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RELATION BETWEEN PLANE RECTANGULAR COORDINATES AND GEOGRAPHIC POSITIONS

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PREFACE TO 1938 EDITION.

The method of computation of plane coordinates developed in this publication results in an approximate equidistant azimuthal projection on a tangent plane. The distances from the center or origin are held almost exact, if the proper limits from the origin are not exceeded. The formulas are intended for a purely local system and the distance from the origin should in no case be greater than twenty or twenty-five miles. The exaggeration of scale is in the direction of circles about the origin and it cannot be detected by testing how well the scale is held from the origin.

This method is in no way related either to the polyconic projection or to the various State systems of plane coordinates. If local surveys are to be of permanent usefulness, they should be computed on the proper State zone by the methods described in Special Publications Nos. 193, 194, and 195. Any local work that is properly tied in with the National Control Net may become part of this control by being computed on the State system. The use of the State systems is advocated on the basis of the permanent value of the results.

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RELATION BETWEEN PLANE RECTANGULAR COORDINATES AND GEOGRAPHIC POSITIONS.

By WALTER F. REYNOLDS, *Senior Mathematician, U. S. Coast and Geodetic Survey.*

INTRODUCTION.

The control surveys over large areas the size of a State or the whole United States are necessarily made and computed by the use of geographic coordinates (latitudes and longitudes) because of the curvature of the earth. For this reason the results of triangulation in publications of the U. S. Coast and Geodetic Survey, U. S. Geological Survey, and U. S. Corps of Engineers are always given in geographic coordinates, for the triangulation in any of these publications either covers a large area or is joined to the triangulation scheme of the whole United States.

When all the points of a survey are located within a relatively small area, such as a city or small county, the use of plane coordinates instead of geographic coordinates is much more convenient, since the computations involved are thereby greatly simplified. If there are triangulation stations within or near the local area to be surveyed they should be used as a basis for the survey, as they not only furnish an accurate control but also serve to join the local survey to the triangulation of the country and thus insure that the resulting map can be joined satisfactorily to maps of adjacent regions.

The object of this publication is to enable the engineer or surveyor who is making the survey of a city, town, or county to convert the geographic coordinates of the available triangulation stations readily and quickly into plane coordinates and also, if he so desires, to convert the position of any point determined by the local survey from the plane coordinates back into geographic coordinates.

The tables given in this publication make the computations for changing from one set of coordinates to the other simple and easy. No difficult formulas are involved. The development of the formulas used in the computation of the tables is given in the appendix on page 85. In the preparation of these tables, reference was made to Hosmer's Geodesy and to Geographic Tables in manuscript form by L. A. Chase.

To establish a system of coordinates for any locality it is necessary to choose first the position of the coordinate axes. The origin should

be defined in terms of some specified point of the survey. In order to avoid large errors, the origin should be at the center of the area to be surveyed. It is possible to keep all the signs of the plane coordinates of the survey positive by assigning to the coordinates of the central origin a large numerical value. The origin may be taken as coinciding with a selected triangulation point as in the case of the survey of Baltimore, Md. In case the area over which the survey is made is very large, it is necessary to use more than one origin, as in the case of Greater New York city, where three different origins were used.

Just how far one may carry the plane coordinates from a given origin depends upon the accuracy desired. The errors of approximation made in computing plane coordinates in small areas are of little or no importance in connection with city surveys. But if it is proposed to extend these coordinates over a larger area it must be borne in mind that the errors of approximation increase rapidly as the area is extended.

The table below shows at a glance the decrease of accuracy with increase of the distance from the origin.

Distance from origin		Accuracy of plane coordinates.
Kilometers.	*Miles.*	
30	18.6	1 part in 100 000.
40	24.9	1 part in 50 000.
64	40	1 part in 20 000.
90	55.9	1 part in 10 000.
128	79.5	1 part in 5 000.

The plane coordinates may be determined from the geographic coordinates by the use of the formulas for inverse solution (see appendix, p. 85), one of the points being the origin and the other the triangulation station whose plane coordinates are desired. This becomes a long process if the coordinates of many points are to be transformed.

