -63.1	55426 -62.4	55465 -61.8	55517 -61.3	55582 -60.9	55660 -60.5	55748 -60.1	55846 -59.9	55954 -59.7	56068 -59.6	56187 -59.6	56311 -59.7	85
80	54052 -51.5	54083 -50.1	54150 -48.8	54253 -47.7	54389 -46.8	54559 -46.0	54760 -45.4	54988 -45.0	55242 -44.8	55516 -44.8	55808 -44.9	56110 -45.3	80
75	52624 -37.1	52645 -35.1	52725 -33.3	52863 -31.7	53059 -30.5	53311 -29.5	53616 -26.8	53971 -28.5	54371 -28.4	54812 -28.5	55285 -29.0	55784 -29.6	75
70	51153 -22.4	51159 -19.9	51244 -17.8	51406 -16.2	51645 -14.9	51957 -14.1	52341 -13.7	52794 -13.6	53312 -13.9	53890 -14.4	54521 -15.2	55194 -16.3	70
65	49588 -9.2	49593 -6.5	49689 -4.4	49873 -2.9	50143 -2.0	50496 -1.7	50931 -1.8	51446 -2.4	52039 -3.3	52708 -4.5	53445 -5.9	54243 -7.4	65
60	47825 1.0	47849 4.1	47973 6.2	48188 7.5	48490 7.9	48874 7.5	49338 6.5	49884 5.0	50512 3.1	51222 1.1	52011 -1.0	52874 -2.9	60
55	45731 7.4	45800 11.3	45971 13.9	46232 15.2	46573 15.3	46987 14.3	47473 12.4	48032 9.9	48667 7.1	49382 4.1	50177 1.2	51048 -1.3	55
50	43175 9.8	43305 15.3	43541 19.0	43862 20.9	44254 21.2	44705 20.0	45214 17.7	45782 14.6	46414 10.9	47113 6.9	47882 3.2	48719 .1	50
45	40032 8.2	40234 16.1	40543 21.6	40933 24.8	41382 26.1	41878 25.7	42417 23.8	43000 20.7	43631 16.6	44311 12.0	45039 7.5	45814 3.6	45
40	36193 3.0	36462 13.6	36843 21.4	37298 26.6	37802 29.8	38343 31.3	38918 31.1	39528 29.1	40171 25.5	40839 20.7	41524 15.4	42222 10.7	40
35	31569 -5.2	31889 8.0	32323 18.0	32826 25.6	33371 31.5	33947 36.1	34558 38.9	35203 39.4	35874 37.3	36547 32.8	37201 27.0	37819 21.4	35
30	26113 -15.7	26454 -.7	26911 11.0	27431 20.9	27987 30.1	28578 38.7	29215 45.9	29901 50.3	30615 50.9	31316 47.5	31956 41.3	32507 34.8	30
25	19856 -27.4	20177 -11.8	20616 .7	21113 12.4	21644 24.9	22222 38.3	22869 50.9	23593 60.4	24361 64.7	25108 63.1	25757 57.1	26259 49.8	25
20	12949 -39.3	13201 -24.3	13572 -12.0	14001 .9	14471 16.5	15005 34.7	15644 53.3	16397 68.6	17221 77.4	18022 78.3	18696 73.1	19169 65.5	20
15	5681 -50.1	5807 -36.4	6059 -25.0	6375 -11.7	6748 6.4	7216 29.1	7829 53.4	8598 74.5	9466 88.0	10316 92.1	11014 88.3	11465 81.0	15
10	-1538 -58.5	-1593 -46.1	-1516 -35.8	-1356 -22.5	-1107 -2.8	-722 23.3	-147 52.2	621 78.3	1512 96.2	2384 103.6	3084 101.8	3500 95.6	10
5	-8237 -63.4	-8525 -51.6	-8669 -41.9	-8700 -28.7	-8595 -8.2	-8301 19.7	-7773 51.3	-7022 80.5	-6141 101.7	-5288 111.9	-4633 112.3	-4292 108.0	5
0	-13983 -63.8	-14533 -51.4	-14927 -41.4	-15166 -28.2	-15210 -7.8	-15007 19.9	-14529 51.7	-13815 81.5	-12984 103.9	-12208 115.7	-11662 118.2	-11460 115.9	0
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG

VERTICAL INTENSITY (Z) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	LAT / E. LONG
90	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	90
85	56436 -59.8	56561 -60.0	56685 -60.3	56804 -60.6	56918 -60.9	57025 -61.3	57124 -61.8	57212 -62.2	57291 -62.7	57357 -63.1	57412 -63.6	57455 -64.1	85
80	56419 -45.7	56728 -46.4	57031 -47.1	57321 -48.0	57594 -48.9	57844 -50.0	58064 -51.0	58252 -52.1	58404 -53.2	58517 -54.3	58590 -55.3	58625 -56.2	80
75	56299 -30.5	56818 -31.6	57330 -32.8	57823 -34.2	58284 -35.7	58701 -37.2	59061 -38.8	59355 -40.4	59575 -41.9	59715 -43.4	59773 -44.7	59750 -46.0	75
70	55897 -17.5	56616 -18.9	57332 -20.5	58026 -22.1	58677 -23.7	59264 -25.3	59765 -26.9	60162 -28.5	60440 -29.9	60588 -31.3	60601 -32.5	60479 -33.5	70
65	55087 -8.9	55961 -10.4	56842 -11.9	57703 -13.4	58515 -14.7	59247 -15.9	59868 -16.9	60349 -17.7	60667 -18.3	60802 -18.8	60746 -19.1	60499 -19.2	65
60	53796 -4.7	54761 -6.2	55743 -7.4	56710 -8.4	57628 -8.9	58455 -9.2	59154 -9.1	59685 -8.6	60015 -7.8	60118 -6.6	59979 -5.4	59596 -4.0	60
55	51985 -3.3	52972 -4.7	53982 -5.5	54982 -5.7	55933 -5.3	56792 -4.4	57512 -2.9	58048 -1.0	58360 1.5	58414 4.5	58189 7.7	57677 10.8	55
50	49617 -2.2	50562 -3.4	51529 -3.6	52487 -3.0	53398 -1.5	54218 .5	54900 3.0	55396 6.1	55663 9.9	55660 14.2	55358 19.0	54744 23.7	50
45	46630 1.0	47479 -.1	48341 .4	49192 2.0	49995 4.5	50714 7.4	51304 10.6	51723 14.0	51926 18.0	51869 22.6	51515 27.9	50840 33.2	45
40	42928 7.6	43639 6.6	44349 7.9	45039 10.8	45683 14.5	46252 18.2	46712 21.4	47028 24.1	47162 26.8	47067 30.1	46695 34.1	46013 38.7	40
35	38400 17.6	38950 16.9	39474 19.2	39969 23.8	40422 29.1	40812 33.6	41121 36.4	41327 37.4	41397 37.4	41288 37.4	40943 38.2	40310 40.1	35
30	32963 30.4	33343 29.9	33671 33.6	33958 40.4	34208 47.9	34414 53.6	34571 55.8	34673 54.3	34699 50.1	34607 45.0	34330 40.8	33804 38.3	30
25	26606 44.8	26627 44.7	26964 50.2	27052 59.7	27108 69.8	27142 76.9	27166 76.5	27187 73.9	27198 64.6	27155 53.3	27087 42.6	26613 34.4	25
20	19427 60.2	19509 60.7	19476 68.2	19384 80.5	19270 93.3	19160 101.9	19081 102.7	19056 94.7	19084 79.8	19126 61.5	19098 43.6	18909 29.3	20
15	11649 75.9	11610 77.4	11429 86.7	11180 101.5	10921 116.5	10695 126.0	10546 125.6	10508 113.9	10588 93.3	10740 68.2	10875 43.6	10889 23.4	15
10	3605 91.4	3451 93.9	3130 104.7	2737 121.1	2346 137.3	2022 146.6	1822 144.0	1792 128.5	1941 102.4	2217 71.2	2518 41.0	2733 16.3	10
5	-4294 105.2	-4582 108.9	-5054 120.5	-5601 137.3	-6130 152.9	-6560 160.4	-6815 154.9	-6844 135.2	-6637 104.5	-6254 68.7	-5805 34.6	-5414 7.5	5
0	-11623 114.8	-12089 119.5	-12747 131.3	-13479 147.0	-14178 160.4	-14745 164.8	-15094 155.6	-15163 132.0	-14945 97.8	-14503 59.4	-13958 24.0	-13437 -3.1	0
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	LAT / E. LONG

VERTICAL INTENSITY (Z) WC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
90	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	90
85	57487 -64.5	57507 -65.0	57517 -65.4	57518 -65.8	57510 -66.2	57495 -66.5	57474 -66.8	57449 -67.2	57420 -67.5	57389 -67.7	57356 -68.0	57324 -68.3	85
80	58622 -57.1	58585 -57.8	58518 -58.5	58426 -59.0	58314 -59.4	58189 -59.7	58057 -59.9	57924 -60.0	57795 -60.0	57676 -60.0	57571 -60.0	57483 -59.9	80
75	59650 -47.0	59480 -47.9	59252 -48.5	58977 -48.9	58669 -49.1	58345 -49.0	58018 -46.7	57705 -48.2	57418 -47.5	57168 -46.7	56966 -45.8	56817 -45.1	75
70	60231 -34.4	59869 -35.0	59412 -35.4	58885 -35.5	58313 -35.3	57724 -34.8	57145 -33.9	56604 -32.6	56123 -31.0	55721 -29.3	55414 -27.5	55211 -25.8	70
65	60071 -19.3	59482 -19.4	58762 -19.3	57947 -19.1	67078 -18.7	56197 -17.9	55346 -16.7	54564 -15.0	53883 -12.8	53330 -10.3	52926 -7.6	52684 -5.1	65
60	58981 -2.9	58162 -2.0	57177 -1.3	56078 -1.0	54921 -.7	53762 -.2	52658 .7	51657 2.3	50800 4.6	50120 7.5	49640 10.6	49374 13.6	60
55	56893 13.5	55867 15.5	54649 16.6	53304 16.9	51902 16.5	50514 16.0	49208 15.9	48041 16.6	47059 18.4	46296 21.2	45775 24.5	45508 27.6	55
50	53827 27.8	52642 30.7	51247 32.1	49718 31.8	48140 30.3	46596 28.2	45164 26.4	43904 25.8	42865 26.7	42079 29.0	41566 32.3	41334 35.4	50
45	49846 38.0	48568 41.3	47068 42.4	45433 41.3	43763 38.2	42150 34.3	40679 30.7	39412 28.6	38398 28.6	37663 30.7	37221 34.0	37071 37.1	45
40	45009 42.9	43714 45.7	42193 46.1	40545 43.7	38876 39.1	37290 33.4	35873 28.4	34691 25.4	33786 25.2	33181 27.6	32881 31.3	32872 34.5	40
35	39368 42.3	38138 43.5	36688 42.6	35121 39.1	33554 33.2	32095 26.5	30829 21.0	29819 18.1	29106 18.7	28707 22.2	28615 26.8	28805 30.2	35
30	32990 37.1	31903 35.9	30611 33.4	29222 28.8	27856 22.5	26619 15.9	25593 11.1	24836 9.6	24385 12.1	24252 17.4	24422 23.2	24852 26.6	30
25	25982 28.8	25103 24.7	24045 20.6	22916 15.5	21836 9.7	20901 4.5	20186 1.8	19741 3.1	19600 8.3	19770 15.8	20230 22.6	20918 25.5	25
20	18499 19.0	17871 12.1	17097 6.9	16285 2.2	15545 -2.1	14963 -4.7	14600 -4.1	14496 .6	14682 8.9	15163 18.4	15910 25.6	16846 27.1	20
15	10714 9.0	10356 .0	9885 -5.5	9409 -8.8	9027 -10.4	8809 -9.6	8799 -5.3	9030 3.0	9526 13.9	10293 24.5	11295 31.0	12445 30.1	15
10	2789 -.8	2691 -10.6	2513 -15.0	2356 -16.0	2308 -14.3	2423 -9.7	2731 -1.8	3254 9.4	4014 21.8	5016 32.3	6220 36.8	7535 32.6	10
5	-5154 -10.3	-5021 -19.2	-4945 -21.4	-4829 -19.1	-4598 -13.8	-4210 -5.8	-3649 4.9	-2899 17.6	-1940 30.1	-770 39.0	575 40.7	2002 32.7	5
0	-13020 -19.6	-12705 -26.0	-12428 -24.8	-12103 -19.0	-11663 -10.3	-11079 .3	-10340 12.5	-9436 25.2	-8349 36.2	-7075 42.5	-5649 40.8	-4158 29.5	0
E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

VERTICAL INTENSITY (Z) WC-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	LAT / E. LONG
90	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	90
85	57291 -68.5	57260 -68.8	57229 -69.1	57199 -69.4	57171 -69.7	57142 -70.0	57114 -70.4	57085 -70.7	57054 -71.0	57021 -71.4	56985 -71.7	56946 -72.0	85
80	57415 -60.0	57366 -60.1	57338 -60.3	57329 -60.6	57336 -61.1	57358 -61.7	57389 -62.5	57427 -63.4	57466 -64.4	57502 -65.5	57530 -66.6	57546 -67.8	80
75	56725 -44.5	56692 -44.1	56716 -44.0	56792 -44.3	56914 -45.0	57074 -46.1	57262 -47.6	57467 -49.4	57679 -51.5	57886 -53.9	58077 -56.4	58242 -58.9	75
70	55119 -24.4	55136 -23.5	55258 -23.2	55477 -23.6	55781 -24.8	56153 -26.8	56576 -29.5	57030 -32.8	57497 -36.6	57957 -40.7	58389 -44.9	58778 -49.1	70
65	52608 -3.1	52698 -1.8	52946 -1.7	53338 -2.8	53856 -5.1	54476 -8.6	55173 -13.2	55918 -18.5	56683 -24.3	57440 -30.3	58161 -36.2	58821 -42.0	65
60	49327 16.0	49495 17.0	49868 16.5	50428 14.1	51152 9.9	52009 4.1	52969 -2.8	53995 -10.5	55052 -18.4	56103 -26.0	57115 -33.2	58056 -39.7	60
55	45498 29.8	45739 30.2	46218 28.4	46913 24.0	47798 17.2	48842 8.6	50009 -1.2	51259 -11.2	52553 -20.7	53850 -29.3	55112 -36.5	56302 -42.4	55
50	41378 37.1	41689 36.5	42249 32.8	43036 25.8	44022 15.9	45177 4.2	46466 -8.3	47852 -20.2	49294 -30.6	50753 -38.7	52189 -44.4	53565 -48.1	50
45	37200 38.3	37590 36.3	38216 30.3	39053 20.4	40077 7.3	41263 -7.4	42583 -22.0	44005 -35.0	45495 -44.9	47017 -51.3	48534 -54.0	50011 -54.1	45
40	33128 35.0	33615 31.4	34301 22.9	35159 10.1	36168 -5.9	37314 -22.9	38582 -38.7	39951 -51.5	41397 -59.8	42889 -63.2	44397 -62.0	45889 -57.6	40
35	29229 29.9	29836 24.4	30582 13.3	31437 -2.3	32390 -20.5	33443 -38.7	34597 -54.4	35847 -65.6	37178 -71.3	38569 -71.1	39991 -65.9	41421 -57.2	35
30	25473 25.1	26213 17.3	27015 3.6	27850 -14.3	28721 -33.7	29646 -51.7	30649 -65.8	31740 -74.3	32914 -76.8	34152 -73.2	35435 -64.8	36741 -53.0	30
25	21743 22.1	22615 11.5	23465 -4.9	24268 -24.5	25041 -43.9	25827 -60.2	26666 -71.3	27582 -76.3	28577 -75.5	29636 -69.4	30740 -59.2	31875 -46.3	25
20	17862 20.8	18850 7.0	19737 -12.0	20503 -32.6	21183 -50.9	21836 -64.1	22521 -71.1	23268 -72.1	24083 -68.4	24951 -61.0	25857 -51.1	26794 -39.1	20
15	13621 20.3	14704 3.0	15621 -18.3	16359 -39.0	16967 -55.1	17518 -64.4	18077 -66.7	18681 -63.8	19333 -57.8	20021 -50.6	20732 -42.5	21467 -33.1	15
10	8833 19.0	9992 -1.6	10940 -24.5	11674 -44.5	12250 -57.7	12745 -62.5	13228 -60.2	13734 -53.9	14264 -46.7	14807 -40.6	15355 -35.3	15918 -29.3	10
5	3384 15.6	4605 -7.4	5597 -30.9	6363 -49.4	6959 -59.2	7460 -59.8	7930 -53.7	8400 -45.0	8872 -37.6	9333 -33.2	9781 -31.0	10234 -27.9	5
0	-2719 10.0	-1441 -14.0	-384 -36.7	455 -52.9	1126 -59.5	1697 -56.8	2223 -48.3	2731 -38.7	3220 -32.1	3681 -29.8	4114 -30.1	4540 -29.0	0
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	LAT / E. LONG

VERTICAL INTENSITY (Z) WC-85

LAT	E. LONG 240	245	250	255	260	265	270	275	280	285	290	295	E. LONG LAT
90	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	55546 -69.3	56546 -69.3	90
85	56902 -72.3	56852 -72.6	56798 -72.8	56738 -72.9	56672 -73.1	56600 -73.1	56523 -73.1	56442 -73.0	56356 -72.8	56267 -72.6	56176 -72.2	56084 -71.8	85
80	57547 -68.9	57529 -70.0	57490 -70.9	57426 -71.8	57338 -72.5	57225 -73.0	57088 -73.4	56927 -73.5	56745 -73.4	56544 -73.0	56328 -72.5	56101 -71.7	80
75	58372 -61.4	58459 -63.8	58498 -65.9	58483 -67.9	58412 -69.5	58283 -70.8	58098 -71.6	57860 -72.1	57571 -72.1	57240 -71.6	56871 -70.7	56475 -69.5	75
70	59108 -53.2	59364 -57.0	59537 -60.6	59617 -63.7	59601 -66.3	59485 -68.3	59270 -69.7	58961 -70.5	58565 -70.5	58091 -69.9	57552 -68.6	56963 -66.7	70
65	59397 -47.4	59869 -52.4	60222 -56.9	60442 -60.9	60519 -64.4	60450 -67.1	60234 -69.1	59874 -70.3	59380 -70.5	58768 -69.7	58055 -68.0	57264 -65.4	65
60	58895 -45.6	59609 -50.9	60173 -55.7	60568 -60.1	60781 -64.2	60799 -67.7	60619 -70.5	60242 -72.3	59679 -73.1	58947 -72.5	58073 -70.7	57089 -67.6	60
55	57388 -47.3	58338 -51.6	59123 -55.8	59717 -60.1	60097 -64.5	60243 -69.1	60143 -73.3	59792 -76.6	59199 -78.7	58383 -79.2	57376 -77.8	56221 -74.7	55
50	54846 -50.5	55998 -52.5	56988 -55.0	57781 -58.6	58344 -63.6	58646 -69.7	58664 -76.1	58383 -82.1	57805 -86.6	56947 -89.0	55846 -89.0	54555 -86.7	50
45	51416 -52.6	52713 -51.2	53865 -51.3	54831 -54.0	55569 -59.6	56034 -67.8	56191 -77.3	56012 -86.9	55489 -95.0	54633 -100.3	53483 -102.5	52096 -101.5	45
40	47336 -51.6	48705 -46.4	49959 -43.8	51051 -45.5	51931 -51.8	52544 -62.3	52839 -75.5	52778 -89.3	52338 -101.4	51524 -110.4	50368 -115.3	48932 -116.4	40
35	42834 -47.1	44201 -38.3	45487 -33.3	46645 -33.7	47619 -40.6	48346 -53.2	48764 -69.8	48821 -87.6	48485 -103.9	47746 -116.5	46630 -124.4	45191 -127.7	35
30	38052 -40.1	39349 -28.7	40602 -21.5	41768 -20.7	42787 -27.4	43592 -41.2	44113 -60.1	44286 -81.2	44067 -101.0	43435 -116.8	42401 -127.4	41007 -133.2	30
25	33034 -32.4	34206 -19.7	35375 -10.9	36503 -8.4	37533 -13.9	38395 -27.4	39008 -47.2	39301 -70.1	39216 -92.3	38719 -110.7	37805 -123.8	36500 -131.9	25
20	27766 -26.0	28781 -13.2	29835 -3.0	30903 1.8	31932 -1.1	32647 -12.6	33561 -31.6	33988 -54.9	34056 -78.7	33717 -99.2	32950 -114.6	31764 -125.3	20
15	22247 -22.0	23097 -9.7	24031 2.1	25038 10.0	26073 10.9	27055 2.8	27687 -14.0	28465 -37.0	28702 -61.8	28535 -84.5	27927 -102.6	26871 -116.1	15
10	16531 -20.5	17236 -8.5	18068 5.3	19030 17.3	20083 22.9	21147 19.0	22109 4.8	22850 -17.7	23262 -43.9	23265 -69.4	22811 -90.8	21880 -107.6	10
5	10735 -20.8	11342 -8.2	12103 8.5	13038 24.9	14118 35.6	15261 35.9	16348 24.0	17244 1.5	17821 -26.9	17984 -56.0	17670 -91.7	16851 -102.4	5
0	5005 -22.2	5572 -7.8	6302 12.5	7225 33.7	8324 49.1	9526 53.0	10710 42.6	11733 19.2	12453 -12.3	12758 -45.8	12573 -76.1	11863 -101.1	0
LAT	E. LONG 240	245	250	255	260	265	270	275	280	285	290	295	E. LONG LAT

VERTICAL INTENSITY (Z) WMC-85

LAT	E. LONG 300	305	310	315	320	325	330	335	340	345	350	355	E. LONG LAT
90	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	56546 -69.3	90
85	55992 -71.4	55902 -70.9	55814 -70.3	55732 -69.6	55655 -68.9	55586 -68.2	55525 -67.5	55474 -66.7	55435 -66.0	55407 -65.2	55391 -64.5	55389 -63.7	85
80	55866 -70.7	55629 -69.5	55394 -68.2	55166 -66.7	54948 -65.1	54746 -63.4	54563 -61.7	54404 -59.9	54271 -58.1	54167 -56.4	54095 -54.7	54056 -53.0	80
75	56058 -67.8	55632 -65.8	55206 -63.6	54788 -61.1	54388 -58.5	54014 -55.7	53673 -52.9	53372 -50.0	53116 -47.2	52911 -44.5	52759 -41.9	52663 -39.4	75
70	56339 -64.2	55696 -61.3	55052 -58.0	54421 -54.4	53819 -50.6	53257 -46.8	52747 -42.9	52298 -39.0	51918 -35.3	51610 -31.7	51379 -28.3	51226 -25.2	70
65	56421 -62.0	55551 -58.0	54679 -53.6	53831 -48.9	53027 -44.0	52284 -39.1	51616 -34.2	51035 -29.3	50548 -24.7	50158 -20.2	49869 -16.1	49679 -12.4	65
60	56031 -63.5	54938 -58.6	53848 -53.2	52795 -47.4	51806 -41.5	50905 -35.5	50107 -29.6	49423 -23.7	48861 -18.0	48421 -12.5	48104 -7.4	47908 -2.8	60
55	54969 -70.3	53673 -64.7	52385 -58.6	51151 -52.1	50007 -45.4	48979 -38.6	48085 -31.7	47334 -24.6	46729 -17.4	46270 -10.4	45956 -3.7	45779 2.3	55
50	53139 -82.4	51668 -76.8	50210 -70.5	48823 -63.8	47554 -56.9	46431 -49.6	45471 -41.8	44678 -33.4	44055 -24.3	43600 -15.0	43307 -5.8	43170 2.7	50
45	50552 -98.2	48937 -93.3	47335 -87.6	45819 -81.7	44444 -75.3	43243 -68.2	42229 -59.9	41407 -49.9	40773 -38.5	40325 -26.1	40059 -13.5	39966 -1.8	45
40	47300 -114.6	45571 -111.1	43846 -107.2	42211 -103.0	40730 -98.3	39443 -92.2	38364 -83.8	37496 -72.5	36835 -58.4	36380 -42.4	36128 -25.9	36072 -10.3	40
35	43514 -128.0	41703 -126.8	39868 -125.5	38108 -124.3	36500 -122.4	35091 -118.4	33905 -110.7	32947 -98.3	32218 -81.6	31720 -61.8	31453 -41.2	31410 -21.8	35
30	39330 -135.8	37468 -137.5	35533 -139.6	33633 -142.4	31857 -144.4	30270 -143.3	28909 -137.0	27793 -124.0	26933 -104.9	26339 -81.7	26014 -57.3	25948 -34.7	30
25	34863 -137.2	32979 -142.1	30952 -148.2	28893 -155.4	26905 -161.9	25074 -164.4	23460 -160.0	22108 -146.9	21046 -126.0	20295 -99.9	19860 -72.6	19728 -47.7	25
20	30196 -133.3	28312 -141.5	26202 -151.6	23973 -163.5	21739 -174.4	19611 -180.6	17684 -176.2	16031 -165.4	14708 -143.1	13745 -114.9	13152 -85.6	12906 -59.6	20
15	25385 -127.0	23515 -138.4	21333 -152.2	18939 -168.0	16456 -182.8	14020 -192.1	11758 -191.6	9781 -179.1	8168 -156.0	6964 -126.3	6177 -95.8	5773 -69.6	15
10	20475 -121.7	18627 -136.0	16394 -152.6	13867 -171.2	11177 -188.7	8474 -200.2	5919 -200.9	3650 -188.7	1770 -165.0	330 -134.4	-665 -103.2	-1261 -77.1	10
5	15524 -119.7	13712 -136.4	11464 -154.9	8869 -174.9	6055 -193.5	3188 -205.9	441 -207.2	-2027 -195.1	-4105 -170.9	-5737 -139.7	-6929 -108.0	-7735 -81.7	5
0	10623 -121.5	8873 -140.0	6667 -159.1	4091 -179.1	1273 -197.4	-1621 -209.6	-4415 -210.8	-6952 -198.6	-9120 -174.3	-10874 -142.6	-12227 -110.3	-13238 -83.0	0
LAT	E. LONG 300	305	310	315	320	325	330	335	340	345	350	355	E. LONG LAT

VERTICAL INTENSITY (Z) WC-85

LAT	E. LONG 0	5	10	15	20	25	30	35	40	45	50	55	E. LONG LAT
0	-13983 -63.8	-14533 -51.4	-14927 -41.4	-15166 -28.2	-15210 -7.8	-15007 19.9	-14529 51.7	-13815 81.5	-12984 103.9	-12208 115.7	-11662 118.2	-11460 115.9	0
-5	-18484 -59.5	-19283 -45.0	-19915 -33.4	-20347 -19.9	-20524 -.7	-20401 24.8	-19977 53.8	-19325 81.2	-18590 102.1	-17959 113.8	-17601 117.3	-17616 116.7	-5
-10	-21644 -50.5	-22629 -32.6	-23435 -18.7	-24004 -4.8	-24271 12.4	-24206 33.7	-23640 57.3	-23282 79.2	-22701 95.7	-22288 104.9	-22200 107.9	-22514 107.9	-10
-15	-23573 -37.4	-24630 -15.8	-25501 .8	-26114 15.0	-26409 29.5	-26376 45.2	-26078 61.1	-25653 75.0	-25286 84.6	-25163 89.1	-25418 89.6	-26102 88.9	-15
-20	-24519 -21.6	-25516 3.4	-26326 22.4	-26881 36.6	-27139 47.9	-27118 57.1	-26906 64.3	-26659 68.7	-26564 69.9	-26788 67.9	-27439 64.3	-28536 61.4	-20
-25	-24787 -4.4	-25612 22.7	-26257 43.2	-26679 57.0	-26863 64.8	-26852 67.7	-26755 66.4	-26730 61.6	-26948 53.9	-27591 44.8	-28612 36.2	-30125 30.1	-25
-30	-24662 12.5	-25260 40.1	-25700 60.8	-25969 73.7	-26085 78.6	-26112 76.3	-26168 68.1	-26397 55.4	-26945 40.2	-27919 24.8	-29362 11.3	-31244 1.7	-30
-35	-24388 27.9	-24775 54.2	-25040 74.2	-25199 85.8	-25297 88.6	-25412 82.9	-25657 70.2	-26153 52.6	-27015 32.6	-28315 12.7	-30069 -4.3	-32234 -16.7	-35
-40	-24183 41.0	-24430 64.9	-24599 83.1	-24731 93.5	-24884 95.2	-25140 88.4	-25596 74.4	-26348 55.3	-27476 33.7	-29025 12.4	-30992 -6.1	-33332 -19.7	-40
-45	-24277 51.9	-24468 72.5	-24633 88.5	-24820 98.0	-25091 99.8	-25519 93.9	-26181 81.4	-27149 64.0	-28474 44.2	-30179 24.5	-32253 7.2	-34655 -6.0	-45
-50	-24911 61.2	-25112 78.2	-25333 92.0	-25623 100.9	-26037 103.6	-26632 100.2	-27465 91.1	-28585 78.0	-30023 62.5	-31790 46.7	-33871 32.5	-36233 21.5	-50
-55	-26302 69.6	-26538 83.4	-26834 95.1	-27228 103.4	-27764 107.4	-28483 107.0	-29425 102.3	-30619 94.4	-32084 84.4	-33824 73.8	-35826 63.9	-38063 55.9	-55
-60	-28580 78.0	-28845 88.8	-29196 98.5	-29659 106.2	-30266 111.3	-31044 113.4	-32017 112.7	-33205 109.6	-34615 104.8	-36250 99.3	-38097 93.7	-40138 88.8	-60
-65	-31750 86.5	-32021 94.6	-32389 102.3	-32872 109.1	-33488 114.4	-34255 118.0	-35187 119.9	-36293 120.3	-37578 119.3	-39038 117.5	-40667 115.2	-42447 112.9	-65
-70	-35688 94.5	-35941 100.2	-36291 105.9	-36747 111.2	-37318 115.8	-38015 119.6	-38843 122.4	-39805 124.3	-40903 125.3	-42134 125.5	-43488 125.1	-44956 124.2	-70
-75	-40184 101.0	-40403 104.5	-40706 108.1	-41096 111.6	-41579 114.7	-42156 117.6	-42830 119.9	-43600 121.7	-44465 123.0	-45421 123.7	-46461 123.9	-47576 123.5	-75
-80	-44992 104.7	-45159 106.4	-45389 108.1	-45681 109.7	-46036 111.3	-46454 112.7	-46934 113.8	-47473 114.8	-48070 115.4	-48721 115.7	-49420 115.8	-50163 115.4	-80
-85	-49842 104.9	-49939 105.2	-50068 105.6	-50229 106.0	-50422 106.3	-50644 106.5	-50896 106.7	-51176 106.8	-51480 106.9	-51808 106.8	-52157 106.6	-52524 106.3	-85
-90	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-90
LAT	E. LONG 0	5	10	15	20	25	30	35	40	45	50	55	E. LONG LAT

VERTICAL INTENSITY (Z) WC-85

LAT	E. LONG 60	65	70	75	80	85	90	95	100	105	110	115	E. LONG LAT
0	-11623 114.8	-12089 119.5	-12747 131.3	-13479 147.0	-14178 160.4	-14745 164.8	-15094 155.6	-15163 132.0	-14945 97.6	-14503 59.4	-13958 24.0	-13437 -3.1	0
-5	-18012 117.1	-18716 122.5	-19614 133.6	-20581 147.1	-21499 157.2	-22260 157.7	-22765 144.7	-22946 118.2	-22795 82.3	-22377 43.8	-21812 9.6	-21232 -15.0	-5
-10	-23218 109.3	-24229 114.9	-25426 124.6	-26683 135.4	-27877 141.7	-28894 138.5	-29629 122.8	-30010 95.1	-30022 60.1	-29725 24.1	-29234 -6.3	-28676 -26.3	-10
-15	-27180 90.2	-28555 95.2	-30101 103.3	-31693 111.4	-33211 114.7	-34538 109.1	-35570 92.5	-36229 66.2	-36495 34.7	-36414 3.8	-36087 -20.5	-35632 -34.6	-15
-20	-30023 61.5	-31790 65.3	-33711 71.8	-35661 77.8	-37526 79.5	-39194 73.5	-40563 58.6	-41554 36.5	-42137 11.0	-42342 -12.6	-42250 -29.6	-41964 -37.3	-20
-25	-32013 28.1	-34162 30.3	-36445 35.3	-38743 40.3	-40947 41.9	-42953 37.8	-44665 27.1	-46003 11.4	-46930 -6.2	-47456 -21.4	-47640 -30.8	-47567 -32.7	-25
-30	-33480 -2.8	-35955 -2.4	-38548 1.5	-41146 6.4	-43647 9.4	-45956 8.8	-47981 3.8	-49646 -4.4	-50904 -13.4	-51751 -20.4	-52223 -23.1	-52385 -20.5	-30
-35	-34726 -23.3	-37436 -24.5	-40252 -21.4	-43072 -16.2	-45800 -11.1	-48348 -7.8	-50629 -6.9	-52571 -7.8	-54121 -9.3	-55261 -9.6	-56009 -7.5	-56410 -2.6	-35
-40	-35966 -27.7	-38800 -29.9	-41735 -27.5	-44679 -22.0	-47545 -15.3	-50249 -8.8	-52712 -3.3	-54862 1.1	-56646 4.9	-58035 8.7	-59030 13.1	-59661 18.0	-40
-45	-37318 -14.1	-40164 -16.8	-43110 -15.0	-46076 -9.8	-48982 -2.6	-51752 5.3	-54310 12.9	-56590 19.7	-58537 25.7	-60117 30.8	-61319 34.9	-62157 37.9	-45
-50	-38824 14.4	-41582 11.6	-44440 12.6	-47328 16.8	-50177 23.0	-52917 30.1	-55480 37.2	-57803 43.6	-59834 48.8	-61537 52.4	-62894 54.3	-63904 54.1	-50
-55	-40498 50.5	-43082 47.9	-45761 48.1	-48479 50.6	-51175 54.5	-53789 59.1	-56261 63.6	-58535 67.3	-60564 69.7	-62312 70.3	-63756 68.9	-64888 65.5	-55
-60	-42343 85.2	-44677 83.0	-47097 82.3	-49558 82.7	-52010 83.9	-54404 85.3	-56689 86.3	-58819 86.4	-60753 85.3	-62458 82.7	-63911 78.4	-65099 72.4	-60
-65	-44359 110.7	-46375 108.9	-48463 107.4	-50589 106.1	-52714 104.9	-54800 103.4	-56807 101.4	-58701 98.6	-60446 94.7	-62017 89.8	-63393 83.7	-64561 76.7	-65
-70	-46520 122.9	-48162 121.3	-49859 119.4	-51586 117.2	-53317 114.6	-55023 111.6	-56677 107.9	-58253 103.6	-59727 98.7	-61079 93.1	-62292 86.9	-63354 80.4	-70
-75	-48755 122.6	-49987 121.3	-51255 119.5	-52545 117.2	-53838 114.5	-55118 111.3	-56367 107.7	-57568 103.7	-58707 99.3	-59769 94.7	-60742 89.9	-61617 85.0	-75
-80	-50942 114.8	-51750 113.8	-52579 112.5	-53420 110.8	-54264 108.9	-55101 106.7	-55923 104.4	-56720 101.8	-57484 99.1	-58206 96.3	-58881 93.5	-59501 90.8	-80
-85	-52906 105.9	-53300 105.4	-53702 104.8	-54108 104.1	-54517 103.3	-54922 102.4	-55322 101.5	-55712 100.6	-56089 99.6	-56449 98.7	-56790 97.7	-57109 96.9	-85
-90	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-90
LAT	E. LONG 60	65	70	75	80	85	90	95	100	105	110	115	E. LONG LAT

VERTICAL INTENSITY (Z) WC-85

LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
0	-13020 -19.6	-12705 -26.0	-12428 -24.8	-12103 -19.0	-11663 -10.3	-11079 .3	-10340 12.5	-9436 25.2	-8349 36.2	-7075 42.5	-5649 40.8	-4158 29.5	0
-5	-20719 -28.1	-20280 -30.7	-19864 -25.7	-19395 -16.4	-18819 -5.1	-18112 6.8	-17268 16.9	-16276 30.1	-15121 38.5	-13797 41.5	-12335 36.8	-10813 23.5	-5
-10	-28137 -34.7	-27637 -33.0	-27139 -24.3	-26587 -12.3	-25937 .3	-25168 12.3	-24273 22.8	-23243 31.3	-22062 36.5	-20724 36.5	-19255 29.8	-17720 16.2	-10
-15	-35136 -37.8	-34632 -31.9	-34105 -20.5	-33517 -7.1	-32837 5.4	-32048 15.9	-31140 23.9	-30102 29.1	-28917 31.2	-27582 29.2	-26117 22.2	-24577 10.4	-15
-20	-41569 -35.6	-41111 -26.7	-40596 -14.0	-40008 -1.0	-39328 10.0	-38542 17.9	-37639 22.7	-36606 24.9	-35427 24.6	-34099 21.8	-32641 16.3	-31100 8.2	-20
-25	-47316 -27.4	-46943 -17.1	-46474 -5.0	-45911 6.0	-45249 14.1	-44477 18.7	-43585 20.3	-42559 20.0	-41387 18.6	-40068 16.6	-38620 14.1	-37083 11.1	-25
-30	-52308 -13.5	-52051 -3.9	-51653 5.8	-51135 13.4	-50501 17.7	-49749 18.9	-48869 17.8	-47851 16.0	-46686 14.7	-45379 14.7	-43948 16.2	-42430 18.9	-30
-35	-56523 4.2	-56406 11.4	-56104 17.3	-55648 20.6	-55055 20.9	-54327 18.9	-53463 15.9	-52458 13.6	-51309 13.4	-50024 16.2	-48625 22.0	-47146 30.1	-35
-40	-59971 22.7	-60011 26.2	-59828 27.7	-59456 26.7	-58920 23.4	-58232 18.9	-57398 14.9	-56419 12.9	-55302 14.4	-54060 20.0	-52717 29.6	-51303 42.2	-40
-45	-62661 39.3	-62871 38.7	-62827 35.8	-62565 31.1	-62113 25.1	-61490 19.2	-60712 14.9	-59788 13.8	-58732 17.1	-57564 25.0	-56306 37.3	-54987 52.7	-45
-50	-64586 51.9	-64966 47.5	-65077 41.3	-64950 33.9	-64615 26.4	-64096 20.1	-63413 16.3	-62586 16.3	-61632 20.9	-60574 30.2	-59437 43.7	-58245 60.2	-50
-55	-65715 60.1	-66253 53.0	-66524 44.6	-66553 36.3	-66368 28.5	-65994 22.6	-65452 19.7	-64768 20.6	-63961 25.9	-63056 35.4	-62075 48.7	-61040 64.5	-55
-60	-66022 65.1	-66686 56.8	-67104 48.1	-67295 39.9	-67280 32.9	-67081 28.0	-66720 26.0	-66219 27.5	-65600 32.6	-64883 41.3	-64088 53.0	-63233 66.8	-60
-65	-65513 69.0	-66251 61.0	-66781 53.2	-67114 46.2	-67264 40.6	-67247 37.0	-67081 35.8	-66783 37.4	-66370 41.8	-65860 48.8	-65268 58.1	-64607 69.0	-65
-70	-64258 73.7	-64999 67.2	-65580 61.2	-66005 56.0	-66281 52.1	-66417 49.7	-66424 49.1	-66314 50.4	-66099 53.6	-65789 58.6	-65394 65.1	-64925 72.7	-70
-75	-62388 80.3	-63050 75.9	-63600 72.0	-64040 68.7	-64370 66.4	-64594 65.0	-64718 64.7	-64746 65.5	-64684 67.4	-64538 70.4	-64315 74.2	-64018 78.7	-75
-80	-60062 88.3	-60560 86.0	-60992 84.0	-61356 82.4	-61651 81.2	-61877 80.5	-62035 80.3	-62126 80.7	-62152 81.5	-62114 82.9	-62015 84.6	-61857 86.7	-80
-85	-57403 96.0	-57670 95.3	-57908 94.7	-58115 94.1	-58290 93.8	-58433 93.5	-58542 93.4	-58617 93.4	-58658 93.6	-58665 93.9	-58639 94.4	-58579 94.9	-85
-90	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-90
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