It is much more convenient to use the following formulas for the transformation of the geographic coordinates to the plane coordinates (see p. 87):

$$x = \Delta\lambda'' H, \qquad y = \Delta\phi'' K + Lx^2$$

where

$$\Delta\lambda'' = \lambda_n - \lambda_o \text{ (in seconds)},$$
$$\Delta\varphi'' = \varphi_n - \varphi_o \text{ (in seconds)}.$$

φ_n and λ_n are the latitude and longitude, respectively, of the new station and φ_o and λ_o the latitude and longitude of the origin. Log H, log K, and log L are taken directly from the tables for a given latitude, log K being taken out for the mean latitude of the origin and the new station, log H for the latitude of the new station, and log L for the latitude of the origin. The resulting values for the plane coordinates are in feet.

The tables can be used in the transformation of geographic coordinates to plane coordinates of any stations between latitudes 24° and 49°; that is, throughout the extent of the United States.

COMPUTATION OF PLANE COORDINATES FROM GEOGRAPHIC COORDINATES

To obtain the plane coordinates when the geographic coordinates (latitude and longitude) are given, it is necessary first to get the differences in latitude and longitude between the origin and the station whose plane coordinates are desired, and reduce these differences to seconds; then to take out from the tables log H, log K, and log L corresponding to the proper latitudes.

An example of this computation is given below showing the use of the tables. Triangulation station "Bogart," whose geographic coordinates are latitude 40° 36′ 07″.650, longitude 74° 06′ 58″.013, is considered the origin of the system of plane coordinates, and its plane coordinates are 0, 0. It is desired to obtain the plane coordinates of triangulation station, Fort Tompkins 2, whose geographic coordinates are latitude 40° 36′ 15″.867, longitude 74° 03′ 23″.433.

	Latitude.			Longitude.		
Fort Tompkins 2	40°	36′	15″.867	74°	03′	23″.433
Bogart (origin)	40	36	07 .650	74	06	58 .013
	$\Delta\varphi''=+8''.217$			$\Delta\lambda''=-3'\ 34''.580$		
				$=-214''.580$		

$\log\Delta\lambda''=2.3315892n$ $\quad\log x^2=8.43768$ $\quad\log\Delta\varphi''=0.9147133$

$\log H=1.8872494$ $\quad\log L=2.31073-10$ $\quad\log K=2.0051783$

$\log x=4.2188386n$ $\quad\log Lx^2=0.74841$ $\quad\log\Delta\varphi''K=2.9198916$

$x=-16551.55$ ft. (east) $\quad Lx^2=5.603$ ft. $\quad\Delta\varphi''K=+831.556$ ft.

$y=+831.556+5.603=+837.159$ feet (north).

The latitude of the new station, 40° 36′ 15″.867, is used as the argument in taking out log H, the latitude of the origin, 40° 36′ 07″.650, in taking out log L, and the mean latitude of the origin and the new station or 40° 36′ 11″.758 as the argument for log K. (See p. 59.) It should be noted that -10 is understood after each logarithm in the column headed "Log L."

On pages 87 and 88 are shown the positions of a number of points expressed as geographic coordinates and the computations for conversion to plane coordinates. These points form a closed circuit, and the various steps necessary to make the two ends of the circuit come together, or close the circuit, are also given.

COMPUTATION OF GEOGRAPHIC COORDINATES FROM PLANE COORDINATES

If we have two points, A and B, whose rectangular coordinates are x_1, y_1 and x_2, y_2 referred to the same origin, then the distance between them may be computed from the formula

$$S=\sqrt{(x_1-x_2)^2+(y_1-y_2)^2} \tag{1}$$

The direction of the line from the point A to the point B, referred to a line parallel with the Y axis through the point A, may be computed from the formula

$$\tan \alpha_y = \frac{x_2 - x_1}{y_1 - y_2} \tag{2}$$

If it is desired to obtain the true azimuth of the line from A to B or, in other words, its direction referred to the true meridian through the point A, a correction to α_y for the convergence of the meridians between the origin and the point A must be computed as follows:

$$\Delta\alpha = -\Delta\lambda'' \sin\varphi_m$$

where $\Delta\lambda''$ is the difference in longitude in seconds between the origin and the point A (see p. 6), and φ_m is the mean latitude of point A and the origin. In north latitudes the sign of this correction is plus if the point is east of the origin and minus if the point is west of the origin. The true azimuth of the line from A to B is therefore

$$\alpha = \alpha_y + \Delta\alpha$$

The azimuth, α, is counted in a clockwise direction starting with south as zero.

The true azimuth of the line from B to A can be computed in a similar manner.

If logarithms are used, it will be convenient to compute the α first and then compute S from one of the two formulas

$$S = \frac{x_2 - x_1}{\sin \alpha}, \text{ and } S = \frac{y_1 - y_2}{\cos \alpha}.$$

To make the effect of omitted decimal places as small as possible, the one of these two formulas that has the larger numerator in each particular case should be used.

Since the distance and azimuth between any two points can be thus easily determined when their plane coordinates are known, the geographic positions of all the points whose plane coordinates are known can be computed provided the geographic position of the origin has been determined.

To illustrate this, let us take the case of two points in a triangulation scheme whose geographic positions and plane coordinates are given, one of these points being the origin. The plane coordinates of station Great Kills are

$$x = +4309.12 \text{ feet} = +1313.42 \text{ meters},$$
$$y = -24119.16 \text{ feet} = -7351.53 \text{ meters}$$

as referred to Bogart as origin (0, 0). (See page 88.)

Now if S represent the distance and α the azimuth of the line Bogart to Great Kills, then since $x = S \sin \alpha$ and $y = S \cos \alpha$, $\tan \alpha = \frac{x}{y}$ and $S = \frac{y}{\cos \alpha}$.

$$\begin{aligned} \log x &= 3.1184036 \\ \log y &= 3.8663778 \\ \hline \log \tan \alpha &= 9.2520258 - 10 \\ \alpha &= 10^\circ\ 07'\ 46''.4 \end{aligned}$$

$$\begin{aligned} \log y &= 3.8663778 \\ \log \cos \alpha &= 9.9931771 - 10 \\ \hline \log S &= 3.8732007 \\ S &= 7467.94 \text{ meters.} \end{aligned}$$

Now knowing the geographic position of the origin, Bogart, and the distance and bearing of Great Kills from the origin, we can readily compute the geographic position of Great Kills from the formulas given in Special Publication No. 8 of the U. S. Coast and Geodetic Survey. The latitude and the longitude of station Great Kills as determined in this manner are respectively, 40° 32′ 09″.312, 74° 07′ 53″.821, agreeing exactly with the latitude and longitude as determined through the regular computation of geographic coordinates.

Engineers and others who have occasion to compute geographic positions, will find it of help to have Special Publication No. 8, referred to above. It is entitled, "Formulæ and Tables for the Computation of Geodetic Positions," and contains data which enable one to compute the geographic coordinates for triangulation when the distances, angles, and the geographic coordinates of some initial point are known.