VERTICAL INTENSITY (Z) WGS-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
0	-2719 10.0	-1441 -14.0	-384 -36.7	455 -52.9	1126 -59.5	1697 -56.6	2223 -46.3	2731 -38.7	3220 -32.1	3681 -29.8	4114 -30.1	4540 -29.0	0
-5	-9335 3.2	-7998 -19.8	-6854 -40.4	-5906 -53.7	-5111 -57.6	-4413 -53.0	-3769 -44.0	-3156 -35.3	-2575 -30.7	-2032 -30.7	-1526 -32.8	-1045 -32.2	-5
-10	-16210 -2.5	-14809 -22.6	-13564 -39.6	-12462 -49.8	-11533 -51.9	-10674 -47.3	-9870 -39.9	-9105 -34.1	-8376 -32.5	-7691 -35.1	-7052 -38.4	-6445 -37.4	-10
-15	-23039 -4.7	-21573 -20.1	-20226 -32.6	-19007 -39.7	-17898 -40.9	-16870 -37.9	-15896 -34.2	-14962 -32.9	-14066 -35.7	-13215 -41.3	-12410 -45.8	-11645 -44.2	-15
-20	-29539 -1.4	-28020 -10.9	-26584 -18.3	-25247 -22.5	-23999 -23.7	-22823 -23.8	-21698 -25.1	-20614 -29.6	-19567 -37.6	-18560 -46.8	-17595 -53.6	-16667 -51.5	-20
-25	-35513 7.9	-33961 5.6	-32467 2.7	-31049 1.1	-29705 -.8	-28423 -4.4	-27192 -11.2	-25999 -22.0	-24840 -35.5	-23713 -48.8	-22615 -57.6	-21540 -57.5	-25
-30	-40872 22.3	-39319 25.6	-37807 28.2	-36355 28.8	-34965 26.3	-33633 19.5	-32347 7.7	-31096 -8.5	-29872 -27.6	-28666 -44.5	-27468 -56.5	-26268 -59.4	-30
-35	-45628 39.4	-44109 48.1	-42622 54.7	-41183 57.5	-39798 54.8	-38464 46.0	-37170 30.9	-35905 11.0	-34654 -11.2	-33401 -32.0	-32131 -47.3	-30825 -53.9	-35
-40	-49855 55.9	-48405 68.9	-46979 76.7	-45594 83.4	-44253 81.5	-42953 72.3	-41684 56.3	-40430 35.0	-39174 11.4	-37893 -11.0	-36566 -28.8	-35169 -39.0	-40
-45	-53639 69.3	-52287 84.8	-50953 96.9	-49648 103.5	-48375 103.2	-47130 95.5	-45901 80.9	-44669 61.2	-43415 38.7	-42112 16.8	-40736 -1.8	-39264 -14.3	-45
-50	-57024 77.7	-55794 94.2	-54572 107.5	-53364 115.8	-52173 117.7	-50990 112.9	-49804 101.8	-48596 85.9	-47344 67.0	-46024 47.8	-44612 30.7	-43088 17.6	-50
-55	-59970 81.3	-58681 97.3	-57785 110.8	-56685 120.1	-55581 124.3	-54464 123.0	-53323 116.5	-52141 105.7	-50898 92.1	-49575 77.5	-48151 63.6	-46613 51.9	-55
-60	-62334 81.5	-61400 95.8	-60441 108.3	-59457 117.9	-58447 123.8	-57405 125.7	-56319 123.7	-55177 118.2	-53965 110.2	-52668 100.9	-51275 91.3	-49777 82.6	-60
-65	-63869 80.6	-63120 92.2	-62307 102.8	-61451 111.7	-60549 118.3	-59599 122.2	-58593 123.5	-57523 122.4	-56382 119.4	-55161 114.9	-53856 109.6	-52465 104.5	-65
-70	-64388 80.9	-63789 89.3	-63132 97.3	-62419 104.5	-61649 110.5	-60822 115.1	-59935 116.1	-58985 119.6	-57969 119.6	-56887 118.9	-55738 117.2	-54525 115.0	-70
-75	-63652 83.7	-63222 88.9	-62731 94.1	-62180 99.0	-61571 103.4	-60906 107.2	-60186 110.3	-59411 112.6	-58582 114.2	-57703 115.1	-56776 115.4	-55805 115.1	-75
-80	-61642 89.0	-61373 91.5	-61053 94.1	-60682 96.7	-60263 99.1	-59799 101.4	-59292 103.5	-58745 105.2	-58159 106.7	-57539 107.8	-56888 108.7	-56210 109.2	-80
-85	-58487 95.6	-58364 96.3	-58211 97.0	-58029 97.8	-57819 98.6	-57583 99.4	-57323 100.1	-57041 100.8	-56738 101.5	-56417 102.1	-56079 102.6	-55729 103.0	-85
-90	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-90
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT

VERTICAL INTENSITY (Z) WC-85

LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	LAT / E. LONG
0	5005 -22.2	5572 -7.8	6302 12.5	7225 33.7	8324 49.1	9526 53.0	10710 42.6	11733 19.2	12453 -12.3	12758 -45.8	12573 -76.1	11863 -101.1	0
-5	-539 -24.3	51 -7.2	786 17.1	1708 42.7	2812 62.1	4040 68.5	5281 58.7	6394 33.9	7231 -.7	7667 -36.5	7613 -73.4	7026 -102.2	-5
-10	-5836 -27.5	-5172 -7.3	-4395 20.6	-3461 49.8	-2359 72.0	-1130 80.1	137 70.6	1311 44.7	2248 7.7	2812 -33.1	2905 -71.2	2468 -102.6	-10
-15	-10894 -32.4	-10117 -9.7	-9263 20.8	-8288 52.1	-7173 75.9	-5939 85.1	-4652 76.3	-3424 50.6	-2391 13.4	-1689 -27.9	-1432 -66.7	-1685 -98.8	-15
-20	-15759 -39.0	-14840 -15.3	-13871 15.8	-12812 47.6	-11640 71.9	-10362 82.1	-9028 75.0	-7729 51.8	-6598 17.4	-5740 -21.3	-5302 -57.8	-5353 -88.1	-20
-25	-20474 -46.1	-19394 -23.7	-18270 5.9	-17073 36.3	-15783 60.1	-14403 71.4	-12973 67.4	-11569 48.9	-10303 20.4	-9302 -12.3	-8683 -43.6	-8527 -69.8	-25
-30	-25051 -51.0	-23798 -32.1	-22489 -6.2	-21106 21.1	-19640 43.5	-18100 55.9	-16525 55.8	-14985 43.9	-13581 23.5	-12430 -.9	-11641 -24.8	-11294 -45.2	-30
-35	-29467 -50.1	-28040 -36.4	-26533 -15.9	-24942 6.8	-23270 26.9	-21539 40.0	-19794 44.1	-18105 39.2	-16564 27.6	-15276 12.4	-14337 -3.3	-13817 -17.4	-35
-40	-33684 -40.0	-32100 -32.4	-30410 -18.2	-28623 -.6	-26756 15.9	-24845 28.8	-22943 36.1	-21120 37.2	-19463 33.4	-18060 26.5	-16994 18.3	-16321 9.9	-40
-45	-37678 -19.6	-35970 -17.5	-34141 -9.5	-32207 2.2	-30200 14.9	-28162 26.4	-26152 35.0	-24242 40.0	-22506 41.6	-21023 40.6	-19855 37.8	-19047 33.6	-45
-50	-41439 9.8	-39659 7.6	-37758 10.4	-35757 16.9	-33693 25.3	-31612 34.1	-29573 41.9	-27642 48.1	-25884 52.1	-24362 54.1	-23124 54.1	-22202 52.2	-50
-55	-44953 43.6	-43171 39.1	-41280 38.3	-39306 40.5	-37282 44.8	-35255 50.2	-33277 55.7	-31404 60.6	-29686 64.3	-28178 66.6	-26910 67.1	-25906 65.9	-55
-60	-48172 75.6	-46467 70.6	-44675 67.9	-42820 67.3	-40933 68.3	-39053 70.3	-37221 72.8	-35481 75.2	-33873 77.1	-32432 77.9	-31183 77.6	-30143 75.9	-60
-65	-50991 99.7	-49441 95.7	-47830 92.7	-46178 90.7	-44509 89.6	-42853 89.2	-41238 89.1	-39697 89.0	-38256 88.7	-36940 87.8	-35766 86.3	-34747 83.9	-65
-70	-53253 112.6	-51930 110.1	-50569 107.9	-49184 105.6	-47793 104.0	-46415 102.4	-45069 100.9	-43775 99.4	-42551 97.7	-41413 95.8	-40374 93.6	-39436 91.1	-70
-75	-54796 114.5	-53757 113.6	-52695 112.4	-51621 111.1	-50546 109.7	-49480 108.1	-48437 106.5	-47427 104.9	-46460 103.1	-45546 101.2	-44694 99.2	-43907 97.2	-75
-80	-55509 109.5	-54791 109.5	-54060 109.2	-53324 108.8	-52587 108.2	-51857 107.5	-51139 106.7	-50439 105.7	-49764 104.7	-49118 103.7	-48506 102.7	-47932 101.6	-80
-85	-55367 103.4	-54996 103.6	-54620 103.8	-54241 103.9	-53862 104.0	-53485 104.0	-53113 103.9	-52750 103.6	-52397 103.7	-52057 103.5	-51734 103.4	-51428 103.2	-85
-90	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-90
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	LAT / E. LONG

VERTICAL INTENSITY (Z) epoch 1985

E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
0	10623 -121.5	8873 -140.0	6667 -159.1	4091 -179.1	1273 -197.4	-1621 -209.6	-4415 -210.8	-6952 -198.6	-9120 -174.3	-10874 -142.6	-12227 -110.3	-13238 -83.0	0
-5	5898 -125.1	4256 -144.7	2159 -163.4	-301 -182.3	-2998 -199.3	-5776 -210.3	-8470 -211.1	-10937 -196.9	-13082 -174.8	-14872 -143.0	-16330 -109.8	-17513 -80.9	-5
-10	1493 -127.1	12 -146.8	-1908 -164.5	-4169 -181.5	-6645 -196.6	-9194 -206.3	-11672 -206.7	-13960 -195.0	-15985 -171.6	-17729 -140.1	-19225 -106.0	-20512 -75.0	-10
-15	-2466 -123.4	-3741 -142.5	-5435 -158.7	-7443 -173.7	-9642 -186.9	-11903 -195.6	-14104 -195.9	-16151 -185.2	-17993 -163.3	-19624 -132.8	-21074 -98.4	-22383 -65.4	-15
-20	-5915 -111.3	-6956 -128.9	-8400 -143.4	-10137 -156.8	-12048 -168.6	-14013 -176.7	-15930 -177.7	-17723 -166.8	-19357 -149.1	-20830 -120.4	-22166 -86.6	-23394 -52.3	-20
-25	-8665 -90.0	-9668 -105.5	-10860 -118.5	-12335 -130.7	-13976 -141.6	-15670 -150.0	-17328 -152.2	-18885 -145.6	-20310 -128.9	-21599 -103.0	-22767 -70.8	-23830 -36.6	-25
-30	-11418 -61.5	-11990 -74.6	-12940 -86.2	-14167 -97.6	-15560 -108.6	-17013 -117.3	-18442 -121.1	-19785 -117.1	-21010 -103.6	-22135 -81.3	-23076 -52.0	-23929 -19.3	-30
-35	-13743 -29.5	-14095 -40.1	-14809 -50.6	-15793 -61.5	-16946 -72.6	-18170 -82.0	-19383 -87.2	-20524 -85.7	-21556 -75.7	-22459 -57.1	-23231 -31.5	-23873 -1.9	-35
-40	-16062 1.6	-16197 -6.9	-16671 -16.3	-17404 -26.8	-18308 -37.8	-19292 -47.5	-20281 -53.7	-21215 -54.1	-22054 -47.1	-22775 -32.3	-23368 -10.9	-23834 14.6	-40
-45	-18611 28.2	-18529 21.3	-18756 12.9	-19224 3.0	-19858 -7.4	-20583 -16.8	-21330 -23.2	-22045 -24.7	-22688 -20.0	-23237 -8.6	-23691 8.6	-24023 29.7	-45
-50	-21603 46.5	-21311 42.8	-21290 35.2	-21486 26.4	-21840 17.1	-22291 8.8	-22782 3.0	-23270 1.2	-23718 4.4	-24108 13.0	-24432 26.4	-24694 43.1	-50
-55	-25171 62.7	-24691 57.6	-24440 51.3	-24378 43.6	-24461 36.2	-24644 29.5	-24886 24.9	-25151 23.4	-25414 25.6	-25659 32.4	-25883 42.6	-26092 55.5	-55
-60	-29315 72.8	-28690 68.4	-28249 63.0	-27969 57.1	-27818 51.4	-27766 46.6	-27786 43.5	-27853 42.7	-27952 44.6	-28071 49.8	-28210 57.5	-28375 67.2	-60
-65	-33884 80.8	-33175 77.0	-32610 72.9	-32173 66.6	-31849 64.8	-31619 61.6	-31467 60.1	-31380 60.0	-31348 62.0	-31366 65.8	-31434 71.5	-31559 78.5	-65
-70	-38610 86.3	-37893 85.3	-37282 82.4	-36771 79.7	-36353 77.4	-36019 75.9	-35764 75.2	-35580 75.7	-35464 77.4	-35414 80.2	-35431 84.2	-35520 89.0	-70
-75	-43192 95.3	-42550 93.4	-41981 91.6	-41486 90.2	-41064 89.1	-40712 88.5	-40430 88.5	-40216 89.1	-40069 90.3	-39991 92.2	-39982 94.7	-40045 97.7	-75
-80	-47401 100.7	-46914 99.8	-46475 99.1	-46085 98.6	-45746 98.3	-45459 98.2	-45224 98.3	-45044 98.8	-44919 99.5	-44850 100.5	-44838 101.7	-44895 103.2	-80
-85	-51142 103.1	-50879 103.0	-50639 102.9	-50425 102.9	-50238 102.9	-50080 103.0	-49951 103.1	-49853 103.3	-49786 103.5	-49751 103.8	-49746 104.1	-49779 104.5	-85
-90	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-54447 101.4	-90
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	LAT / E. LONG

TOTAL INTENSITY (F) WC-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
90	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	90
85	55602 -64.6	55628 -64.0	55667 -63.4	55718 -63.0	55780 -62.5	55853 -62.1	55935 -61.8	56026 -61.6	56125 -61.4	56230 -61.3	56340 -61.2	56452 -61.3	85
80	54502 -54.6	54537 -53.4	54605 -52.2	54705 -51.2	54835 -50.3	54994 -49.5	55181 -48.9	55392 -48.5	55625 -48.2	55876 -48.1	56141 -48.2	56415 -48.4	80
75	53396 -41.9	53424 -40.1	53506 -38.4	53641 -37.0	53828 -35.8	54065 -34.9	54350 -34.2	54679 -33.8	55048 -33.6	55451 -33.6	55883 -33.9	56336 -34.4	75
70	52325 -28.4	52341 -26.2	52429 -24.4	52587 -22.9	52814 -21.8	53108 -21.0	53468 -20.5	53890 -20.4	54371 -20.6	54903 -21.0	55481 -21.7	56095 -22.5	70
65	51270 -15.6	51282 -13.4	51378 -11.7	51554 -10.6	51810 -9.9	52142 -9.6	52550 -9.8	53032 -10.3	53585 -11.1	54206 -12.2	54888 -13.3	55622 -14.6	65
60	50172 -4.9	50197 -2.8	50313 -1.4	50512 -.7	50793 -.7	51150 -1.3	51585 -2.5	52096 -4.0	52685 -5.7	53350 -7.5	54086 -9.4	54890 -11.2	60
55	48958 3.1	49018 5.4	49169 6.6	49402 6.7	49710 6.0	50089 4.4	50538 2.1	51060 -.5	51656 -3.3	52331 -6.1	53082 -8.8	53905 -11.1	55
50	47566 8.2	47678 11.0	47880 12.3	48158 12.2	48501 10.9	48903 8.4	49364 5.3	49887 1.6	50476 -2.3	51138 -6.2	51873 -9.6	52679 -12.5	50
45	45958 10.6	46133 14.3	46395 16.1	46726 16.1	47110 14.6	47540 11.8	48014 8.0	48538 3.6	49116 -1.2	49755 -5.9	50456 -10.2	51219 -13.8	45
40	44122 10.8	44365 15.6	44690 18.1	45074 18.6	45499 17.3	45957 14.6	46448 10.8	46975 6.2	47544 .9	48157 -4.5	48817 -9.6	49522 -13.9	40
35	42080 9.2	42388 15.1	42771 18.3	43201 19.4	43660 18.7	44141 16.6	44645 13.3	45176 6.9	45737 3.6	46327 -2.2	46944 -7.9	47586 -12.9	35
30	39897 6.9	40260 13.2	40688 16.9	41150 18.4	41630 18.3	42120 16.9	42627 14.4	43155 10.7	43706 5.7	44274 -.1	44851 -6.2	45433 -11.7	30
25	37689 4.5	38094 10.6	38551 14.1	39029 15.6	39511 15.7	39995 14.8	40488 12.9	40998 9.9	41526 5.5	42068 .0	42609 -6.0	43142 -11.7	25
20	35620 3.0	36057 8.0	36530 10.7	37011 11.7	37482 11.4	37941 10.2	38399 8.2	38868 5.3	39355 1.4	39856 -3.4	40361 -8.9	40861 -14.3	20
15	33872 2.8	34339 6.1	34826 7.5	35305 7.3	35757 5.8	36178 3.2	36579 .0	36979 -3.5	37396 -7.3	37838 -11.4	38306 -15.8	38795 -20.2	15
10	32574 3.5	33084 4.6	33595 4.6	34079 2.9	34513 -.5	34888 -5.3	35215 -10.7	35521 -15.7	35842 -20.0	36211 -23.4	36645 -26.3	37149 -29.1	10
5	31738 4.1	32313 2.8	32869 1.1	33373 -2.2	33795 -7.5	34120 -14.7	34362 -22.5	34562 -29.5	34779 -34.4	35077 -37.1	35496 -38.4	36049 -39.5	5
0	31238 2.9	31897 -1.0	32516 -4.5	33051 -9.1	33465 -15.9	33740 -24.8	33898 -34.3	33998 -42.4	34130 -47.6	34387 -49.4	34833 -49.0	35487 -48.3	0
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT

TOTAL INTENSITY (F) WC-85

E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
90	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	90
85	56566 -61.3	56680 -61.5	56791 -61.7	56899 -61.9	57002 -62.2	57099 -62.6	57187 -63.0	57267 -63.4	57337 -63.8	57397 -64.2	57446 -64.6	57485 -65.1	85
80	56694 -48.7	56973 -49.2	57245 -49.8	57507 -50.6	57751 -51.4	57975 -52.3	58173 -53.2	58342 -54.2	58479 -55.2	58582 -56.2	58651 -57.2	58686 -58.1	80
75	56801 -35.1	57268 -36.0	57728 -37.1	58169 -38.2	58581 -39.5	58953 -40.9	59275 -42.3	59540 -43.8	59741 -45.2	59874 -46.6	59936 -48.0	59929 -49.3	75
70	56733 -23.6	57381 -24.8	58025 -26.1	58646 -27.5	59228 -29.0	59752 -30.5	60201 -32.1	60561 -33.6	60819 -35.0	60967 -36.4	61001 -37.7	60922 -39.0	70
65	56394 -16.0	57188 -17.4	57985 -18.8	58760 -20.1	59489 -21.4	60147 -22.6	60707 -23.7	61148 -24.7	61450 -25.5	61599 -26.3	61589 -26.9	61419 -27.5	65
60	55745 -12.8	56634 -14.2	57533 -15.5	58416 -16.4	59250 -17.2	60004 -17.7	60644 -17.8	61139 -17.7	61464 -17.4	61600 -16.8	61534 -16.2	61265 -15.5	60
55	54789 -12.9	55717 -14.3	56663 -15.2	57596 -15.7	58482 -15.6	59283 -15.1	59960 -14.2	60476 -12.7	60800 -10.9	60907 -8.6	60779 -6.2	60414 -3.9	55
50	53548 -14.6	54464 -16.0	55401 -16.5	56330 -16.3	57212 -15.5	58008 -14.0	58677 -12.0	59180 -9.2	59479 -5.9	59545 -2.0	59358 2.3	58908 6.4	50
45	52039 -16.2	52902 -17.5	53785 -17.7	54661 -16.9	55491 -15.3	56237 -13.1	56858 -10.2	57316 -6.6	57572 -2.2	57594 3.0	57355 8.7	56843 14.3	45
40	50270 -16.8	51051 -18.2	51848 -18.0	52635 -16.7	53377 -14.4	54040 -11.6	54585 -8.3	54977 -4.2	55180 .6	55159 6.3	54884 12.7	54337 19.2	40
35	48251 -16.3	48936 -17.8	49629 -17.4	50309 -15.6	50947 -12.8	51509 -9.6	51963 -6.0	52280 -2.1	52428 2.5	52372 8.1	52080 14.4	51527 21.0	35
30	46019 -15.6	46611 -17.3	47203 -16.9	47780 -14.6	48314 -11.4	48779 -7.8	49146 -4.2	49391 -.5	49488 3.6	49408 8.5	49116 14.2	48583 20.1	30
25	43667 -15.9	44189 -17.9	44705 -17.5	45202 -15.2	45660 -11.7	46049 -7.9	46348 -4.2	46537 -.6	46597 3.2	46502 7.6	46221 12.5	45727 17.6	25
20	41357 -18.5	41848 -20.7	42334 -20.7	42800 -18.7	43225 -15.5	43581 -11.6	43847 -7.6	44006 -3.4	44044 .9	43942 5.5	43680 10.2	43233 14.6	20
15	39300 -23.9	39817 -26.3	40333 -27.1	40832 -26.1	41285 -23.6	41663 -19.8	41942 -15.1	42103 -9.6	42138 -3.7	42037 2.4	41792 7.9	41391 12.4	15
10	37711 -32.0	38313 -34.6	38931 -36.3	39532 -36.8	40081 -35.4	40542 -31.9	40882 -26.0	41083 -18.3	41135 -9.4	41042 -.6	40810 6.8	40449 11.9	10
5	36719 -41.2	37470 -43.9	38255 -46.8	39027 -48.8	39736 -48.5	40337 -44.8	40787 -37.3	41063 -26.6	41157 -14.1	41084 -2.0	40869 7.8	40541 13.9	5
0	36320 -49.0	37275 -51.6	38285 -55.3	39282 -58.4	40203 -58.7	40991 -54.4	41597 -44.9	41987 -31.1	42155 -15.2	42126 .0	41943 11.7	41650 18.3	0
E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

TOTAL INTENSITY (F) WC-65

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
90	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	90
85	57513 -65.5	57531 -65.9	57540 -66.4	57539 -66.8	57532 -67.1	57517 -67.5	57497 -67.8	57472 -68.1	57444 -68.4	57413 -68.7	57381 -69.0	57348 -69.2	85
80	58688 -59.0	58659 -59.8	58604 -60.5	58526 -61.1	58430 -61.6	58322 -62.0	58205 -62.3	58087 -62.5	57971 -62.6	57862 -62.7	57764 -62.8	57679 -62.8	80
75	59855 -50.4	59721 -51.5	59536 -52.3	59309 -53.0	59052 -53.4	58778 -53.6	58499 -53.6	58228 -53.4	57976 -53.0	57754 -52.4	57568 -51.8	57426 -51.2	75
70	60736 -40.1	60453 -41.0	60087 -41.8	59659 -42.4	59188 -42.6	58697 -42.5	58210 -42.1	57747 -41.3	57330 -40.2	56975 -38.8	56695 -37.3	56500 -35.8	70
65	61098 -28.1	60640 -28.6	60069 -29.1	59413 -29.4	58703 -29.4	57974 -29.2	57260 -28.5	56593 -27.3	56003 -25.5	55512 -23.4	55142 -21.1	54903 -18.7	65
60	60803 -15.0	60168 -14.7	59390 -14.6	58507 -14.6	57563 -14.7	56603 -14.5	55672 -13.9	54813 -12.6	54062 -10.7	53449 -8.1	52997 -5.2	52722 -2.3	60
55	59820 -1.9	59022 -.4	58058 .4	56973 .5	55823 .3	54663 .0	53549 .0	52529 .8	51646 2.5	50933 5.1	50417 8.2	50113 11.4	55
50	58205 10.0	57273 12.7	56157 14.2	54911 14.4	53600 13.6	52287 12.4	51036 11.4	49901 11.2	48926 12.3	48147 14.5	47589 17.6	47268 20.7	50
45	56061 19.3	55036 23.0	53814 25.0	52458 25.0	51039 23.5	49629 21.1	48296 18.8	47096 17.4	46076 17.6	45270 19.3	44700 22.1	44381 25.0	45
40	53515 25.0	52442 29.3	51167 31.4	49758 31.1	48290 28.7	46843 25.1	45485 21.4	44275 18.9	43257 18.2	42464 19.5	41917 22.1	41623 24.7	40
35	50704 26.9	49633 31.2	48362 33.1	46959 32.2	45505 28.9	44091 24.2	42755 19.5	41584 16.1	40613 15.0	39872 16.1	39378 18.7	39133 21.0	35
30	47797 25.5	46774 29.3	45559 30.6	44223 29.0	42843 25.0	41498 19.5	40254 14.2	39167 10.5	38278 9.4	37617 10.7	37197 13.4	37014 15.6	30
25	45005 22.1	44068 24.9	42958 25.4	41738 23.1	40482 18.5	39262 12.7	38139 7.4	37164 3.9	36378 3.1	35807 4.7	35462 7.6	35334 9.8	25
20	42591 18.1	41764 19.9	40789 19.3	39719 16.3	38619 11.3	37550 5.6	36567 .6	35714 -2.5	35028 -2.8	34536 -.8	34245 2.2	34143 4.3	20
15	40831 15.2	40123 15.8	39294 14.2	38385 10.4	37449 5.1	36533 -.5	35684 -5.2	34940 -7.8	34333 -7.9	33867 -5.7	33609 -2.7	33487 -.6	15
10	39964 14.3	39366 13.9	38674 11.0	37917 6.2	37127 .5	36344 -5.2	35604 -9.7	34939 -12.2	34374 -12.2	33930 -10.2	33614 -7.3	33415 -5.2	10
5	40118 16.0	39614 14.3	39038 9.9	38403 3.9	37731 -2.7	37047 -8.7	36381 -13.3	35758 -15.8	35196 -16.2	34710 -14.5	34306 -11.8	33982 -9.4	5
0	41282 19.5	40852 16.3	40365 10.0	39822 2.4	39232 -5.1	38614 -11.5	37990 -16.2	37376 -19.0	36785 -19.5	36225 -18.2	35702 -15.7	35220 -13.1	0
E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

TOTAL INTENSITY (F) WC-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
90	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	90
85	57315 -69.5	57283 -69.7	57251 -70.0	57219 -70.2	57189 -70.5	57158 -70.7	57127 -71.0	57096 -71.3	57064 -71.6	57029 -71.9	56992 -72.1	56953 -72.4	85
80	57609 -62.8	57556 -62.9	57519 -63.1	57498 -63.3	57491 -63.6	57495 -64.1	57508 -64.7	57526 -65.3	57546 -66.1	57563 -66.9	57574 -67.8	57575 -68.7	80
75	57330 -50.6	57282 -50.2	57281 -50.0	57324 -50.1	57405 -50.5	57517 -51.3	57653 -52.3	57803 -53.6	57958 -55.2	58109 -57.0	58248 -58.9	58365 -60.9	75
70	56395 -34.5	56381 -33.5	56454 -33.0	56608 -33.1	56831 -33.8	57111 -35.1	57432 -37.1	57779 -39.5	58136 -42.4	58485 -45.6	58813 -48.9	59103 -52.3	70
65	54802 -16.7	54839 -15.3	55008 -14.8	55296 -15.2	55689 -16.7	56167 -19.2	56706 -22.6	57283 -26.7	57874 -31.3	58456 -36.1	59006 -40.9	59504 -45.6	65
60	52629 .1	52719 1.6	52982 1.7	53403 .3	53960 -2.6	54629 -6.9	55379 -12.3	56181 -18.4	57003 -24.7	57817 -31.1	58592 -37.1	59305 -42.6	60
55	50028 13.8	50159 14.9	50496 14.0	51021 11.1	51709 6.2	52532 -.3	53454 -8.0	54441 -16.1	55457 -24.0	56468 -31.4	57442 -37.8	58350 -43.4	55
50	47189 22.8	47347 23.0	47731 20.8	48320 16.0	49089 8.7	50008 -.3	51040 -10.2	52149 -20.0	53297 -28.8	54449 -36.3	55570 -42.1	56630 -46.5	50
45	44312 26.6	44488 25.8	44893 21.9	45507 14.9	46303 5.2	47254 -6.1	48326 -17.7	49483 -28.5	50691 -37.5	51913 -44.0	53116 -48.1	54270 -50.3	45
40	41578 25.7	41769 23.7	42177 18.2	42780 9.1	43555 -2.6	44478 -15.7	45522 -28.4	46658 -39.3	47853 -47.4	49076 -52.1	50294 -53.6	51480 -52.9	40
35	39125 21.4	39331 18.4	39727 11.4	40290 .7	41003 -12.5	41848 -26.5	42810 -39.4	43865 -49.5	44988 -55.9	46150 -58.2	47323 -56.9	48481 -53.1	35
30	37045 15.5	37260 11.6	37628 3.4	38127 -8.3	38744 -22.1	39474 -36.0	40311 -48.1	41241 -56.7	42246 -61.0	43300 -60.9	44377 -57.0	45454 -50.7	30
25	35392 9.3	35598 4.7	35916 -4.0	36325 -16.0	36820 -29.4	37408 -42.3	38092 -52.7	38868 -59.3	39721 -61.6	40629 -59.6	41568 -54.0	42516 -46.4	25
20	34197 3.6	34361 -1.2	34599 -9.9	34894 -21.2	35249 -33.4	35676 -44.3	36189 -52.6	36790 -57.1	37466 -57.7	38197 -54.6	38962 -48.6	39744 -40.9	20
15	33487 -1.3	33567 -5.7	33693 -13.6	33852 -23.5	34050 -33.7	34306 -42.3	34637 -48.3	35047 -51.0	35526 -50.4	36056 -47.1	36620 -41.6	37204 -35.0	15
10	33308 -5.4	33259 -8.8	33240 -15.1	33241 -23.0	33272 -30.8	33349 -37.2	33490 -41.1	33698 -42.4	33965 -41.2	34278 -38.2	34622 -33.9	34988 -29.1	10
5	33721 -8.8	33503 -10.7	33311 -14.9	33137 -20.4	32990 -25.9	32883 -30.2	32827 -32.6	32827 -33.0	32875 -31.6	32961 -29.1	33077 -25.9	33219 -22.8	5
0	34777 -11.4	34366 -11.6	33982 -13.6	33621 -16.9	33288 -20.5	32991 -23.3	32737 -24.7	32525 -24.4	32353 -22.7	32213 -20.2	32104 -17.7	32023 -15.8	0
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT

TOTAL INTENSITY (F) WC-85

E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
90	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	90
85	56909 -72.6	56862 -72.8	56810 -73.0	56754 -73.1	56693 -73.2	56627 -73.2	56558 -73.2	56484 -73.1	56408 -73.0	56329 -72.8	56248 -72.5	56168 -72.2	85
80	57564 -69.6	57537 -70.4	57492 -71.2	57423 -71.9	57343 -72.5	57238 -72.9	57113 -73.2	56969 -73.3	56807 -73.2	56630 -72.9	56440 -72.5	56242 -71.9	80
75	58454 -62.9	58507 -64.7	58521 -66.5	58490 -68.0	58414 -69.3	58290 -70.4	58121 -71.1	57907 -71.4	57653 -71.4	57362 -71.1	57041 -70.4	56697 -69.4	75
70	59345 -55.5	59527 -58.6	59641 -61.4	59680 -63.9	59640 -65.9	59520 -67.6	59320 -68.7	59043 -69.2	58695 -69.2	58285 -68.7	57821 -67.8	57315 -66.0	70
65	59933 -50.1	60277 -54.1	60523 -57.8	60663 -61.0	60689 -63.7	60597 -65.8	60388 -67.3	60065 -68.0	59635 -68.0	59109 -67.2	58503 -65.6	57832 -63.2	65
60	59933 -47.7	60456 -52.2	60857 -56.3	61123 -59.9	61243 -63.1	61209 -65.7	61020 -67.6	60676 -68.7	60187 -68.8	59565 -67.9	58831 -66.9	58006 -62.9	60
55	59166 -48.1	59866 -52.3	60429 -56.1	60837 -59.7	61075 -63.3	61128 -66.6	60990 -69.3	60659 -71.3	60142 -72.1	59453 -71.5	58617 -69.5	57666 -66.0	55
50	57600 -49.9	58455 -52.8	59171 -55.8	59724 -59.2	60090 -63.1	60251 -67.5	60192 -71.7	59905 -75.2	59393 -77.5	58671 -77.9	57767 -76.3	56720 -72.8	50
45	55347 -51.3	56319 -52.2	57160 -53.9	57840 -56.9	58331 -61.5	58605 -67.3	58639 -73.6	58418 -79.4	57940 -83.8	57218 -85.9	56280 -85.3	55173 -82.2	45
40	52606 -51.0	53645 -49.5	54569 -49.6	55343 -52.2	55934 -57.5	56307 -65.2	56431 -74.0	56284 -82.6	55858 -89.6	55162 -93.7	54224 -94.6	53094 -92.2	40
35	49598 -48.4	50649 -44.5	51603 -43.2	52425 -45.4	53077 -51.6	53518 -61.0	53712 -72.3	53632 -83.7	53264 -93.3	52614 -99.6	51706 -101.9	50589 -100.5	35
30	46507 -43.8	47512 -38.2	48441 -35.8	49258 -37.7	49923 -44.4	50393 -55.2	50629 -68.5	50601 -82.1	50290 -93.7	49698 -101.8	48846 -105.5	47778 -104.9	30
25	43455 -38.3	44363 -31.9	45215 -28.8	45976 -30.5	46609 -37.3	47069 -48.7	47318 -62.9	47323 -77.7	47065 -90.5	46541 -99.6	45766 -104.1	44779 -104.1	25
20	40525 -33.0	41292 -26.7	42022 -23.6	42686 -25.1	43248 -31.5	43667 -42.4	43905 -56.4	43928 -71.0	43717 -84.6	43264 -93.2	42581 -97.6	41696 -98.2	20
15	37796 -28.5	38367 -23.2	38963 -20.7	39498 -21.9	39962 -27.6	40316 -37.3	40523 -49.9	40551 -63.2	40377 -75.1	39991 -83.7	39401 -88.0	38628 -88.3	15
10	35371 -24.5	35767 -20.9	36166 -19.5	36551 -21.0	36895 -25.8	37162 -33.6	37318 -44.2	37330 -55.4	37174 -65.4	36840 -72.6	36336 -76.2	35664 -76.1	10
5	33385 -20.3	33577 -18.9	33788 -19.2	34006 -21.4	34207 -25.9	34362 -32.4	34438 -40.4	34403 -48.8	34235 -56.5	33921 -61.8	33466 -64.2	32885 -63.3	5
0	31975 -15.2	31962 -16.2	31979 -18.7	32016 -22.5	32053 -27.4	32065 -32.9	32022 -38.8	31897 -44.6	31671 -49.5	31336 -52.7	30897 -53.5	30374 -51.6	0
E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

TOTAL INTENSITY (F) WC-65

E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
90	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	56591 -69.9	90
85	56088 -71.8	56009 -71.4	55934 -70.9	55863 -70.3	55798 -69.7	55739 -69.1	55689 -68.5	55647 -67.8	55616 -67.1	55595 -66.5	55585 -65.8	55587 -65.2	85
80	56038 -71.1	55832 -70.1	55628 -69.0	55430 -67.8	55243 -66.4	55069 -65.0	54913 -63.5	54778 -62.0	54667 -60.5	54581 -59.0	54524 -57.5	54497 -56.0	80
75	56337 -68.0	55968 -66.4	55599 -64.6	55238 -62.5	54892 -60.3	54569 -58.0	54275 -55.6	54016 -53.2	53798 -50.8	53623 -48.4	53497 -46.1	53420 -44.0	75
70	56779 -63.9	56228 -61.4	55675 -58.7	55133 -55.7	54614 -52.5	54129 -49.3	53688 -46.0	53300 -42.7	52971 -39.5	52706 -36.4	52508 -33.5	52381 -30.8	70
65	57118 -60.3	56381 -56.8	55641 -53.0	54919 -49.0	54231 -44.8	53593 -40.6	53019 -36.4	52516 -32.3	52094 -28.4	51757 -24.7	51507 -21.3	51345 -18.3	65
60	57126 -59.0	56214 -54.5	55301 -49.6	54416 -44.4	53581 -39.2	52816 -34.0	52136 -29.0	51550 -24.1	51066 -19.4	50686 -15.1	50412 -11.2	50242 -7.7	60
55	56639 -61.4	55575 -55.9	54516 -50.0	53498 -43.8	52550 -37.6	51695 -31.5	50947 -25.6	50316 -19.8	49806 -14.2	49418 -9.0	49150 -4.3	48999 -.1	55
50	55579 -67.7	54397 -61.5	53226 -54.7	52111 -47.7	51090 -40.8	50185 -33.9	49410 -27.2	48771 -20.5	48270 -13.7	47903 -7.2	47668 -1.2	47559 4.1	50
45	53954 -77.0	52689 -70.4	51442 -63.2	50269 -55.8	49211 -48.5	48293 -41.2	47527 -33.7	46913 -25.9	46447 -17.8	46124 -9.6	45940 -1.7	45888 5.2	45
40	51836 -87.3	50525 -80.8	49237 -73.5	48037 -66.2	46973 -59.0	46070 -51.6	45337 -43.6	44769 -34.8	44356 -25.1	44092 -14.9	43970 -5.1	43983 3.7	40
35	49330 -96.1	48012 -90.0	46716 -83.2	45517 -76.4	44467 -69.7	43597 -62.6	42910 -54.3	42398 -44.6	42047 -33.5	41848 -21.5	41792 -9.7	41874 .8	35
30	46559 -101.1	45270 -95.6	43999 -89.7	42824 -83.8	41805 -77.9	40975 -71.2	40339 -62.9	39887 -52.5	39602 -40.2	39470 -26.9	39482 -13.9	39629 -2.3	30
25	43635 -101.0	42414 -96.2	41199 -91.1	40073 -86.1	39099 -80.9	38317 -74.6	37738 -66.2	37351 -55.4	37137 -42.7	37077 -29.1	37158 -15.9	37368 -4.4	25
20	40659 -95.5	39537 -91.3	38410 -86.8	37359 -82.4	36453 -77.4	35739 -70.9	35233 -62.3	34926 -51.4	34798 -39.0	34822 -26.3	34979 -14.5	35252 -4.5	20
15	37714 -85.7	36715 -81.7	35704 -77.4	34759 -72.7	33954 -67.0	33342 -59.7	32942 -50.4	32749 -39.7	32733 -28.7	32863 -16.4	33111 -9.5	33454 -2.4	15
10	34674 -73.3	34011 -69.1	33140 -64.0	32336 -58.1	31674 -50.9	31208 -41.8	30960 -31.6	30919 -21.5	31048 -12.6	31309 -6.2	31665 -1.6	32094 1.4	10
5	32211 -60.0	31487 -55.0	30774 -46.6	30143 -40.7	29664 -31.0	29387 -19.9	29328 -8.8	29468 .3	29763 5.9	30167 7.8	30646 7.2	31176 5.6	5
0	29798 -47.4	29210 -41.1	28667 -32.9	28230 -22.5	27958 -10.3	27890 2.7	28031 14.2	28351 21.7	28803 23.8	29344 20.8	29942 14.8	30579 8.3	0
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	LAT / E. LONG

TOTAL INTENSITY (F) WC-85

LAT	E. LONG 0	5	10	15	20	25	30	35	40	45	50	55	E. LONG LAT
0	31238 2.9	31897 -1.0	32516 -4.5	33051 -9.1	33465 -15.9	33740 -24.8	33898 -34.3	33998 -42.4	34130 -47.6	34387 -49.4	34833 -49.0	35487 -48.3	0
-5	30874 -1.1	31613 -8.0	32292 -13.4	32854 -19.1	33255 -26.5	33479 -35.5	33563 -44.9	33592 -52.5	33685 -56.6	33961 -56.8	34500 -54.5	35318 -52.2	-5
-10	30461 -8.5	31245 -18.6	31950 -26.0	32509 -32.5	32878 -39.3	33051 -46.7	33084 -53.8	33090 -58.6	33213 -59.7	33588 -57.2	34299 -52.7	35348 -48.9	-10
-15	29902 -18.9	30663 -32.0	31330 -41.5	31838 -48.3	32148 -53.6	32273 -57.9	32290 -60.5	32335 -60.4	32569 -56.7	33131 -50.2	34090 -42.9	35428 -37.3	-15
-20	29197 -31.3	29854 -47.0	30411 -58.1	30816 -64.9	31047 -68.1	31137 -68.1	31186 -64.9	31343 -58.3	31771 -48.6	32594 -37.2	33858 -26.7	35518 -19.3	-20
-25	28418 -44.4	28908 -61.8	29304 -73.9	29577 -80.3	29730 -81.0	29821 -76.4	29962 -67.0	30303 -53.7	30991 -37.7	32123 -21.6	33709 -8.0	35682 1.2	-25
-30	27677 -56.9	27983 -74.8	28214 -87.1	28371 -92.7	28485 -91.0	28632 -82.4	28928 -67.8	29510 -48.9	30491 -28.0	31930 -8.3	33808 7.6	36040 18.1	-30
-35	27113 -68.0	27270 -85.0	27387 -96.7	27491 -101.2	27637 -97.8	27907 -86.6	28410 -68.9	29253 -46.9	30510 -23.7	32204 -2.4	34293 14.4	36693 25.6	-35
-40	26891 -77.1	26976 -92.2	27065 -102.5	27204 -106.1	27456 -101.9	27902 -90.2	28627 -72.3	29703 -50.6	31171 -28.1	33026 -7.6	35222 8.7	37684 19.7	-40
-45	27211 -84.3	27302 -96.8	27444 -105.4	27686 -108.3	28090 -104.7	28718 -94.6	29632 -79.3	30873 -60.8	32457 -41.5	34370 -23.9	36568 -9.6	38991 .3	-45
-50	28268 -89.8	28411 -99.7	28643 -106.8	29008 -109.7	29553 -107.6	30323 -100.7	31354 -89.6	32670 -76.1	34274 -61.6	36148 -48.1	38260 -36.9	40562 -28.9	-50
-55	30182 -94.3	30378 -102.0	30688 -108.0	31143 -111.2	31774 -111.1	32612 -107.7	33676 -101.4	34978 -93.1	36515 -83.9	38274 -74.9	40230 -67.2	42348 -61.3	-55
-60	32937 -98.3	33161 -104.3	33507 -109.4	33994 -113.0	34644 -114.6	35472 -114.1	36490 -111.8	37702 -108.0	39106 -103.3	40689 -98.3	42435 -93.7	44318 -90.0	-60
-65	36391 -102.1	36614 -106.7	36954 -110.9	37422 -114.4	38030 -116.9	38787 -118.2	39698 -118.3	40766 -117.5	41985 -115.9	43348 -113.8	44841 -111.6	46445 -109.3	-65
-70	40335 -105.1	40537 -108.4	40841 -111.6	41254 -114.4	41781 -116.8	42427 -118.6	43193 -119.8	44078 -120.3	45078 -120.2	46187 -119.6	47395 -118.6	48687 -117.2	-70
-75	44546 -106.7	44717 -108.6	44968 -110.6	45304 -112.4	45726 -114.0	46235 -115.3	46830 -116.3	47509 -116.9	48269 -117.1	49104 -116.9	50007 -116.3	50968 -115.3	-75
-80	48823 -105.9	48952 -106.7	49137 -107.5	49379 -108.2	49677 -108.8	50030 -109.3	50437 -109.6	50896 -109.7	51404 -109.6	51956 -109.3	52549 -108.7	53176 -107.8	-80
-85	52975 -102.6	53048 -102.7	53150 -102.7	53280 -102.7	53436 -102.6	53619 -102.5	53826 -102.3	54056 -102.1	54308 -101.8	54579 -101.4	54868 -100.9	55171 -100.4	-85
-90	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	-90
LAT	E. LONG 0	5	10	15	20	25	30	35	40	45	50	55	E. LONG LAT