Table for transformation of coordinates.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
24 00 00	1.9672311	.....	2.0040379	2.02663	24 10 00	1.9666696	9.3	2.0040475	2.03002
10	2217	9.4	81	69	10	6601	9.5	77	08
20	2124	9.3	82	74	20	6508	9.3	78	13
30	2030	9.4	84	80	30	6413	9.5	79	18
40	1938	9.2	86	86	40	6320	9.3	80	24
50	1844	9.4	87	91	50	6225	9.5	82	29
24 01 00	1751	9.3	89	2.02697	24 11 00	6132	9.3	84	35
10	1658	9.3	90	2.02703	10	6037	9.4	86	41
20	1564	9.4	92	09	20	5944	9.3	88	47
30	1471	9.3	93	14	30	5850	9.4	89	52
40	1379	9.2	95	20	40	5757	9.3	91	57
50	1285	9.4	97	26	50	5662	9.5	93	64
24 02 00	1192	9.3	2.0040398	31	24 12 00	5568	9.4	94	70
10	1098	9.4	2.0040400	37	10	5474	9.4	96	76
20	1005	9.3	02	43	20	5380	9.4	98	81
30	0911	9.4	03	48	30	5285	9.5	2.0040499	86
40	0818	9.3	05	53	40	5192	9.3	2.0040501	92
50	0724	9.4	07	59	50	5097	9.5	03	2.03097
24 03 00	0631	9.3	08	65	24 13 00	5002	9.5	04	2.03103
10	0537	9.4	10	71	10	4909	9.3	06	09
20	0444	9.3	12	77	20	4815	9.4	07	15
30	0350	9.4	13	82	30	4720	9.5	08	20
40	0257	9.3	15	87	40	4626	9.4	09	25
50	0163	9.4	17	93	50	4532	9.4	11	31
24 04 00	1.9670070	9.3	18	2.02799	24 14 00	4438	9.4	13	37
10	1.9669976	9.4	20	2.02805	10	4343	9.5	15	43
20	9883	9.3	21	11	20	4249	9.4	17	49
30	9789	9.4	22	16	30	4155	9.4	18	54
40	9696	9.3	23	21	40	4061	9.4	20	59
50	9602	9.4	25	27	50	3966	9.5	22	65
24 05 00	9509	9.3	27	33	24 15 00	3872	9.4	23	71
10	9415	9.4	29	39	10	3777	9.5	24	77
20	9322	9.3	31	44	20	3683	9.4	26	82
30	9227	9.5	32	50	30	3588	9.5	28	88
40	9134	9.3	34	55	40	3495	9.3	30	93
50	9040	9.4	36	60	50	3400	9.5	32	2.03199
24 06 00	8947	9.3	37	66	24 16 00	3306	9.4	33	2.03204
10	8853	9.4	39	72	10	3211	9.5	35	10
20	8760	9.3	41	78	20	3117	9.4	37	15
30	8666	9.4	42	83	30	3023	9.5	38	21
40	8573	9.3	43	88	40	2928	9.4	39	27
50	8479	9.4	45	2.02894	50	2834	9.4	40	32
24 07 00	8386	9.3	46	2.02900	24 17 00	2740	9.5	42	38
10	8291	9.5	48	06	10	2645	9.4	43	44
20	8198	9.3	50	12	20	2551	9.4	45	49
30	8104	9.4	51	17	30	2456	9.5	47	55
40	8010	9.4	53	22	40	2362	9.4	49	60
50	7916	9.4	55	28	50	2267	9.5	51	66
24 08 00	7823	9.3	56	34	24 18 00	2173	9.4	52	71
10	7728	9.5	58	40	10	2078	9.5	54	77
20	7635	9.3	59	46	20	1984	9.4	56	82
30	7541	9.4	60	51	30	1889	9.5	57	88
40	7447	9.4	61	56	40	1794	9.5	58	94
50	7353	9.4	63	62	50	1699	9.5	59	2.03299
24 09 00	7260	9.3	65	68	24 19 00	1605	9.4	61	2.03305
10	7165	9.5	67	74	10	1510	9.5	62	10
20	7072	9.3	69	80	20	1416	9.4	64	15
30	6977	9.5	70	85	30	1321	9.5	66	21
40	6884	9.3	72	90	40	1227	9.4	68	27
50	6789	9.5	74	2.02996	50	1131	9.6	70	33
24 10 00	6696	9.3	75	2.03002	24 20 00	1037	9.4	71	39