TOTAL INTENSITY (F) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
0	36320 -49.0	37275 -51.6	38285 -55.3	39282 -58.4	40203 -58.7	40991 -54.4	41597 -44.9	41987 -31.1	42155 -15.2	42126 .0	41943 11.7	41650 18.3	0
-5	36371 -52.0	37580 -54.4	38856 -58.5	40116 -62.0	41287 -62.1	42301 -56.8	43100 -45.5	43646 -29.3	43931 -11.1	43984 5.6	43860 17.9	43620 24.0	-5
-10	36672 -47.7	38171 -49.8	39741 -53.8	41288 -57.0	42731 -56.6	43997 -50.4	45022 -38.1	45763 -21.1	46210 -2.6	46392 13.7	46368 24.8	46205 29.0	-10
-15	37061 -35.3	38870 -36.9	40744 -40.5	42582 -43.3	44304 -42.5	45834 -36.2	47106 -24.4	48074 -8.7	48723 7.9	49077 21.7	49192 29.9	49135 31.2	-15
-20	37469 -16.3	39585 -17.4	41749 -20.6	43866 -23.3	45855 -22.8	47643 -17.8	49166 -8.2	50375 4.3	51250 16.8	51806 26.3	52090 30.6	52164 28.7	-20
-25	37926 5.0	40312 4.5	42731 1.4	45090 -1.6	47314 -2.5	49336 -.1	51093 5.7	52536 13.4	53638 20.6	54406 25.1	54873 25.2	55095 20.5	-25
-30	38511 22.8	41102 22.6	43712 19.5	46256 15.6	48666 12.7	50878 11.8	52834 13.0	54482 15.3	55794 17.0	56764 16.7	57415 13.3	57789 6.9	-30
-35	39299 30.8	42008 31.0	44728 27.8	47386 22.9	49917 17.9	52263 13.8	54367 10.7	56179 8.2	57665 5.4	58814 1.5	59635 -3.9	60160 -10.5	-35
-40	40323 25.1	43054 25.6	45799 22.5	48492 17.1	51074 10.8	53489 4.4	55682 -1.6	57605 -7.2	59223 -12.7	60517 -18.2	61488 -23.7	62155 -29.0	-40
-45	41570 5.4	44235 6.3	46923 3.6	49575 -1.5	52135 -8.0	54551 -14.9	56770 -21.8	58749 -28.3	60448 -34.1	61847 -39.1	62939 -43.1	63733 -45.7	-45
-50	43003 -24.4	45529 -23.3	48087 -25.0	50625 -29.0	53093 -34.3	55441 -40.1	57623 -45.8	59594 -51.0	61320 -55.2	62777 -58.0	63952 -59.2	64848 -58.6	-50
-55	44590 -57.7	46914 -56.4	49277 -57.0	51633 -59.1	53940 -62.2	56152 -65.6	58227 -68.8	60127 -71.2	61819 -72.4	63279 -72.3	64492 -70.4	65454 -66.8	-55
-60	46309 -87.2	48375 -85.7	50483 -85.1	52594 -85.2	54672 -85.8	56679 -86.3	58580 -86.4	60340 -85.7	61932 -84.0	63333 -81.0	64529 -76.6	65512 -70.9	-60
-65	48140 -107.3	49900 -105.5	51698 -103.9	53506 -102.5	55293 -100.9	57031 -99.0	58690 -96.6	60244 -93.6	61670 -89.7	62949 -84.9	64068 -79.2	65018 -72.8	-65
-70	50050 -115.6	51464 -113.8	52910 -111.7	54367 -109.3	55814 -106.5	57229 -103.4	58591 -99.8	59880 -95.7	61081 -91.0	62177 -85.9	63158 -80.3	64015 -74.5	-70
-75	51978 -113.9	53024 -112.2	54094 -110.1	55174 -107.6	56249 -104.8	57308 -101.7	58334 -98.3	59317 -94.5	60243 -90.5	61104 -86.3	61891 -82.0	62597 -77.8	-75
-80	53831 -106.7	54508 -105.4	55200 -103.8	55899 -102.0	56598 -100.1	57289 -97.9	57964 -95.6	58616 -93.1	59240 -90.6	59828 -88.1	60375 -85.6	60878 -83.3	-80
-85	55487 -99.7	55812 -99.0	56144 -98.3	56480 -97.4	56816 -96.5	57150 -95.6	57478 -94.7	57798 -93.7	58107 -92.8	58402 -91.9	58681 -91.0	58942 -90.2	-85
-90	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	-90
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

TOTAL INTENSITY (F) WC-85

LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
0	41282 19.5	40852 16.3	40365 10.0	39822 2.4	39232 -5.1	38614 -11.5	37990 -16.2	37376 -19.0	36785 -19.5	36225 -18.2	35702 -15.7	35220 -13.1	0
-5	43305 23.7	42937 18.3	42516 10.1	42037 1.0	41503 -7.4	40925 -14.1	40317 -18.8	39692 -21.3	39054 -22.0	38406 -20.9	37753 -18.5	37106 -15.8	-5
-10	45954 26.5	45642 19.0	45271 8.9	44838 -1.4	44341 -10.1	43786 -16.6	43183 -20.6	42536 -22.6	41845 -23.0	41109 -22.0	40334 -20.0	39534 -17.7	-10
-15	48963 26.2	48709 16.8	48382 5.6	47984 -5.0	47512 -13.3	46972 -18.8	46366 -21.7	45694 -22.7	44952 -22.6	44139 -21.8	43260 -20.8	42332 -19.8	-15
-20	52086 21.5	51896 11.0	51612 -.2	51244 -10.0	50793 -16.9	50261 -20.7	49649 -22.0	48953 -21.9	48167 -21.4	47290 -21.2	46329 -21.7	45305 -23.0	-20
-25	55124 12.0	55006 1.7	54770 -8.3	54431 -16.1	53997 -20.7	53472 -22.2	52852 -21.8	52135 -20.6	51314 -20.1	50389 -21.0	49372 -23.7	48284 -28.2	-25
-30	57935 -1.5	57900 -10.3	57718 -17.8	57414 -22.6	56999 -24.2	56480 -23.4	55855 -21.3	55121 -19.5	54276 -19.4	53322 -21.9	52274 -27.3	51155 -35.1	-30
-35	60430 -17.4	60489 -23.4	60373 -27.4	60112 -28.6	59723 -27.2	59215 -24.1	58591 -20.8	57851 -18.8	56996 -19.5	56036 -23.9	54985 -32.0	53868 -43.1	-35
-40	62551 -33.2	62714 -35.6	62678 -35.7	62475 -33.4	62124 -29.3	61641 -24.5	61031 -20.4	60302 -18.7	59461 -20.6	58519 -26.8	57494 -37.1	56411 -50.8	-40
-45	64252 -46.5	64525 -45.2	64583 -41.8	64455 -36.6	64163 -30.4	63725 -24.5	63155 -20.4	62464 -19.3	61664 -22.3	60771 -29.9	59804 -41.7	58787 -56.9	-45
-50	65478 -56.0	65862 -51.5	66024 -45.3	65990 -38.2	65782 -31.0	65420 -24.9	64921 -21.2	64301 -20.9	63578 -24.8	62768 -33.1	61892 -45.4	60969 -60.8	-50
-55	66172 -61.5	66656 -54.8	66926 -47.2	67000 -39.3	66899 -32.1	66643 -26.5	66251 -23.6	65740 -24.1	65129 -28.4	64437 -36.6	63682 -48.4	62880 -62.7	-55
-60	66283 -64.1	66846 -56.6	67214 -48.7	67400 -41.3	67421 -35.0	67294 -30.5	67036 -28.5	66665 -29.5	66197 -33.7	65650 -41.2	65039 -51.4	64378 -63.8	-60
-65	65795 -65.8	66401 -58.7	66842 -51.8	67126 -45.7	67265 -40.7	67271 -37.5	67158 -36.4	66940 -37.6	66630 -41.3	66242 -47.5	65788 -55.7	65278 -65.5	-65
-70	64744 -68.6	65343 -62.9	65814 -57.7	66161 -53.3	66390 -49.9	66508 -47.9	66525 -47.4	66448 -48.6	66288 -51.4	66053 -55.9	65752 -61.8	65391 -68.8	-70
-75	63218 -73.7	63750 -69.9	64193 -66.6	64547 -63.9	64814 -61.9	64998 -60.8	65102 -60.7	65130 -61.6	65087 -63.5	64979 -66.3	64809 -69.9	64582 -74.3	-75
-80	61332 -81.1	61734 -79.1	62083 -77.4	62377 -76.1	62617 -75.2	62801 -74.8	62931 -74.8	63008 -75.3	63033 -76.2	63008 -77.7	62935 -79.4	62816 -81.6	-80
-85	59182 -89.5	59401 -88.8	59595 -88.3	59766 -87.9	59910 -87.7	60028 -87.5	60119 -87.5	60183 -87.7	60220 -88.0	60229 -88.5	60212 -89.0	60168 -89.7	-85
-90	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	-90
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

TOTAL INTENSITY (F) WC-85

E. LONG / LAT	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
0	34777 -11.4	34366 -11.6	33982 -13.6	33621 -16.9	33288 -20.5	32991 -23.3	32737 -24.7	32525 -24.4	32353 -22.7	32213 -20.2	32104 -17.7	32023 -15.8	0
-5	36475 -13.5	35866 -12.4	35285 -12.9	34733 -14.5	34213 -16.6	33727 -18.3	33276 -18.8	32858 -17.6	32473 -15.1	32118 -11.9	31792 -9.2	31500 -7.8	-5
-10	38729 -15.7	37937 -14.5	37171 -14.4	36437 -15.3	35739 -16.5	35073 -17.2	34438 -16.4	33832 -13.7	33252 -9.5	32699 -4.6	32176 -.6	31687 1.0	-10
-15	41382 -19.2	40435 -19.3	39511 -20.0	38619 -21.1	37764 -21.8	36942 -21.2	36149 -18.5	35381 -13.4	34637 -6.4	33916 1.1	33221 7.1	32556 9.8	-15
-20	44246 -25.1	43182 -27.7	42136 -30.3	41123 -32.3	40146 -32.8	39202 -30.8	38288 -25.7	37397 -17.4	36527 -7.0	35676 3.8	34842 12.5	34027 17.0	-20
-25	47155 -33.7	46016 -39.7	44892 -44.9	43799 -48.4	42743 -48.9	41721 -45.5	40728 -37.8	39758 -26.2	38805 -12.1	37862 2.1	36923 13.9	35986 20.7	-25
-30	49995 -44.5	48824 -54.1	47666 -62.2	46539 -67.3	45447 -68.1	44389 -63.7	43360 -53.9	42351 -39.6	41352 -22.5	40352 -5.2	39340 9.4	38304 18.9	-30
-35	52713 -56.0	51549 -68.8	50399 -79.6	49276 -86.5	48188 -88.0	47131 -83.3	46099 -72.6	45082 -56.8	44065 -38.0	43033 -18.8	41969 -2.1	40858 9.8	-35
-40	55297 -66.2	54174 -81.5	53065 -94.4	51980 -102.9	50924 -105.6	49894 -101.8	48882 -91.6	47874 -76.2	46856 -57.5	45806 -38.0	44705 -20.5	43535 -7.0	-40
-45	57742 -73.7	56690 -90.3	55646 -104.5	54621 -114.5	53617 -118.8	52629 -116.7	51648 -108.6	50659 -95.3	49645 -78.7	48585 -60.8	47459 -44.1	46248 -30.3	-45
-50	60020 -77.7	59060 -94.4	58102 -109.0	57152 -119.9	56211 -125.9	55273 -126.3	54328 -121.3	53361 -111.6	52356 -98.6	51293 -84.1	50154 -69.8	48923 -57.3	-50
-55	62048 -78.5	61198 -94.1	60339 -108.3	59475 -119.5	58604 -126.8	57721 -129.7	56816 -128.2	55877 -122.7	54889 -114.3	53837 -104.1	52706 -93.4	51484 -83.4	-55
-60	63680 -77.4	62953 -91.1	62203 -103.8	61432 -114.5	60640 -122.5	59820 -127.3	58966 -126.8	58068 -127.3	57115 -123.3	56097 -117.6	55005 -111.0	53832 -104.3	-60
-65	64722 -76.2	64125 -87.2	63492 -97.8	62825 -107.1	62122 -114.8	61381 -120.5	60597 -124.1	59763 -125.5	58875 -125.0	57926 -123.1	56913 -120.2	55833 -116.7	-65
-70	64977 -76.5	64514 -84.5	64005 -92.3	63453 -99.7	62856 -106.2	62215 -111.6	61528 -115.8	60793 -118.7	60007 -120.3	59170 -121.0	58281 -120.7	57341 -119.8	-70
-75	64302 -79.0	63970 -84.1	63591 -89.2	63166 -94.2	62696 -98.9	62183 -103.0	61626 -106.7	61027 -109.6	60386 -111.9	59705 -113.6	58986 -114.7	58231 -115.3	-75
-80	62652 -84.0	62446 -86.5	62199 -89.2	61913 -91.9	61589 -94.5	61230 -97.0	60836 -99.4	60410 -101.4	59954 -103.3	59470 -104.8	58960 -106.1	58427 -107.1	-80
-85	60099 -90.4	60005 -91.3	59887 -92.2	59745 -93.1	59581 -94.0	59397 -95.0	59192 -95.9	58970 -96.8	58731 -97.6	58476 -98.4	58208 -99.2	57929 -99.8	-85
-90	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	-90
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	LAT / E. LONG

TOTAL INTENSITY (F) WC-85

LAT \ E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	LAT \ E. LONG
0	31975 -15.2	31962 -16.2	31979 -18.7	32016 -22.5	32053 -27.4	32065 -32.9	32022 -36.8	31897 -44.6	31671 -49.5	31336 -52.7	30897 -53.5	30374 -51.6	0
-5	31245 -8.7	31031 -11.9	30851 -17.2	30696 -23.4	30548 -29.7	30382 -35.3	30177 -39.8	29913 -43.2	29578 -45.4	29173 -46.2	28710 -45.2	28211 -42.0	-5
-10	31237 -.7	30826 -6.1	30450 -14.1	30094 -23.3	29741 -31.8	29370 -38.3	28966 -42.4	28517 -44.2	28026 -44.2	27503 -42.8	26973 -39.9	26466 -35.4	-10
-15	31925 7.9	31325 1.1	30750 -9.3	30187 -21.2	29616 -32.3	29022 -40.6	28392 -45.3	27728 -46.6	27045 -45.4	26368 -42.5	25736 -38.3	25188 -32.9	-15
-20	33231 15.8	32450 8.7	31677 -3.0	30900 -16.9	30103 -30.2	29274 -40.6	28407 -46.8	27515 -49.0	26623 -48.0	25773 -45.0	25015 -40.7	24399 -35.3	-20
-25	35043 21.1	34092 14.9	33125 3.4	32133 -11.1	31106 -25.7	30039 -37.9	28937 -46.2	27818 -50.4	26720 -51.3	25696 -49.8	24804 -46.9	24099 -42.6	-25
-30	37237 21.7	36130 17.6	34979 7.6	33779 -5.9	32530 -20.5	31236 -33.8	29912 -44.1	28585 -50.9	27302 -54.7	26118 -56.0	25097 -55.6	24295 -53.6	-30
-35	39686 15.3	38444 14.1	37131 7.0	35747 -4.3	34301 -17.7	32809 -30.9	31294 -42.4	29795 -51.6	28359 -58.3	27044 -62.8	25911 -65.3	25011 -65.7	-35
-40	42281 .9	40934 2.7	39493 -1.1	37967 -9.3	36372 -20.2	34731 -32.1	33078 -43.7	31455 -54.1	29912 -62.7	28504 -69.5	27283 -74.3	26294 -76.7	-40
-45	44937 -21.0	43521 -16.7	42002 -17.4	40392 -22.2	38711 -30.0	36989 -39.6	35265 -49.8	33582 -59.7	31987 -68.6	30530 -76.1	29253 -81.7	28193 -85.1	-45
-50	47589 -47.8	46149 -42.2	44607 -40.4	42978 -42.1	41285 -46.7	39560 -53.3	37839 -60.9	36165 -68.8	34579 -76.3	33121 -82.8	31828 -87.7	30724 -90.7	-50
-55	50166 -75.2	48752 -69.4	47247 -66.3	45668 -65.7	44037 -67.4	42382 -70.8	40738 -75.4	39139 -80.4	37620 -85.3	36213 -89.6	34946 -92.7	33836 -94.4	-55
-60	52575 -98.3	51239 -93.4	49830 -90.0	48364 -88.2	46860 -87.8	45341 -88.7	43835 -90.3	42369 -92.4	40970 -94.5	39662 -96.2	38464 -97.3	37391 -97.5	-60
-65	54687 -113.2	53481 -109.9	52221 -107.2	50922 -105.1	49597 -103.7	48265 -102.9	46946 -102.5	45659 -102.4	44423 -102.3	43256 -102.1	42171 -101.5	41178 -100.5	-65
-70	56354 -118.4	55324 -116.9	54259 -115.3	53168 -113.7	52042 -112.2	50954 -110.9	49856 -109.7	48782 -108.6	47744 -107.4	46754 -106.2	45821 -104.8	44953 -103.3	-70
-75	57444 -115.4	56629 -115.2	55793 -114.7	54941 -114.0	54081 -113.2	53221 -112.2	52369 -111.2	51533 -110.1	50720 -108.9	49938 -107.7	49193 -106.4	48492 -105.2	-75
-80	57874 -107.8	57306 -108.3	56724 -108.5	56135 -108.6	55541 -108.5	54948 -108.3	54360 -107.9	53782 -107.4	53218 -106.9	52673 -106.3	52150 -105.7	51654 -105.1	-80
-85	57639 -100.4	57342 -100.9	57039 -101.3	56732 -101.6	56424 -101.9	56116 -102.1	55811 -102.3	55511 -102.4	55219 -102.4	54935 -102.4	54664 -102.4	54405 -102.4	-85
-90	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	-90
LAT \ E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	LAT \ E. LONG

TOTAL INTENSITY (F) WC-85

E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
0	29798 -47.4	29210 -41.1	28667 -32.9	28230 -22.5	27958 -10.3	27890 2.7	28031 14.2	28351 21.7	28803 23.8	29344 20.8	29942 14.8	30579 8.3	0
-5	27712 -36.6	27251 -28.9	26875 -18.8	26634 -6.3	26569 8.1	26698 22.3	27013 33.6	27480 39.2	28054 37.8	28699 30.3	29393 19.5	30123 8.2	-5
-10	26018 -28.9	25666 -20.0	25442 -8.6	25378 5.5	25491 21.0	25779 35.6	26221 46.2	26781 50.0	27424 46.0	28125 35.0	28871 20.2	29656 4.7	-10
-15	24763 -25.7	24489 -16.3	24387 -4.2	24463 10.4	24709 26.2	25106 40.6	25622 50.5	26224 53.1	26884 47.4	27588 34.3	28332 16.6	29110 -2.2	-15
-20	23963 -28.3	23731 -19.1	23707 -7.1	23875 7.3	24207 22.7	24665 36.7	25212 46.1	25814 48.3	26450 42.1	27110 28.2	27794 9.1	28496 -11.9	-20
-25	23622 -36.7	23390 -28.4	23394 -17.2	23602 -3.5	23969 11.3	24447 24.8	24990 34.0	25563 36.5	26144 30.9	26725 17.5	27303 -1.7	27872 -23.5	-25
-30	23750 -49.4	23475 -42.5	23454 -32.5	23645 -19.8	23995 -5.8	24448 7.2	24952 16.5	25470 19.6	25976 15.2	26455 3.2	26902 -14.7	27312 -35.9	-30
-35	24379 -63.6	24022 -58.4	23923 -49.8	24039 -38.4	24315 -25.6	24692 -13.3	25118 -4.1	25551 -.3	25960 -3.3	26327 -13.2	26643 -29.0	26905 -48.3	-35
-40	25564 -76.3	25098 -72.7	24878 -65.7	24866 -55.9	25012 -44.6	25262 -33.6	25565 -25.0	25880 -20.9	26174 -22.6	26427 -30.4	26630 -43.4	26782 -59.9	-40
-45	27368 -85.6	26781 -83.2	26417 -77.7	26245 -69.7	26222 -60.4	26305 -51.2	26451 -43.8	26621 -40.0	26787 -40.9	26931 -46.7	27046 -57.0	27135 -70.2	-45
-50	29823 -91.3	29127 -89.4	28622 -85.1	28285 -79.0	28086 -71.8	27990 -64.7	27966 -59.1	27984 -56.1	28022 -56.7	28069 -61.0	28119 -68.8	28180 -78.9	-50
-55	32893 -94.4	32117 -92.6	31500 -89.2	31026 -84.6	30673 -79.4	30420 -74.4	30244 -70.6	30126 -68.8	30053 -69.4	30018 -72.8	30021 -79.5	30070 -86.1	-55
-60	36449 -96.6	35638 -94.7	34956 -91.9	34391 -88.5	33931 -84.9	33564 -81.8	33276 -79.5	33058 -78.7	32902 -79.6	32807 -82.3	32774 -86.6	32813 -92.2	-60
-65	40284 -99.0	39490 -97.0	38796 -94.7	38196 -92.3	37686 -90.0	37260 -88.2	36911 -87.1	36636 -87.0	36432 -88.0	36300 -90.2	36245 -93.5	36272 -97.5	-65
-70	44155 -101.7	43430 -99.9	42780 -98.2	42205 -96.6	41703 -95.3	41274 -94.4	40916 -94.0	40629 -94.2	40414 -95.2	40273 -96.9	40209 -99.2	40228 -102.0	-70
-75	47837 -103.9	47234 -102.7	46684 -101.7	46191 -100.7	45755 -100.1	45379 -99.7	45062 -99.6	44808 -99.9	44616 -100.7	44494 -101.7	44438 -103.1	44455 -104.8	-75
-80	51187 -104.5	50754 -104.0	50356 -103.5	49997 -103.2	49678 -102.9	49402 -102.8	49171 -102.9	48987 -103.0	48851 -103.4	48765 -103.9	48731 -104.5	48750 -105.2	-80
-85	54162 -102.4	53936 -102.3	53729 -102.3	53542 -102.3	53377 -102.3	53235 -102.3	53118 -102.3	53026 -102.3	52961 -102.4	52922 -102.4	52912 -102.5	52929 -102.6	-85
-90	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	56804 -97.1	-90
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	LAT / E. LONG

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
90	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	90
85	4722 -20.5	4740 -21.0	4740 -21.6	4724 -22.0	4690 -22.4	4639 -22.8	4571 -23.1	4486 -23.4	4385 -23.7	4268 -23.9	4136 -24.1	3990 -24.3	85
80	6987 -27.7	7024 -28.6	7034 -29.3	7018 -29.8	6974 -30.3	6902 -30.8	6802 -31.1	6674 -31.4	6515 -31.7	6327 -31.9	6108 -32.1	5860 -32.3	80
75	9044 -31.5	9093 -32.4	9113 -33.2	9105 -33.8	9067 -34.3	9000 -34.8	8902 -35.1	8770 -35.4	8603 -35.7	8398 -35.9	8152 -36.2	7865 -36.5	75
70	11015 -30.9	11061 -32.0	11082 -32.9	11078 -33.7	11051 -34.3	10999 -34.7	10921 -35.1	10814 -35.4	10674 -35.6	10497 -35.9	10278 -36.1	10014 -36.5	70
65	13025 -26.5	13055 -28.1	13065 -29.5	13057 -30.6	13034 -31.5	12997 -32.1	12944 -32.6	12873 -32.9	12779 -33.1	12658 -33.3	12503 -33.5	12308 -33.8	65
60	15166 -19.4	15173 -22.0	15165 -24.2	15145 -26.1	15120 -27.7	15090 -28.9	15058 -29.7	15021 -30.2	14976 -30.6	14919 -30.7	14843 -30.9	14742 -31.1	60
55	17479 -10.8	17468 -14.7	17443 -18.2	17412 -21.3	17380 -24.0	17353 -26.2	17333 -27.8	17322 -29.0	17318 -29.7	17318 -30.1	17320 -30.3	17317 -30.6	55
50	19962 -1.6	19946 -7.0	19916 -12.0	19881 -16.6	19848 -20.7	19824 -24.4	19812 -27.4	19816 -29.7	19840 -31.3	19885 -32.3	19952 -32.8	20038 -33.1	50
45	22573 7.1	22573 .6	22557 -5.6	22535 -11.6	22514 -17.5	22501 -22.9	22499 -27.8	22515 -31.8	22555 -34.8	22629 -36.6	22744 -37.6	22903 -38.1	45
40	25234 14.4	25273 7.7	25295 .9	25309 -6.1	25322 -13.5	25336 -20.8	25353 -27.9	25381 -34.0	25431 -38.6	25521 -41.7	25668 -43.3	25880 -44.0	40
35	27823 19.8	27925 13.8	28010 7.3	28085 -.1	28154 -8.4	28214 -17.4	28265 -26.5	28312 -34.8	28371 -41.4	28469 -45.8	28632 -48.1	28881 -49.2	35
30	30165 22.6	30349 18.1	30517 12.8	30674 5.9	30818 -2.7	30942 -12.8	31041 -23.5	31117 -33.6	31192 -42.0	31297 -47.7	31471 -50.9	31740 -52.4	30
25	32034 22.3	32311 19.9	32575 16.2	32825 10.6	33055 2.5	33253 -7.8	33410 -19.2	33529 -30.5	33631 -40.1	33754 -47.0	33943 -51.0	34230 -53.1	25
20	33183 18.6	33554 18.2	33915 16.3	34260 12.3	34576 5.4	34848 -3.9	35068 -14.9	35240 -26.1	35387 -36.1	35548 -43.7	35769 -48.4	36086 -51.1	20
15	33392 11.3	33845 12.4	34295 12.0	34724 9.6	35114 4.6	35451 -2.7	35732 -11.7	35966 -21.5	36178 -30.7	36405 -38.1	36689 -43.1	37062 -46.3	15
10	32538 .7	33046 2.4	33561 2.9	34053 2.0	34495 -.6	34881 -4.8	35215 -10.5	35516 -17.2	35810 -24.2	36132 -30.4	36515 -35.1	36983 -38.5	10
5	30651 -12.9	31168 -11.3	31705 -10.4	32219 -10.0	32684 -9.9	33095 -10.2	33472 -11.3	33841 -13.5	34233 -16.9	34676 -20.7	35192 -24.1	35793 -27.0	5
0	27934 -28.8	28393 -27.5	28887 -26.5	29366 -24.8	29809 -21.9	30219 -17.7	30626 -13.5	31064 -10.3	31564 -8.9	32146 -9.0	32823 -10.1	33585 -11.6	0
E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT

HORIZONTAL INTENSITY (H) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	LAT / E. LONG
90	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	90
85	3831 -24.5	3660 -24.7	3478 -25.0	3289 -25.4	3094 -25.8	2895 -26.3	2697 -27.0	2503 -27.8	2316 -28.8	2141 -30.0	1983 -31.3	1847 -32.7	85
80	5584 -32.6	5281 -32.9	4955 -33.4	4611 -34.0	4256 -34.8	3899 -35.8	3554 -37.2	3237 -38.8	2969 -40.4	2774 -41.9	2671 -42.6	2671 -42.4	80
75	7536 -36.9	7168 -37.4	6763 -38.1	6332 -39.0	5887 -40.1	5447 -41.5	5039 -43.1	4697 -44.7	4461 -45.9	4363 -46.4	4421 -46.0	4628 -44.8	75
70	9702 -37.0	9342 -37.6	8940 -38.5	8505 -39.6	8057 -40.9	7620 -42.5	7233 -44.3	6937 -46.0	6778 -47.3	6789 -48.0	6980 -48.0	7335 -47.5	70
65	12068 -34.3	11783 -35.0	11456 -36.0	11096 -37.3	10723 -38.8	10365 -40.7	10059 -42.8	9850 -44.9	9779 -46.8	9876 -48.4	10152 -49.4	10590 -49.8	65
60	14610 -31.5	14442 -32.3	14241 -33.3	14013 -34.8	13772 -36.5	13544 -38.6	13359 -40.9	13255 -43.2	13269 -45.5	13428 -47.6	13743 -49.2	14201 -50.1	60
55	17303 -31.0	17273 -31.7	17223 -32.9	17155 -34.4	17078 -36.3	17005 -38.2	16958 -40.2	16965 -42.2	17053 -44.0	17245 -45.7	17554 -46.9	17975 -47.7	55
50	20137 -33.6	20244 -34.4	20349 -35.7	20448 -37.3	20539 -39.1	20624 -40.7	20714 -41.9	20820 -42.6	20962 -42.9	21157 -43.0	21420 -42.8	21754 -42.3	50
45	23102 -38.7	23332 -39.6	23580 -41.2	23832 -43.0	24077 -44.8	24305 -45.8	24511 -45.8	24696 -44.7	24865 -42.6	25033 -40.0	25216 -37.3	25425 -34.5	45
40	26159 -44.7	26492 -46.0	26859 -47.9	27238 -50.1	27608 -52.0	27948 -52.6	28241 -51.4	28474 -48.1	28645 -43.1	28762 -37.2	28842 -31.2	28901 -25.5	40
35	29216 -50.1	29625 -51.6	30080 -54.0	30553 -56.8	31010 -59.0	31424 -59.4	31768 -57.1	32020 -51.8	32170 -44.0	32220 -34.8	32188 -25.4	32094 -16.7	35
30	32112 -53.6	32570 -55.4	33082 -58.3	33611 -61.7	34119 -64.2	34570 -64.5	34930 -61.3	35174 -54.3	35285 -44.3	35264 -32.3	35126 -20.1	34894 -9.1	30
25	34626 -54.6	35113 -56.8	35657 -60.1	36214 -63.7	36742 -66.2	37200 -66.1	37552 -62.1	37770 -54.1	37836 -42.6	37749 -29.0	37525 -15.2	37185 -2.9	25
20	36510 -53.0	37022 -55.5	37587 -58.7	38159 -62.0	38692 -63.9	39143 -63.0	39478 -56.2	39666 -49.5	39694 -37.5	39562 -23.7	39283 -10.0	38878 2.0	20
15	37534 -48.7	38086 -51.2	38680 -54.0	39272 -56.2	39815 -56.6	40267 -54.2	40594 -48.5	40771 -39.5	40786 -28.1	40642 -15.6	40352 -3.6	39933 6.5	15
10	37538 -41.0	38157 -43.3	38805 -45.1	39437 -45.5	40013 -43.8	40491 -39.5	40842 -32.7	41044 -24.1	41089 -14.4	40982 -4.6	40733 4.2	40356 10.9	10
5	36467 -29.3	37189 -30.9	37920 -31.3	38623 -29.6	39261 -25.5	39800 -19.3	40214 -11.9	40489 -4.3	40619 2.7	40605 8.5	40455 12.9	40178 15.1	5
0	34410 -13.1	35261 -13.7	36101 -12.5	36897 -8.7	37620 -2.5	38248 5.0	38762 12.1	39153 17.6	39417 20.7	39551 21.7	39552 20.9	39423 18.3	0
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	LAT / E. LONG

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
90	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	90
85	1736 -34.0	1654 -35.1	1600 -35.9	1573 -36.3	1569 -36.4	1581 -36.2	1603 -35.7	1630 -35.3	1655 -34.8	1673 -34.3	1682 -33.9	1678 -33.5	85
80	2768 -41.3	2941 -39.8	3166 -38.4	3418 -37.3	3677 -36.5	3926 -36.1	4154 -36.0	4351 -36.1	4513 -36.3	4634 -36.6	4711 -36.9	4744 -37.1	80
75	4955 -43.4	5362 -42.1	5812 -41.2	6272 -40.8	6716 -40.8	7126 -41.1	7487 -41.7	7791 -42.5	8030 -43.3	8203 -44.1	8306 -44.8	8340 -45.4	75
70	7818 -46.8	8382 -46.1	8982 -45.7	9579 -45.5	10141 -45.6	10647 -46.0	11082 -46.7	11436 -47.4	11705 -48.2	11887 -48.9	11985 -49.6	11999 -50.2	70
65	11154 -49.7	11794 -49.4	12463 -49.0	13115 -48.5	13717 -48.2	14243 -48.1	14679 -48.1	15019 -48.3	15263 -48.6	15412 -48.9	15474 -49.2	15452 -49.4	65
60	14771 -50.4	15407 -50.1	16059 -49.2	16682 -48.1	17239 -46.9	17706 -45.8	18071 -44.9	18332 -44.2	18494 -43.8	18567 -43.6	18562 -43.3	18487 -43.1	60
55	18484 -47.7	19041 -46.9	19600 -45.3	20115 -43.3	20552 -41.0	20889 -38.9	21118 -37.0	21244 -35.7	21278 -34.7	21235 -34.0	21133 -33.4	20985 -32.8	55
50	22145 -41.2	22562 -39.5	22964 -37.0	23311 -34.0	23569 -30.9	23723 -28.0	23769 -25.7	23717 -24.1	23586 -23.0	23398 -22.3	23173 -21.8	22931 -21.2	50
45	25655 -31.7	25888 -28.6	26089 -25.1	26223 -21.5	26264 -18.0	26199 -15.1	26034 -13.0	25782 -11.8	25468 -11.4	25117 -11.3	24753 -11.2	24401 -11.0	45
40	28948 -20.5	28971 -15.8	28945 -11.6	28843 -7.8	28647 -4.6	28350 -2.5	27964 -1.6	27510 -1.6	27012 -2.3	26499 -3.3	25998 -4.0	25532 -4.2	40
35	31954 -9.4	31764 -3.5	31510 1.2	31171 4.6	30738 6.6	30216 7.1	29623 6.3	28984 4.5	28324 2.3	27672 .3	27052 -1.2	26490 -1.7	35
30	34586 -.1	34205 6.6	33744 11.0	33192 13.3	32551 13.7	31835 12.2	31071 9.3	30286 5.7	29506 2.2	28756 -.7	28057 -2.5	27430 -3.1	30
25	36748 6.7	36220 13.2	35598 16.7	34884 17.4	34088 15.7	33236 12.2	32359 7.6	31488 2.6	30646 -1.7	29854 -4.8	29125 -6.4	28477 -6.6	25
20	38364 10.9	37748 16.3	37033 18.1	36227 16.9	35352 13.3	34440 8.1	33526 2.4	32639 -3.0	31803 -7.3	31029 -9.9	30325 -10.9	29699 -10.4	20
15	39401 13.3	38764 16.4	38030 16.0	37214 12.9	36345 7.8	35456 1.9	34582 -4.0	33753 -8.9	32985 -12.2	32286 -13.8	31655 -13.9	31089 -12.7	15
10	39866 14.4	39274 14.7	38593 12.0	37843 7.2	37055 1.4	36264 -4.5	35499 -9.6	34787 -13.1	34139 -14.9	33557 -15.2	33033 -14.4	32554 -12.9	10
5	39786 14.8	39295 12.0	38724 7.2	38099 1.5	37450 -4.4	36807 -9.4	36198 -12.8	35640 -14.5	35142 -14.5	34701 -13.7	34301 -12.5	33923 -11.4	5
0	39175 14.1	38827 8.6	38404 2.5	37938 -3.5	37459 -8.5	36991 -11.9	36555 -13.4	36165 -13.0	35825 -11.6	35527 -10.2	35252 -9.4	34974 -9.7	0
E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

HORIZONTAL INTENSITY (H) WC-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	LAT / E. LONG
90	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	90
85	1659 -33.2	1626 -32.9	1576 -32.7	1511 -32.5	1433 -32.3	1342 -32.1	1243 -31.9	1140 -31.5	1041 -30.9	957 -29.5	902 -27.2	891 -23.5	85
80	4730 -37.3	4669 -37.4	4563 -37.3	4411 -37.1	4216 -36.8	3978 -36.2	3700 -35.6	3385 -34.7	3035 -33.7	2653 -32.6	2245 -31.4	1813 -30.2	80
75	8305 -45.8	8201 -46.1	8029 -46.1	7792 -45.8	7490 -45.3	7125 -44.5	6701 -43.4	6218 -42.0	5682 -40.3	5095 -38.2	4464 -35.9	3794 -33.1	75
70	11932 -50.5	11785 -50.6	11560 -50.4	11256 -49.9	10875 -49.1	10417 -47.9	9882 -46.4	9273 -44.5	8593 -42.3	7847 -39.6	7043 -36.5	6189 -32.9	70
65	15351 -49.3	15173 -49.1	14918 -48.5	14586 -47.6	14173 -46.3	13678 -44.7	13097 -42.6	12430 -40.2	11680 -37.5	10851 -34.4	9951 -31.1	8994 -27.4	65
60	18349 -42.6	18152 -41.9	17895 -40.9	17574 -39.5	17182 -37.6	16713 -35.4	16160 -32.8	15519 -29.9	14788 -26.9	13970 -24.0	13073 -21.2	12111 -18.4	60
55	20802 -32.1	20587 -31.0	20341 -29.6	20058 -27.7	19728 -25.4	19339 -22.6	18879 -19.5	18339 -16.5	17712 -13.7	16996 -11.5	16197 -10.0	15324 -9.3	55
50	22685 -20.4	22444 -19.2	22208 -17.6	21971 -15.4	21722 -12.6	21443 -9.6	21118 -6.4	20729 -3.6	20266 -1.5	19720 -.6	19089 -1.2	18377 -3.1	50
45	24077 -10.3	23795 -9.1	23557 -7.4	23360 -5.0	23190 -2.2	23027 .7	22848 3.5	22631 5.6	22355 6.5	22009 5.7	21582 3.1	21073 -1.2	45
40	25125 -3.7	24792 -2.6	24542 -.8	24371 1.5	24267 4.1	24205 6.4	24160 8.3	24101 9.2	24005 8.7	23853 6.4	23631 2.4	23332 -3.4	40
35	26008 -1.3	25627 -.1	25357 1.8	25200 4.0	25141 5.9	25156 7.3	25214 7.7	25281 7.1	25332 5.3	25344 2.2	25302 -2.3	25193 -8.2	35
30	26898 -2.4	26481 -.9	26193 1.2	26039 3.1	26004 4.2	26063 4.2	26184 2.9	26333 .8	26485 -2.0	26618 -5.1	26715 -8.9	26761 -13.5	30
25	27925 -5.5	27492 -3.4	27191 -1.1	27029 .5	26994 .6	27061 -1.0	27202 -3.9	27385 -7.3	27588 -10.5	27792 -13.1	27981 -15.2	28135 -17.6	25
20	29161 -8.6	28729 -6.0	28418 -3.7	28235 -2.6	28174 -3.5	28213 -6.5	28328 -10.7	28497 -14.9	28700 -18.0	28921 -19.4	29146 -19.6	29354 -19.6	20
15	30592 -10.5	30175 -7.8	29854 -5.7	29636 -5.3	29521 -7.2	29497 -11.1	29546 -15.9	29653 -20.1	29804 -22.6	29987 -22.8	30187 -21.3	30385 -19.5	15
10	32116 -10.9	31722 -8.8	31388 -7.5	31124 -7.9	30935 -10.3	30818 -14.4	30767 -18.9	30772 -22.4	30825 -23.9	30915 -23.0	31031 -20.4	31158 -17.7	10
5	33551 -10.4	33185 -9.8	32837 -9.8	32520 -11.1	32248 -13.7	32025 -17.1	31855 -20.3	31734 -22.3	31655 -22.4	31612 -20.5	31598 -17.6	31603 -15.0	5
0	34671 -10.7	34336 -12.2	33979 -14.1	33618 -16.3	33269 -18.5	32948 -20.4	32661 -21.5	32410 -21.2	32192 -19.6	32002 -16.9	31839 -14.0	31700 -11.9	0
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	LAT / E. LONG

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
90	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	90
85	932 -18.9	1027 -14.5	1167 -10.9	1339 -8.3	1534 -6.7	1744 -5.9	1964 -5.6	2188 -5.7	2413 -6.1	2637 -6.8	2856 -7.6	3070 -8.5	85
80	1367 -29.2	917 -28.8	511 -28.5	407 -11.0	758 3.9	1221 6.2	1703 5.6	2185 4.0	2658 1.9	3117 -.4	3559 -2.8	3979 -5.2	80
75	3092 -29.9	2368 -25.9	1636 -20.5	935 -10.3	516 18.0	930 24.6	1624 19.1	2346 14.2	3058 9.8	3746 5.6	4401 1.7	5018 -2.1	75
70	5301 -28.6	4399 -23.3	3519 -16.3	2726 -6.3	2160 7.5	2039 20.6	2423 24.5	3110 21.9	3916 17.3	4749 12.3	5564 7.5	6339 2.9	70
65	8000 -23.2	6999 -18.1	6035 -11.7	5177 -3.5	4528 6.3	4214 16.3	4312 23.1	4783 25.1	5501 23.4	6343 19.7	7224 15.2	8087 10.6	65
60	11105 -15.6	10087 -12.3	9102 -8.0	8215 -2.3	7507 5.1	7072 13.4	6981 21.0	7244 26.2	7801 28.0	8556 27.0	9411 24.2	10287 20.5	60
55	14395 -9.0	13439 -8.6	12497 -7.3	11622 -4.2	10885 1.2	10366 8.8	10133 17.4	10219 25.1	10606 30.4	11228 32.8	11998 32.5	12829 30.6	55
50	17598 -5.9	16769 -8.7	15924 -10.3	15108 -9.7	14382 -5.8	13816 1.4	13479 11.0	13419 21.1	13645 29.7	14120 35.3	14773 38.0	15522 38.4	50
45	20485 -6.7	19829 -12.2	19127 -16.4	18413 -17.8	17738 -15.3	17166 -8.5	16765 1.8	16592 13.7	16675 24.8	17002 33.3	17524 38.7	18167 41.4	45
40	22949 -10.4	22486 -17.6	21951 -23.5	21370 -26.6	20781 -25.5	20240 -19.6	19611 -9.5	19555 3.1	19515 15.7	19699 26.1	20081 33.6	20605 38.5	40
35	25005 -15.2	24730 -22.7	24367 -29.4	23929 -33.7	23442 -34.3	22952 -30.1	22518 -21.4	22201 -9.5	22053 3.2	22102 14.6	22341 23.5	22737 30.2	35
30	26738 -19.2	26628 -25.7	26420 -32.5	26112 -38.0	25721 -40.6	25282 -39.0	24847 -32.7	24478 -22.7	24232 -10.9	24151 .5	24251 10.2	24517 18.3	30
25	28233 -21.1	28249 -26.2	28160 -32.6	27953 -39.2	27633 -44.1	27227 -45.6	26783 -42.4	26360 -35.0	26023 -24.7	25823 -13.6	25793 -3.3	25938 5.8	25
20	29518 -20.9	29608 -24.4	29592 -30.6	29446 -38.2	29167 -45.5	28773 -50.1	28307 -50.0	27831 -45.1	27412 -36.2	27111 -25.4	26970 -14.6	27011 -4.4	20
15	30555 -19.2	30662 -21.8	30669 -27.9	30546 -36.6	30285 -45.9	29890 -52.9	29402 -55.4	28881 -52.3	28398 -44.3	28019 -33.4	27794 -21.7	27751 -10.6	15
10	31271 -16.8	31340 -19.2	31330 -25.6	31207 -35.1	30950 -45.6	30559 -54.3	30064 -58.4	29520 -56.4	28997 -48.6	28564 -37.2	28276 -24.6	28164 -12.8	10
5	31612 -14.4	31603 -17.2	31546 -23.8	31407 -33.6	31158 -44.6	30788 -54.0	30310 -58.8	29770 -57.4	29230 -49.7	28762 -37.9	28421 -24.6	28240 -12.8	5
0	31581 -11.9	31472 -15.0	31352 -21.6	31190 -31.0	30954 -41.6	30617 -51.1	30177 -56.4	29661 -55.6	29120 -48.6	28621 -37.3	28223 -24.7	27962 -13.3	0
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	LAT / E. LONG