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
24 20 00	1.9661037	9.4	2.0040571	2.03339	24 30 00	1.9655334	9.5	2.0040668	2.03674
10	0942	9.5	73	45	10	5239	9.5	70	80
20	0848	9.4	75	50	20	5143	9.6	71	85
30	0752	9.6	77	56	30	5048	9.5	72	91
40	0658	9.4	79	61	40	4953	9.5	74	2.03696
50	0563	9.5	80	67	50	4857	9.5	76	2.03702
24 21 00	0469	9.4	81	72	24 31 00	4762	9.5	77	07
10	0373	9.6	82	78	10	4667	9.5	79	13
20	0279	9.4	84	83	20	4571	9.6	80	18
30	0185	9.4	86	89	30	4476	9.5	82	24
40	1.9660089	9.6	88	2.03395	40	4380	9.6	84	29
50	1.9659995	9.4	89	2.03400	50	4285	9.5	85	35
24 22 00	9901	9.4	90	06	24 32 00	4189	9.6	87	40
10	9805	9.6	92	13	10	4094	9.5	89	46
20	9711	9.4	94	18	20	3998	9.6	90	51
30	9616	9.5	96	24	30	3902	9.6	92	57
40	9521	9.5	98	29	40	3806	9.6	94	64
50	9426	9.5	2.0040599	35	50	3711	9.5	95	69
24 23 00	9331	9.5	2.0040600	40	24 33 00	3615	9.6	97	75
10	9236	9.5	02	46	10	3520	9.5	2.0040699	81
20	9141	9.5	04	51	20	3424	9.6	2.0040700	86
30	9046	9.5	06	57	30	3328	9.6	02	92
40	8951	9.5	08	62	40	3232	9.6	04	2.03797
50	8856	9.5	09	68	50	3137	9.5	05	2.03803
24 24 00	8761	9.5	10	73	24 34 00	3041	9.6	07	08
10	8666	9.5	11	79	10	2945	9.6	09	14
20	8571	9.5	13	84	20	2849	9.6	10	19
30	8476	9.5	15	90	30	2754	9.5	11	25
40	8381	9.5	17	2.03496	40	2659	9.5	13	30
50	8286	9.5	18	2.03501	50	2563	9.6	15	36
24 25 00	8191	9.5	19	07	24 35 00	2467	9.5	16	41
10	8096	9.5	21	13	10	2372	9.5	18	47
20	8001	9.5	23	18	20	2275	9.7	19	52
30	7905	9.6	25	24	30	2180	9.5	21	58
40	7811	9.4	27	29	40	2084	9.6	23	64
50	7715	9.6	28	35	50	1988	9.6	24	69
24 26 00	7620	9.5	29	40	24 36 00	1892	9.6	26	75
10	7526	9.4	31	46	10	1796	9.6	28	81
20	7431	9.5	33	51	20	1700	9.6	29	86
30	7335	9.6	35	57	30	1604	9.6	31	92
40	7241	9.4	37	63	40	1508	9.6	33	2.03897
50	7146	9.5	38	68	50	1413	9.5	34	2.03903
24 27 00	7050	9.6	39	74	24 37 00	1316	9.7	36	08
10	6956	9.4	40	80	10	1221	9.5	38	14
20	6860	9.6	42	85	20	1124	9.7	39	19
30	6765	9.5	44	91	30	1029	9.5	41	25
40	6669	9.6	46	2.03596	40	0932	9.7	43	30
50	6574	9.5	47	2.03602	50	0837	9.5	44	36
24 28 00	6479	9.5	48	07	24 38 00	0740	9.7	46	41
10	6383	9.6	50	13	10	0645	9.5	48	47
20	6288	9.5	52	18	20	0548	9.7	49	52
30	6192	9.6	54	24	30	0452	9.6	50	58
40	6097	9.5	56	30	40	0357	9.5	52	63
50	6001	9.6	57	35	50	0260	9.7	54	69
24 29 00	5907	9.4	58	41	24 39 00	0165	9.5	55	74
10	5811	9.6	59	47	10	1.9650069	9.6	57	80
20	5716	9.5	61	52	20	1.9649972	9.7	58	85
30	5620	9.6	63	58	30	9877	9.5	60	91
40	5525	9.5	65	63	40	9780	9.7	62	2.03997
50	5429	9.6	67	69	50	9684	9.6	63	2.04002
24 30 00	5334	9.5	68	74	24 40 00	9588	9.6	65	08