HORIZONTAL INTENSITY (H) WC-85

LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
90	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	2246 -15.9	90
85	3275 -9.5	3471 -10.5	3655 -11.6	3828 -12.6	3988 -13.7	4134 -14.7	4266 -15.7	4382 -16.6	4483 -17.5	4568 -18.3	4636 -19.1	4687 -19.8	85
80	4377 -7.6	4749 -10.0	5095 -12.2	5412 -14.4	5701 -16.4	5961 -18.3	6193 -20.1	6395 -21.7	6569 -23.2	6714 -24.5	6832 -25.7	6923 -26.8	80
75	5592 -5.6	6121 -9.0	6603 -12.1	7038 -15.1	7425 -17.7	7767 -20.2	8064 -22.4	8319 -24.4	8534 -26.2	8712 -27.8	8855 -29.2	8965 -30.5	75
70	7059 -1.4	7717 -5.4	8307 -9.0	8829 -12.3	9285 -15.4	9676 -18.1	10008 -20.5	10284 -22.8	10511 -24.8	10692 -26.6	10834 -28.2	10940 -29.7	70
65	8900 6.2	9642 2.0	10301 -1.8	10876 -5.1	11366 -8.2	11776 -11.0	12114 -13.6	12386 -16.1	12600 -18.4	12764 -20.7	12885 -22.8	12970 -24.8	65
60	11131 16.6	11906 12.9	12592 9.4	13182 6.4	13676 3.5	14080 .8	14403 -1.9	14654 -4.7	14845 -7.6	14983 -10.7	15077 -13.7	15136 -16.6	60
55	13652 28.0	14416 25.3	15094 22.8	15672 20.5	16149 18.3	16534 15.9	16835 13.1	17065 9.8	17235 6.1	17354 2.0	17429 -2.3	17468 -6.6	55
50	16288 37.6	17014 36.5	17663 35.4	18217 34.5	18674 33.3	19043 31.5	19334 28.8	19558 25.2	19725 20.7	19843 15.4	19918 9.8	19955 4.0	50
45	18856 42.7	19529 43.6	20142 44.5	20677 45.2	21128 45.5	21501 44.6	21806 42.4	22052 38.5	22245 33.4	22390 27.2	22489 20.5	22548 13.7	45
40	21204 42.0	21818 45.0	22401 48.0	22930 50.7	23398 52.6	23806 52.8	24159 51.1	24461 47.4	24711 42.0	24911 35.4	25062 28.4	25167 21.4	40
35	23238 35.5	23790 40.6	24350 45.6	24891 50.2	25399 53.6	25870 54.9	26300 53.8	26684 50.3	27018 45.0	27296 38.8	27519 32.3	27692 25.9	35
30	24917 25.3	25408 32.1	25948 38.9	26509 45.0	27070 49.3	27616 51.2	28133 50.3	28610 47.1	29033 42.3	29396 36.9	29701 31.7	29953 27.0	30
25	26241 14.2	26671 22.4	27191 30.3	27767 37.1	28370 41.7	28975 43.3	29560 42.1	30105 38.8	30597 34.6	31029 30.4	31406 27.0	31736 24.4	25
20	27227 5.0	27597 14.1	28085 22.4	28653 29.0	29261 32.7	29877 33.2	30473 31.0	31030 27.2	31537 23.4	31994 20.5	32413 19.0	32805 18.5	20
15	27891 -.5	28196 8.8	28630 16.6	29147 22.1	29700 24.2	30251 22.7	30773 18.7	31254 14.0	31697 10.2	32116 8.4	32529 8.4	32952 9.7	15
10	28231 -2.4	28456 6.3	28801 12.9	29212 16.5	29637 16.3	30035 12.4	30389 6.3	30702 .2	30998 -3.8	31307 -5.0	31658 -4.3	32069 -1.7	10
5	28223 -2.8	28345 4.7	28559 9.4	28809 10.8	29040 8.1	29214 1.8	29325 -6.4	29398 -13.8	29478 -18.4	29617 -19.4	29852 -17.9	30201 -15.3	5
0	27840 -4.6	27630 1.2	27881 3.8	27932 2.9	27929 -2.0	27843 -10.2	27681 -20.0	27485 -28.5	27321 -33.7	27255 -34.9	27332 -33.3	27565 -30.8	0
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
0	27934 -28.8	28393 -27.5	28887 -26.5	29366 -24.8	29809 -21.9	30219 -17.7	30626 -13.5	31064 -10.3	31564 -8.9	32146 -9.0	32823 -10.1	33585 -11.6	0
-5	24729 -46.0	25051 -44.8	25420 -43.3	25795 -40.1	26165 -34.2	26546 -25.7	26971 -16.0	27477 -7.1	28091 -.4	28824 3.8	29673 6.0	30611 6.7	-5
-10	21434 -63.2	21546 -61.3	21716 -58.6	21924 -53.5	22178 -44.7	22504 -32.3	22939 -18.0	23514 -4.1	24243 7.7	25128 16.5	26145 22.3	27251 25.6	-10
-15	18397 -78.9	18265 -75.3	18200 -70.4	18212 -63.0	18331 -51.6	18597 -36.4	19042 -19.0	19684 -1.5	20527 14.1	21551 26.7	22716 35.8	23954 41.5	-15
-20	15851 -91.3	15498 -85.2	15225 -77.5	15067 -67.4	15078 -54.0	15302 -37.4	15769 -18.7	16483 .3	17429 17.9	18568 32.5	19836 43.3	21147 50.4	-20
-25	13898 -98.9	13405 -90.1	13010 -79.5	12768 -67.0	12739 -52.2	12972 -35.4	13486 -17.1	14275 1.3	15305 18.5	16517 32.7	17822 42.9	19123 49.5	-25
-30	12562 -101.1	12039 -89.9	11640 -76.9	11423 -62.7	11445 -47.4	11744 -31.3	12333 -14.7	13192 1.6	14272 16.1	15494 27.5	16758 35.1	17963 39.2	-30
-35	11848 -98.4	11395 -85.6	11093 -71.4	10991 -56.5	11129 -41.6	11533 -26.9	12202 -12.7	13105 .3	14180 11.0	15341 18.4	16489 22.2	17531 22.8	-35
-40	11762 -92.1	11441 -78.9	11287 -64.8	11333 -50.6	11602 -36.9	12103 -24.3	12819 -12.9	13713 -3.4	14719 3.4	15756 6.9	16736 7.2	17581 4.7	-40
-45	12291 -84.1	12112 -71.8	12099 -58.9	12269 -46.3	12629 -34.6	13173 -24.4	13677 -15.8	14699 -9.4	15579 -5.7	16448 -4.9	17233 -6.9	17871 -11.1	-45
-50	13361 -76.0	13288 -65.3	13366 -54.4	13598 -43.9	13981 -34.5	14499 -26.6	15125 -20.3	15819 -16.2	16532 -14.3	17208 -14.8	17792 -17.4	18233 -21.6	-50
-55	14803 -68.6	14783 -59.9	14889 -51.1	15115 -42.8	15452 -35.4	15882 -29.3	16379 -24.7	16909 -21.7	17435 -20.4	17913 -20.8	18301 -22.5	18561 -25.2	-55
-60	16370 -61.7	16359 -54.9	16441 -48.1	16612 -41.6	16857 -35.7	17162 -30.8	17504 -26.9	17858 -24.1	18194 -22.5	18482 -21.8	18690 -21.9	18788 -22.5	-60
-65	17784 -54.5	17756 -49.4	17792 -44.1	17884 -38.9	18022 -34.1	18193 -29.8	18380 -26.1	18565 -23.0	18727 -20.5	18843 -18.5	18892 -16.8	18851 -15.3	-65
-70	18796 -46.2	18747 -42.2	18734 -38.1	18750 -33.9	18788 -29.8	18839 -25.9	18891 -22.2	18931 -18.7	18946 -15.5	18922 -12.5	18842 -9.6	18693 -6.7	-70
-75	19225 -36.0	19161 -33.1	19110 -29.9	19067 -26.6	19029 -23.2	18987 -19.8	18938 -16.4	18872 -13.0	18781 -9.7	18659 -6.4	18495 -3.2	18284 .0	-75
-80	18959 -24.3	18893 -22.2	18824 -20.0	18749 -17.7	18667 -15.2	18575 -12.7	18471 -10.1	18350 -7.5	18210 -4.8	18048 -2.1	17861 .5	17645 3.1	-80
-85	17946 -11.7	17896 -10.7	17838 -9.6	17771 -8.4	17695 -7.1	17609 -5.8	17514 -4.4	17409 -3.0	17294 -1.6	17168 -.1	17032 1.3	16884 2.7	-85
-90	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	-90
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG

HORIZONTAL INTENSITY (H) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
0	34410 -13.1	35261 -13.7	36101 -12.5	36897 -8.7	37620 -2.5	38248 5.0	38762 12.1	39153 17.6	39417 20.7	39551 21.7	39552 20.9	39423 18.3	0
-5	31598 6.7	32587 7.4	33542 10.1	34435 15.5	35248 22.9	35971 30.5	36598 36.2	37127 38.4	37554 36.6	37867 32.4	38052 26.2	38103 19.1	-5
-10	28386 27.5	29496 29.7	30543 33.5	31507 39.7	32385 47.1	33179 53.5	33699 56.5	34550 54.5	35129 47.8	35618 37.9	35991 26.9	36229 16.1	-10
-15	25194 45.2	26373 48.5	27458 53.0	28439 59.1	29324 65.5	30131 69.6	30883 69.1	31600 62.6	32281 51.0	32903 36.5	33430 21.6	33833 8.9	-15
-20	22418 54.9	23588 58.7	24630 63.1	25544 68.5	26353 73.2	27087 74.8	27785 70.9	28477 60.7	29172 45.4	29850 27.9	30468 11.3	30986 -2.2	-20
-25	20335 53.5	21402 56.6	22309 60.3	23067 64.3	23705 67.2	24270 66.7	24810 60.5	25371 48.3	25974 31.4	26607 13.2	27231 -3.1	27799 -15.2	-25
-30	19030 41.1	19915 42.4	20610 44.2	21134 46.5	21524 47.8	21832 46.0	22118 39.4	22441 27.4	22841 11.8	23322 -4.6	23857 -18.5	24399 -27.8	-30
-35	18399 21.7	19058 20.3	19503 19.6	19755 19.7	19852 19.5	19848 17.4	19809 11.9	19808 2.5	19905 -9.5	20131 -21.9	20477 -31.7	20907 -37.3	-35
-40	18232 .9	18660 -3.1	18861 -6.2	18848 -8.1	18656 -9.4	18331 -11.2	17941 -14.7	17564 -20.3	17282 -27.5	17156 -34.6	17210 -39.8	17432 -41.7	-40
-45	18315 -16.3	18538 -21.5	18528 -25.8	18293 -28.8	17855 -30.5	17248 -31.5	16531 -32.7	15779 -34.5	15082 -37.0	14528 -39.3	14186 -40.5	14083 -39.8	-45
-50	18492 -26.4	18542 -31.2	18369 -35.0	17969 -37.4	17351 -38.4	16537 -38.2	15568 -37.2	14502 -35.9	13419 -34.6	12415 -33.5	11589 -32.4	11025 -31.1	-50
-55	18660 -28.3	18572 -31.1	18279 -33.1	17771 -33.9	17047 -33.3	16117 -31.3	15004 -28.3	13744 -24.7	12392 -21.0	11019 -17.6	9715 -15.1	8588 -14.3	-55
-60	18749 -23.1	18552 -23.4	18176 -23.0	17612 -21.7	16852 -19.3	15898 -15.9	14762 -11.5	13462 -6.6	12027 -1.4	10495 3.4	8915 7.3	7345 9.3	-60
-65	18700 -13.7	18421 -11.8	17999 -9.5	17424 -6.6	16690 -3.0	15794 1.2	14744 5.9	13548 10.9	12224 16.0	10791 20.8	9273 25.1	7695 28.4	-65
-70	18462 -3.8	18136 -.7	17706 2.6	17165 6.2	16508 10.0	15736 14.0	14853 18.1	13865 22.2	12786 26.1	11631 29.7	10418 32.8	9171 35.2	-70
-75	18016 3.2	17687 6.5	17292 9.7	16828 13.0	16293 16.2	15690 19.4	15021 22.5	14295 25.3	13520 27.9	12707 30.1	11872 32.0	11031 33.4	-75
-80	17399 5.7	17120 8.2	16809 10.7	16464 13.1	16086 15.3	15679 17.5	15245 19.4	14789 21.2	14316 22.8	13834 24.1	13350 25.2	12874 26.1	-80
-85	16726 4.1	16558 5.4	16380 6.7	16193 7.9	15999 9.1	15799 10.2	15595 11.2	15388 12.1	15181 12.9	14976 13.6	14777 14.2	14585 14.7	-85
-90	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	-90
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
0	39175 14.1	38827 8.6	38404 2.5	37938 -3.5	37459 -8.5	36991 -11.9	36555 -13.4	36165 -13.0	35825 -11.6	35527 -10.2	35252 -9.4	34974 -9.7	0
-5	38028 11.6	37846 4.3	37590 -2.2	37295 -7.5	36991 -10.9	36699 -12.3	36432 -11.8	36202 -9.9	36008 -7.7	35842 -6.4	35681 -6.9	35496 -9.3	-5
-10	36333 6.6	36323 -1.3	36235 -7.1	36105 -10.8	35964 -12.2	35830 -11.6	35715 -9.4	35623 -6.6	35556 -4.4	35503 -4.2	35442 -6.6	35341 -11.7	-10
-15	34101 -1.3	34251 -8.4	34318 -12.5	34337 -13.9	34339 -13.2	34341 -10.8	34352 -7.7	34378 -4.7	34417 -3.3	34460 -4.6	34487 -9.3	34467 -16.9	-15
-20	31385 -11.5	31671 -16.6	31872 -18.3	32020 -17.2	32143 -14.5	32259 -10.9	32377 -7.4	32502 -5.0	32634 -4.6	32766 -7.8	32878 -14.4	32944 -23.9	-20
-25	28281 -22.3	28670 -24.8	28981 -23.8	29238 -20.5	29466 -16.3	29682 -12.1	29895 -8.9	30112 -7.4	30335 -8.5	30556 -12.8	30759 -20.4	30921 -30.6	-25
-30	24907 -31.9	25359 -31.6	25755 -28.2	26107 -23.3	26430 -18.4	26741 -14.3	27049 -11.8	27361 -11.2	27681 -13.1	28000 -17.8	28305 -25.1	28575 -34.8	-30
-35	21376 -38.2	21847 -35.5	22300 -30.7	22732 -25.3	23148 -20.5	23558 -17.1	23970 -15.3	24390 -15.3	24820 -17.2	25251 -21.0	25669 -26.9	26057 -34.7	-35
-40	17782 -40.1	18213 -36.2	18688 -31.1	19185 -26.3	19694 -22.5	20213 -20.0	20745 -18.8	21290 -18.7	21847 -19.6	22404 -21.6	22946 -24.9	23457 -29.9	-40
-45	14207 -37.3	14516 -33.6	14960 -29.8	15495 -26.7	16091 -24.5	16729 -23.1	17398 -22.0	18087 -21.0	18786 -20.0	19481 -19.3	20155 -19.6	20792 -21.4	-45
-50	10772 -29.6	10826 -28.3	11146 -27.5	11668 -27.1	12333 -26.9	13092 -26.3	13908 -24.7	14754 -22.1	15608 -18.7	16449 -15.1	17258 -12.2	18021 -11.0	-50
-55	7756 -15.7	7322 -19.2	7326 -23.8	7724 -27.8	8412 -30.0	9283 -29.6	10253 -26.8	11265 -22.0	12279 -15.8	13268 -9.5	14213 -3.9	15101 -.3	-55
-60	5872 8.0	4629 1.4	3842 -12.0	3759 -26.7	4355 -33.5	5346 -32.3	6499 -26.6	7694 -18.9	8873 -10.3	10007 -2.1	11081 4.9	12088 9.7	-60
-65	6083 30.5	4459 31.2	2845 29.9	1261 26.1	310 -31.7	1786 -19.7	3217 -12.2	4581 -4.5	5876 3.2	7099 10.2	8251 15.9	9334 19.7	-65
-70	7917 37.0	6690 38.0	5539 38.3	4536 37.9	3800 36.5	3478 33.6	3647 29.7	4212 27.1	5005 26.6	5905 27.2	6845 28.1	7791 28.5	-70
-75	10207 34.3	9421 34.8	8701 34.9	8076 34.6	7576 34.1	7230 33.4	7056 32.8	7061 32.1	7234 31.5	7554 30.8	7992 29.9	8521 28.7	-75
-80	12415 26.7	11983 27.1	11589 27.2	11243 27.2	10954 27.0	10731 26.6	10580 26.1	10503 25.5	10504 24.8	10578 23.9	10724 22.9	10935 21.6	-80
-85	14403 15.0	14235 15.3	14083 15.4	13949 15.5	13836 15.4	13746 15.2	13680 14.9	13639 14.5	13625 14.0	13637 13.4	13675 12.7	13738 12.0	-85
-90	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	-90
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	LAT / E. LONG

HORIZONTAL INTENSITY (H) WC-85

LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
0	34671 -10.7	34336 -12.2	33979 -14.1	33618 -16.3	33269 -18.5	32948 -20.4	32661 -21.5	32410 -21.2	32192 -19.6	32002 -16.9	31839 -14.0	31700 -11.9	0
-5	35260 -13.1	34963 -17.3	34612 -21.2	34227 -24.1	33829 -25.6	33437 -25.5	33061 -23.9	32707 -21.2	32371 -17.6	32053 -13.9	31755 -10.8	31482 -8.9	-5
-10	35173 -18.4	34927 -25.3	34607 -31.1	34233 -34.5	33827 -35.2	33409 -33.2	32993 -29.1	32583 -23.8	32179 -18.3	31781 -13.2	31393 -9.3	31025 -6.7	-10
-15	34376 -26.3	34199 -35.5	33941 -42.7	33618 -46.7	33253 -46.8	32865 -43.3	32466 -37.4	32062 -30.2	31652 -22.9	31235 -16.3	30816 -10.8	30403 -6.4	-15
-20	32942 -35.0	32857 -45.7	32692 -54.0	32461 -58.5	32182 -58.7	31874 -55.0	31546 -48.5	31203 -40.5	30845 -32.2	30468 -24.1	30073 -16.5	29666 -9.5	-20
-25	31022 -42.3	31049 -53.4	31003 -62.3	30893 -67.6	30734 -68.8	30540 -66.2	30321 -60.8	30079 -53.6	29812 -45.4	29516 -36.5	29187 -27.1	28827 -17.2	-25
-30	28792 -45.7	28944 -56.4	29029 -65.5	29055 -71.9	29031 -75.0	28969 -75.0	28675 -72.4	28752 -67.5	28595 -60.9	28400 -52.4	28162 -42.1	27878 -30.1	-30
-35	26397 -43.8	26678 -53.3	26897 -62.3	27058 -70.0	27169 -75.8	27237 -79.3	27268 -80.6	27262 -79.6	27219 -75.9	27133 -69.4	27000 -59.7	26817 -47.1	-35
-40	23921 -36.5	24328 -44.4	24674 -53.1	24962 -62.0	25197 -70.4	25385 -77.8	25532 -83.6	25639 -87.0	25707 -87.4	25735 -84.1	25720 -76.7	25660 -65.4	-40
-45	21378 -25.3	21904 -31.3	22369 -39.3	22773 -49.0	23122 -59.5	23422 -70.2	23678 -80.0	23896 -87.8	24080 -92.4	24230 -93.0	24350 -89.0	24437 -80.5	-45
-50	18726 -12.2	19368 -16.3	19945 -23.3	20461 -33.0	20921 -44.7	21333 -57.4	21704 -69.9	22042 -80.9	22353 -89.0	22644 -93.3	22916 -93.0	23170 -88.3	-50
-55	15924 .5	16681 -1.8	17372 -7.6	18002 -16.6	18580 -28.1	19114 -41.1	19614 -54.5	20089 -67.0	20547 -77.1	20993 -84.0	21432 -86.9	21860 -85.9	-55
-60	13025 11.7	13895 10.5	14701 5.9	15453 -1.7	16158 -11.9	16827 -23.7	17469 -36.2	18093 -48.2	18706 -56.6	19312 -66.5	19910 -71.5	20497 -73.4	-60
-65	10350 21.2	11307 20.0	12211 16.2	13069 10.0	13891 1.8	14683 -7.8	15454 -18.0	16209 -28.0	16952 -37.2	17683 -44.7	18401 -50.4	19098 -54.1	-65
-70	8725 27.8	9640 25.7	10534 22.2	11405 17.2	12258 11.1	13092 4.1	13912 -3.3	14717 -10.8	15506 -17.8	16278 -24.1	17029 -29.4	17751 -33.6	-70
-75	9116 27.0	9756 24.8	10429 21.9	11121 18.3	11826 14.2	12536 9.7	13246 5.0	13952 .1	14648 -4.7	15331 -9.2	15993 -13.4	16631 -17.2	-75
-80	11204 20.2	11524 18.4	11887 16.5	12284 14.3	12710 11.9	13156 9.3	13617 6.6	14087 3.8	14559 .9	15030 -1.9	15492 -4.7	15943 -7.4	-80
-85	13826 11.1	13936 10.1	14067 9.1	14217 8.0	14384 6.8	14565 5.5	14758 4.2	14961 2.9	15170 1.6	15383 .2	15598 -1.2	15813 -2.5	-85
-90	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	-90
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
0	31581 -11.9	31472 -15.0	31352 -21.6	31190 -31.0	30954 -41.6	30617 -51.1	30177 -56.4	29661 -55.6	29120 -48.6	28621 -37.3	28223 -24.7	27962 -13.3	0
-5	31241 -9.1	31031 -11.9	30841 -17.6	30649 -25.9	30418 -35.7	30112 -44.9	29711 -50.9	29222 -51.7	28681 -46.7	28148 -37.4	27682 -26.7	27323 -17.2	-5
-10	30667 -6.0	30389 -7.4	30131 -11.2	29894 -17.7	29647 -26.2	29349 -35.4	28966 -42.8	28487 -46.4	27936 -45.0	27359 -39.6	26816 -32.5	26351 -26.1	-10
-15	30008 -3.4	29646 -2.1	29322 -3.1	29026 -7.2	28734 -14.4	28408 -23.8	28008 -33.3	27516 -40.7	26939 -44.4	26314 -44.4	25696 -42.2	25132 -39.8	-15
-20	29256 -3.1	28858 1.9	28479 4.3	28119 3.1	27762 -2.7	27378 -12.4	26935 -24.3	26407 -36.0	25795 -45.2	25125 -51.1	24447 -54.3	23804 -56.2	-20
-25	28440 -7.2	28039 1.8	27631 8.0	27222 9.6	26805 5.6	26361 -4.2	25866 -17.9	25298 -33.1	24654 -47.1	23953 -56.3	23235 -66.4	22540 -72.2	-25
-30	27551 -17.1	27186 -4.8	26791 4.8	26374 9.3	25932 7.2	25457 -1.7	24932 -15.9	24343 -32.8	23684 -49.5	22971 -64.2	22234 -75.8	21511 -84.4	-30
-35	26583 -32.7	26301 -18.2	25974 -6.3	25608 .6	25201 .8	24748 -6.1	24239 -18.8	23663 -35.0	23018 -52.0	22316 -67.6	21583 -80.6	20848 -90.5	-35
-40	25554 -51.3	25400 -36.6	25198 -23.7	24945 -15.1	24637 -12.5	24268 -16.5	23828 -26.0	23310 -39.2	22714 -53.9	22052 -68.1	21343 -80.4	20615 -90.1	-40
-45	24489 -68.8	24501 -55.5	24466 -43.2	24375 -33.9	24217 -29.4	23981 -30.1	23657 -35.6	23240 -44.6	22730 -55.4	22138 -66.4	21483 -76.4	20786 -84.6	-45
-50	23400 -80.0	23598 -69.7	23751 -59.3	23844 -50.7	23860 -45.1	23784 -43.3	23606 -45.1	23320 -49.7	22928 -56.2	22440 -63.4	21870 -70.4	21237 -76.5	-50
-55	22270 -81.5	22649 -74.9	22983 -67.5	23251 -60.7	23437 -55.5	23523 -52.5	23499 -51.8	23359 -53.2	23106 -56.2	22747 -60.1	22295 -64.3	21765 -68.3	-55
-60	21062 -72.6	21593 -69.8	22073 -65.8	22484 -61.6	22810 -58.0	23036 -55.3	23153 -53.9	23156 -53.8	23047 -54.7	22831 -56.5	22519 -58.7	22123 -61.3	-60
-65	19765 -56.0	20390 -56.3	20960 -55.5	21461 -54.2	21880 -52.7	22207 -51.5	22434 -50.8	22559 -50.6	22582 -51.0	22507 -52.0	22342 -53.4	22098 -55.2	-65
-70	18438 -36.9	19080 -39.1	19668 -40.6	20193 -41.6	20647 -42.2	21023 -42.7	21317 -43.3	21526 -43.9	21653 -44.8	21700 -45.9	21671 -47.3	21576 -48.8	-70
-75	17237 -20.6	17806 -23.5	18332 -26.0	18809 -28.1	19233 -30.0	19601 -31.7	19909 -33.2	20158 -34.7	20346 -36.1	20477 -37.5	20554 -38.9	20581 -40.3	-75
-80	16377 -9.9	16790 -12.3	17179 -14.6	17540 -16.7	17871 -18.7	18170 -20.5	18435 -22.2	18665 -23.8	18861 -25.3	19023 -26.6	19152 -27.8	19250 -28.9	-80
-85	16025 -3.9	16232 -5.2	16433 -6.5	16626 -7.7	16809 -8.9	16982 -10.0	17143 -11.0	17291 -11.9	17426 -12.8	17548 -13.6	17656 -14.3	17751 -14.9	-85
-90	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	-90
E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

HORIZONTAL INTENSITY (H) WC-85

E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
0	27840 -4.6	27830 1.2	27881 3.8	27932 2.9	27929 -2.0	27843 -10.2	27681 -20.0	27485 -28.5	27321 -33.7	27255 -34.9	27332 -33.3	27565 -30.8	0
-5	27077 -10.4	26916 -6.7	26788 -6.2	26633 -9.0	26399 -15.3	26066 -24.6	25651 -35.2	25210 -44.4	24817 -50.1	24545 -51.6	24439 -50.2	24509 -47.9	-5
-10	25975 -21.9	25666 -20.4	25371 -21.5	25034 -25.4	24609 -32.2	24083 -41.6	23479 -52.0	22855 -61.3	22284 -67.2	21833 -69.1	21544 -68.0	21419 -65.5	-10
-15	24640 -38.6	24202 -39.0	23774 -41.2	23303 -45.3	22750 -51.6	22105 -60.1	21391 -69.7	20660 -78.3	19975 -84.1	19390 -86.2	18936 -85.2	18612 -82.3	-15
-20	23221 -57.9	22689 -59.9	22169 -62.5	21616 -66.1	20996 -71.4	20298 -78.3	19542 -86.4	18768 -93.9	18025 -99.2	17352 -101.2	16768 -100.0	16271 -96.4	-20
-25	21896 -76.3	21299 -79.4	20720 -82.0	20122 -84.8	19473 -88.5	18764 -93.8	18006 -100.1	17228 -106.3	16464 -110.8	15740 -112.4	15070 -110.6	14457 -105.9	-25
-30	20826 -90.3	20182 -94.0	19561 -96.4	18930 -98.3	18266 -100.7	17557 -104.4	16808 -109.2	16040 -114.1	15275 -117.7	14533 -118.5	13827 -116.0	13167 -110.0	-30
-35	20135 -97.3	19453 -101.4	18789 -103.6	18123 -105.0	17436 -106.6	16720 -109.3	15976 -112.9	15219 -116.7	14466 -119.3	13736 -119.3	13044 -115.8	12408 -108.7	-35
-40	19887 -96.9	19172 -101.1	18466 -103.5	17760 -104.9	17042 -106.4	16310 -108.6	15565 -111.5	14822 -114.4	14095 -116.1	13405 -115.2	12771 -110.9	12215 -103.1	-40
-45	20066 -90.7	19337 -94.8	18603 -97.5	17866 -99.4	17125 -101.2	16381 -103.5	15642 -106.1	14923 -108.3	14240 -109.1	13613 -107.4	13065 -102.7	12617 -94.7	-45
-50	20561 -81.5	19854 -85.3	19129 -88.2	18395 -90.7	17658 -93.1	16928 -95.6	16218 -97.9	15544 -99.5	14923 -99.7	14375 -97.6	13920 -92.8	13577 -85.4	-50
-55	21174 -72.1	20539 -75.3	19874 -78.3	19192 -81.1	18507 -83.8	17833 -86.4	17186 -86.4	16583 -89.6	16042 -89.3	15578 -87.0	15209 -82.7	14947 -76.4	-55
-60	21659 -64.0	21142 -66.8	20588 -69.5	20012 -72.2	19429 -74.8	18857 -77.0	18310 -78.6	17805 -79.3	17357 -78.7	16980 -76.6	16684 -72.9	16479 -67.8	-60
-65	21787 -57.3	21422 -59.5	21017 -61.8	20587 -64.0	20147 -66.1	19711 -67.7	19293 -66.7	18906 -68.9	18563 -68.1	18272 -66.2	18043 -63.2	17879 -59.2	-65
-70	21422 -50.4	21220 -52.2	20981 -53.9	20716 -55.4	20436 -56.8	20153 -57.7	19876 -58.1	19617 -57.9	19382 -56.9	19178 -55.2	19011 -52.8	18883 -49.7	-70
-75	20564 -41.7	20508 -42.9	20421 -44.0	20310 -45.0	20181 -45.6	20043 -45.9	19900 -45.9	19760 -45.4	19627 -44.4	19504 -42.9	19396 -41.0	19303 -38.7	-75
-80	19320 -29.9	19364 -30.7	19385 -31.3	19386 -31.7	19370 -31.9	19341 -31.9	19302 -31.6	19254 -31.0	19201 -30.2	19144 -29.1	19085 -27.7	19023 -26.1	-80
-85	17833 -15.3	17901 -15.7	17957 -15.9	18002 -16.1	18034 -16.1	18056 -16.0	18067 -15.7	18069 -15.4	18062 -14.9	18045 -14.3	18021 -13.5	17987 -12.7	-85
-90	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	16193 .4	-90
E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT

DECLINATION (D) WC-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG
90	-33.7 45.3	-28.7 45.3	-23.7 45.3	-18.7 45.3	-13.7 45.3	-8.7 45.3	-3.7 45.3	1.3 45.3	6.3 45.3	11.3 45.3	16.3 45.3	21.3 45.3	90
85	-17.2 23.6	-12.7 23.7	-8.2 23.8	-3.7 24.0	.6 24.3	4.9 24.6	9.1 25.1	13.3 25.6	17.3 26.1	21.2 26.8	25.0 27.5	28.6 28.4	85
80	-13.1 16.8	-8.8 16.8	-4.6 16.9	-.5 17.0	3.6 17.2	7.5 17.3	11.4 17.5	15.2 17.8	18.8 18.1	22.2 18.5	25.5 19.0	28.5 19.5	80
75	-11.2 13.6	-7.2 13.5	-3.4 13.4	.4 13.3	4.1 13.2	7.7 13.1	11.2 13.0	14.5 13.0	17.6 12.9	20.6 13.0	23.3 13.1	25.7 13.2	75
70	-9.7 11.8	-6.2 11.5	-2.7 11.1	.6 10.8	3.9 10.4	7.0 10.1	10.0 9.7	12.9 9.4	15.5 9.1	18.0 8.9	20.2 8.7	22.1 8.6	70
65	-8.3 10.7	-5.2 10.2	-2.2 9.6	.7 9.0	3.4 8.4	6.1 7.9	8.6 7.3	10.9 6.8	13.1 6.4	15.1 6.0	16.8 5.8	18.2 5.5	65
60	-7.0 10.1	-4.3 9.4	-1.7 8.7	.7 7.9	3.0 7.1	5.1 6.3	7.1 5.6	9.0 5.0	10.7 4.5	12.2 4.1	13.5 3.9	14.6 3.7	60
55	-5.8 9.8	-3.5 9.0	-1.3 8.1	.7 7.2	2.6 6.3	4.3 5.4	5.8 4.6	7.3 3.9	8.6 3.4	9.7 3.0	10.7 2.8	11.4 2.6	55
50	-4.8 9.8	-2.8 8.9	-.9 7.9	.8 6.9	2.2 5.9	3.6 5.0	4.8 4.1	5.9 3.4	6.8 2.8	7.6 2.4	8.2 2.1	8.7 2.0	50
45	-4.1 9.8	-2.3 8.8	-.7 7.8	.7 6.8	1.9 5.8	3.0 4.9	3.9 4.0	4.7 3.2	5.4 2.6	5.9 2.0	6.2 1.7	6.4 1.7	45
40	-3.6 9.8	-2.0 8.8	-.5 7.9	.6 6.9	1.7 6.0	2.5 5.1	3.2 4.3	3.8 3.4	4.3 2.6	4.5 1.9	4.7 1.5	4.6 1.4	40
35	-3.4 9.7	-1.9 8.8	-.6 7.9	.5 7.1	1.3 6.3	2.1 5.6	2.7 4.7	3.1 3.7	3.4 2.8	3.5 1.9	3.4 1.4	3.2 1.2	35
30	-3.4 9.5	-1.9 8.6	-.8 7.9	.2 7.3	.9 6.7	1.6 6.1	2.2 5.3	2.6 4.2	2.8 3.1	2.7 2.1	2.5 1.3	2.1 1.1	30
25	-3.6 9.3	-2.2 8.4	-1.1 7.8	-.2 7.4	.5 7.1	1.2 6.7	1.7 5.9	2.1 4.8	2.3 3.5	2.2 2.3	1.8 1.4	1.3 1.0	25
20	-4.1 9.1	-2.7 8.3	-1.6 7.8	-.7 7.7	.0 7.6	.7 7.3	1.3 6.7	1.8 5.5	1.9 4.0	1.7 2.6	1.2 1.5	.5 1.0	20
15	-4.8 9.0	-3.4 8.2	-2.3 7.9	-1.4 7.9	-.5 8.1	.2 8.1	.9 7.4	1.4 6.2	1.5 4.6	1.3 3.0	.7 1.7	-.1 1.1	15
10	-5.8 9.1	-4.3 8.3	-3.2 8.1	-2.1 8.3	-1.2 8.7	-.3 8.8	.5 8.3	1.0 7.0	1.1 5.2	.8 3.4	.1 2.0	-.8 1.3	10
5	-7.2 9.5	-5.7 8.7	-4.3 8.5	-3.1 8.9	-2.0 9.4	-1.0 9.6	-.1 9.1	.4 7.8	.5 5.9	.1 3.9	-.7 2.3	-1.7 1.6	5
0	-9.1 10.3	-7.4 9.4	-5.9 9.2	-4.5 9.6	-3.1 10.2	-1.8 10.4	-.9 9.9	-.3 8.5	-.3 6.5	-.9 4.3	-1.9 2.7	-3.0 1.9	0
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG

DECLINATION (D) WC-85

LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
90	26.3 45.3	31.3 45.3	36.3 45.3	41.3 45.3	46.3 45.3	51.3 45.3	56.3 45.3	61.3 45.3	66.3 45.3	71.3 45.3	76.3 45.3	81.3 45.3	90
85	32.1 29.4	35.4 30.4	38.5 31.6	41.3 32.9	43.8 34.3	45.9 35.7	47.6 37.1	48.8 38.4	49.5 39.3	49.5 39.6	48.7 38.8	47.3 36.7	85
80	31.2 20.2	33.6 20.9	35.6 21.7	37.1 22.5	37.8 23.2	37.7 23.6	36.5 23.5	33.9 22.1	29.8 18.9	24.2 13.2	17.5 5.4	10.5 -3.0	80
75	27.8 13.4	29.5 13.6	30.6 13.8	30.9 13.9	30.4 13.8	28.8 13.3	25.9 11.9	21.5 9.4	15.6 5.4	8.8 .3	1.9 -4.8	-4.3 -8.8	75
70	23.6 8.5	24.6 8.5	25.0 8.4	24.7 8.2	23.5 7.9	21.3 7.2	17.9 5.9	13.4 4.0	7.9 1.5	1.9 -1.4	-3.8 -4.2	-8.7 -6.3	70
65	19.2 5.4	19.8 5.3	19.9 5.2	19.2 5.0	17.8 4.8	15.6 4.3	12.4 3.6	8.4 2.4	3.8 1.0	-1.0 -.7	-5.6 -2.3	-9.6 -3.7	65
60	15.3 3.6	15.6 3.6	15.4 3.5	14.7 3.5	13.3 3.3	11.3 3.1	8.6 2.6	5.3 2.0	1.6 1.2	-2.2 .2	-6.0 -.9	-9.3 -2.0	60
55	11.8 2.6	11.9 2.7	11.7 2.7	10.9 2.7	9.8 2.6	8.1 2.5	5.9 2.2	3.3 1.8	.4 1.2	-2.7 .6	-5.7 -.2	-8.5 -1.0	55
50	8.9 2.1	8.9 2.2	8.6 2.3	7.9 2.3	6.9 2.2	5.6 2.0	3.9 1.7	1.9 1.4	-.4 1.0	-2.8 .6	-5.2 .1	-7.5 -.5	50
45	6.5 1.8	6.4 1.9	6.0 2.0	5.5 2.0	4.7 1.9	3.7 1.6	2.4 1.2	.9 .8	-.8 .5	-2.7 .2	-4.6 -.1	-6.5 -.5	45
40	4.5 1.5	4.3 1.7	4.0 1.9	3.5 1.9	2.9 1.6	2.2 1.2	1.3 .6	.2 .1	-1.0 -.3	-2.4 -.5	-3.9 -.7	-5.4 -.8	40
35	2.9 1.3	2.6 1.6	2.3 1.8	1.9 1.8	1.5 1.4	1.0 .8	.4 .0	-.3 -.7	-1.1 -1.1	-2.1 -1.4	-3.2 -1.4	-4.3 -1.4	35
30	1.7 1.2	1.3 1.5	1.0 1.8	.7 1.7	.4 1.3	.1 .4	-.2 -.5	-.6 -1.4	-1.1 -2.1	-1.7 -2.4	-2.5 -2.4	-3.3 -2.2	30
25	.7 1.2	.2 1.5	-.1 1.9	-.4 1.8	-.5 1.2	-.6 .2	-.7 -1.1	-.8 -2.2	-1.0 -3.0	-1.3 -3.4	-1.8 -3.3	-2.4 -3.0	25
20	-.1 1.2	-.6 1.6	-1.0 1.9	-1.2 1.8	-1.3 1.1	-1.2 -.1	-1.1 -1.6	-.9 -3.0	-.8 -4.0	-.9 -4.4	-1.1 -4.3	-1.5 -3.8	20
15	-.9 1.2	-1.5 1.7	-1.8 2.0	-2.0 1.9	-1.9 1.1	-1.7 -.4	-1.4 -2.1	-1.0 -3.7	-.7 -4.8	-.5 -5.3	-.5 -5.1	-.7 -4.4	15
10	-1.7 1.4	-2.3 1.8	-2.7 2.1	-2.8 1.9	-2.6 .9	-2.3 -.7	-1.7 -2.7	-1.2 -4.4	-.6 -5.7	-.2 -6.1	.0 -5.8	.0 -4.9	10
5	-2.7 1.6	-3.4 1.9	-3.8 2.2	-3.8 1.8	-3.5 .7	-2.9 -1.1	-2.2 -3.3	-1.4 -5.2	-.6 -6.4	.0 -6.8	.3 -6.3	.5 -5.1	5
0	-4.1 1.8	-4.8 2.1	-5.1 2.2	-5.1 1.7	-4.6 .4	-3.9 -1.6	-2.9 -3.9	-1.8 -5.8	-.8 -7.0	.0 -7.2	.6 -6.5	.9 -5.1	0
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

DECLINATION (D) WC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
90	86.3 45.3	91.3 45.3	96.3 45.3	101.3 45.3	106.3 45.3	111.3 45.3	116.3 45.3	121.3 45.3	126.3 45.3	131.3 45.3	136.3 45.3	141.3 45.3	90
85	45.2 32.8	42.7 27.1	39.9 20.1	37.3 12.4	35.2 5.0	33.7 -1.4	33.0 -6.5	33.1 -10.4	34.1 -13.1	35.9 -15.0	38.3 -16.1	41.4 -16.8	85
80	4.3 -10.1	-.6 -14.7	-3.9 -17.1	-5.6 -17.8	-6.0 -17.6	-5.4 -16.9	-3.9 -16.0	-1.8 -15.0	.8 -14.1	3.9 -13.3	7.3 -12.7	11.0 -12.1	80
75	-9.1 -11.3	-12.4 -12.3	-14.1 -12.3	-14.6 -11.8	-14.0 -11.0	-12.6 -10.2	-10.6 -9.3	-8.1 -8.4	-5.1 -7.7	-1.8 -7.1	1.8 -6.6	5.5 -6.2	75
70	-12.5 -7.6	-14.9 -8.1	-16.2 -8.2	-16.4 -7.8	-15.6 -7.3	-14.2 -6.7	-12.1 -6.0	-9.6 -5.3	-6.6 -4.8	-3.3 -4.3	.2 -3.9	3.8 -3.8	70
65	-12.7 -4.8	-14.8 -5.4	-15.9 -5.6	-16.0 -5.5	-15.4 -5.3	-14.0 -4.8	-12.0 -4.3	-9.6 -3.8	-6.6 -3.3	-3.6 -2.9	-.3 -2.7	3.2 -2.7	65
60	-11.9 -2.9	-13.7 -3.6	-14.7 -4.0	-14.9 -4.2	-14.3 -4.1	-13.1 -3.8	-11.3 -3.4	-9.0 -2.9	-6. -2.5	-3.3 -2.2	-.2 -2.2	3.2 -2.3	60
55	-10.7 -1.7	-12.4 -2.4	-13.3 -3.0	-13.5 -3.3	-13.0 -3.3	-11.8 -3.2	-10.2 -2.9	-8.0 -2.5	-5.5 -2.1	-2.7 -1.9	.3 -1.9	3.4 -2.2	55
50	-9.4 -1.1	-10.9 -1.8	-11.7 -2.3	-11.9 -2.7	-11.4 -2.9	-10.4 -2.8	-8.8 -2.6	-6.8 -2.2	-4.5 -1.9	-1.8 -1.7	1.0 -1.8	3.8 -2.3	50
45	-8.1 -.9	-9.3 -1.5	-10.1 -2.0	-10.2 -2.4	-9.8 -2.6	-8.8 -2.6	-7.3 -2.4	-5.4 -2.0	-3.2 -1.7	-.7 -1.5	1.9 -1.7	4.5 -2.3	45
40	-6.8 -1.1	-7.8 -1.4	-8.4 -1.8	-8.5 -2.2	-8.1 -2.4	-7.1 -2.4	-5.7 -2.2	-3.8 -1.8	-1.7 -1.4	.6 -1.3	3.0 -1.6	5.4 -2.4	40
35	-5.4 -1.5	-6.3 -1.6	-6.8 -1.9	-6.8 -2.1	-6.3 -2.3	-5.4 -2.2	-3.9 -1.9	-2.2 -1.5	-.1 -1.1	2.1 -1.0	4.3 -1.5	6.4 -2.4	35
30	-4.2 -2.0	-4.9 -1.9	-5.2 -2.0	-5.1 -2.1	-4.6 -2.1	-3.6 -1.9	-2.2 -1.5	-.4 -1.0	1.5 -.7	3.6 -.7	5.6 -1.3	7.4 -2.5	30
25	-3.0 -2.6	-3.5 -2.2	-3.7 -2.1	-3.4 -1.9	-2.8 -1.8	-1.8 -1.4	-.4 -1.0	1.3 -.5	3.1 -.2	5.0 -.3	6.8 -1.1	8.4 -2.5	25
20	-1.9 -3.1	-2.2 -2.5	-2.2 -2.1	-1.9 -1.7	-1.2 -1.3	-.1 -.9	1.3 -.3	2.9 .2	4.6 .3	6.3 -.1	7.9 -1.1	9.2 -2.7	20
15	-.9 -3.5	-1.0 -2.7	-.9 -1.9	-.4 -1.4	.4 -.8	1.4 -.2	2.8 .3	4.3 .7	5.8 .7	7.4 .1	8.7 -1.2	9.7 -3.0	15
10	-.1 -3.7	.0 -2.6	.3 -1.7	.8 -.9	1.7 -.2	2.8 .4	4.0 .9	5.4 1.1	6.9 .9	8.2 .0	9.4 -1.5	10.1 -3.3	10
5	.6 -3.7	.8 -2.4	1.2 -1.2	1.9 -.3	2.8 .4	3.9 .9	5.1 1.3	6.3 1.3	7.6 .8	8.8 -.3	9.8 -1.9	10.4 -3.6	5
0	1.2 -3.5	1.5 -1.9	2.1 -.7	2.8 .2	3.7 .9	4.7 1.3	5.9 1.5	7.1 1.2	8.2 .5	9.3 -.7	10.1 -2.3	10.6 -3.9	0
E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

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E. LONG / LAT	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
90	146.3 45.3	151.3 45.3	156.3 45.3	161.3 45.3	166.3 45.3	171.3 45.3	176.3 45.3	-178.7 45.3	-173.7 45.3	-168.7 45.3	-163.7 45.3	-158.7 45.3	90
85	45.1 -17.0	49.4 -16.8	54.4 -16.3	60.0 -15.3	66.4 -13.5	73.6 -10.8	82.1 -6.2	92.0 1.0	103.7 12.5	117.7 29.3	134.1 50.6	152.2 71.0	85
80	14.9 -11.7	19.0 -11.5	23.3 -11.4	27.7 -11.5	32.2 -11.8	36.9 -12.3	41.7 -13.1	46.7 -14.1	51.8 -15.6	57.3 -17.6	63.3 -20.3	70.1 -24.0	80
75	9.4 -6.0	13.4 -5.9	17.5 -6.0	21.6 -6.2	25.7 -6.6	29.8 -7.2	33.8 -8.0	37.7 -9.0	41.6 -10.3	45.2 -12.1	48.6 -14.4	51.7 -17.8	75
70	7.6 -3.7	11.4 -3.9	15.3 -4.2	19.1 -4.7	22.8 -5.4	26.4 -6.2	29.8 -7.1	33.0 -8.1	36.0 -9.3	38.6 -10.8	40.7 -12.7	42.2 -15.1	70
65	6.8 -2.9	10.4 -3.3	14.0 -3.9	17.5 -4.7	20.8 -5.6	24.0 -6.5	26.9 -7.5	29.4 -8.5	31.7 -9.5	33.5 -10.5	34.7 -11.7	35.2 -13.0	65
60	6.5 -2.7	9.9 -3.4	13.2 -4.3	16.3 -5.3	19.2 -6.3	21.9 -7.3	24.3 -8.1	26.4 -8.9	28.0 -9.4	29.2 -9.9	29.8 -10.3	29.8 -10.7	60
55	6.5 -2.9	9.6 -3.8	12.5 -4.9	15.3 -6.0	17.9 -7.1	20.2 -8.0	22.1 -8.6	23.7 -8.9	24.9 -8.9	25.6 -8.7	25.9 -8.4	25.5 -8.1	55
50	6.7 -3.1	9.5 -4.2	12.1 -5.5	14.5 -6.8	16.7 -7.8	18.6 -8.5	20.1 -8.8	21.4 -8.5	22.2 -8.0	22.7 -7.1	22.7 -6.2	22.2 -5.4	50
45	7.1 -3.4	9.5 -4.7	11.8 -6.1	13.8 -7.4	15.6 -8.3	17.1 -8.7	18.4 -8.5	19.3 -7.7	19.9 -6.6	20.1 -5.2	20.0 -4.0	19.5 -3.0	45
40	7.7 -3.6	9.7 -5.1	11.6 -6.6	13.2 -7.8	14.6 -8.5	15.8 -8.4	16.7 -7.7	17.4 -6.5	17.8 -5.0	17.9 -3.3	17.8 -1.9	17.3 -.9	40
35	8.3 -3.9	10.0 -5.5	11.4 -6.9	12.6 -7.9	13.6 -8.2	14.5 -7.8	15.1 -6.7	15.6 -5.1	15.9 -3.3	16.0 -1.6	15.8 -.1	15.4 .8	35
30	9.0 -4.0	10.3 -5.7	11.2 -7.1	12.0 -7.8	12.6 -7.7	13.2 -6.8	13.6 -5.4	14.0 -3.6	14.2 -1.8	14.2 -.1	14.1 1.1	13.7 1.8	30
25	9.6 -4.2	10.5 -5.9	11.0 -7.0	11.4 -7.3	11.7 -6.8	12.0 -5.6	12.2 -4.0	12.5 -2.2	12.6 -.6	12.6 .8	12.5 1.8	12.2 2.3	25
20	10.0 -4.5	10.5 -6.0	10.7 -6.8	10.7 -6.7	10.8 -5.8	10.9 -4.3	11.0 -2.7	11.2 -1.1	11.2 .3	11.2 1.3	11.1 2.0	10.8 2.4	20
15	10.3 -4.7	10.5 -6.0	10.4 -6.5	10.2 -6.0	10.1 -4.8	10.0 -3.1	10.1 -1.5	10.1 -.2	10.1 .7	10.1 1.4	9.9 1.8	9.8 2.2	15
10	10.5 -4.9	10.4 -5.9	10.2 -6.0	9.9 -5.2	9.6 -3.7	9.5 -2.1	9.4 -.7	9.4 .3	9.4 .9	9.3 1.2	9.1 1.5	9.0 1.9	10
5	10.6 -5.0	10.4 -5.7	10.1 -5.5	9.7 -4.4	9.4 -2.8	9.2 -1.3	9.1 -.1	9.1 .6	9.0 .8	8.9 .9	8.7 1.1	8.6 1.7	5
0	10.8 -5.0	10.6 -5.4	10.2 -4.9	9.9 -3.7	9.6 -2.1	9.3 -.7	9.2 .3	9.1 .6	9.0 .6	8.9 .5	8.8 .8	8.7 1.6	0
E. LONG / LAT	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT

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E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
90	-153.7 45.3	-148.7 45.3	-143.7 45.3	-138.7 45.3	-133.7 45.3	-128.7 45.3	-123.7 45.3	-118.7 45.3	-113.7 45.3	-108.7 45.3	-103.7 45.3	-98.7 45.3	90
85	170.6 83.0	-172.3 84.0	-157.5 78.0	-144.9 69.4	-134.1 61.0	-124.8 53.7	-116.4 47.8	-108.9 43.0	-101.9 39.1	-95.3 35.9	-89.1 33.4	-83.2 31.3	85
80	78.6 -28.7	91.3 -31.3	119.0 14.2	-171.8 213.2	-129.4 116.5	-113.0 68.2	-103.4 47.8	-96.0 37.2	-89.7 30.9	-84.0 26.8	-78.6 24.0	-73.5 22.0	80
75	54.1 -23.2	55.3 -32.4	53.7 -51.5	42.8 -102.2	-9.3 -134.2	-61.6 20.7	-72.6 29.1	-74.2 25.3	-72.9 22.0	-70.4 19.7	-67.3 18.0	-63.8 16.8	75
70	42.7 -18.4	41.6 -23.2	37.7 -30.3	28.7 -39.9	11.2 -45.3	-14.1 -29.1	-35.6 -4.3	-47.6 6.0	-53.1 12.3	-55.0 13.5	-54.9 13.8	-53.5 13.7	70
65	34.8 -14.8	32.9 -17.0	29.0 -19.7	22.3 -22.4	11.8 -23.3	-1.9 -19.5	-16.4 -10.8	-28.3 -1.7	-36.3 4.6	-41.0 8.2	-43.2 10.2	-43.7 11.2	65
60	28.9 -11.3	26.9 -12.1	23.5 -13.1	18.3 -14.2	11.1 -14.6	2.1 -13.4	-7.9 -10.0	-17.3 -5.0	-24.9 .0	-30.3 4.0	-33.7 6.8	-35.4 8.7	60
55	24.5 -7.9	22.6 -8.1	19.8 -8.7	15.7 -9.5	10.4 -10.3	3.8 -10.3	-3.6 -9.1	-11.0 -6.4	-17.6 -2.8	-22.9 .8	-26.7 3.9	-29.0 6.2	55
50	21.2 -5.0	19.5 -5.0	17.2 -5.6	13.9 -6.6	9.7 -7.9	4.7 -8.7	-1.1 -8.7	-7.1 -7.3	-12.8 -4.6	-17.8 -1.7	-21.6 1.2	-24.2 3.8	50
45	18.6 -2.5	17.2 -2.6	15.2 -3.4	12.6 -4.8	9.2 -6.4	5.1 -7.9	.4 -8.5	-4.6 -8.0	-9.6 -6.3	-14.2 -3.8	-17.9 -1.0	-20.6 1.5	45
40	16.5 -.5	15.3 -.8	13.7 -1.9	11.5 -3.6	8.8 -5.5	5.4 -7.3	1.5 -8.4	-2.9 -8.5	-7.3 -7.4	-11.5 -5.4	-15.1 -2.9	-17.9 -.6	40
35	14.8 1.0	13.8 .4	12.4 -.8	10.7 -2.7	8.4 -4.9	5.6 -6.9	2.2 -8.3	-1.6 -8.8	-5.5 -8.2	-9.4 -6.6	-13.0 -4.5	-15.9 -2.4	35
30	13.2 1.9	12.4 1.2	11.3 -.1	9.9 -2.0	8.0 -4.2	5.7 -6.4	2.8 -8.1	-.5 -8.9	-4.1 -8.6	-7.8 -7.5	-11.2 -5.8	-14.2 -4.0	30
25	11.8 2.3	11.2 1.7	10.4 .4	9.3 -1.4	7.8 -3.6	5.8 -5.8	3.3 -7.7	.4 -8.8	-2.9 -8.9	-6.3 -8.1	-9.7 -6.8	-12.8 -5.3	25
20	10.5 2.4	10.2 2.0	9.6 .9	8.8 -.7	7.6 -2.8	6.0 -5.1	3.9 -7.1	1.2 -8.5	-1.8 -9.0	-5.1 -8.6	-8.4 -7.6	-11.6 -6.4	20
15	9.6 2.4	9.4 2.2	9.0 1.4	8.5 .0	7.6 -2.0	6.3 -4.3	4.5 -6.6	2.1 -8.3	-.6 -9.2	-4.0 -9.1	-7.3 -8.4	-10.5 -7.3	15
10	8.9 2.3	8.9 2.5	8.7 2.1	8.4 .9	7.8 -1.1	6.7 -3.5	5.1 -6.1	2.9 -8.2	.2 -9.4	-2.9 -9.7	-6.3 -9.1	-9.6 -8.2	10
5	8.6 2.4	8.7 2.9	8.7 2.8	8.6 1.8	8.1 -.2	7.3 -2.8	5.8 -5.7	3.8 -8.2	1.2 -9.8	-2.0 -10.4	-5.4 -10.0	-8.8 -9.1	5
0	8.7 2.6	8.8 3.5	8.9 3.6	8.9 2.7	8.6 .6	7.9 -2.3	6.6 -5.6	4.7 -8.4	2.1 -10.4	-1.0 -11.2	-4.5 -11.0	-8.1 -10.0	0
E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

DECLINATION (D) WC-85

LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
90	-93.7 45.3	-88.7 45.3	-83.7 45.3	-78.7 45.3	-73.7 45.3	-68.7 45.3	-63.7 45.3	-58.7 45.3	-53.7 45.3	-48.7 45.3	-43.7 45.3	-38.7 45.3	90
85	-77.5 29.7	-71.9 28.3	-66.5 27.2	-61.2 26.3	-56.0 25.5	-50.9 25.0	-45.9 24.5	-41.0 24.1	-36.1 23.9	-31.3 23.7	-26.5 23.6	-21.9 23.5	85
80	-68.5 20.6	-63.6 19.5	-58.7 18.7	-53.9 18.1	-49.2 17.7	-44.6 17.4	-39.9 17.1	-35.4 17.0	-30.8 16.9	-26.3 16.8	-21.9 16.8	-17.5 16.8	80
75	-60.1 15.9	-56.3 15.3	-52.3 14.9	-48.2 14.5	-44.1 14.3	-40.0 14.2	-35.8 14.0	-31.6 13.9	-27.5 13.9	-23.3 13.8	-19.2 13.7	-15.2 13.7	75
70	-51.4 13.5	-48.8 13.3	-45.8 13.1	-42.5 13.0	-39.1 12.9	-35.5 12.8	-31.9 12.7	-28.2 12.7	-24.4 12.6	-20.7 12.4	-17.0 12.2	-13.3 12.0	70
65	-43.0 11.7	-41.5 12.0	-39.5 12.2	-37.0 12.2	-34.2 12.3	-31.1 12.3	-26.0 12.2	-24.7 12.1	-21.4 12.0	-18.1 11.8	-14.8 11.5	-11.5 11.1	65
60	-35.8 9.9	-35.2 10.7	-33.8 11.2	-31.9 11.5	-29.7 11.7	-27.1 11.8	-24.4 11.9	-21.5 11.9	-18.6 11.8	-15.6 11.5	-12.7 11.2	-9.8 10.7	60
55	-30.0 7.9	-30.0 9.0	-29.2 9.9	-27.7 10.4	-25.9 10.9	-23.7 11.2	-21.3 11.5	-18.7 11.6	-16.1 11.6	-13.4 11.4	-10.8 11.1	-8.2 10.5	55
50	-25.6 5.7	-26.0 7.2	-25.5 8.2	-24.4 9.1	-22.9 9.8	-20.9 10.4	-18.8 10.9	-16.5 11.3	-14.1 11.5	-11.7 11.4	-9.3 11.1	-7.0 10.5	50
45	-22.3 3.5	-23.0 5.1	-22.8 6.4	-21.9 7.4	-20.6 8.4	-18.9 9.3	-16.9 10.1	-14.8 10.8	-12.6 11.2	-10.4 11.4	-8.2 11.1	-6.0 10.6	45
40	-19.8 1.4	-20.7 3.1	-20.8 4.4	-20.2 5.6	-19.0 6.8	-17.5 8.0	-15.6 9.2	-13.7 10.2	-11.6 11.0	-9.5 11.3	-7.4 11.1	-5.4 10.6	40
35	-17.9 -.5	-19.1 1.0	-19.5 2.4	-19.1 3.7	-18.1 5.2	-16.7 6.7	-15.0 8.2	-13.1 9.6	-11.1 10.6	-9.0 11.1	-7.0 11.0	-5.1 10.5	35
30	-16.5 -2.3	-17.9 -.9	-18.6 .4	-18.4 1.9	-17.7 3.5	-16.4 5.3	-14.8 7.2	-12.9 9.0	-10.9 10.2	-8.9 10.9	-6.9 10.9	-5.0 10.4	30
25	-15.3 -3.9	-17.0 -2.6	-18.0 -1.4	-18.2 .1	-17.7 1.9	-16.6 4.0	-15.0 6.3	-13.2 8.3	-11.2 9.9	-9.2 10.7	-7.1 10.7	-5.3 10.1	25
20	-14.3 -5.2	-16.4 -4.1	-17.7 -2.9	-18.2 -1.5	-18.0 .5	-17.1 2.8	-15.7 5.4	-13.9 7.8	-11.9 9.6	-9.7 10.5	-7.7 10.6	-5.7 9.9	20
15	-13.5 -6.3	-15.9 -5.3	-17.6 -4.2	-18.5 -2.7	-18.6 -.7	-17.9 1.8	-16.6 4.7	-14.9 7.3	-12.8 9.4	-10.6 10.5	-8.5 10.5	-6.5 9.9	15
10	-12.8 -7.2	-15.5 -6.3	-17.5 -5.2	-18.8 -3.8	-19.3 -1.7	-18.9 1.0	-17.8 4.1	-16.1 7.0	-14.1 9.3	-11.8 10.6	-9.6 10.7	-7.6 10.1	10
5	-12.2 -8.0	-15.1 -7.0	-17.5 -6.0	-19.2 -4.6	-20.0 -2.5	-19.9 .3	-19.1 3.5	-17.6 6.8	-15.6 9.4	-13.4 10.9	-11.1 11.2	-9.1 10.5	5
0	-11.6 -8.9	-14.8 -7.8	-17.5 -6.7	-19.5 -5.3	-20.7 -3.2	-21.0 -.4	-20.5 3.0	-19.2 6.6	-17.4 9.6	-15.3 11.5	-13.1 12.0	-11.0 11.4	0
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT

DECLINATION (D) WC-85

E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
0	-9.1 10.3	-7.4 9.4	-5.9 9.2	-4.5 9.6	-3.1 10.2	-1.8 10.4	-.9 9.9	-.3 8.5	-.3 6.5	-.9 4.3	-1.9 2.7	-3.0 1.9	0
-5	-11.5 11.5	-9.7 10.5	-7.9 10.1	-6.2 10.4	-4.5 11.0	-3.0 11.2	-1.9 10.6	-1.4 9.0	-1.6 6.9	-2.3 4.7	-3.6 3.1	-4.9 2.3	-5
-10	-14.4 13.0	-12.5 11.9	-10.5 11.4	-8.4 11.4	-6.4 11.7	-4.7 11.7	-3.5 10.9	-3.1 9.2	-3.6 7.0	-4.7 5.0	-6.2 3.5	-7.6 2.8	-10
-15	-17.7 14.6	-15.7 13.5	-13.6 12.7	-11.2 12.3	-9.0 12.1	-7.1 11.7	-6.0 10.5	-5.9 8.7	-6.7 6.6	-8.2 4.8	-9.9 3.8	-11.6 3.4	-15
-20	-20.8 16.1	-19.0 15.1	-16.9 13.9	-14.6 12.8	-12.3 11.8	-10.6 10.5	-9.8 8.9	-10.0 7.0	-11.3 5.3	-13.2 4.2	-15.2 3.8	-16.8 4.0	-20
-25	-23.4 17.3	-22.0 16.4	-20.2 14.7	-18.1 12.6	-16.2 10.4	-15.0 8.0	-14.7 5.7	-15.6 3.9	-17.4 2.9	-19.5 2.7	-21.5 3.3	-23.1 4.1	-25
-30	-25.0 17.9	-24.0 17.2	-22.7 15.0	-21.3 11.7	-20.2 8.0	-19.8 4.4	-20.4 1.5	-21.9 -.1	-24.0 -.5	-26.2 .2	-28.2 1.4	-29.7 2.9	-30
-35	-25.4 17.9	-24.8 17.3	-24.1 14.6	-23.6 10.4	-23.5 5.5	-24.1 1.0	-25.5 -2.4	-27.5 -4.1	-29.9 -4.3	-32.2 -3.3	-34.3 -1.8	-35.8 .0	-35
-40	-24.7 17.0	-24.6 16.3	-24.7 13.4	-25.0 8.8	-25.9 3.5	-27.3 -1.3	-29.3 -4.9	-31.8 -6.9	-34.4 -7.5	-36.9 -6.9	-39.1 -5.6	-40.9 -4.0	-40
-45	-23.5 15.1	-24.0 14.3	-24.7 11.6	-25.8 7.3	-27.4 2.4	-29.5 -2.2	-32.0 -5.8	-34.7 -8.2	-37.6 -9.3	-40.3 -9.4	-42.8 -8.8	-45.0 -7.8	-45
-50	-22.0 12.6	-23.1 11.9	-24.5 9.6	-26.3 6.1	-28.5 2.1	-31.0 -1.9	-33.9 -5.3	-36.9 -7.9	-39.9 -9.6	-42.9 -10.4	-45.7 -10.5	-48.3 -10.2	-50
-55	-20.6 10.1	-22.4 9.6	-24.4 7.9	-26.7 5.3	-29.3 2.2	-32.2 -1.0	-35.3 -4.0	-38.5 -6.4	-41.8 -8.3	-45.0 -9.6	-48.2 -10.3	-51.1 -10.7	-55
-60	-19.6 8.0	-21.9 7.6	-24.4 6.5	-27.1 4.7	-30.0 2.6	-33.2 .2	-36.5 -2.1	-40.0 -4.2	-43.4 -6.0	-46.9 -7.4	-50.3 -8.4	-53.6 -9.1	-60
-65	-19.0 6.3	-21.7 6.1	-24.6 5.5	-27.7 4.4	-30.9 3.0	-34.3 1.5	-37.8 -.1	-41.4 -1.7	-45.1 -3.1	-48.8 -4.4	-52.5 -5.4	-56.2 -6.2	-65
-70	-18.9 5.1	-22.1 5.0	-25.3 4.7	-28.7 4.1	-32.2 3.4	-35.8 2.5	-39.5 1.5	-43.3 .5	-47.2 -.5	-51.1 -1.4	-55.1 -2.2	-59.1 -2.8	-70
-75	-19.5 4.1	-23.0 4.1	-26.6 4.0	-30.3 3.8	-34.1 3.5	-37.9 3.0	-41.9 2.6	-45.9 2.0	-50.0 1.5	-54.1 1.0	-58.4 .5	-62.7 .1	-75
-80	-20.9 3.3	-24.8 3.4	-28.8 3.4	-32.8 3.3	-36.9 3.2	-41.1 3.1	-45.3 2.9	-49.6 2.7	-54.0 2.5	-58.4 2.3	-62.9 2.1	-67.5 1.9	-80
-85	-23.4 2.5	-27.8 2.6	-32.2 2.6	-36.7 2.6	-41.2 2.6	-45.7 2.6	-50.3 2.6	-54.9 2.5	-59.6 2.5	-64.4 2.4	-69.1 2.4	-74.0 2.3	-85
-90	-27.5 1.7	-32.5 1.7	-37.5 1.7	-42.5 1.7	-47.5 1.7	-52.5 1.7	-57.5 1.7	-62.5 1.7	-67.5 1.7	-72.5 1.7	-77.5 1.7	-82.5 1.7	-90
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG

DECLINATION (D) WC-85

E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
0	-4.1 1.8	-4.8 2.1	-5.1 2.2	-5.1 1.7	-4.6 .4	-3.9 -1.6	-2.9 -3.9	-1.8 -5.8	-.8 -7.0	.0 -7.2	.6 -6.5	.9 -5.1	0
-5	-6.0 2.2	-6.8 2.4	-7.0 2.3	-6.8 1.6	-6.2 .1	-5.2 -2.0	-4.0 -4.4	-2.6 -6.3	-1.3 -7.4	-.2 -7.4	.6 -6.4	1.1 -4.8	-5
-10	-8.8 2.7	-9.5 2.8	-9.7 2.6	-9.3 1.7	-8.4 .0	-7.1 -2.3	-5.6 -4.7	-3.9 -6.6	-2.2 -7.5	-.8 -7.3	.3 -6.1	1.1 -4.3	-10
-15	-12.7 3.5	-13.3 3.6	-13.3 3.3	-12.6 2.2	-11.4 .3	-9.8 -2.1	-7.8 -4.6	-5.7 -6.4	-3.7 -7.2	-1.9 -6.8	-.4 -5.4	.7 -3.5	-15
-20	-17.8 4.4	-18.2 4.6	-17.9 4.3	-16.9 3.1	-15.4 1.1	-13.3 -1.4	-10.9 -3.9	-8.3 -5.7	-5.8 -6.4	-3.5 -5.9	-1.5 -4.5	.1 -2.6	-20
-25	-24.0 5.0	-24.1 5.4	-23.5 5.2	-22.3 4.1	-20.4 2.2	-17.9 -.3	-15.1 -2.7	-11.9 -4.5	-8.6 -5.3	-5.8 -4.8	-3.3 -3.5	-1.1 -1.7	-25
-30	-30.5 4.3	-30.5 5.1	-29.8 5.2	-28.4 4.5	-26.3 2.9	-23.6 .7	-20.3 -1.5	-16.6 -3.2	-12.6 -4.0	-9.1 -3.7	-5.8 -2.5	-2.8 -1.0	-30
-35	-36.7 1.7	-36.8 2.9	-36.3 3.5	-35.0 3.3	-33.0 2.4	-30.3 .8	-26.8 -.9	-22.7 -2.4	-18.2 -3.1	-13.7 -2.9	-9.4 -2.0	-5.4 -.8	-35
-40	-42.1 -2.4	-42.6 -1.0	-42.6 -.1	-41.7 .3	-40.1 .0	-37.7 -.7	-34.4 -1.8	-30.2 -2.8	-25.3 -3.3	-20.0 -3.1	-14.6 -2.4	-9.4 -1.4	-40
-45	-46.6 -6.6	-47.8 -5.4	-48.3 -4.5	-48.2 -3.9	-47.3 -3.7	-45.6 -3.9	-43.0 -4.3	-39.2 -4.8	-34.4 -5.0	-28.6 -4.8	-22.2 -4.2	-15.6 -3.4	-45
-50	-50.4 -9.7	-52.2 -9.0	-53.5 -8.3	-54.2 -7.8	-54.4 -7.5	-53.7 -7.4	-52.2 -7.5	-49.6 -7.8	-45.7 -8.0	-40.3 -8.1	-33.6 -7.9	-25.6 -7.5	-50
-55	-53.8 -10.7	-56.2 -10.5	-58.2 -10.2	-59.9 -10.0	-61.1 -9.8	-61.7 -9.7	-61.7 -9.9	-60.8 -10.1	-58.8 -10.6	-55.3 -11.4	-49.9 -12.3	-42.2 -13.4	-55
-60	-56.8 -9.5	-59.8 -9.8	-62.6 -9.8	-65.1 -9.8	-67.4 -9.8	-69.3 -9.8	-70.9 -9.9	-72.0 -10.1	-72.5 -10.7	-72.1 -11.6	-70.5 -13.3	-66.9 -16.1	-60
-65	-59.8 -6.8	-63.3 -7.2	-66.8 -7.4	-70.1 -7.5	-73.4 -7.6	-76.5 -7.6	-79.6 -7.6	-82.5 -7.7	-85.3 -7.8	-88.0 -8.2	-90.6 -8.9	-93.0 -10.2	-65
-70	-63.1 -3.3	-67.1 -3.7	-71.1 -4.0	-75.2 -4.2	-79.2 -4.2	-83.3 -4.2	-87.5 -4.2	-91.8 -4.0	-96.3 -3.9	-101.0 -3.7	-106.2 -3.6	-111.9 -3.4	-70
-75	-67.0 -.2	-71.4 -.5	-75.9 -.7	-80.5 -.9	-85.2 -.9	-90.0 -1.0	-94.9 -.9	-100.1 -.6	-105.4 -.7	-111.1 -.5	-117.2 -.3	-123.7 .0	-75
-80	-72.1 1.7	-76.9 1.6	-81.7 1.5	-86.7 1.4	-91.7 1.3	-96.9 1.2	-102.2 1.2	-107.7 1.2	-113.3 1.2	-119.1 1.2	-125.2 1.3	-131.5 1.3	-80
-85	-78.9 2.3	-83.9 2.2	-88.9 2.2	-94.0 2.1	-99.1 2.1	-104.4 2.0	-109.7 2.0	-115.1 1.9	-120.5 1.9	-126.1 1.8	-131.7 1.8	-137.4 1.7	-85
-90	-87.5 1.7	-92.5 1.7	-97.5 1.7	-102.5 1.7	-107.5 1.7	-112.5 1.7	-117.5 1.7	-122.5 1.7	-127.5 1.7	-132.5 1.7	-137.5 1.7	-142.5 1.7	-90
LAT / E. LONG	60	65	70	75	80	85	90	95	100	105	110	115	LAT / E. LONG

DECLINATION (D) WC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
0	1.2 -3.5	1.5 -1.9	2.1 -.7	2.6 .2	3.7 .9	4.7 1.3	5.9 1.5	7.1 1.2	8.2 .5	9.3 -.7	10.1 -2.3	10.6 -3.9	0
-5	1.6 -3.0	2.1 -1.4	2.7 -.1	3.5 .8	4.4 1.3	5.5 1.5	6.6 1.4	7.7 1.0	8.8 .2	9.8 -1.1	10.5 -2.6	11.0 -3.9	-5
-10	1.7 -2.4	2.4 -.7	3.2 .5	4.1 1.2	5.1 1.6	6.1 1.5	7.2 1.3	8.3 .7	9.4 -.2	10.3 -1.4	11.0 -2.6	11.5 -3.7	-10
-15	1.7 -1.6	2.6 .0	3.5 1.1	4.5 1.6	5.6 1.6	6.7 1.4	7.9 .9	9.0 .3	10.0 -.5	11.0 -1.5	11.7 -2.4	12.2 -3.1	-15
-20	1.4 -.8	2.6 .6	3.8 1.4	5.0 1.7	6.2 1.6	7.4 1.1	8.6 .6	9.8 .0	10.9 -.7	11.9 -1.3	12.7 -1.9	13.3 -2.2	-20
-25	.8 -.1	2.4 1.1	3.9 1.6	5.4 1.6	6.8 1.3	8.2 .8	9.6 .3	10.9 -.2	12.1 -.5	13.2 -.8	14.0 -.9	14.6 -.9	-25
-30	-.3 .3	1.9 1.2	3.9 1.5	5.8 1.3	7.5 .8	9.2 .3	10.8 .0	12.2 -.1	13.6 -.1	14.8 .2	15.7 .5	16.4 .8	-30
-35	-2.0 .3	1.1 .8	3.7 .9	6.1 .6	8.3 .2	10.4 -.1	12.2 -.1	14.0 .2	15.5 .6	16.8 1.5	17.8 2.2	18.4 2.7	-35
-40	-4.7 -.6	-.5 -.2	3.1 -.2	6.4 -.5	9.3 -.6	11.8 -.5	14.1 .0	16.1 .9	17.8 2.0	19.2 3.2	20.3 4.1	21.0 4.7	-40
-45	-9.2 -2.7	-3.3 -2.3	1.9 -2.1	6.4 -2.0	10.3 -1.6	13.7 -.8	16.5 .4	18.9 2.0	20.6 3.7	22.3 5.1	23.4 6.2	24.1 6.7	-45
-50	-17.1 -6.9	-8.6 -6.2	-.9 -5.3	5.8 -4.2	11.5 -2.7	16.1 -.8	19.8 1.5	22.7 3.7	24.9 5.8	26.4 7.4	27.5 8.4	28.2 8.7	-50
-55	-32.0 -14.2	-20.0 -13.9	-7.5 -11.9	3.8 -8.4	12.9 -4.1	19.8 .0	24.8 3.7	28.4 6.7	30.9 8.9	32.5 10.2	33.5 10.8	34.0 10.5	-55
-60	-60.1 -20.9	-48.1 -27.7	-28.7 -31.5	-4.8 -22.4	15.1 -6.5	27.7 4.3	35.0 10.0	39.3 12.7	41.6 13.9	42.9 14.1	43.4 13.5	43.5 12.3	-60
-65	-95.3 -12.7	-97.3 -17.7	-98.8 -29.5	-98.3 -74.2	53.7 218.0	68.8 57.5	68.3 35.6	66.9 27.0	65.2 22.1	63.5 18.6	61.8 15.8	60.1 13.2	-65
-70	-118.5 -3.2	-126.5 -2.7	-136.8 -1.7	-150.5 .9	-169.1 6.3	167.7 14.1	144.3 19.3	125.4 19.4	111.6 17.2	101.6 14.4	94.0 11.9	88.1 9.7	-70
-75	-130.8 .3	-138.6 .6	-147.2 1.0	-156.8 1.5	-167.2 2.1	-178.4 2.6	170.0 3.1	158.4 3.5	147.3 3.7	137.0 3.6	127.7 3.4	119.4 3.0	-75
-80	-138.0 1.3	-144.8 1.4	-151.8 1.4	-159.1 1.4	-166.6 1.3	-174.3 1.3	177.9 1.2	170.1 1.1	162.3 1.0	154.7 .9	147.3 .8	140.1 .7	-80
-85	-143.1 1.7	-149.0 1.6	-154.9 1.5	-160.8 1.5	-166.8 1.4	-172.8 1.3	-178.8 1.3	175.1 1.2	169.1 1.1	163.1 1.1	157.2 1.0	151.3 1.0	-85
-90	-147.5 1.7	-152.5 1.7	-157.5 1.7	-162.5 1.7	-167.5 1.7	-172.5 1.7	-177.5 1.7	177.5 1.7	172.5 1.7	167.5 1.7	162.5 1.7	157.5 1.7	-90
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	LAT / E. LONG

DECLINATION (D) WC-85

LAT	E. LONG 180	185	190	195	200	205	210	215	220	225	230	235	E. LONG LAT
0	10.8 -5.0	10.6 -5.4	10.2 -4.9	9.9 -3.7	9.6 -2.1	9.3 -.7	9.2 .3	9.1 .6	9.0 .6	8.9 .5	8.8 .8	8.7 1.6	0
-5	11.1 -4.7	10.9 -4.9	10.6 -4.2	10.3 -3.0	10.0 -1.5	9.8 -.3	9.7 .3	9.6 .4	9.4 .2	9.3 .1	9.2 .6	9.1 1.6	-5
-10	11.6 -4.2	11.5 -4.1	11.3 -3.4	11.0 -2.3	10.8 -1.1	10.6 -.2	10.5 .1	10.4 .0	10.3 -.3	10.1 -.3	10.0 .4	9.9 1.7	-10
-15	12.4 -3.4	12.4 -3.2	12.3 -2.5	12.1 -1.6	11.9 -.8	11.7 -.3	11.6 -.3	11.5 -.6	11.4 -.9	11.3 -.7	11.2 .2	11.1 1.8	-15
-20	13.6 -2.2	13.6 -1.9	13.5 -1.4	13.4 -.9	13.2 -.6	13.1 -.6	13.0 -.9	12.9 -1.3	12.8 -1.6	12.7 -1.2	12.6 .0	12.5 1.8	-20
-25	15.0 -.7	15.1 -.5	15.1 -.3	15.0 -.2	14.8 -.4	14.7 -.9	14.6 -1.5	14.5 -2.1	14.4 -2.3	14.3 -1.7	14.2 -.3	14.2 1.6	-25
-30	16.7 1.0	16.9 1.1	16.9 1.0	16.8 .6	16.7 -.2	16.5 -1.1	16.4 -2.1	16.3 -2.8	16.2 -2.9	16.2 -2.2	16.2 -.7	16.3 1.4	-30
-35	18.9 2.9	19.0 2.8	19.0 2.2	18.9 1.3	18.8 .0	18.6 -1.3	18.5 -2.5	18.4 -3.3	18.4 -3.3	18.4 -2.5	18.5 -.9	18.7 1.1	-35
-40	21.4 4.8	21.5 4.4	21.5 3.4	21.4 2.0	21.2 .4	21.1 -1.3	21.0 -2.6	20.9 -3.4	20.9 -3.4	21.0 -2.5	21.2 -1.0	21.5 1.0	-40
-45	24.5 6.6	24.6 5.8	24.6 4.5	24.4 2.7	24.3 .8	24.1 -1.0	24.0 -2.4	24.0 -3.1	24.1 -3.0	24.3 -2.1	24.5 -.6	24.8 1.2	-45
-50	28.5 8.2	28.6 7.0	28.5 5.4	28.3 3.4	28.2 1.4	28.0 -.4	28.0 -1.6	28.0 -2.3	28.1 -2.1	28.3 -1.3	28.5 .1	28.8 1.7	-50
-55	34.2 9.6	34.2 8.1	34.0 6.2	33.8 4.1	33.6 2.2	33.4 .5	33.3 -.6	33.2 -1.1	33.3 -.9	33.4 -.1	33.4 1.0	33.5 2.3	-55
-60	43.2 10.7	42.9 8.8	42.4 6.7	41.9 4.7	41.4 2.9	41.0 1.5	40.7 .6	40.4 .3	40.1 .5	39.8 1.0	39.5 1.9	39.1 2.8	-60
-65	58.5 10.8	57.0 8.6	55.6 6.5	54.3 4.7	53.1 3.3	52.0 2.2	51.0 1.6	50.0 1.3	49.1 1.4	48.1 1.8	47.2 2.3	45.9 2.8	-65
-70	83.3 7.8	79.2 6.1	75.7 4.7	72.6 3.5	69.8 2.6	67.3 2.0	65.0 1.7	62.8 1.5	60.6 1.6	58.5 1.8	56.4 2.0	54.2 2.3	-70
-75	112.1 2.6	105.7 2.1	99.9 1.7	94.7 1.4	90.0 1.2	85.7 1.0	81.7 .9	77.9 .9	74.3 1.0	70.9 1.1	67.5 1.2	64.2 1.3	-75
-80	133.2 .6	126.7 .5	120.4 .4	114.5 .4	108.9 .4	103.5 .4	96.4 .4	93.5 .4	88.8 .5	84.2 .5	79.8 .6	75.5 .6	-80
-85	145.5 .9	139.7 .9	134.0 .8	128.4 .8	122.9 .8	117.5 .8	112.2 .8	107.0 .8	101.9 .8	96.9 .8	91.9 .8	87.0 .8	-85
-90	152.5 1.7	147.5 1.7	142.5 1.7	137.5 1.7	132.5 1.7	127.5 1.7	122.5 1.7	117.5 1.7	112.5 1.7	107.5 1.7	102.5 1.7	97.5 1.7	-90
LAT	E. LONG 180	185	190	195	200	205	210	215	220	225	230	235	E. LONG LAT