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
24 40 00	1.9649588	9.6	2.0040765	2.04008	24 50 00	1.9643796	9.7	2.0040863	2.04340
10	9492	9.6	67	14	10	3699	9.7	65	46
20	9395	9.7	68	19	20	3602	9.7	66	51
30	9299	9.6	70	25	30	3505	9.7	67	57
40	9203	9.6	72	30	40	3409	9.6	69	62
50	9107	9.6	73	36	50	3311	9.8	71	68
24 41 00	9010	9.7	75	41	24 51 00	3215	9.6	72	73
10	8914	9.6	77	47	10	3118	9.7	74	79
20	8818	9.6	78	52	20	3021	9.7	75	84
30	8722	9.6	79	58	30	2924	9.7	77	90
40	8625	9.7	81	63	40	2827	9.7	79	2.04395
50	8529	9.6	83	69	50	2730	9.7	80	2.04401
24 42 00	8432	9.7	84	74	24 52 00	2633	9.7	82	06
10	8337	9.5	86	80	10	2536	9.7	84	11
20	8240	9.7	87	85	20	2438	9.8	85	17
30	8144	9.6	89	91	30	2342	9.6	87	22
40	8048	9.6	91	2.04096	40	2244	9.8	89	27
50	7951	9.7	92	2.04102	50	2147	9.7	90	33
24 43 00	7855	9.6	94	08	24 53 00	2050	9.7	92	38
10	7759	9.6	96	14	10	1953	9.7	94	44
20	7662	9.7	97	19	20	1855	9.8	95	50
30	7566	9.6	2.0040799	25	30	1759	9.6	97	56
40	7469	9.7	2.0040801	30	40	1661	9.8	2.0040899	61
50	7373	9.6	02	36	50	1564	9.7	2.0040900	67
24 44 00	7276	9.7	04	41	24 54 00	1467	9.7	02	72
10	7180	9.6	06	47	10	1370	9.7	04	78
20	7083	9.7	07	52	20	1272	9.8	05	83
30	6987	9.5	09	57	30	1175	9.7	07	89
40	6890	9.7	11	63	40	1079	9.6	09	2.04494
50	6794	9.6	12	69	50	0981	9.8	10	2.04500
24 45 00	6697	9.7	14	74	24 55 00	0884	9.7	12	05
10	6601	9.6	16	80	10	0787	9.7	14	11
20	6504	9.7	17	85	20	0689	9.8	15	16
30	6408	9.6	19	91	30	0592	9.7	16	22
40	6311	9.7	21	2.04196	40	0495	9.7	18	28
50	6215	9.6	22	2.04202	50	0398	9.7	20	33
24 46 00	6118	9.7	24	07	24 56 00	0300	9.8	21	38
10	6021	9.7	26	13	10	0203	9.7	23	44
20	5924	9.7	27	18	20	0105	9.8	24	49
30	5828	9.6	28	24	30	1.9640008	9.7	26	55
40	5732	9.6	30	29	40	1.9639910	9.8	28	60
50	5635	9.7	32	35	50	9813	9.7	29	66
24 47 00	5539	9.6	33	40	24 57 00	9715	9.8	31	71
10	5442	9.7	35	46	10	9618	9.7	33	77
20	5345	9.7	36	51	20	9520	9.8	34	82
30	5249	9.6	38	57	30	9423	9.7	36	88
40	5152	9.7	40	62	40	9326	9.7	38	93
50	5055	9.7	41	68	50	9228	9.8	39	2.04599
24 48 00	4958	9.7	43	73	24 58 00	9131	9.7	41	2.04604
10	4862	9.6	45	79	10	9034	9.7	43	10
20	4764	9.8	46	84	20	8936	9.8	44	15
30	4668	9.6	47	90	30	8839	9.7	46	21
40	4571	9.7	49	2.04296	40	8741	9.8	48	26
50	4474	9.7	51	2.04301	50	8644	9.7	49	32
24 49 00	4377	9.7	53	07	24 59 00	8546	9.8	51	37
10	4281	9.6	55	13	10	8449	9.7	53	43
20	4183	9.8	56	18	20	8351	9.8	54	48
30	4087	9.6	58	24	30	8254	9.7	56	54
40	3990	9.7	60	29	40	8155	9.9	58	59
50	3893	9.7	61	35	50	8058	9.7	59	65
24 50 00	3796	9.7	63	40	25 00 00	7960	9.8	61	70