DECLINATION (D) WC-85

E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
0	8.7 2.6	8.8 3.5	8.9 3.6	8.9 2.7	8.6 .6	7.9 -2.3	6.6 -5.6	4.7 -8.4	2.1 -10.4	-1.0 -11.2	-4.5 -11.0	-8.1 -10.0	0
-5	9.2 3.0	9.3 4.1	9.4 4.5	9.5 3.6	9.3 1.3	8.6 -1.9	7.4 -5.5	5.6 -8.8	3.1 -11.1	.0 -12.1	-3.5 -11.9	-7.3 -11.0	-5
-10	10.0 3.4	10.1 4.8	10.2 5.2	10.2 4.2	10.1 1.8	9.5 -1.7	8.4 -5.6	6.6 -9.1	4.2 -11.7	1.1 -12.9	-2.5 -12.8	-6.4 -11.9	-10
-15	11.1 3.7	11.1 5.2	11.2 5.7	11.3 4.7	11.1 2.1	10.6 -1.5	9.5 -5.6	7.9 -9.2	5.5 -11.9	2.4 -13.2	-1.3 -13.4	-5.3 -12.6	-15
-20	12.5 3.9	12.6 5.5	12.6 5.9	12.6 4.9	12.5 2.3	12.0 -1.3	11.0 -5.3	9.4 -8.9	7.0 -11.6	4.0 -13.0	.3 -13.3	-3.9 -12.8	-20
-25	14.3 3.8	14.3 5.4	14.4 5.9	14.4 4.9	14.3 2.5	13.8 -.9	12.8 -4.6	11.2 -7.9	8.9 -10.4	5.8 -11.9	2.1 -12.4	-2.2 -12.3	-25
-30	16.4 3.5	16.5 5.0	16.6 5.5	16.7 4.7	16.5 2.7	16.0 -.2	15.0 -3.4	13.4 -6.3	11.0 -8.5	7.9 -9.9	4.1 -10.6	-.2 -10.9	-30
-35	18.9 3.1	19.1 4.6	19.2 5.2	19.3 4.6	19.1 3.1	18.5 .8	17.5 -1.7	15.8 -4.0	13.4 -5.8	10.2 -7.1	6.4 -8.0	2.1 -8.8	-35
-40	21.8 2.9	22.1 4.3	22.2 5.0	22.2 4.7	21.9 3.6	21.2 2.0	20.0 .2	18.2 -1.5	15.7 -3.0	12.6 -4.2	8.8 -5.2	4.6 -6.3	-40
-45	25.2 2.9	25.4 4.3	25.5 5.0	25.3 5.0	24.8 4.4	23.9 3.3	22.5 2.0	20.5 .7	18.0 -.5	14.8 -1.6	11.1 -2.8	7.1 -3.9	-45
-50	29.0 3.2	29.1 4.4	28.9 5.1	28.5 5.3	27.7 4.9	26.5 4.3	24.9 3.3	22.7 2.3	20.0 1.3	16.9 .2	13.4 -1.0	9.6 -2.2	-50
-55	33.4 3.6	33.1 4.5	32.6 5.1	31.8 5.3	30.7 5.1	29.1 4.6	27.2 3.9	24.8 3.1	22.1 2.1	19.0 1.1	15.6 .1	12.1 -1.0	-55
-60	38.5 3.7	37.7 4.3	36.7 4.7	35.4 4.9	33.8 4.7	31.9 4.3	29.6 3.7	27.1 3.0	24.3 2.2	21.2 1.4	18.0 .5	14.6 -.4	-60
-65	44.6 3.3	43.1 3.7	41.4 3.9	39.5 3.9	37.4 3.8	35.1 3.4	32.5 3.0	29.8 2.5	26.8 1.9	23.8 1.2	20.6 .6	17.3 .0	-65
-70	52.0 2.5	49.7 2.7	47.2 2.7	44.7 2.7	42.0 2.5	39.2 2.3	36.3 2.0	33.2 1.7	30.1 1.3	26.9 .9	23.7 .6	20.4 .3	-70
-75	61.0 1.4	57.7 1.5	54.4 1.5	51.1 1.5	47.8 1.4	44.5 1.3	41.1 1.2	37.7 1.1	34.3 .9	30.9 .8	27.4 .7	24.0 .6	-75
-80	71.3 .7	67.2 .7	63.1 .8	59.1 .8	55.1 .8	51.2 .8	47.3 .9	43.4 .9	39.5 .9	35.7 .9	31.9 1.0	28.1 1.1	-80
-85	82.2 .9	77.5 .9	72.8 .9	68.2 1.0	63.6 1.0	59.1 1.1	54.6 1.1	50.1 1.2	45.7 1.2	41.3 1.3	37.0 1.4	32.6 1.4	-85
-90	92.5 1.7	87.5 1.7	82.5 1.7	77.5 1.7	72.5 1.7	67.5 1.7	62.5 1.7	57.5 1.7	52.5 1.7	47.5 1.7	42.5 1.7	37.5 1.7	-90
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

DECLINATION (D) WC-85

LAT	E. LONG 300	305	310	315	320	325	330	335	340	345	350	355	E. LONG LAT
0	-11.6 -8.9	-14.8 -7.8	-17.5 -6.7	-19.5 -5.3	-20.7 -3.2	-21.0 -.4	-20.5 3.0	-19.2 6.6	-17.4 9.6	-15.3 11.5	-13.1 12.0	-11.0 11.4	0
-5	-11.0 -9.8	-14.5 -8.6	-17.4 -7.5	-19.8 -6.1	-21.3 -4.1	-22.0 -1.2	-21.9 2.4	-21.0 6.2	-19.4 9.7	-17.5 12.1	-15.5 13.0	-13.4 12.6	-5
-10	-10.3 -10.7	-14.0 -9.5	-17.2 -8.4	-19.9 -7.1	-21.8 -5.1	-22.8 -2.3	-23.1 1.4	-22.6 5.5	-21.5 9.5	-20.0 12.5	-18.2 14.0	-16.3 13.9	-10
-15	-9.4 -11.5	-13.3 -10.5	-16.6 -9.5	-19.8 -8.3	-22.0 -6.6	-23.4 -3.8	-24.1 -.1	-24.1 4.3	-23.4 8.8	-22.3 12.5	-21.0 14.7	-19.4 15.3	-15
-20	-8.2 -12.0	-12.4 -11.3	-16.2 -10.6	-19.4 -9.7	-21.9 -8.2	-23.7 -5.7	-24.7 -2.0	-25.1 2.6	-24.9 7.5	-24.3 11.8	-23.4 14.9	-22.2 16.2	-20
-25	-6.7 -12.0	-11.1 -11.7	-15.1 -11.5	-18.6 -11.0	-21.4 -9.8	-23.5 -7.6	-24.8 -4.1	-25.6 .5	-25.8 5.7	-25.7 10.7	-25.2 14.5	-24.4 16.7	-25
-30	-4.8 -11.2	-9.3 -11.5	-13.6 -11.8	-17.3 -11.7	-20.4 -11.0	-22.7 -9.1	-24.4 -5.9	-25.5 -1.4	-26.0 3.9	-26.2 9.2	-26.1 13.8	-25.6 16.8	-30
-35	-2.5 -9.5	-7.1 -10.4	-11.5 -11.2	-15.3 -11.6	-18.6 -11.2	-21.2 -9.7	-23.2 -6.9	-24.5 -2.7	-25.4 2.5	-25.8 7.9	-25.9 12.8	-25.7 16.3	-35
-40	.1 -7.4	-4.4 -8.6	-8.8 -9.7	-12.7 -10.4	-16.1 -10.3	-18.8 -9.2	-21.0 -6.7	-22.6 -3.0	-23.7 1.8	-24.3 7.0	-24.7 11.8	-24.8 15.4	-40
-45	2.8 -5.2	-1.4 -6.5	-5.6 -7.7	-9.4 -8.4	-12.7 -8.5	-15.6 -7.6	-17.9 -5.5	-19.7 -2.2	-21.0 1.9	-21.9 6.4	-22.6 10.7	-23.0 13.8	-45
-50	5.7 -3.4	1.7 -4.6	-2.1 -5.6	-5.7 -6.2	-9.0 -6.2	-11.8 -5.3	-14.2 -3.6	-16.1 -.9	-17.7 2.4	-19.0 6.0	-20.0 9.3	-21.0 11.7	-50
-55	8.5 -2.1	4.8 -3.0	1.3 -3.7	-2.0 -4.1	-5.1 -3.9	-7.9 -3.2	-10.3 -1.7	-12.5 .4	-14.3 2.9	-16.0 5.5	-17.5 7.9	-19.0 9.5	-55
-60	11.2 -1.2	7.9 -1.8	4.6 -2.2	1.4 -2.3	-1.5 -2.1	-4.3 -1.3	-6.8 -.2	-9.2 1.4	-11.3 3.2	-13.4 5.0	-15.4 6.5	-17.4 7.6	-60
-65	14.1 -.5	10.9 -.8	7.7 -1.0	4.6 -.9	1.7 -.6	-1.1 .1	-3.8 .9	-6.4 2.0	-8.9 3.2	-11.4 4.4	-13.9 5.4	-16.4 6.1	-65
-70	17.2 .1	13.9 .0	10.7 .0	7.6 .2	4.5 .6	1.5 1.1	-1.4 1.7	-4.3 2.4	-7.2 3.2	-10.0 3.9	-12.9 4.5	-15.9 4.9	-70
-75	20.6 .6	17.2 .7	13.8 .8	10.4 1.1	7.1 1.4	3.8 1.7	.5 2.1	-2.8 2.6	-6.1 3.0	-9.4 3.4	-12.7 3.7	-16.1 4.0	-75
-80	24.3 1.2	20.5 1.3	16.8 1.4	13.0 1.6	9.3 1.8	5.6 2.0	1.9 2.2	-1.9 2.5	-5.6 2.7	-9.4 2.9	-13.2 3.1	-17.0 3.2	-80
-85	26.3 1.5	24.0 1.6	19.7 1.7	15.4 1.8	11.1 1.9	6.9 2.0	2.6 2.1	-1.7 2.2	-6.0 2.3	-10.3 2.3	-14.7 2.4	-19.0 2.5	-85
-90	32.5 1.7	27.5 1.7	22.5 1.7	17.5 1.7	12.5 1.7	7.5 1.7	2.5 1.7	-2.5 1.7	-7.5 1.7	-12.5 1.7	-17.5 1.7	-22.5 1.7	-90
LAT	E. LONG 300	305	310	315	320	325	330	335	340	345	350	355	E. LONG LAT

INCLINATION (I) WC-85

LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG
90	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	90
85	85.1 .9	85.1 1.0	85.1 1.0	85.1 1.0	85.2 1.1	85.2 1.1	85.3 1.1	85.4 1.1	85.5 1.2	85.6 1.2	85.8 1.2	85.9 1.2	85
80	82.6 1.3	82.6 1.4	82.6 1.4	82.6 1.5	82.7 1.5	82.8 1.5	82.9 1.6	83.1 1.6	83.3 1.6	83.5 1.6	83.8 1.7	84.0 1.7	80
75	80.2 1.6	80.2 1.7	80.2 1.7	80.2 1.8	80.3 1.8	80.4 1.9	80.6 1.9	80.8 1.9	81.0 1.9	81.3 1.9	81.6 1.9	82.0 2.0	75
70	77.8 1.7	77.8 1.8	77.8 1.9	77.8 1.9	77.9 2.0	78.0 2.0	78.2 2.0	78.4 2.0	78.7 2.0	79.0 2.0	79.3 2.0	79.7 2.0	70
65	75.3 1.6	75.3 1.7	75.3 1.8	75.3 1.9	75.4 2.0	75.6 2.0	75.7 2.0	76.0 2.0	76.2 2.0	76.5 2.0	76.8 2.0	77.2 1.9	65
60	72.4 1.3	72.4 1.5	72.5 1.7	72.6 1.8	72.7 1.9	72.8 2.0	73.0 2.0	73.2 2.0	73.5 2.0	73.8 1.9	74.1 1.9	74.4 1.8	60
55	69.1 .9	69.1 1.2	69.2 1.5	69.4 1.8	69.5 1.9	69.7 2.0	69.9 2.1	70.2 2.1	70.4 2.0	70.7 2.0	71.0 1.9	71.3 1.8	55
50	65.2 .4	65.3 .9	65.4 1.3	65.6 1.7	65.8 2.0	66.1 2.1	66.3 2.2	66.6 2.3	66.9 2.3	67.1 2.2	67.4 2.1	67.6 2.0	50
45	60.6 -.2	60.7 .5	60.9 1.1	61.2 1.6	61.5 2.0	61.8 2.3	62.1 2.6	62.4 2.7	62.7 2.7	62.9 2.6	63.2 2.5	63.4 2.4	45
40	55.1 -.8	55.3 .1	55.5 .9	55.8 1.5	56.2 2.1	56.5 2.6	56.9 3.0	57.3 3.2	57.7 3.3	58.0 3.3	58.3 3.2	58.5 3.0	40
35	48.6 -1.5	48.8 -.4	49.1 .5	49.5 1.3	49.8 2.1	50.3 2.8	50.7 3.5	51.2 3.9	51.7 4.2	52.1 4.2	52.4 4.0	52.6 3.8	35
30	40.9 -2.3	41.1 -1.1	41.4 .0	41.8 1.0	42.2 2.0	42.7 3.0	43.3 4.0	43.9 4.7	44.5 5.2	45.0 5.2	45.4 5.0	45.7 4.7	30
25	31.8 -3.2	32.0 -1.9	32.3 -.7	32.7 .4	33.2 1.7	33.8 3.1	34.4 4.5	35.1 5.6	35.9 6.3	36.6 6.4	37.2 6.2	37.5 5.7	25
20	21.3 -4.2	21.5 -2.8	21.8 -1.6	22.2 -.4	22.7 1.2	23.3 3.0	24.0 4.9	25.0 6.5	25.9 7.5	26.9 7.7	27.6 7.4	28.0 6.9	20
15	9.7 -5.2	9.7 -3.8	10.0 -2.6	10.4 -1.3	10.9 .5	11.5 2.8	12.4 5.1	13.4 7.2	14.7 8.5	15.8 9.0	16.7 8.7	17.2 8.1	15
10	-2.7 -6.2	-2.8 -4.8	-2.6 -3.6	-2.3 -2.3	-1.8 -.3	-1.2 2.3	-.2 5.1	1.0 7.6	2.4 9.3	3.8 10.0	4.8 9.8	5.4 9.2	10
5	-15.0 -7.0	-15.3 -5.6	-15.3 -4.5	-15.1 -3.1	-14.7 -1.1	-14.1 1.7	-13.1 4.7	-11.7 7.6	-10.2 9.6	-8.7 10.5	-7.5 10.5	-6.8 9.9	5
0	-26.6 -7.7	-27.1 -6.3	-27.3 -5.2	-27.3 -3.8	-27.0 -1.7	-26.4 1.0	-25.4 4.2	-24.0 7.1	-22.4 9.3	-20.8 10.5	-19.6 10.7	-18.8 10.3	0
LAT / E. LONG	0	5	10	15	20	25	30	35	40	45	50	55	LAT / E. LONG

INCLINATION (I) WC-85

E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT
90	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	90
85	86.1 1.2	86.3 1.3	86.5 1.3	86.7 1.3	86.9 1.4	87.1 1.4	87.3 1.4	87.5 1.5	87.7 1.6	87.9 1.7	88.0 1.7	88.2 1.8	85
80	84.3 1.7	84.7 1.7	85.0 1.8	85.4 1.8	85.8 1.9	86.1 1.9	86.5 2.0	86.8 2.1	87.1 2.2	87.3 2.3	87.4 2.3	87.4 2.3	80
75	82.4 2.0	82.8 2.0	83.3 2.0	83.8 2.1	84.2 2.1	84.7 2.2	85.1 2.3	85.5 2.4	85.7 2.5	85.8 2.5	85.8 2.4	85.6 2.4	75
70	80.2 2.0	80.6 2.0	81.1 2.1	81.7 2.1	82.2 2.2	82.7 2.2	83.1 2.3	83.4 2.4	83.6 2.5	83.6 2.5	83.4 2.5	83.1 2.4	70
65	77.6 1.9	78.1 1.9	78.6 2.0	79.1 2.0	79.6 2.1	80.1 2.1	80.5 2.2	80.7 2.3	80.8 2.4	80.8 2.5	80.5 2.5	80.1 2.6	65
60	74.8 1.8	75.2 1.8	75.7 1.8	76.1 1.9	76.6 1.9	77.0 2.0	77.3 2.1	77.5 2.3	77.5 2.4	77.4 2.5	77.1 2.6	76.6 2.7	60
55	71.6 1.8	71.9 1.8	72.3 1.8	72.7 1.9	73.0 1.9	73.3 2.1	73.6 2.2	73.7 2.3	73.7 2.4	73.6 2.5	73.2 2.7	72.7 2.8	55
50	67.9 1.9	68.2 1.9	68.5 2.0	68.7 2.1	69.0 2.2	69.2 2.3	69.3 2.4	69.4 2.4	69.4 2.5	69.2 2.6	68.8 2.7	68.3 2.8	50
45	63.6 2.3	63.8 2.3	64.0 2.4	64.2 2.5	64.3 2.6	64.4 2.7	64.5 2.8	64.5 2.8	64.4 2.8	64.2 2.7	63.9 2.7	63.4 2.8	45
40	58.6 2.9	58.7 2.9	58.8 3.0	58.8 3.2	58.9 3.4	58.9 3.5	58.8 3.5	58.8 3.4	58.7 3.2	58.6 3.0	58.3 2.8	57.9 2.7	40
35	52.7 3.6	52.7 3.6	52.7 3.8	52.6 4.1	52.5 4.4	52.4 4.5	52.3 4.5	52.2 4.2	52.1 3.8	52.0 3.3	51.8 2.9	51.5 2.5	35
30	45.7 4.5	45.7 4.5	45.5 4.7	45.3 5.2	45.1 5.6	44.9 5.9	44.7 5.8	44.6 5.3	44.5 4.6	44.5 3.8	44.3 3.0	44.1 2.4	30
25	37.5 5.4	37.4 5.5	37.1 5.9	36.8 6.5	36.4 7.2	36.1 7.5	35.9 7.4	35.7 6.8	35.7 5.7	35.7 4.4	35.7 3.2	35.6 2.2	25
20	28.0 6.5	27.8 6.5	27.4 7.1	26.9 8.0	26.5 8.9	26.1 9.4	25.8 9.2	25.7 8.3	25.7 6.9	25.8 5.1	25.9 3.4	25.9 2.0	20
15	17.2 7.6	17.0 7.7	16.5 8.4	15.9 9.5	15.3 10.6	14.9 11.2	14.6 11.0	14.5 9.8	14.6 7.9	14.8 5.7	15.1 3.5	15.3 1.7	15
10	5.5 8.7	5.2 8.8	4.6 9.5	4.0 10.8	3.4 12.0	2.9 12.6	2.6 12.2	2.5 10.8	2.7 8.6	3.1 6.0	3.5 3.4	3.9 1.3	10
5	-6.7 9.5	-7.0 9.6	-7.6 10.4	-8.3 11.6	-8.9 12.7	-9.4 13.2	-9.6 12.7	-9.6 11.1	-9.3 8.6	-8.8 5.8	-8.2 3.0	-7.7 .8	5
0	-18.7 9.9	-18.9 10.0	-19.4 10.8	-20.1 11.8	-20.6 12.8	-21.1 13.1	-21.3 12.4	-21.2 10.6	-20.8 8.1	-20.1 5.2	-19.4 2.4	-18.8 .2	0
E. LONG / LAT	60	65	70	75	80	85	90	95	100	105	110	115	E. LONG / LAT

INCLINATION (I) WC-85

E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
90	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	90
85	88.3 1.9	88.4 2.0	88.4 2.0	88.4 2.1	88.4 2.1	88.4 2.1	88.4 2.0	88.4 2.0	88.3 2.0	88.3 1.9	88.3 1.9	88.3 1.9	85
80	87.3 2.3	87.1 2.2	86.9 2.1	86.7 2.0	86.4 1.9	86.1 1.9	85.9 1.9	85.7 1.9	85.5 1.9	85.4 1.9	85.3 1.9	85.3 1.9	80
75	85.3 2.3	84.8 2.2	84.4 2.1	83.9 2.1	83.5 2.0	83.0 2.0	82.6 2.1	82.3 2.1	82.0 2.2	81.8 2.2	81.7 2.3	81.6 2.3	75
70	82.6 2.4	82.0 2.3	81.4 2.3	80.8 2.3	80.1 2.3	79.5 2.3	79.0 2.3	78.6 2.4	78.2 2.4	78.0 2.5	77.8 2.6	77.7 2.7	70
65	79.5 2.6	78.8 2.5	78.0 2.5	77.2 2.5	76.5 2.5	75.8 2.5	75.1 2.5	74.6 2.6	74.2 2.7	73.9 2.7	73.7 2.8	73.7 2.9	65
60	75.9 2.7	75.2 2.7	74.3 2.7	73.4 2.7	72.6 2.7	71.8 2.6	71.1 2.6	70.5 2.7	70.0 2.7	69.7 2.8	69.5 2.9	69.5 2.9	60
55	72.0 2.8	71.2 2.9	70.3 2.9	69.3 2.8	68.4 2.7	67.5 2.6	66.8 2.6	66.1 2.6	65.7 2.6	65.4 2.7	65.2 2.8	65.2 2.8	55
50	67.6 2.9	66.8 2.9	65.9 2.9	64.9 2.8	63.9 2.6	63.0 2.5	62.2 2.4	61.6 2.3	61.2 2.3	60.9 2.4	60.9 2.5	61.0 2.6	50
45	62.8 2.8	61.9 2.8	61.0 2.7	60.0 2.6	59.0 2.4	58.1 2.1	57.4 2.0	56.8 1.9	56.4 1.9	56.3 2.0	56.4 2.2	56.6 2.3	45
40	57.3 2.6	56.5 2.5	55.5 2.4	54.6 2.2	53.6 1.9	52.8 1.6	52.1 1.4	51.6 1.3	51.4 1.4	51.4 1.6	51.7 1.8	52.2 2.0	40
35	50.9 2.3	50.2 2.1	49.3 1.9	48.4 1.6	47.5 1.3	46.7 1.0	46.1 .8	45.8 .8	45.8 1.0	46.1 1.3	46.6 1.7	47.4 1.9	35
30	43.6 1.9	43.0 1.6	42.2 1.3	41.4 1.0	40.6 .7	39.9 .4	39.5 .2	39.4 .3	39.6 .7	40.1 1.3	41.0 1.8	42.2 2.0	30
25	35.3 1.5	34.7 1.0	34.0 .6	33.3 .3	32.6 .0	32.2 -.2	32.0 -.2	32.1 .1	32.6 .7	33.5 1.5	34.8 2.2	36.3 2.4	25
20	25.7 1.0	25.3 .3	24.8 -.1	24.2 -.4	23.7 -.6	23.5 -.7	23.5 -.4	23.9 .2	24.8 1.1	26.0 2.1	27.7 2.8	29.6 2.9	20
15	15.2 .4	15.0 -.4	14.6 -.8	14.2 -1.0	13.9 -1.1	14.0 -.9	14.3 -.4	15.0 .5	16.1 1.7	17.7 2.8	19.6 3.5	21.8 3.3	15
10	4.0 -.2	3.9 -1.0	3.7 -1.4	3.6 -1.5	3.6 -1.3	3.8 -.9	4.4 -.1	5.3 1.0	6.7 2.3	8.5 3.5	10.7 4.0	13.0 3.6	10
5	-7.4 -.7	-7.3 -1.5	-7.3 -1.8	-7.2 -1.7	-7.0 -1.3	-6.5 -.6	-5.8 .3	-4.7 1.6	-3.2 2.9	-1.3 3.8	1.0 4.1	3.4 3.4	5
0	-18.4 -1.2	-18.1 -1.8	-17.9 -1.9	-17.7 -1.7	-17.3 -1.1	-16.7 -.3	-15.8 .8	-14.6 1.9	-13.1 3.1	-11.3 3.8	-9.1 3.7	-6.8 2.8	0
E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT

INCLINATION (I) WC-85

E. LONG / LAT	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG / LAT
90	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	90
85	88.3 1.9	88.4 1.9	88.4 1.9	88.5 1.8	88.6 1.8	88.7 1.8	88.8 1.8	88.9 1.8	89.0 1.8	89.0 1.7	89.1 1.6	89.1 1.4	85
80	85.3 1.9	85.3 1.9	85.5 1.9	85.6 1.9	85.8 1.9	86.0 1.9	86.3 1.9	86.6 1.8	87.0 1.8	87.4 1.8	87.8 1.7	88.2 1.7	80
75	81.7 2.3	81.8 2.4	81.9 2.4	82.2 2.4	82.5 2.3	82.9 2.3	83.3 2.2	83.8 2.2	84.4 2.1	85.0 2.0	85.6 1.9	86.3 1.7	75
70	77.8 2.7	77.9 2.7	78.2 2.7	78.5 2.7	79.0 2.6	79.5 2.5	80.1 2.4	80.8 2.3	81.5 2.2	82.3 2.0	83.1 1.8	84.0 1.6	70
65	73.7 2.9	73.9 2.9	74.3 2.9	74.7 2.8	75.3 2.7	75.9 2.5	76.6 2.3	77.5 2.1	78.4 1.9	79.3 1.7	80.3 1.4	81.3 1.2	65
60	69.6 3.0	69.9 2.9	70.3 2.9	70.8 2.7	71.4 2.5	72.2 2.2	73.0 1.9	74.0 1.6	75.0 1.3	76.0 1.0	77.1 .8	78.2 .6	60
55	65.4 2.9	65.8 2.8	66.2 2.6	66.9 2.4	67.6 2.0	68.4 1.6	69.3 1.1	70.3 .7	71.4 .4	72.5 .1	73.6 .0	74.8 -.1	55
50	61.3 2.6	61.7 2.5	62.3 2.2	63.0 1.8	63.7 1.3	64.6 .7	65.6 .2	66.6 -.3	67.7 -.7	68.8 -.8	69.9 -.9	71.1 -.8	50
45	57.1 2.3	57.7 2.1	58.3 1.7	59.1 1.1	59.9 .4	60.8 -.3	61.8 -1.0	62.8 -1.5	63.8 -1.7	64.9 -1.8	66.0 -1.6	67.2 -1.3	45
40	52.8 2.0	53.6 1.7	54.4 1.1	55.3 .4	56.1 -.5	57.0 -1.4	57.9 -2.1	58.9 -2.5	59.9 -2.7	60.9 -2.5	62.0 -2.1	63.0 -1.5	40
35	48.3 1.8	49.3 1.4	50.3 .6	51.3 -.4	52.2 -1.4	53.0 -2.4	53.9 -3.1	54.8 -3.4	55.7 -3.4	56.7 -3.0	57.7 -2.4	58.7 -1.6	35
30	43.4 1.8	44.7 1.2	45.9 .1	46.9 -1.1	47.8 -2.3	48.7 -3.2	49.5 -3.8	50.3 -4.0	51.2 -3.6	52.1 -3.3	53.0 -2.5	53.9 -1.5	30
25	37.9 2.0	39.4 1.1	40.8 -.3	41.9 -1.8	42.9 -3.0	43.7 -3.9	44.4 -4.4	45.2 -4.3	46.0 -3.9	46.8 -3.2	47.7 -2.4	48.6 -1.4	25
20	31.5 2.2	33.3 .9	34.8 -.8	36.0 -2.4	36.9 -3.8	37.7 -4.5	36.5 -4.7	39.2 -4.3	40.0 -3.8	40.8 -3.0	41.6 -2.2	42.4 -1.4	20
15	24.0 2.3	26.0 .6	27.6 -1.4	28.9 -3.2	29.9 -4.5	30.7 -5.0	31.5 -4.8	32.2 -4.2	33.0 -3.5	33.7 -2.8	34.5 -2.2	35.2 -1.5	15
10	15.4 2.2	17.5 .1	19.2 -2.1	20.6 -4.0	21.6 -5.2	22.5 -5.4	23.3 -4.9	24.1 -4.1	24.8 -3.3	25.6 -2.7	26.3 -2.2	27.1 -1.8	10
5	5.8 1.7	7.9 -.6	9.7 -3.0	11.1 -4.8	12.2 -5.7	13.1 -5.7	14.0 -4.9	14.8 -4.0	15.7 -3.2	16.4 -2.7	17.2 -2.5	17.9 -2.3	5
0	-4.5 .9	-2.4 -1.4	-.6 -3.7	.8 -5.4	1.9 -6.1	2.9 -5.8	3.9 -4.9	4.8 -3.9	5.7 -3.2	6.6 -3.0	7.4 -3.0	8.1 -2.9	0
LAT / E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	LAT / E. LONG

INCLINATION (I) WC-85

LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
90	87.7 .8	87.7 .8	87.7 .6	87.7 .8	87.7 .8	87.7 .6	87.7 .8	87.7 .8	87.7 .6	87.7 .8	87.7 .6	87.7 .8	90
85	89.1 1.1	89.0 .8	88.8 .6	88.6 .4	88.4 .3	88.2 .2	88.0 .2	87.8 .2	87.5 .2	87.3 .2	87.1 .2	86.9 .3	85
80	88.6 1.6	89.1 1.7	89.5 1.7	89.6 .6	89.2 -.3	88.8 -.5	88.3 -.5	87.8 -.4	87.3 -.3	86.8 -.2	86.4 -.1	85.9 .0	80
75	87.0 1.6	87.7 1.4	88.4 1.1	89.1 .5	89.5 -1.1	89.1 -1.5	88.4 -1.2	87.7 -1.0	87.0 -.6	86.3 -.6	85.6 -.4	84.9 -.2	75
70	84.9 1.4	85.8 1.1	86.6 .7	87.4 .2	87.9 -.6	88.0 -1.3	87.7 -1.6	87.0 -1.5	86.2 -1.3	85.3 -1.1	84.5 -.8	83.6 -.6	70
65	82.3 1.0	83.3 .7	84.3 .3	85.1 -.1	85.7 -.6	86.0 -1.2	85.9 -1.6	85.4 -1.8	84.7 -1.7	83.8 -1.6	82.9 -1.4	82.0 -1.2	65
60	79.3 .4	80.4 .2	81.4 .0	82.3 -.3	83.0 -.7	83.4 -1.2	83.4 -1.6	83.1 -2.0	82.6 -2.1	81.7 -2.1	80.8 -2.1	79.8 -1.9	60
55	75.9 -.2	77.0 -.2	78.1 -.3	79.0 -.4	79.7 -.7	80.2 -1.1	80.4 -1.7	80.3 -2.1	79.8 -2.5	79.1 -2.7	78.2 -2.8	77.1 -2.8	55
50	72.2 -.6	73.3 -.4	74.4 -.3	75.3 -.3	76.2 -.5	76.7 -1.0	77.1 -1.6	77.1 -2.2	76.7 -2.8	76.1 -3.3	75.2 -3.5	74.1 -3.7	50
45	68.3 -.8	69.4 -.4	70.5 -.1	71.4 .0	72.3 -.2	73.0 -.7	73.4 -1.4	73.5 -2.2	73.3 -3.0	72.7 -3.7	71.9 -4.2	70.8 -4.5	45
40	64.1 -.9	65.2 -.2	66.3 .2	67.3 .4	68.2 .3	68.9 -.3	69.4 -1.1	69.7 -2.1	69.6 -3.1	69.1 -4.0	68.3 -4.7	67.2 -5.2	40
35	59.7 -.7	60.8 .1	61.8 .7	62.8 1.0	63.8 .8	64.6 .3	65.2 -.6	65.5 -1.8	65.5 -3.0	65.2 -4.1	64.4 -5.0	63.3 -5.7	35
30	54.9 -.5	55.9 .4	56.9 1.1	58.0 1.5	59.0 1.4	59.9 .9	60.6 -.1	61.1 -1.3	61.2 -2.7	60.9 -4.0	60.2 -5.1	59.1 -6.1	30
25	49.5 -.4	50.4 .6	51.5 1.4	52.6 1.9	53.6 2.0	54.7 1.6	55.5 .6	56.1 -.7	56.4 -2.2	56.3 -3.7	55.7 -5.0	54.6 -6.2	25
20	43.2 -.4	44.2 .6	45.2 1.6	46.4 2.3	47.6 2.6	48.8 2.3	49.9 1.4	50.7 .0	51.2 -1.7	51.2 -3.4	50.7 -5.0	49.6 -6.4	20
15	36.1 -.6	37.0 .5	38.1 1.7	39.3 2.7	40.7 3.3	42.2 3.2	43.5 2.4	44.6 .9	45.3 -1.0	45.5 -3.1	45.1 -5.0	44.1 -6.8	15
10	27.9 -1.0	28.8 .2	30.0 1.7	31.4 3.1	33.0 4.1	34.7 4.3	36.3 3.5	37.7 1.9	38.7 -.4	39.2 -2.8	38.9 -5.2	37.8 -7.5	10
5	18.8 -1.6	19.7 -.2	21.0 1.7	22.5 3.6	24.4 5.1	26.4 5.6	28.3 4.9	30.1 3.0	31.4 .3	32.0 -2.8	31.9 -5.8	30.8 -8.5	5
0	9.0 -2.2	10.0 -.5	11.4 1.8	13.0 4.3	15.1 6.3	17.3 7.1	19.5 6.3	21.6 4.1	23.2 .8	24.0 -2.9	24.0 -6.6	23.0 -10.0	0
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT

INCLINATION (I) WC-85

E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
90	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	87.7 .8	90
85	86.7 .3	86.4 .4	86.3 .4	86.1 .5	85.9 .5	85.7 .6	85.6 .6	85.5 .7	85.4 .8	85.3 .8	85.2 .8	85.2 .9	85
80	85.5 .1	85.1 .2	84.7 .4	84.4 .5	84.1 .6	83.8 .7	83.5 .8	83.3 .9	83.1 1.0	82.9 1.1	82.8 1.2	82.7 1.3	80
75	84.3 -.1	83.7 .1	83.2 .3	82.7 .4	82.2 .6	81.8 .8	81.5 .9	81.1 1.0	80.9 1.2	80.6 1.3	80.5 1.4	80.3 1.5	75
70	82.9 -.4	82.1 -.2	81.4 .0	80.8 .2	80.2 .4	79.7 .6	79.3 .8	78.9 1.0	78.6 1.1	78.3 1.3	78.1 1.4	77.9 1.6	70
65	81.0 -.9	80.2 -.7	79.3 -.5	78.6 -.3	77.9 -.1	77.3 .1	76.8 .4	76.4 .6	76.0 .8	75.7 1.0	75.5 1.2	75.4 1.4	65
60	78.8 -1.7	77.8 -1.5	76.8 -1.3	76.0 -1.1	75.2 -.9	74.5 -.7	74.0 -.4	73.5 -.1	73.1 .1	72.8 .4	72.6 .7	72.5 1.0	60
55	76.1 -2.7	75.0 -2.6	73.9 -2.4	73.0 -2.2	72.1 -2.1	71.3 -1.8	70.7 -1.5	70.2 -1.2	69.8 -.8	69.4 -.4	69.2 .1	69.1 .5	55
50	73.0 -3.7	71.8 -3.7	70.6 -3.7	69.5 -3.6	68.6 -3.5	67.7 -3.3	67.0 -3.0	66.4 -2.6	65.9 -2.1	65.5 -1.5	65.3 -.8	65.2 -.2	50
45	69.5 -4.7	68.2 -4.9	66.9 -5.0	65.7 -5.1	64.6 -5.1	63.6 -5.0	62.7 -4.7	62.0 -4.2	61.4 -3.5	61.0 -2.7	60.7 -1.8	60.6 -1.0	45
40	65.9 -5.7	64.4 -6.0	62.9 -6.4	61.5 -6.7	60.1 -6.9	58.9 -6.9	57.8 -6.7	56.9 -6.1	56.1 -5.2	55.6 -4.2	55.3 -3.0	55.1 -1.8	40
35	61.9 -6.4	60.3 -7.0	58.6 -7.7	56.8 -8.3	55.2 -8.8	53.6 -9.0	52.2 -8.8	51.0 -8.2	50.0 -7.1	49.3 -5.7	48.8 -4.2	48.6 -2.8	35
30	57.6 -7.0	55.9 -7.9	53.9 -8.9	51.8 -9.9	49.6 -10.8	47.6 -11.3	45.8 -11.2	44.2 -10.5	42.9 -9.2	41.9 -7.5	41.2 -5.6	40.9 -3.8	30
25	53.0 -7.4	51.0 -8.7	48.7 -10.1	46.1 -11.6	43.5 -12.9	40.9 -13.7	38.4 -13.8	36.3 -13.0	34.5 -11.4	33.2 -9.3	32.3 -7.0	31.9 -4.9	25
20	48.0 -7.9	45.7 -9.5	43.0 -11.3	39.9 -13.3	36.6 -15.1	33.3 -16.3	30.1 -16.6	27.3 -15.7	25.0 -13.8	23.2 -11.2	22.1 -8.5	21.5 -6.1	20
15	42.3 -8.6	39.8 -10.5	36.7 -12.7	33.0 -15.2	29.0 -17.4	24.9 -19.0	20.9 -19.4	17.4 -18.4	14.4 -16.1	12.2 -13.1	10.8 -9.9	9.9 -7.2	15
10	36.0 -9.6	33.2 -11.9	29.6 -14.4	25.4 -17.2	20.7 -19.8	15.8 -21.6	11.0 -22.1	6.8 -20.9	3.3 -18.2	.6 -14.8	-1.2 -11.2	-2.3 -8.3	10
5	28.8 -11.1	25.8 -13.7	21.9 -16.5	17.1 -19.4	11.8 -22.2	6.2 -24.0	.9 -24.3	-3.9 -22.8	-7.9 -19.8	-11.0 -16.0	-13.1 -12.3	-14.4 -9.1	5
0	20.9 -12.9	17.7 -15.8	13.4 -18.7	8.3 -21.6	2.6 -24.2	-3.3 -25.9	-9.1 -25.9	-14.2 -24.2	-18.5 -21.0	-21.8 -17.0	-24.1 -13.1	-25.7 -9.9	0
E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT

INCLINATION (I) WC-85

E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT
0	-26.6 -7.7	-27.1 -6.3	-27.3 -5.2	-27.3 -3.8	-27.0 -1.7	-26.4 1.0	-25.4 4.2	-24.0 7.1	-22.4 9.3	-20.8 10.5	-19.6 10.7	-18.8 10.3	0
-5	-36.8 -8.4	-37.6 -6.8	-38.1 -5.6	-38.3 -4.2	-38.1 -2.2	-37.5 .4	-36.5 3.5	-35.1 6.4	-33.5 8.7	-31.9 10.0	-30.7 10.4	-29.9 10.2	-5
-10	-45.3 -9.1	-46.4 -7.4	-47.2 -6.0	-47.6 -4.5	-47.6 -2.6	-47.1 -.1	-46.1 2.8	-44.7 5.6	-43.1 7.8	-41.6 9.2	-40.3 9.7	-39.6 9.7	-10
-15	-52.0 -9.8	-53.4 -7.8	-54.5 -6.3	-55.1 -4.7	-55.2 -2.7	-54.8 -.4	-53.9 2.2	-52.5 4.7	-50.9 6.8	-49.4 8.1	-48.2 8.7	-47.5 8.8	-15
-20	-57.1 -10.4	-58.7 -8.2	-60.0 -6.3	-60.7 -4.6	-60.9 -2.7	-60.6 -.5	-59.6 1.8	-58.3 4.0	-56.7 5.8	-55.3 6.9	-54.1 7.4	-53.5 7.5	-20
-25	-60.7 -10.7	-62.4 -8.3	-63.6 -6.1	-64.4 -4.2	-64.6 -2.3	-64.2 -.3	-63.2 1.7	-61.9 3.4	-60.4 4.7	-59.1 5.5	-58.1 5.7	-57.6 5.6	-25
-30	-63.0 -10.5	-64.5 -7.9	-65.6 -5.5	-66.3 -3.4	-66.3 -1.4	-65.8 .3	-64.8 1.9	-63.4 3.1	-62.1 3.7	-61.0 3.9	-60.3 3.7	-60.1 3.3	-30
-35	-64.1 -9.7	-65.3 -7.0	-66.1 -4.4	-66.4 -2.2	-66.3 -.3	-65.6 1.2	-64.6 2.3	-63.4 2.8	-62.3 2.8	-61.6 2.4	-61.3 1.7	-61.5 1.1	-35
-40	-64.1 -8.3	-64.9 -5.6	-65.4 -3.1	-65.4 -.9	-65.0 .8	-64.3 2.0	-63.4 2.6	-62.5 2.6	-61.8 2.1	-61.5 1.3	-61.6 .3	-62.2 -.5	-40
-45	-63.1 -6.5	-63.7 -4.1	-63.8 -1.7	-63.7 .2	-63.3 1.7	-62.7 2.6	-62.1 2.8	-61.6 2.5	-61.3 1.7	-61.4 .7	-61.9 -.3	-62.7 -1.1	-45
-50	-61.8 -4.6	-62.1 -2.6	-62.2 -.6	-62.0 1.0	-61.8 2.2	-61.4 2.8	-61.2 2.9	-61.0 2.5	-61.2 1.8	-61.6 .9	-62.3 .0	-63.3 -.8	-50
-55	-60.6 -2.9	-60.9 -1.3	-61.0 .2	-61.0 1.4	-60.9 2.3	-60.9 2.8	-60.9 2.9	-61.1 2.6	-61.5 2.1	-62.1 1.5	-62.9 .8	-64.0 .1	-55
-60	-60.2 -1.5	-60.4 -.4	-60.6 .7	-60.7 1.6	-60.9 2.3	-61.1 2.7	-61.3 2.9	-61.7 2.8	-62.3 2.5	-63.0 2.2	-63.9 1.8	-64.9 1.3	-60
-65	-60.7 -.5	-61.0 .3	-61.2 1.0	-61.5 1.7	-61.7 2.2	-62.0 2.6	-62.4 2.8	-62.9 2.9	-63.5 2.9	-64.2 2.7	-65.1 2.6	-66.1 2.4	-65
-70	-62.2 .3	-62.5 .8	-62.7 1.2	-63.0 1.7	-63.3 2.1	-63.6 2.4	-64.1 2.7	-64.6 2.9	-65.1 2.9	-65.8 3.0	-66.6 3.0	-67.4 2.9	-70
-75	-64.4 .9	-64.6 1.1	-64.9 1.4	-65.1 1.7	-65.4 2.0	-65.8 2.3	-66.1 2.5	-66.6 2.6	-67.1 2.8	-67.7 2.9	-68.3 3.0	-69.0 3.0	-75
-80	-67.1 1.3	-67.3 1.4	-67.5 1.6	-67.7 1.8	-67.9 1.9	-68.2 2.1	-66.5 2.2	-68.9 2.3	-69.3 2.4	-69.7 2.5	-70.1 2.6	-70.6 2.7	-80
-85	-70.2 1.6	-70.3 1.7	-70.4 1.7	-70.5 1.8	-70.7 1.8	-70.8 1.9	-71.0 2.0	-71.2 2.0	-71.4 2.1	-71.7 2.1	-71.9 2.2	-72.2 2.2	-85
-90	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-90
E. LONG / LAT	0	5	10	15	20	25	30	35	40	45	50	55	E. LONG / LAT

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LAT	E. LONG 60	65	70	75	80	85	90	95	100	105	110	115	E. LONG LAT
0	-18.7 9.9	-18.9 10.0	-19.4 10.8	-20.1 11.8	-20.6 12.8	-21.1 13.1	-21.3 12.4	-21.2 10.6	-20.8 8.1	-20.1 5.2	-19.4 2.4	-18.8 .2	0
-5	-29.7 9.9	-29.9 10.1	-30.3 10.7	-30.9 11.5	-31.4 12.2	-31.8 12.2	-31.9 11.3	-31.7 9.5	-31.3 7.0	-30.6 4.2	-29.8 1.7	-29.1 -.3	-5
-10	-39.3 9.6	-39.4 9.7	-39.8 10.2	-40.3 10.8	-40.7 11.1	-41.1 10.9	-41.2 9.9	-41.0 8.1	-40.5 5.7	-39.8 3.2	-39.1 .9	-38.4 -.8	-10
-15	-47.2 8.8	-47.3 8.9	-47.6 9.2	-48.1 9.6	-48.6 9.7	-48.9 9.3	-49.0 8.2	-48.9 6.5	-48.5 4.3	-47.9 2.1	-47.2 .1	-46.5 -1.2	-15
-20	-53.3 7.4	-53.4 7.5	-53.8 7.7	-54.4 7.9	-54.9 7.9	-55.4 7.5	-55.6 6.4	-55.6 4.8	-55.3 2.9	-54.8 1.0	-54.2 -.5	-53.6 -1.6	-20
-25	-57.6 5.5	-57.9 5.5	-58.5 5.6	-59.2 5.8	-59.9 5.8	-60.5 5.3	-60.9 4.4	-61.1 3.1	-61.0 1.6	-60.7 .1	-60.2 -1.1	-59.7 -1.8	-25
-30	-60.4 3.1	-61.0 3.0	-61.9 3.1	-62.8 3.3	-63.8 3.3	-64.6 3.1	-65.3 2.4	-65.7 1.5	-65.8 .3	-65.7 -.8	-65.4 -1.6	-65.0 -2.0	-30
-35	-62.1 .7	-63.0 .6	-64.1 .6	-65.4 .8	-66.6 .9	-67.7 .9	-68.6 .5	-69.4 .0	-69.8 -.7	-70.0 -1.4	-69.9 -1.9	-69.7 -2.0	-35
-40	-63.1 -1.0	-64.3 -1.3	-65.7 -1.3	-67.1 -1.1	-68.6 -1.0	-70.0 -.9	-71.2 -.9	-72.2 -1.1	-73.0 -1.4	-73.5 -1.7	-73.7 -1.9	-73.7 -1.9	-40
-45	-63.9 -1.7	-65.2 -2.1	-66.7 -2.2	-68.3 -2.1	-70.0 -1.9	-71.6 -1.8	-73.1 -1.7	-74.4 -1.6	-75.6 -1.7	-76.4 -1.7	-77.0 -1.7	-77.2 -1.6	-45
-50	-64.5 -1.4	-66.0 -1.8	-67.5 -2.0	-69.2 -2.0	-70.9 -1.9	-72.6 -1.7	-74.3 -1.5	-75.9 -1.4	-77.4 -1.3	-78.6 -1.2	-79.6 -1.2	-80.2 -1.1	-50
-55	-65.3 -.4	-66.7 -.7	-68.2 -.9	-69.9 -1.0	-71.6 -.9	-73.3 -.8	-75.1 -.7	-76.8 -.5	-78.4 -.4	-80.0 -.3	-81.3 -.2	-82.5 -.3	-55
-60	-66.1 1.0	-67.4 .7	-68.9 .6	-70.4 .5	-72.0 .5	-73.7 .5	-75.4 .6	-77.1 .7	-78.8 .8	-80.5 .9	-82.1 1.0	-83.6 .9	-60
-65	-67.1 2.2	-68.3 2.0	-69.6 1.9	-71.0 1.8	-72.4 1.8	-73.9 1.8	-75.5 1.8	-77.0 1.9	-78.6 1.9	-80.1 2.0	-81.7 2.0	-83.2 2.0	-65
-70	-68.4 2.9	-69.4 2.8	-70.4 2.8	-71.6 2.7	-72.8 2.7	-74.0 2.7	-75.3 2.6	-76.6 2.6	-77.9 2.6	-79.2 2.6	-80.5 2.5	-81.8 2.5	-70
-75	-69.7 3.0	-70.5 3.0	-71.4 3.0	-72.2 3.0	-73.2 3.0	-74.1 3.0	-75.1 2.9	-76.1 2.9	-77.0 2.8	-78.0 2.8	-78.9 2.7	-79.8 2.6	-75
-80	-71.1 2.7	-71.7 2.8	-72.3 2.8	-72.9 2.8	-73.5 2.8	-74.1 2.8	-74.8 2.7	-75.4 2.7	-76.0 2.7	-76.6 2.6	-77.2 2.6	-77.8 2.5	-80
-85	-72.5 2.2	-72.7 2.2	-73.0 2.3	-73.3 2.3	-73.6 2.3	-74.0 2.3	-74.3 2.3	-74.6 2.3	-74.9 2.3	-75.1 2.3	-75.4 2.2	-75.7 2.2	-85
-90	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-90
LAT	E. LONG 60	65	70	75	80	85	90	95	100	105	110	115	E. LONG LAT

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E. LONG / LAT	120	125	130	135	140	145	150	155	160	165	170	175	E. LONG / LAT
0	-18.4 -1.2	-18.1 -1.8	-17.9 -1.9	-17.7 -1.7	-17.3 -1.1	-16.7 -.3	-15.8 .8	-14.6 1.9	-13.1 3.1	-11.3 3.8	-9.1 3.7	-6.8 2.8	0
-5	-28.6 -1.5	-28.2 -2.0	-27.9 -1.9	-27.5 -1.5	-27.0 -.8	-26.3 .1	-25.4 1.0	-24.2 2.0	-22.8 2.9	-21.1 3.3	-19.1 3.0	-16.9 1.8	-5
-10	-37.8 -1.8	-37.3 -2.0	-36.8 -1.8	-36.4 -1.2	-35.8 -.5	-35.1 .3	-34.2 1.1	-33.1 1.8	-31.8 2.4	-30.3 2.5	-28.5 2.0	-26.6 .8	-10
-15	-45.9 -1.9	-45.3 -2.0	-44.8 -1.7	-44.3 -1.1	-43.7 -.4	-43.0 .3	-42.2 .9	-41.2 1.4	-40.0 1.7	-38.7 1.6	-37.1 1.0	-35.5 -.1	-15
-20	-52.9 -2.0	-52.4 -2.0	-51.9 -1.5	-51.3 -.9	-50.7 -.3	-50.1 .2	-49.3 .6	-48.4 .9	-47.3 .9	-46.1 .7	-44.8 .1	-43.4 -.8	-20
-25	-59.1 -2.1	-58.6 -1.9	-58.1 -1.4	-57.5 -.9	-56.9 -.4	-56.3 .0	-55.6 .3	-54.7 .4	-53.8 .3	-52.7 .0	-51.5 -.5	-50.2 -1.2	-25
-30	-64.5 -2.1	-64.0 -1.8	-63.5 -1.3	-63.0 -.9	-62.4 -.5	-61.7 -.2	-61.0 -.1	-60.2 -.1	-59.3 -.2	-58.3 -.5	-57.2 -.8	-56.0 -1.2	-30
-35	-69.3 -2.0	-68.8 -1.6	-68.3 -1.3	-67.8 -.9	-67.2 -.6	-66.6 -.5	-65.9 -.4	-65.1 -.5	-64.2 -.6	-63.2 -.7	-62.2 -.8	-61.1 -1.0	-35
-40	-73.5 -1.8	-73.1 -1.5	-72.7 -1.2	-72.1 -.9	-71.5 -.8	-70.9 -.7	-70.1 -.7	-69.3 -.7	-68.4 -.7	-67.5 -.7	-66.5 -.7	-65.4 -.6	-40
-45	-77.2 -1.5	-77.0 -1.3	-76.6 -1.1	-76.1 -1.0	-75.5 -.9	-74.8 -.9	-74.0 -.9	-73.2 -.9	-72.3 -.8	-71.3 -.6	-70.3 -.3	-69.3 -.1	-45
-50	-80.5 -1.1	-80.5 -1.1	-80.3 -1.0	-79.8 -1.1	-79.2 -1.1	-78.5 -1.1	-77.6 -1.1	-76.7 -1.0	-75.8 -.7	-74.8 -.4	-73.8 .0	-72.8 .4	-50
-55	-83.3 -.4	-83.7 -.7	-83.7 -1.0	-83.4 -1.2	-82.8 -1.3	-82.0 -1.4	-81.1 -1.2	-80.1 -.9	-79.1 -.6	-78.1 -.1	-77.1 .4	-76.1 .8	-55
-60	-84.9 .7	-86.0 .3	-86.7 -.5	-86.8 -1.2	-86.3 -1.6	-85.4 -1.5	-84.4 -1.2	-83.4 -.8	-82.3 -.3	-81.2 .2	-80.2 .7	-79.2 1.2	-60
-65	-84.7 1.9	-86.1 1.8	-87.6 1.7	-88.9 1.4	-89.7 -1.6	-88.5 -1.0	-87.3 -.5	-86.1 -.1	-84.9 .4	-83.8 .8	-82.8 1.2	-81.8 1.5	-65
-70	-83.0 2.4	-84.1 2.4	-85.2 2.3	-86.1 2.2	-86.7 2.0	-87.0 1.9	-86.9 1.7	-86.4 1.6	-85.7 1.6	-84.9 1.7	-84.0 1.8	-83.2 1.9	-70
-75	-80.7 2.6	-81.5 2.5	-82.2 2.4	-82.8 2.3	-83.3 2.2	-83.6 2.1	-83.8 2.1	-83.8 2.1	-83.6 2.0	-83.3 2.1	-82.9 2.1	-82.4 2.1	-75
-80	-78.3 2.5	-78.8 2.4	-79.2 2.4	-79.6 2.3	-79.9 2.2	-80.2 2.2	-80.3 2.1	-80.4 2.1	-80.4 2.1	-80.3 2.0	-80.2 2.0	-80.0 2.0	-80
-85	-75.9 2.2	-76.1 2.2	-76.3 2.2	-76.5 2.1	-76.6 2.1	-76.8 2.1	-76.8 2.0	-76.9 2.0	-76.9 2.0	-76.9 2.0	-76.9 1.9	-76.8 1.9	-85
-90	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-90
LAT / E. LONG	120	125	130	135	140	145	150	155	160	165	170	175	LAT / E. LONG

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E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG
LAT													LAT
0	-9.5 .9	-2.4 -1.4	-.6 -3.7	.8 -5.4	1.9 -6.1	2.9 -5.8	3.9 -4.9	4.8 -3.9	5.7 -3.2	6.6 -3.0	7.4 -3.0	8.1 -2.9	0
-5	-14.8 .0	-12.9 -2.2	-11.2 -4.3	-9.8 -5.6	-8.6 -6.1	-7.5 -5.7	-6.5 -4.8	-5.5 -3.9	-4.5 -3.4	-3.6 -3.4	-2.8 -3.6	-1.9 -3.5	-5
-10	-24.7 -.9	-23.0 -2.8	-21.4 -4.5	-20.0 -5.5	-18.8 -5.8	-17.7 -5.4	-16.7 -4.6	-15.6 -4.0	-14.6 -3.7	-13.6 -3.9	-12.7 -4.2	-11.7 -4.1	-10
-15	-33.8 -1.5	-32.2 -3.1	-30.8 -4.3	-29.5 -5.1	-28.3 -5.3	-27.2 -5.0	-26.1 -4.5	-25.0 -4.1	-24.0 -4.2	-22.9 -4.5	-21.9 -4.8	-21.0 -4.6	-15
-20	-41.9 -1.9	-40.5 -3.0	-39.1 -3.9	-37.9 -4.5	-36.7 -4.6	-35.6 -4.5	-34.5 -4.3	-33.5 -4.3	-32.4 -4.6	-31.3 -5.1	-30.3 -5.3	-29.3 -5.0	-20
-25	-48.9 -1.9	-47.6 -2.7	-46.3 -3.3	-45.1 -3.7	-44.0 -3.9	-42.9 -4.0	-41.9 -4.1	-40.8 -4.5	-39.8 -5.0	-38.8 -5.5	-37.8 -5.8	-36.8 -5.4	-25
-30	-54.8 -1.7	-53.6 -2.1	-52.5 -2.5	-51.4 -2.8	-50.3 -3.1	-49.3 -3.4	-48.2 -3.9	-47.2 -4.5	-46.3 -5.2	-45.3 -5.8	-44.3 -6.1	-43.3 -5.7	-30
-35	-59.9 -1.2	-58.8 -1.4	-57.7 -1.6	-56.7 -1.9	-55.7 -2.3	-54.7 -2.8	-53.7 -3.5	-52.8 -4.3	-51.9 -5.2	-50.9 -5.9	-50.0 -6.2	-49.0 -6.0	-35
-40	-64.4 -.5	-63.3 -.6	-62.3 -.7	-61.3 -1.0	-60.3 -1.4	-59.4 -2.1	-58.5 -3.0	-57.6 -3.9	-56.7 -4.9	-55.8 -5.7	-54.9 -6.1	-53.9 -6.0	-40
-45	-68.3 .1	-67.3 .2	-66.3 .2	-65.4 -.1	-64.5 -.6	-63.6 -1.3	-62.7 -2.3	-61.9 -3.3	-61.0 -4.3	-60.1 -5.1	-59.1 -5.6	-58.1 -5.6	-45
-50	-71.8 .7	-70.9 .9	-69.9 .9	-69.0 .6	-68.1 .1	-67.3 -.6	-66.5 -1.5	-65.6 -2.5	-64.7 -3.4	-63.8 -4.2	-62.8 -4.7	-61.7 -4.9	-50
-55	-75.1 1.2	-74.2 1.4	-73.3 1.4	-72.4 1.2	-71.5 .8	-70.7 .1	-69.8 -.7	-68.9 -1.5	-68.0 -2.3	-67.0 -3.0	-66.0 -3.5	-64.9 -3.7	-55
-60	-78.2 1.5	-77.2 1.7	-76.3 1.7	-75.4 1.6	-74.5 1.2	-73.7 .7	-72.8 .1	-71.8 -.5	-70.9 -1.2	-69.9 -1.7	-68.8 -2.1	-67.6 -2.3	-60
-65	-80.8 1.8	-79.8 1.9	-78.9 1.9	-78.0 1.8	-77.1 1.6	-76.2 1.2	-75.2 .8	-74.3 .4	-73.3 -.1	-72.2 -.4	-71.1 -.7	-70.0 -.9	-65
-70	-82.3 2.0	-81.4 2.1	-80.5 2.0	-79.6 1.9	-78.8 1.8	-77.9 1.6	-76.9 1.3	-76.0 1.0	-75.0 .8	-74.0 .6	-73.0 .4	-72.0 .2	-70
-75	-81.9 2.1	-81.2 2.0	-80.6 2.0	-79.9 1.9	-79.1 1.8	-78.4 1.7	-77.6 1.6	-76.8 1.5	-76.0 1.3	-75.1 1.2	-74.3 1.1	-73.4 1.0	-75
-80	-79.7 2.0	-79.4 1.9	-79.0 1.9	-78.6 1.8	-78.1 1.8	-77.6 1.7	-77.1 1.7	-76.5 1.6	-75.9 1.5	-75.4 1.5	-74.8 1.4	-74.2 1.3	-80
-85	-76.7 1.9	-76.6 1.8	-76.4 1.8	-76.2 1.8	-76.0 1.8	-75.8 1.7	-75.6 1.7	-75.3 1.7	-75.0 1.6	-74.7 1.6	-74.5 1.6	-74.2 1.5	-85
-90	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-90
LAT													LAT
E. LONG	180	185	190	195	200	205	210	215	220	225	230	235	E. LONG

INCLINATION (I) WC-85

E. LONG / LAT	240	245	250	255	260	265	270	275	280	285	290	295	E. LONG / LAT
0	9.0 -2.2	10.0 -.5	11.4 1.8	13.0 4.3	15.1 6.3	17.3 7.1	19.5 6.3	21.6 4.1	23.2 .8	24.0 -2.9	24.0 -6.6	23.0 -10.0	0
-5	-1.0 -2.7	.1 -.8	1.5 2.0	3.2 4.9	5.3 7.3	7.6 8.4	10.1 7.6	12.3 5.1	14.2 1.2	15.2 -3.2	15.4 -7.6	14.4 -11.6	-5
-10	-10.8 -3.1	-9.7 -.9	-8.3 2.1	-6.6 5.4	-4.6 8.1	-2.2 9.2	.3 8.4	2.6 5.6	4.6 1.4	5.9 -3.6	6.2 -8.6	5.4 -13.0	-10
-15	-20.0 -3.4	-18.8 -1.1	-17.5 2.1	-15.9 5.5	-14.0 8.1	-11.8 9.3	-9.4 8.5	-7.1 5.6	-5.1 1.2	-3.7 -4.0	-3.2 -9.2	-3.8 -13.8	-15
-20	-28.3 -3.7	-27.2 -1.4	-26.0 1.7	-24.5 5.0	-22.7 7.5	-20.7 8.5	-18.5 7.7	-16.3 5.0	-14.3 .7	-12.9 -4.3	-12.2 -9.4	-12.7 -13.9	-20
-25	-35.7 -4.1	-34.7 -1.9	-33.5 1.0	-32.1 3.8	-30.5 6.0	-28.7 7.0	-26.6 6.2	-24.6 3.8	-22.7 .1	-21.2 -4.4	-20.5 -8.9	-20.7 -13.0	-25
-30	-42.3 -4.5	-41.2 -2.6	-40.0 -.2	-38.7 2.3	-37.1 4.1	-35.4 4.9	-33.5 4.3	-31.6 2.4	-29.8 -.5	-28.4 -4.1	-27.6 -7.8	-27.7 -11.2	-30
-35	-47.9 -5.0	-46.8 -3.4	-45.6 -1.4	-44.2 .5	-42.7 2.0	-41.0 2.7	-39.2 2.4	-37.4 1.1	-35.7 -1.0	-34.4 -3.6	-33.6 -6.3	-33.5 -8.9	-35
-40	-52.8 -5.3	-51.6 -4.1	-50.4 -2.6	-48.9 -1.1	-47.4 .1	-45.7 .8	-43.9 .8	-42.2 .1	-40.6 -1.1	-39.3 -2.7	-38.5 -4.5	-38.4 -6.3	-40
-45	-57.0 -5.2	-55.7 -4.4	-54.4 -3.3	-52.9 -2.2	-51.3 -1.2	-49.6 -.5	-47.9 -.3	-46.2 -.5	-44.7 -1.0	-43.5 -1.8	-42.7 -2.8	-42.5 -4.0	-45
-50	-60.5 -4.7	-59.2 -4.2	-57.8 -3.4	-56.3 -2.6	-54.7 -1.8	-53.0 -1.2	-51.4 -.8	-49.8 -.7	-48.5 -.8	-47.4 -1.0	-46.6 -1.5	-46.3 -2.2	-50
-55	-63.6 -3.7	-62.3 -3.4	-60.9 -2.9	-59.4 -2.4	-57.8 -1.8	-56.3 -1.3	-54.8 -.9	-53.4 -.6	-52.1 -.4	-51.1 -.5	-50.4 -.7	-50.0 -1.0	-55
-60	-66.4 -2.4	-65.1 -2.3	-63.7 -2.0	-62.3 -1.7	-60.9 -1.3	-59.5 -.9	-58.1 -.6	-56.9 -.3	-55.8 -.2	-54.9 -.1	-54.2 -.2	-53.7 -.4	-60
-65	-68.8 -1.0	-67.6 -1.0	-66.3 -.9	-65.1 -.7	-63.8 -.5	-62.6 -.3	-61.5 -.1	-60.4 .0	-59.4 .1	-58.6 .1	-58.0 .0	-57.5 -.1	-65
-70	-70.9 .1	-69.8 .1	-68.7 .1	-67.7 .1	-66.6 .2	-65.6 .2	-64.7 .3	-63.8 .3	-63.0 .3	-62.3 .3	-61.8 .2	-61.3 .1	-70
-75	-72.5 .9	-71.7 .8	-70.8 .8	-70.0 .7	-69.2 .7	-68.4 .7	-67.7 .6	-67.0 .6	-66.3 .6	-65.8 .5	-65.3 .4	-64.9 .3	-75
-80	-73.6 1.3	-73.0 1.2	-72.4 1.2	-71.8 1.1	-71.2 1.1	-70.7 1.0	-70.2 1.0	-69.7 .9	-69.2 .9	-68.8 .8	-68.5 .8	-68.1 .7	-80
-85	-73.9 1.5	-73.6 1.5	-73.3 1.4	-73.0 1.4	-72.7 1.4	-72.4 1.3	-72.1 1.3	-71.9 1.3	-71.6 1.3	-71.4 1.3	-71.2 1.3	-71.0 1.2	-85
-90	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.6	-73.4 1.8	-73.4 1.8	-73.4 1.8	-90
LAT / E. LONG	240	245	250	255	260	265	270	275	280	285	290	295	LAT / E. LONG

AD-A191 484 DOD 1985 WORLD MAGNETIC MODEL: CHARTS AND GRID VALUES 2/2
(U) NAVAL OCEANOGRAPHIC OFFICE NSTL STATION MS
L G CAGLE NOV 87 NOO-TN-8222-02-87

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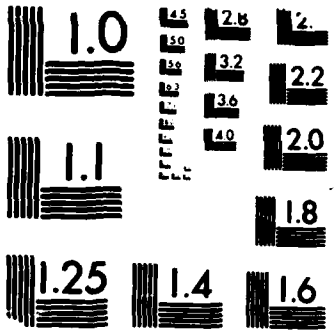
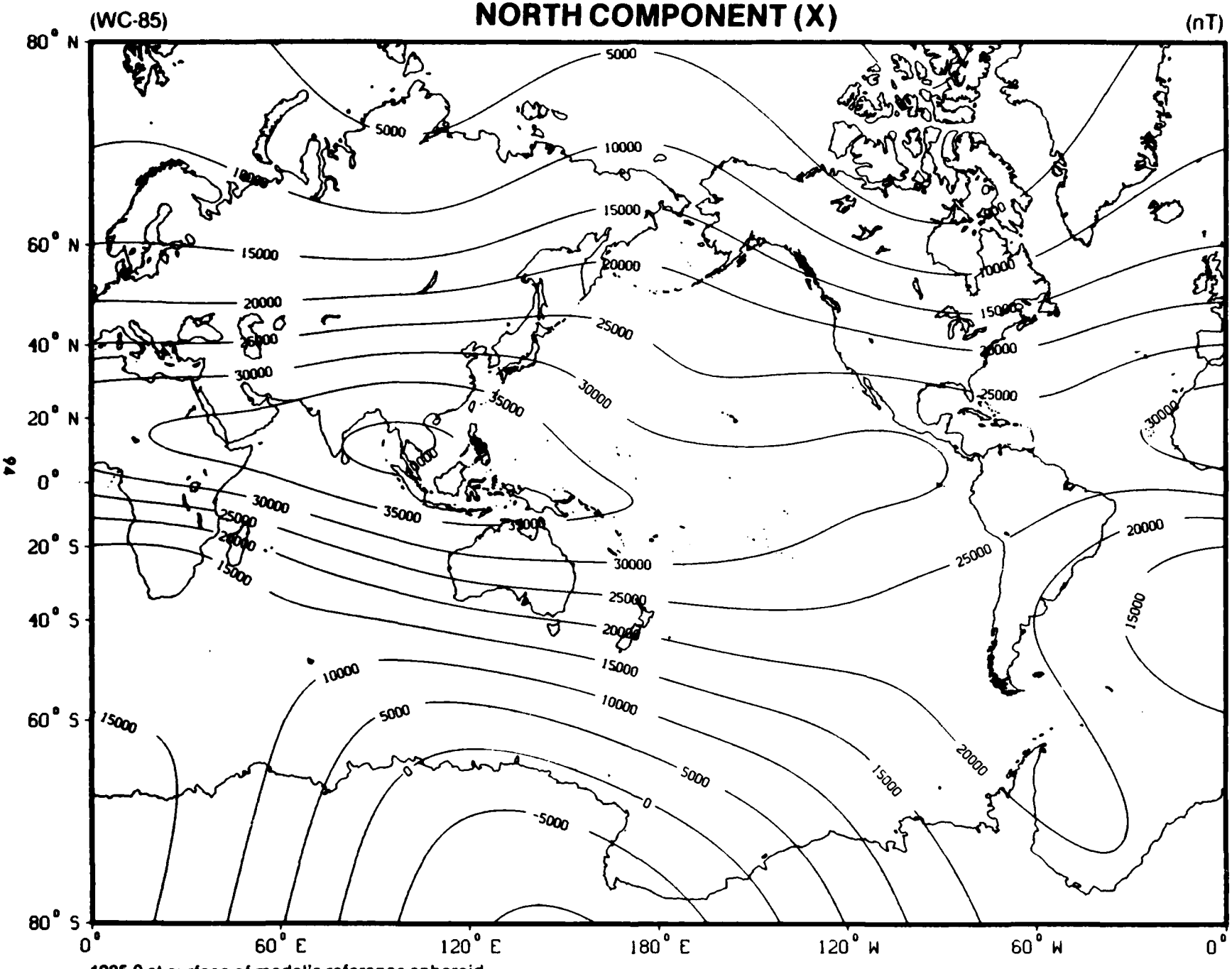


MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

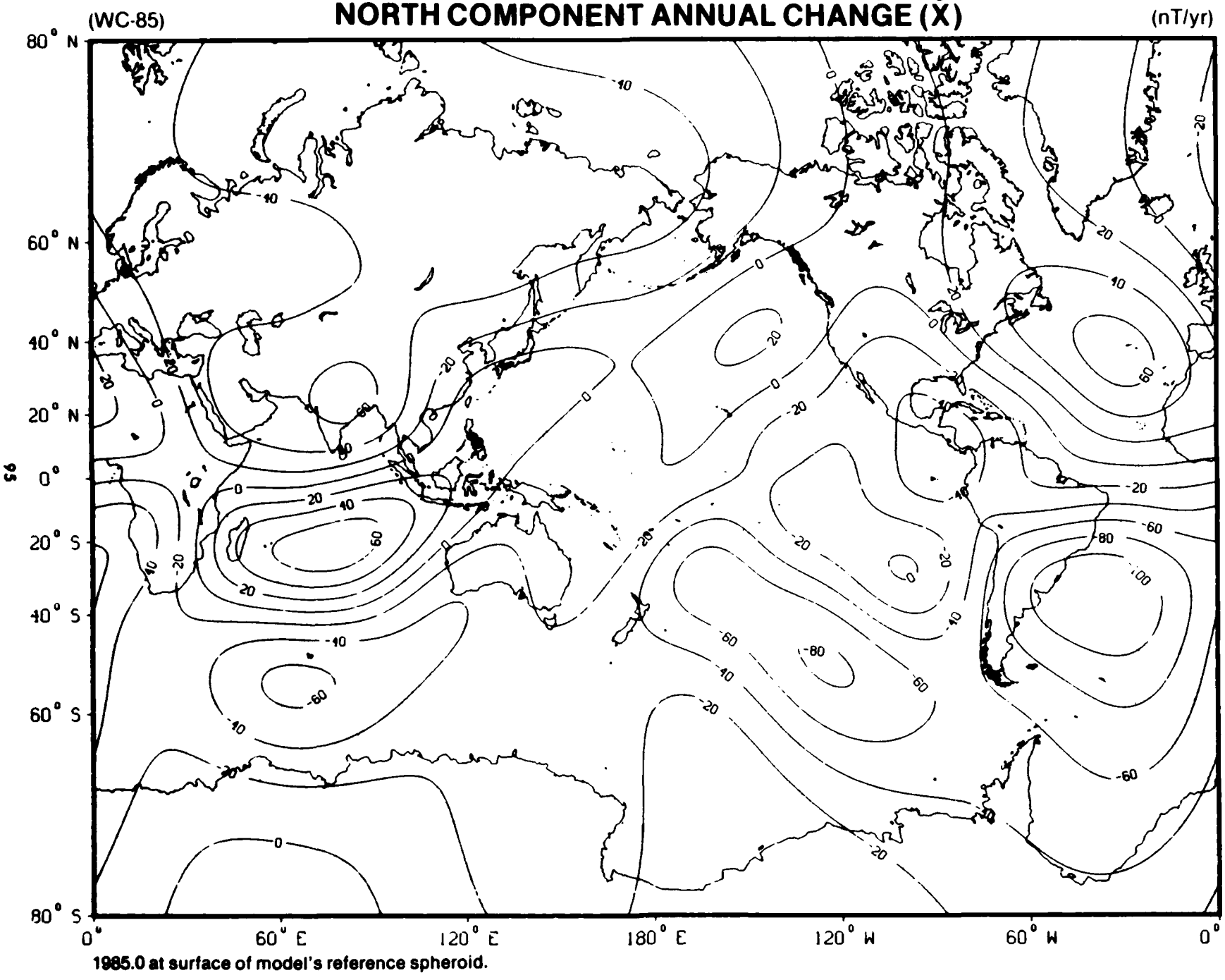
INCLINATION (I) 6C-85

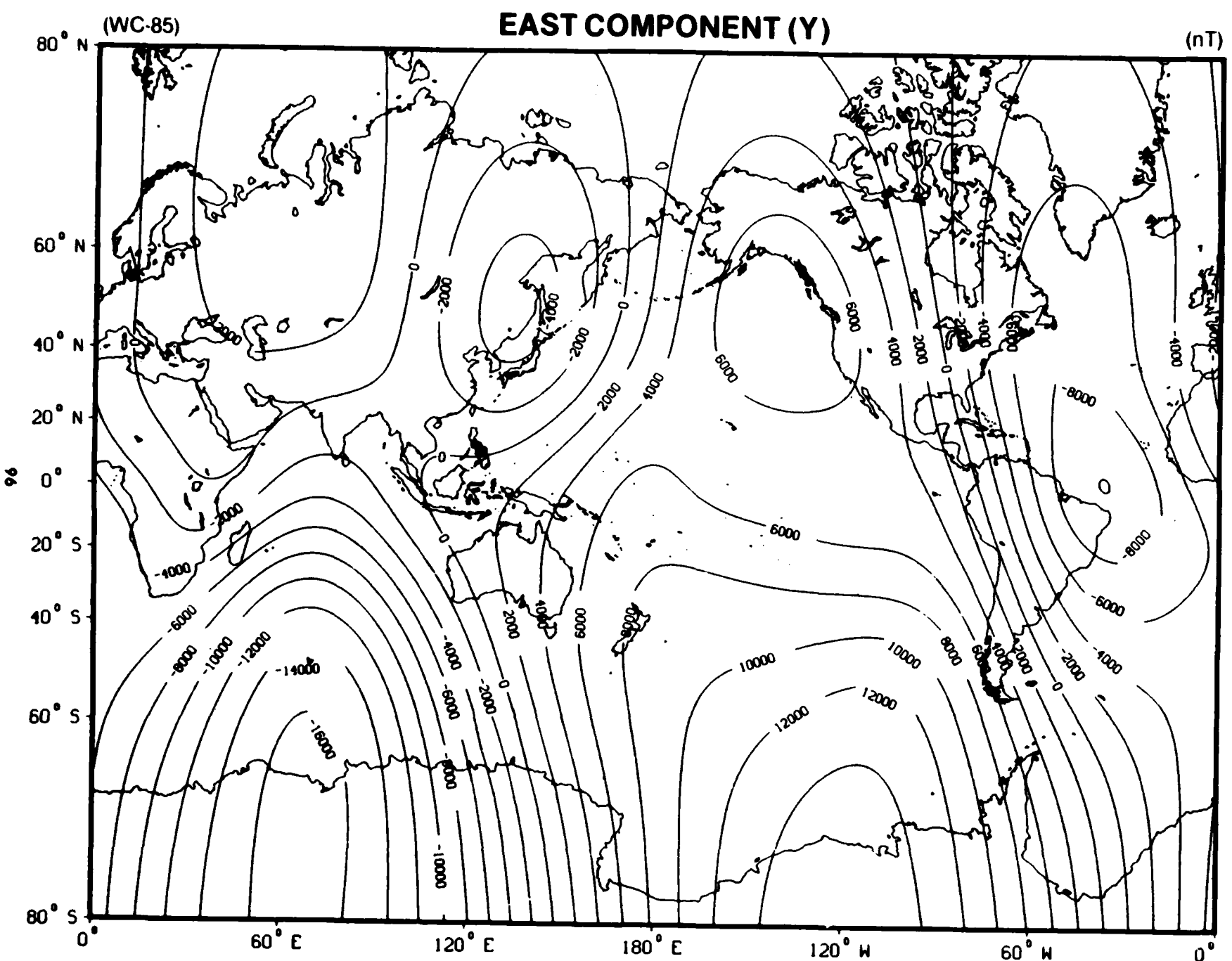
E. LONG / LAT	300	305	310	315	320	325	330	335	340	345	350	355	E. LONG / LAT
0	20.9 -12.9	17.7 -15.8	13.4 -18.7	8.3 -21.6	2.6 -24.2	-3.3 -25.9	-9.1 -25.9	-14.2 -24.2	-18.5 -21.0	-21.8 -17.0	-24.1 -13.1	-25.7 -9.9	0
-5	12.3 -14.9	9.0 -17.9	4.6 -20.8	-.6 -23.5	-6.5 -25.8	-12.5 -27.1	-18.3 -26.9	-23.5 -25.0	-27.6 -21.8	-31.2 -17.8	-33.8 -13.9	-35.5 -10.7	-5
-10	3.3 -16.6	.0 -19.7	-4.3 -22.4	-9.5 -24.8	-15.1 -26.7	-20.9 -27.6	-26.4 -27.3	-31.4 -25.4	-35.7 -22.4	-39.1 -18.6	-41.7 -14.8	-43.8 -11.5	-10
-15	-5.7 -17.6	-8.8 -20.6	-12.9 -23.1	-17.7 -25.2	-23.0 -26.7	-28.3 -27.4	-33.4 -27.0	-38.0 -25.4	-42.0 -22.7	-45.3 -19.3	-48.1 -15.7	-50.3 -12.4	-15
-20	-14.3 -17.5	-17.0 -20.4	-20.8 -22.7	-25.1 -24.5	-29.8 -25.8	-34.6 -26.4	-39.2 -26.2	-43.4 -24.9	-47.0 -22.6	-50.2 -19.6	-52.9 -16.3	-55.2 -13.2	-20
-25	-22.0 -16.3	-24.4 -19.0	-27.7 -21.0	-31.5 -22.7	-35.7 -23.9	-39.9 -24.6	-43.9 -24.6	-47.6 -23.7	-51.0 -22.0	-53.9 -19.5	-56.5 -16.5	-58.8 -13.5	-25
-30	-28.7 -14.1	-30.7 -16.5	-33.5 -18.4	-36.8 -19.9	-40.4 -21.2	-44.1 -22.1	-47.7 -22.3	-51.0 -21.9	-54.0 -20.7	-56.7 -18.7	-59.1 -16.1	-61.2 -13.3	-30
-35	-34.3 -11.2	-35.9 -13.2	-38.2 -15.0	-41.1 -16.5	-44.2 -17.9	-47.4 -18.9	-50.5 -19.5	-53.4 -19.5	-56.1 -18.7	-58.6 -17.2	-60.7 -15.0	-62.5 -12.5	-35
-40	-38.9 -8.0	-40.2 -9.7	-42.1 -11.3	-44.4 -12.8	-47.0 -14.3	-49.8 -15.5	-52.5 -16.3	-55.1 -16.6	-57.4 -16.2	-59.5 -15.1	-61.3 -13.3	-62.9 -10.9	-40
-45	-42.8 -5.2	-43.8 -6.5	-45.2 -7.8	-47.1 -9.3	-49.2 -10.7	-51.5 -12.0	-53.7 -12.9	-55.9 -13.4	-57.9 -13.2	-59.6 -12.4	-61.1 -10.9	-62.3 -8.9	-45
-50	-46.4 -3.0	-47.0 -3.9	-48.1 -5.1	-49.4 -6.3	-51.0 -7.6	-52.8 -8.7	-54.6 -9.6	-56.3 -10.1	-57.8 -10.1	-59.2 -9.5	-60.3 -8.3	-61.2 -6.6	-50
-55	-49.9 -1.5	-50.2 -2.3	-50.9 -3.1	-51.8 -4.1	-52.9 -5.1	-54.1 -6.0	-55.4 -6.7	-56.6 -7.1	-57.7 -7.1	-58.7 -6.6	-59.6 -5.7	-60.2 -4.4	-55
-60	-53.5 -.8	-53.6 -1.3	-53.9 -1.9	-54.4 -2.6	-55.1 -3.2	-55.8 -3.9	-56.6 -4.3	-57.4 -4.6	-58.2 -4.5	-58.8 -4.2	-59.4 -3.5	-59.9 -2.6	-60
-65	-57.3 -.4	-57.1 -.7	-57.2 -1.1	-57.4 -1.5	-57.7 -1.9	-58.1 -2.3	-58.5 -2.5	-58.9 -2.6	-59.4 -2.6	-59.8 -2.3	-60.1 -1.8	-60.5 -1.2	-65
-70	-61.0 -.1	-60.8 -.3	-60.6 -.5	-60.6 -.8	-60.7 -1.0	-60.8 -1.1	-60.9 -1.2	-61.1 -1.2	-61.3 -1.1	-61.6 -.9	-61.8 -.6	-62.0 -.2	-70
-75	-64.5 .2	-64.3 .1	-64.1 .0	-63.9 -.1	-63.8 -.1	-63.8 -.2	-63.8 -.2	-63.8 -.1	-63.9 .0	-64.0 .1	-64.1 .3	-64.3 .6	-75
-80	-67.8 .7	-67.6 .7	-67.4 .6	-67.2 .6	-67.1 .6	-67.0 .6	-66.9 .7	-66.9 .7	-66.9 .8	-66.9 .9	-66.9 1.0	-67.0 1.1	-80
-85	-70.8 1.2	-70.6 1.2	-70.5 1.2	-70.4 1.3	-70.3 1.3	-70.2 1.3	-70.1 1.3	-70.1 1.3	-70.1 1.4	-70.1 1.4	-70.1 1.5	-70.1 1.5	-85
-90	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-73.4 1.8	-90
LAT / E. LONG	300	305	310	315	320	325	330	335	340	345	350	355	LAT / E. LONG

CHARTS

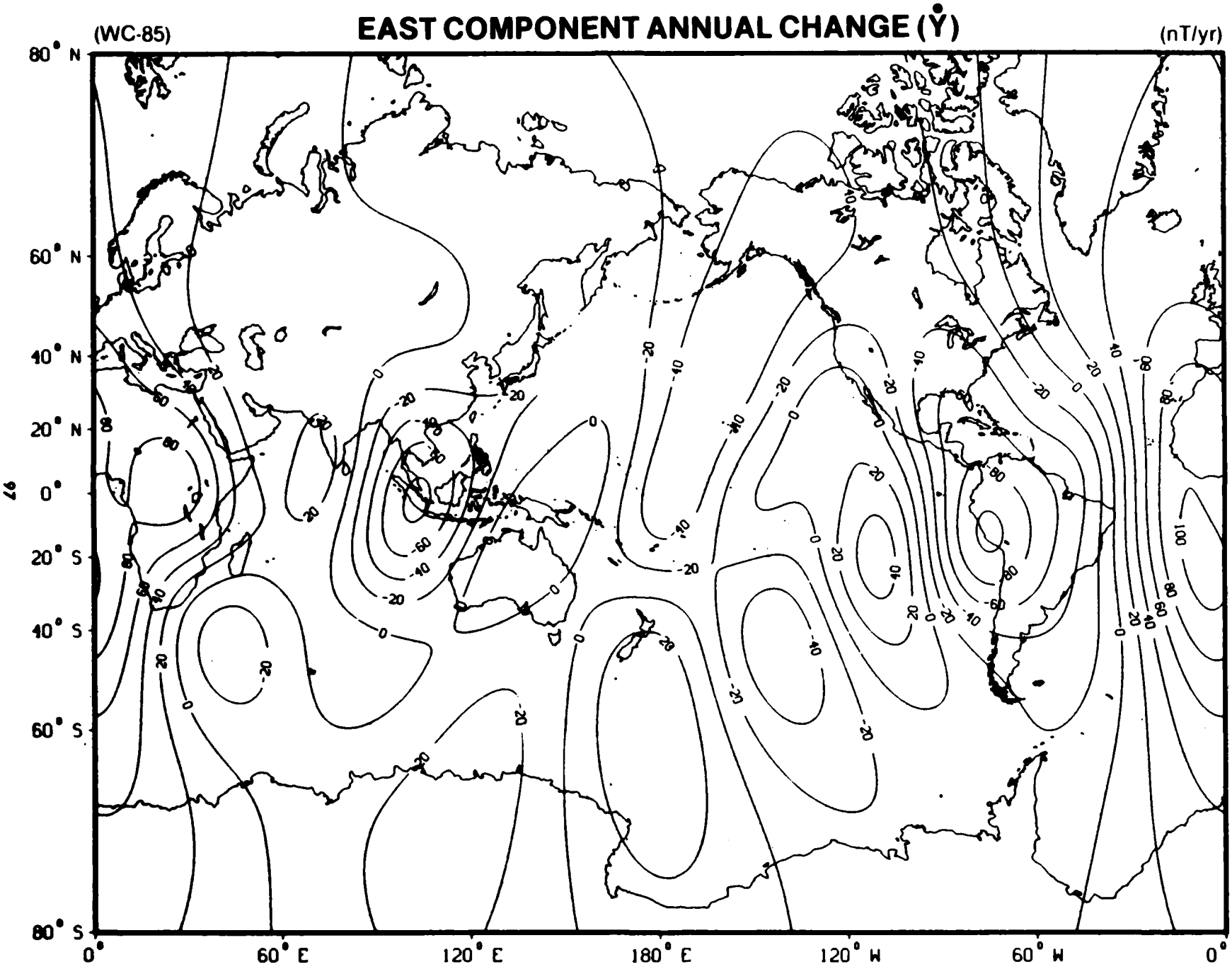


1985.0 at surface of model's reference spheroid.


(WC-85)
NORTH COMPONENT ANNUAL CHANGE (Ẋ)
(nT/yr)
80° N
60° N
40° N
20° N
0°
20° S
40° S
60° S
80° S
0°
60° E
120° E
180° E
120° W
60° W
0°
95
1985.0 at surface of model's reference spheroid.



1985.0 at surface of model's reference spheroid.