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
25 00 00	1.9637960	9.8	2.0040961	2.04670	25 10 00	1.9632080	9.9	2.0041059	2.04999
10	7863	9.7	63	76	10	1982	9.8	61	2.05004
20	7765	9.8	64	81	20	1883	9.9	62	10
30	7668	9.7	66	87	30	1785	9.8	64	15
40	7569	9.9	68	92	40	1686	9.9	66	20
50	7472	9.7	69	2.04698	50	1588	9.8	67	26
25 01 00	7374	9.8	71	2.04703	25 11 00	1489	9.9	69	31
10	7277	9.7	73	09	10	1391	9.8	71	37
20	7178	9.9	74	14	20	1292	9.9	72	42
30	7081	9.7	75	20	30	1194	9.8	74	48
40	6984	9.7	77	25	40	1095	9.9	76	53
50	6885	9.9	79	31	50	0997	9.8	77	59
25 02 00	6788	9.7	80	36	25 12 00	0898	9.9	79	64
10	6691	9.7	82	41	10	0800	9.8	81	70
20	6592	9.9	83	47	20	0701	9.9	82	75
30	6495	9.7	85	52	30	0602	9.9	84	81
40	6397	9.8	87	57	40	0504	9.8	86	86
50	6299	9.8	88	63	50	0405	9.9	87	92
25 03 00	6201	9.8	90	68	25 13 00	0307	9.8	89	2.05097
10	6103	9.8	92	74	10	0209	9.8	91	2.05102
20	6005	9.8	93	80	20	0110	9.9	92	08
30	5908	9.7	95	86	30	1.9630012	9.8	94	14
40	5809	9.9	97	91	40	1.9629912	10.0	96	19
50	5712	9.7	2.0040998	2.04797	50	9814	9.8	97	25
25 04 00	5613	9.9	2.0041000	2.04802	25 14 00	9715	9.9	2.0041099	30
10	5516	9.7	02	08	10	9617	9.8	2.0041101	36
20	5417	9.9	03	13	20	9517	10.0	02	41
30	5320	9.7	05	19	30	9419	9.8	04	47
40	5221	9.9	07	24	40	9320	9.9	06	52
50	5124	9.7	08	30	50	9222	9.8	07	58
25 05 00	5025	9.9	10	35	25 15 00	9122	10.0	09	63
10	4927	9.8	12	41	10	9024	9.8	11	69
20	4829	9.8	13	46	20	8925	9.9	12	74
30	4731	9.8	15	52	30	8826	9.9	14	80
40	4634	9.7	17	57	40	8728	9.8	16	85
50	4535	9.9	18	63	50	8629	9.9	17	91
25 06 00	4438	9.7	20	68	25 16 00	8530	9.9	19	2.05196
10	4340	9.8	22	74	10	8432	9.8	21	2.05201
20	4241	9.9	23	79	20	8333	9.9	22	07
30	4144	9.7	25	85	30	8234	9.9	24	12
40	4045	9.9	27	90	40	8135	9.9	26	17
50	3947	9.8	28	2.04896	50	8036	9.9	27	23
25 07 00	3849	9.8	30	2.04901	25 17 00	7937	9.9	29	28
10	3751	9.8	32	06	10	7838	9.9	31	34
20	3652	9.9	33	12	20	7739	9.9	32	39
30	3554	9.8	35	17	30	7640	9.9	33	45
40	3456	9.8	37	22	40	7541	9.9	35	50
50	3358	9.8	38	28	50	7442	9.9	37	56
25 08 00	3259	9.9	40	33	25 18 00	7343	9.9	38	61
10	3161	9.8	42	39	10	7244	9.9	40	66
20	3062	9.9	43	44	20	7145	9.9	41	72
30	2965	9.7	44	50	30	7046	9.9	43	77
40	2867	9.8	46	55	40	6948	9.8	45	82
50	2768	9.9	48	61	50	6848	10.0	46	88
25 09 00	2670	9.8	49	66	25 19 00	6749	9.8	48	93
10	2572	9.8	51	72	10	6651	9.8	50	2.05299
20	2473	9.9	52	77	20	6551	10.0	51	2.05304
30	2376	9.7	54	83	30	6453	9.8	53	10
40	2277	9.9	56	88	40	6353	10.0	55	15
50	2179	9.8	57	94	50	6254	9.9	56	21
25 10 00	2080	9.9	59	99	25 20 00	6155	9.9	58	26