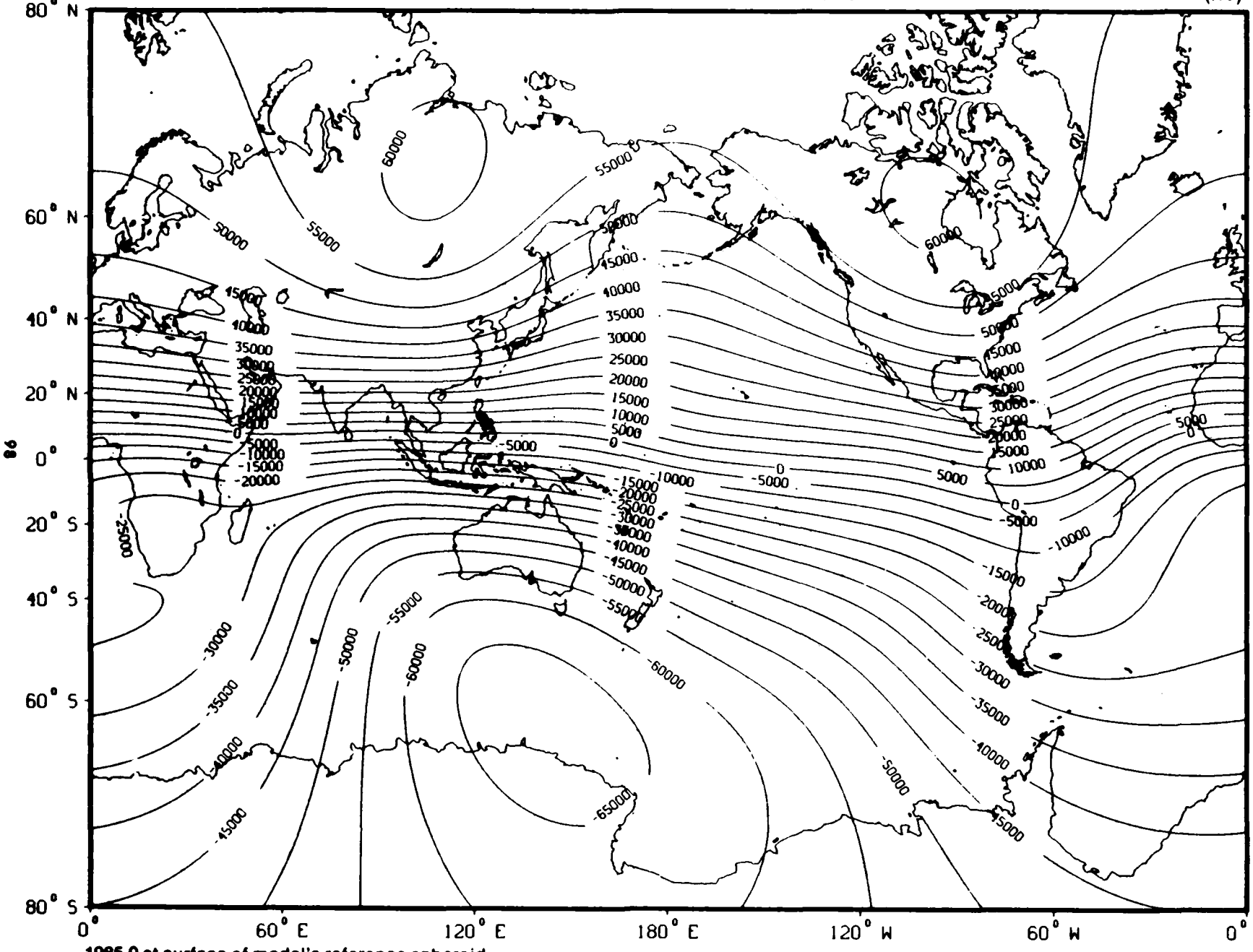


1985.0 at surface of model's reference spheroid.

(WC-85)

VERTICAL INTENSITY (Z)

(nT)

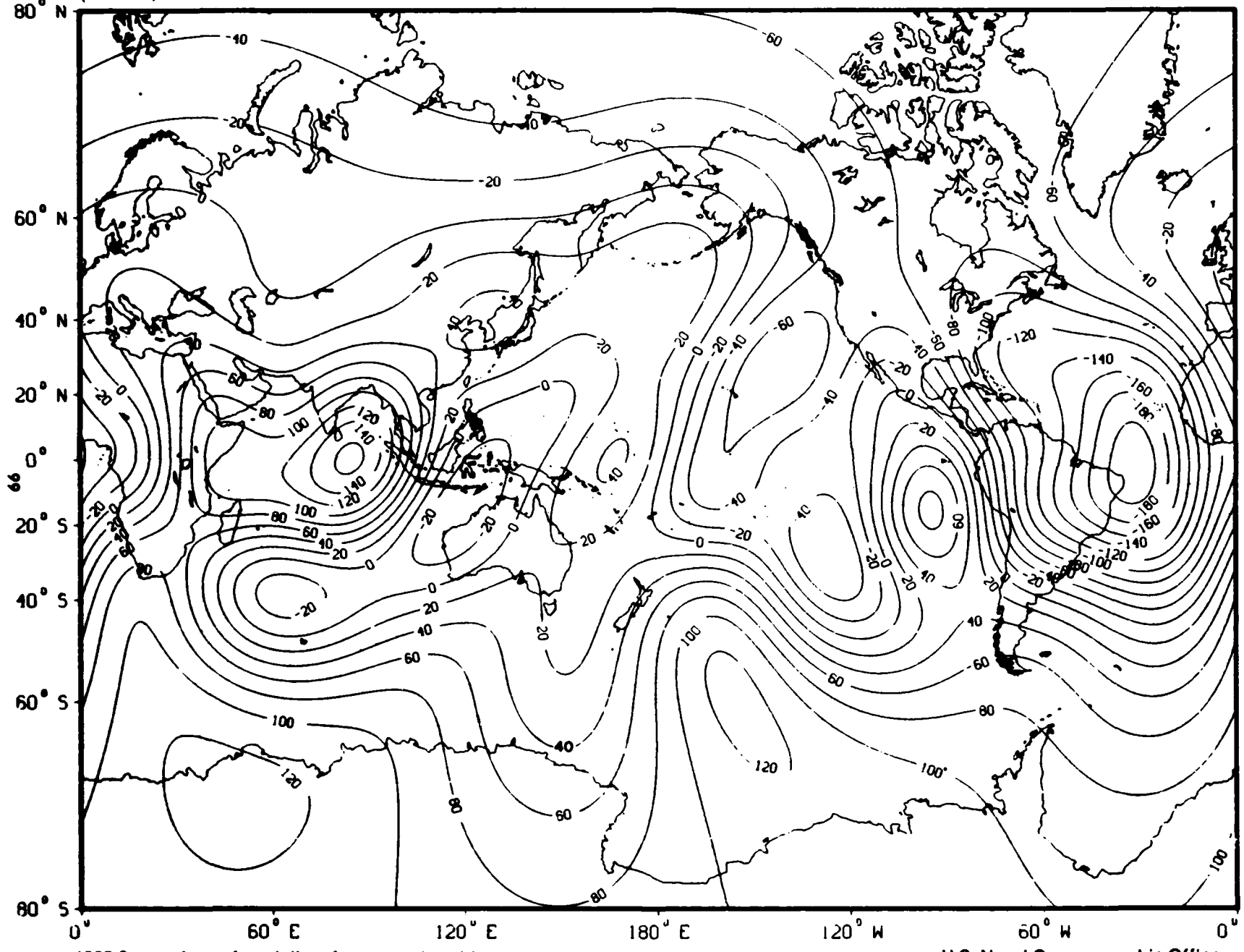


1985.0 at surface of model's reference spheroid.

(WC-85)

VERTICAL INTENSITY ANNUAL CHANGE ($\dot{Z}$)

(nT/yr)



1985.0 at surface of model's reference spheroid.

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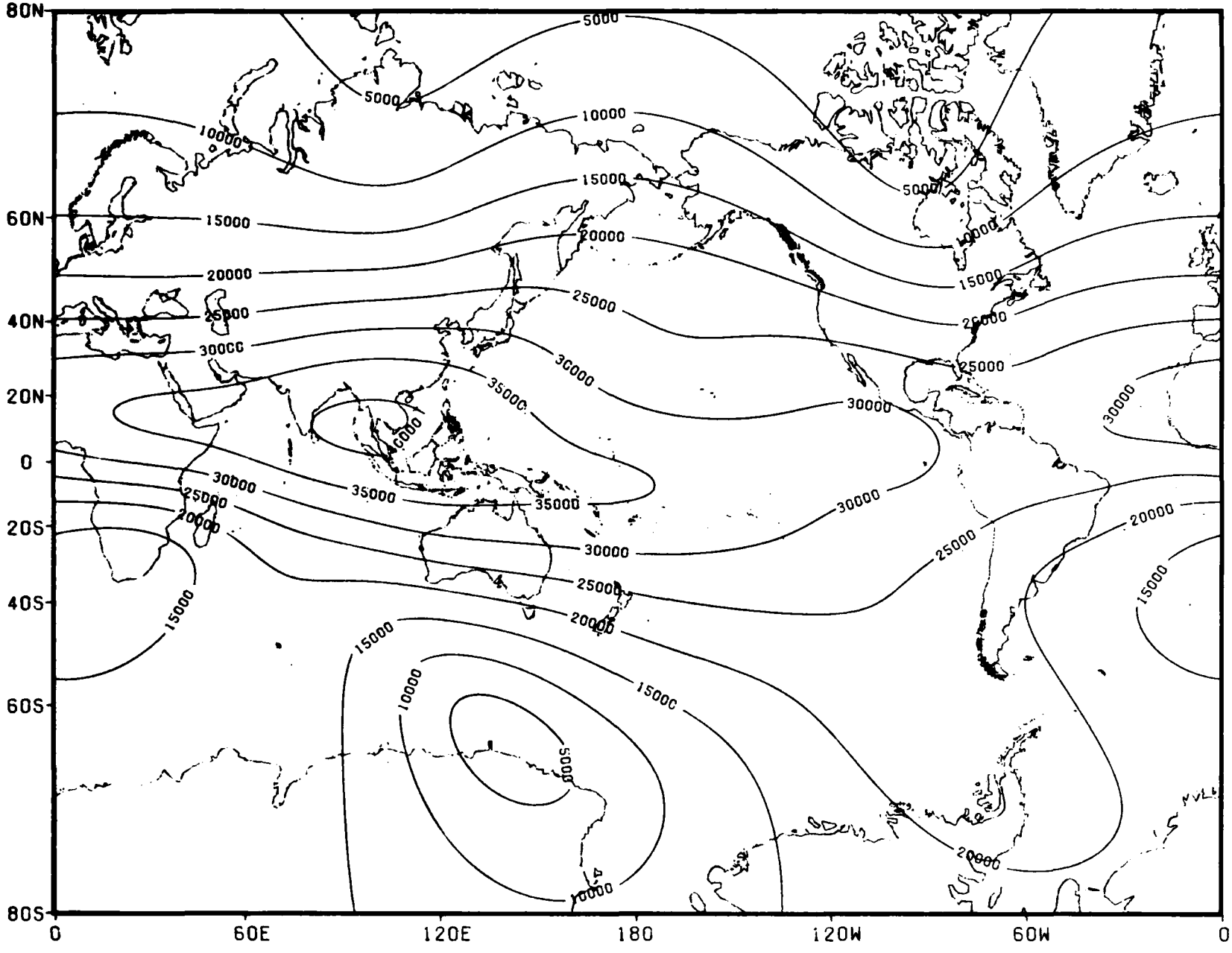
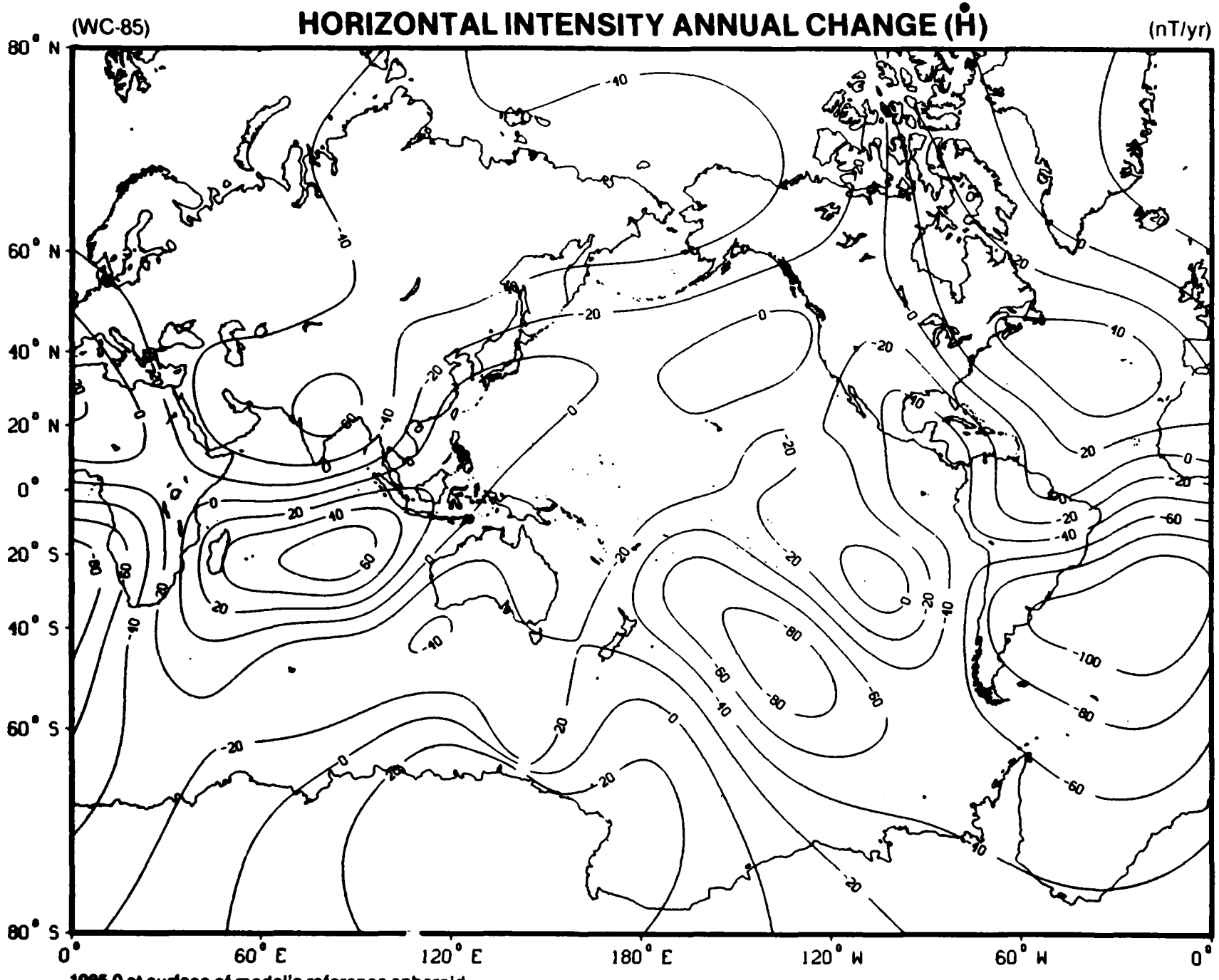
(WC-85)

HORIZONTAL INTENSITY (H)

(nT)

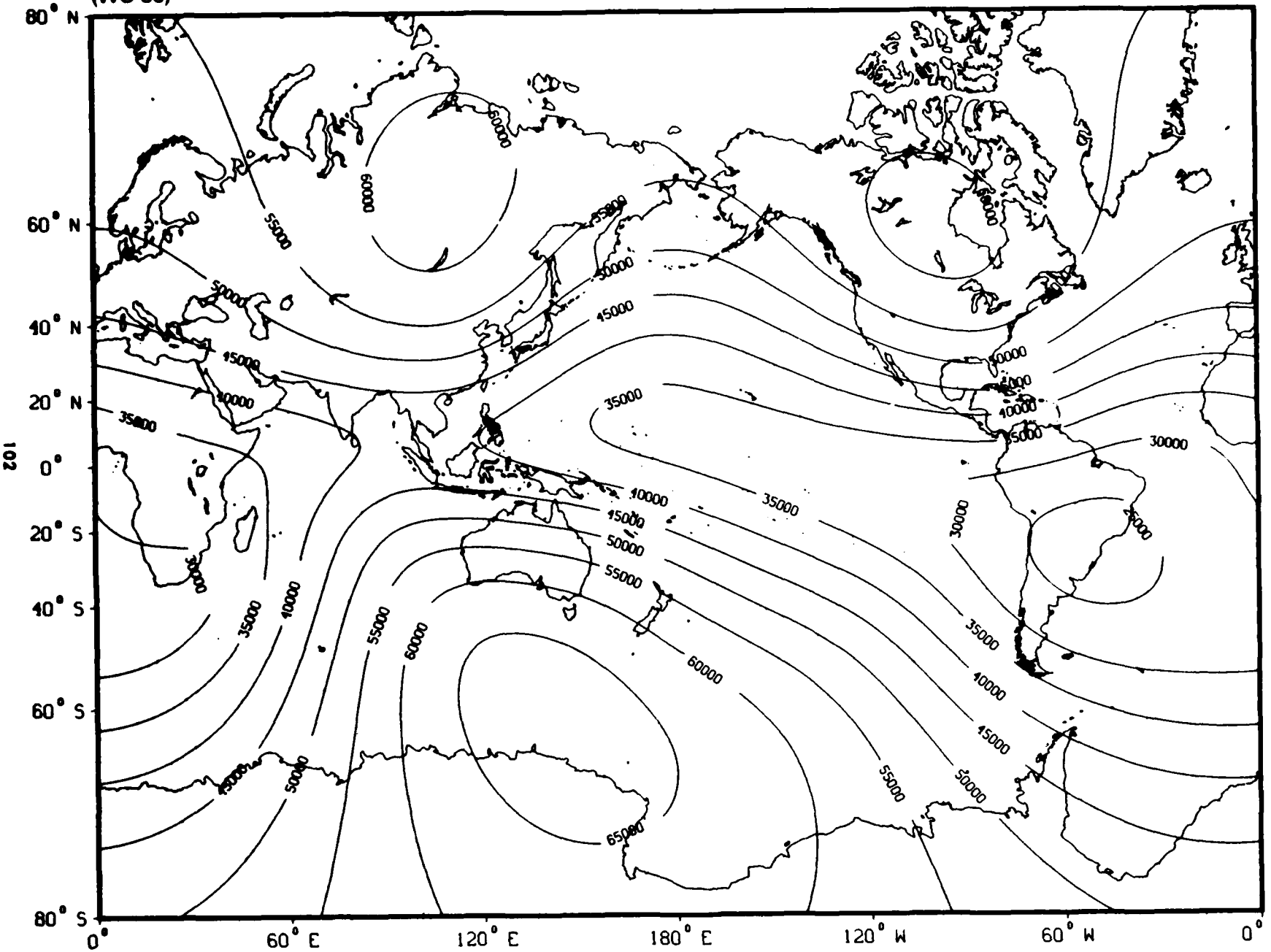


1985.0 at surface of model's reference spheroid.

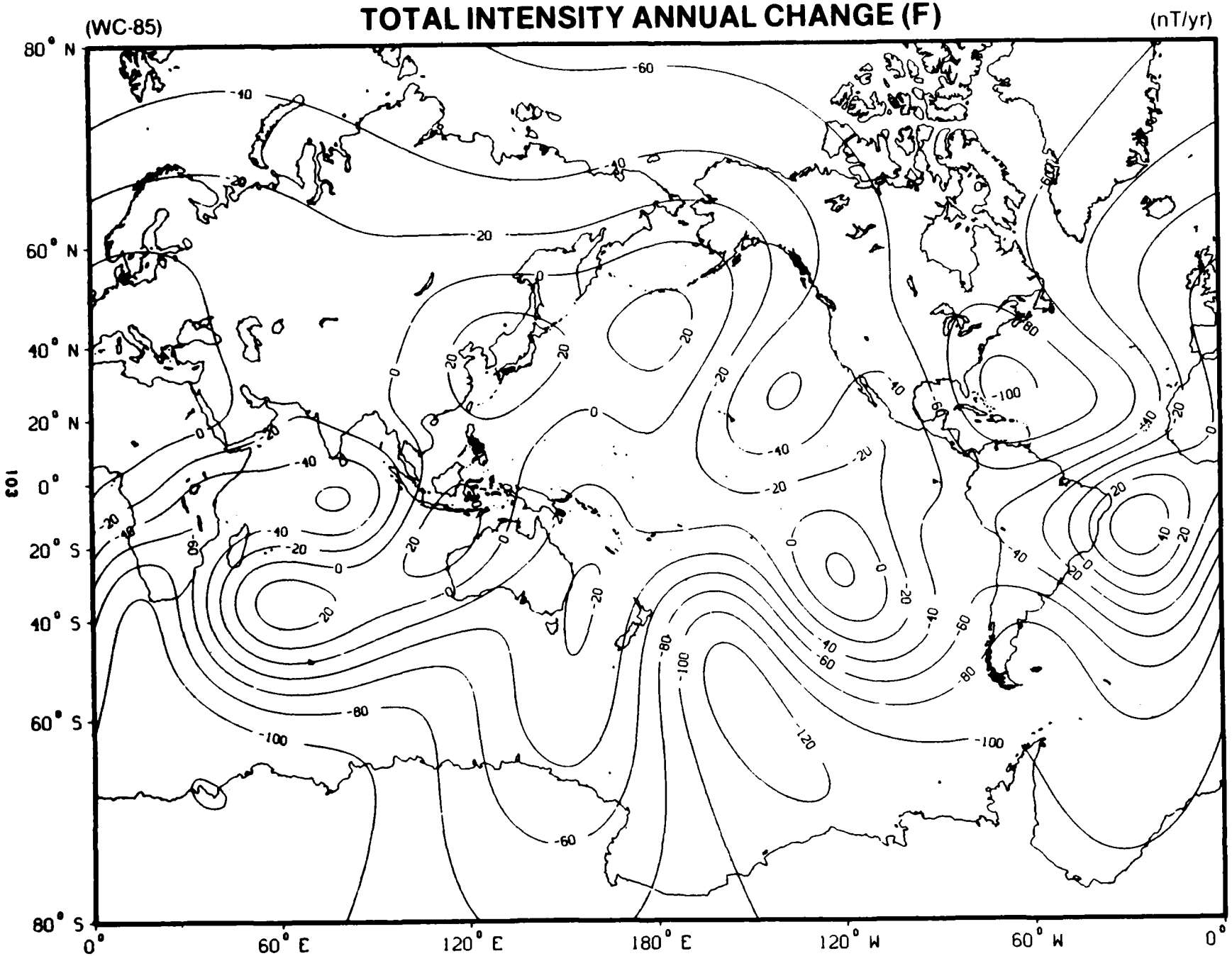

(WC-85)
HORIZONTAL INTENSITY ANNUAL CHANGE (Ḣ)
(nT/yr)
80° N
60° N
40° N
20° N
0°
20° S
40° S
60° S
80° S
0°
60° E
120° E
180° E
120° W
60° W
0°
1985.0 at surface of model's reference spheroid.

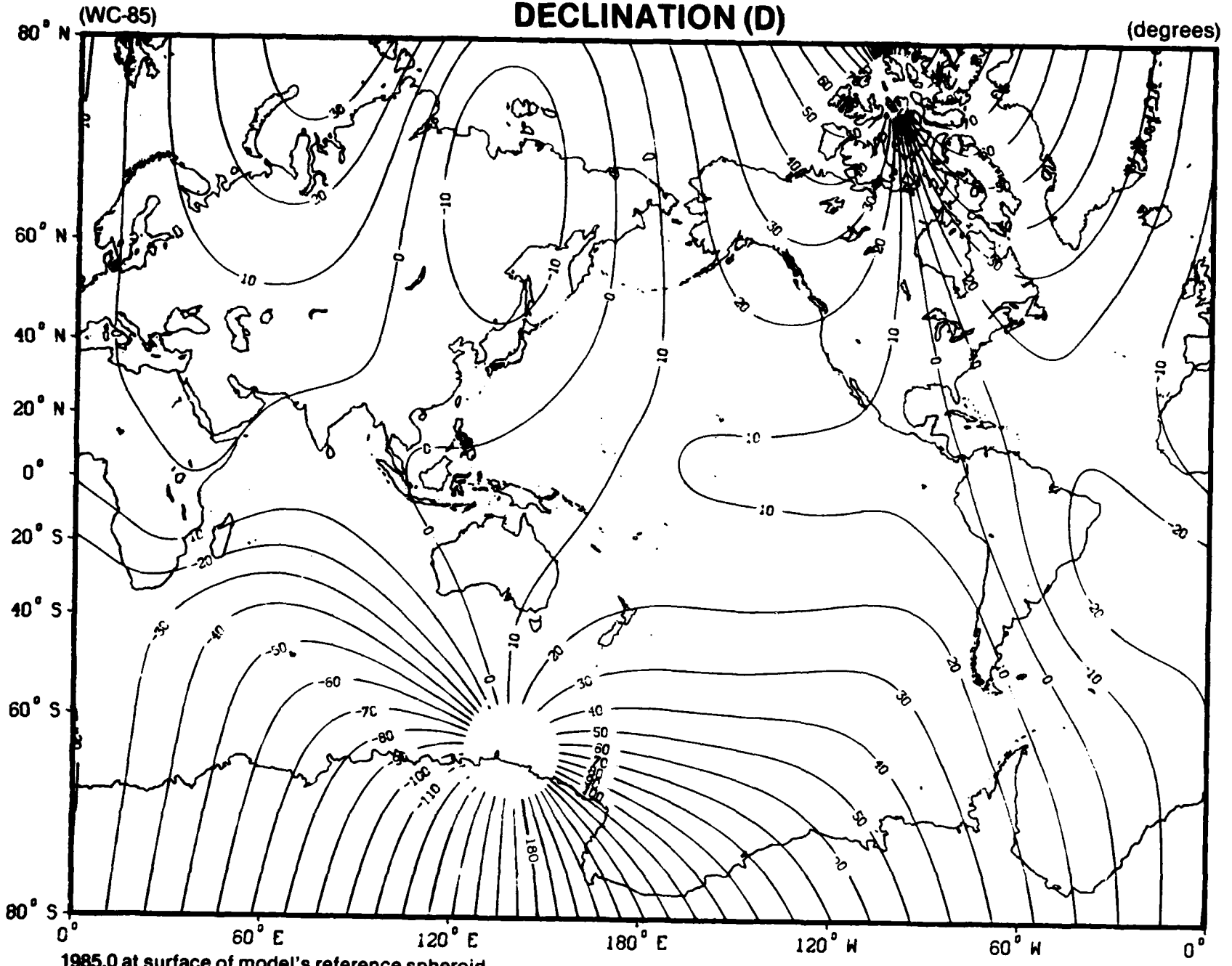
TOTAL INTENSITY (F)

(WC-85) (nT)



1985.0 at surface of model's reference spheroid.

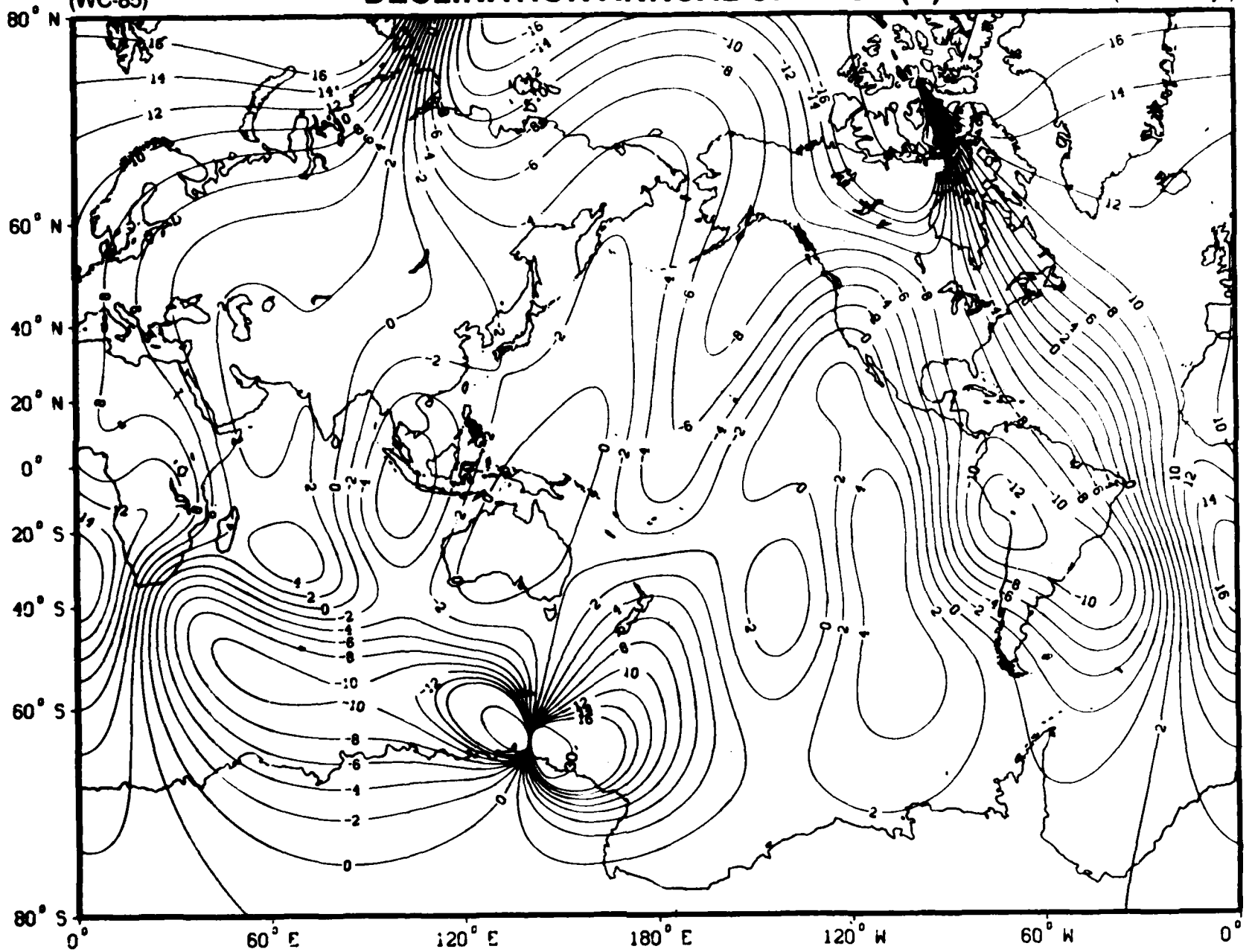

TOTAL INTENSITY ANNUAL CHANGE (Ḟ)
(WC-85)
(nT/yr)
80° N
60° N
40° N
20° N
0°
20° S
40° S
60° S
80° S
0°
60° E
120° E
180° E
120° W
60° W
0°
10³
1985.0 at surface of model's reference spheroid.



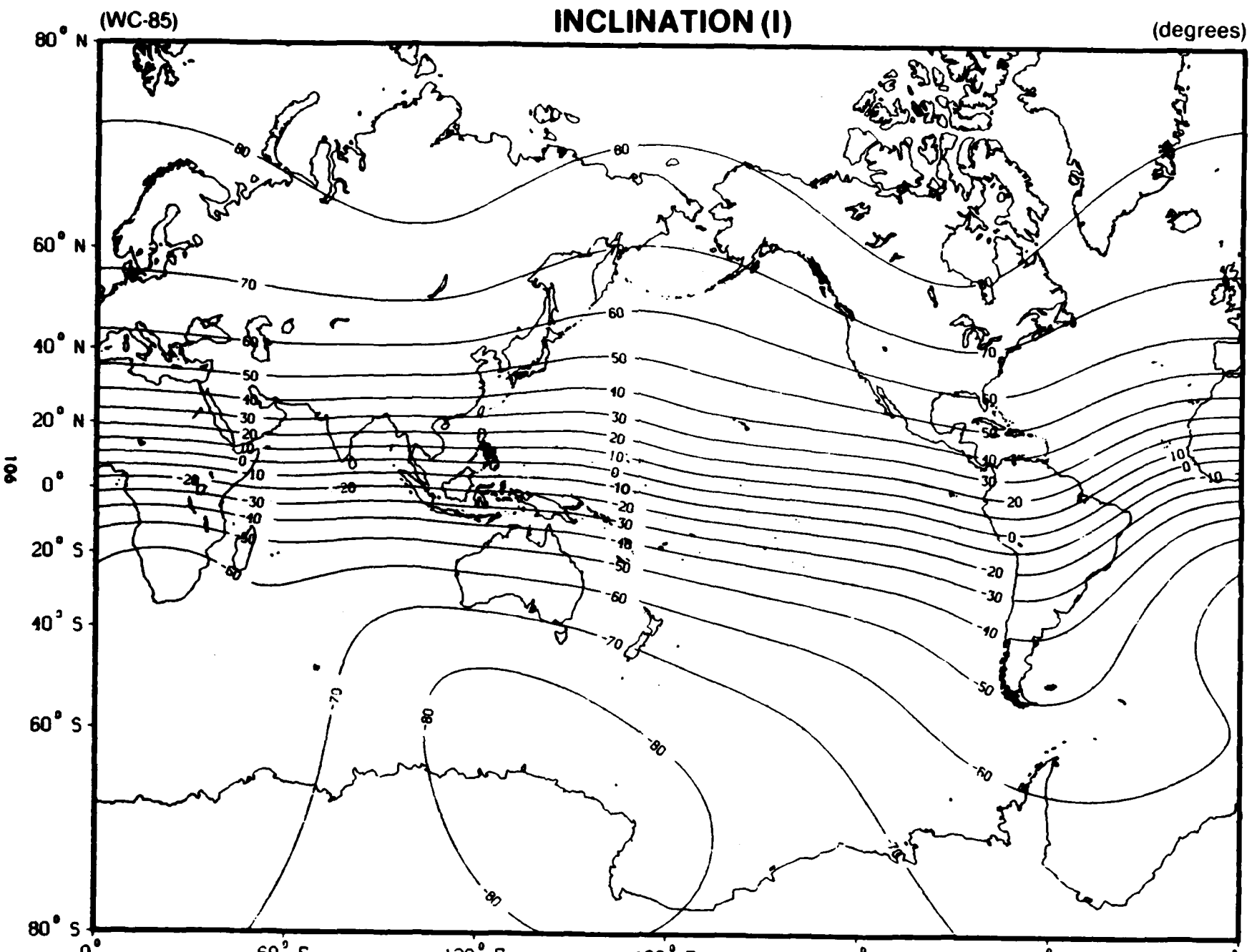
1985.0 at surface of model's reference spheroid.

DECLINATION ANNUAL CHANGE ($\dot{D}$)

(WC-85) (minutes/yr)



1985.0 at surface of model's reference spheroid.

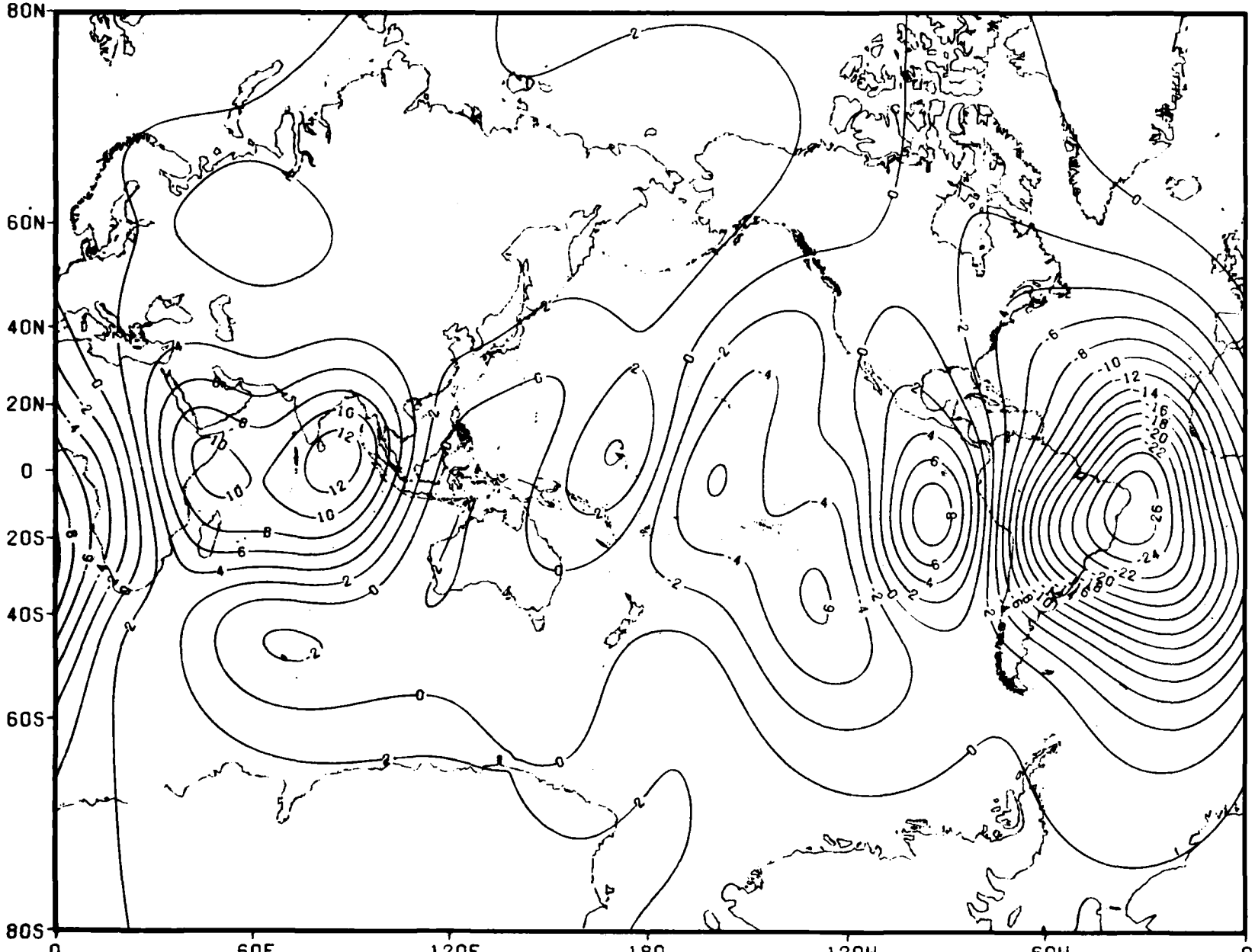


1985.0 at surface of model's reference spheroid.

(WC-85)

INCLINATION ANNUAL CHANGE ($\dot{i}$)

(minutes/yr)



1985.0 at surface of model's reference spheroid.

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COMSEVENTHFLT (NSAP Advisor)	1
COMSIXTHFLT (NSAP Advisor)	1
COMSUBDEVRON TWELVE (20B)	1
COMSUBLANT (NSAP Advisor)	1
COMSUBPAC (NSAP Advisor)	1
ALL COMSURFWARDEVGRU	8
COMTHIRDFLT (NSAP Advisor)	1
DCA (Technical Library)	1
Defense Information School	1
DMAAC	10
DMAHTC (Technical Library)	1
DMAIAGS	5
DNA (Technical Library)	1
ALL DPT NAVSCI	6
DTIC	10
FASOTRAGRULANT (Det Brunswick, Cecil Field, Jacksonville)	3
FASOTRAGRUPAC (Det Agana, Barbers Point, Cubi Point, Moffett Field, North Island)	5
FCTCLANT (Code 213)	1
FLEASWTRACENLANT	1
FLEASWTRACENPAC	1
FLEBALMISUBTRACEN	1
FLEMINEWARTRACEN	1
FLENUMOCEANCEN	1
National Defense University	1
NATWARCOL	1
NAVAIRDEVCEN (Code 8131)	1
NAVAIRTESTCEN (Technical Information Dept.)	1
NAVAVIONICCEN (Technical Library)	1
NAVCOASTSYSCEN (Technical Information Center - Code 6120)	1
NAVEASTOCEANCEN	1

NAVELEXCEN (Technical Library-Code AL)	1
ALL NAVELEXDET	2
NAVOCEANCOMCEN	2
ALL NAVOCEANCOMDET	47
NAVOCEANCOMFAC	7
NAVOCEANO (Maury Oceanographic Library)	1
NAVOCEANSYSCEN (Technical Library-Code 447)	1
NAVPGSCOL	1
NAVPHIBASE	1
NAVPOLAROCEANCEN	1
NAVSHIPWPNSYSENGSTA (Code 5125)	1
NAVSWC (Technical Library-Code E23)	1
NAVTACSUPPACT (Technical Library)	1
NAVWARCOL (Technical Library)	1
NAVWESTOCEANCEN	1
NAVWPNSUPPCEN (Code 016)	1
NISC (Technical Library-Code 63)	1
NORDA (Codes 245, 302, 352, 370, 371, 372, 550, 125L)	8
NRL (Technical Library-Code 2620)	1
NUSC (Technical Library-Code 02152)	1
OPTEVFOR (Technical Library)	1
SUBASE	1
SWFPAC (Technical Library-Code SPB161)	1
SWOSCOLCOM (Technical Library)	1
USNA (Nimitz Library)	1
WPNSTA (Technical Library)	1
Analysis Technology	1
AVCO Systems vision	1
BGS	1
Boeing Aerospace Company	1
Boeing Commerical Airplane Company	1
Boeing Military Airplane Company	1
Canadian Pacific Airlines	1
Center for Naval Analyses (Technical Library)	1
Center for Potential Field Studies, CSM	1
College Observatory	1
Control Systems Technology Center	1
Danish Meteorological Institute	1
Defense Communications Agency	1
Digital Cartographic Systems	1
Eastern Airlines	1
EG&G/Geometrics	1
ESL	1
General Dynamics	2
General Electric Co.	1
Geophysical Services, Inc.	2
Geosource Marine	1
Goddard Space Flight Center	1
Hughes Aircraft	2
Institute Nazionale Di Geofisica	1
Intergraph Corporation	1
KLM-Royal Dutch Airlines	1

LDGO	1
LITEF	1
Litton	1
Lockheed Corporation	1
Maritime Safety Agency	1
McDonnell Douglas Corporation	1
McDonnell Douglas Helicopter Corp.	1
NOAA/NDBC	1
NOAA/NGDC	3
NOAA/NOS (Codes, N/CG22X2, N/CG31X4)	2
Northrop Corporation	1
Shell Offshore, Inc.	1
Singer/Link	1
SIO	1
Systems & Applied Sciences Corp.	1
Systems Control Technology	1
Technical Studies & Analytical Corp.	1
TRW Corporation	1
USGS Denver	3
USGS Fredericksburg	1
USGS Menlo Park	1
WHOI	1
ARMY	
Avionics R&D Act.	1
Eng Topo Lab	1
ESEIA	1
USAATCA-ASO	1
36 Medical DET	1
AIR FORCE	
AFGWC	1
Ogden AFLC	1
(SPECIAL) (AFLC)	1
CPUSS	1
HQASD	1
USAF Academy (Technical Library)	1
9th SRW/IND	1
31st Test and Evaluation Squadron	1
366th Tactical Fighter Wing	1
403 Rescue and Weather Reconnaissance Wing/DOX	1
815 Weather Reconnaissance Wing/DOT	1
4029th Strategic Reconnaissance Training Squadron	1
6514th Test Squadron	1

END

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