Table for transformation of coordinates—Continued.

Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
°	′	″					°	′	″				
25	20	00	1.9626155	9.9	2.0041158	2.05326	25	30	00	1.9620184	9.9	2.0041258	2.05651
		10	6056	9.9	60	31			10	1.9620085	10.1	60	57
		20	5956	10.0	61	37			20	1.9619985	10.0	61	62
		30	5858	9.8	63	42			30	9885	10.0	63	68
		40	5758	10.0	65	47			40	9785	10.0	65	73
		50	5659	9.9	66	53			50	9685	10.0	66	79
25	21	00	5559	10.0	68	58	25	31	00	9585	10.0	68	84
		10	5461	9.8	70	64			10	9485	10.0	70	89
		20	5361	10.0	71	69			20	9385	10.0	71	2.05695
		30	5262	9.9	73	75			30	9285	10.0	73	2.05700
		40	5163	9.9	75	80			40	9186	9.9	75	05
		50	5063	10.0	76	86			50	9086	10.0	76	11
25	22	00	4965	9.8	78	91	25	32	00	8985	10.1	78	16
		10	4866	9.9	80	2.05396			10	8886	9.9	80	21
		20	4766	10.0	81	2.05402			20	8785	10.1	81	27
		30	4667	9.9	83	07			30	8686	9.9	83	32
		40	4567	10.0	85	12			40	8585	10.1	85	37
		50	4468	9.9	86	18			50	8485	10.0	86	43
25	23	00	4368	10.0	88	23	25	33	00	8385	10.0	88	48
		10	4270	9.8	90	28			10	8285	10.0	90	54
		20	4170	10.0	91	34			20	8184	10.1	91	59
		30	4071	9.9	93	40			30	8085	9.9	93	65
		40	3971	10.0	95	46			40	7985	10.0	95	71
		50	3872	9.9	96	51			50	7884	10.1	96	77
25	24	00	3772	10.0	2.0041198	57	25	34	00	7785	9.9	2.0041298	82
		10	3673	9.9	2.0041200	62			10	7685	10.0	2.0041300	87
		20	3573	10.0	01	67			20	7584	10.1	01	93
		30	3474	9.9	03	73			30	7484	10.0	03	2.05798
		40	3375	9.9	05	78			40	7384	10.0	05	2.05803
		50	3275	10.0	06	83			50	7284	10.0	06	09
25	25	00	3176	9.9	08	89	25	35	00	7183	10.1	08	14
		10	3077	9.9	10	2.05494			10	7083	10.0	10	19
		20	2977	10.0	11	2.05500			20	6982	10.1	11	25
		30	2877	10.0	13	05			30	6883	9.9	13	30
		40	2777	10.0	15	11			40	6782	10.1	15	35
		50	2678	9.9	16	16			50	6682	10.0	16	41
25	26	00	2578	10.0	18	22	25	36	00	6581	10.1	18	46
		10	2479	9.9	20	27			10	6481	10.0	20	52
		20	2379	10.0	22	32			20	6380	10.1	21	57
		30	2280	9.9	23	38			30	6280	10.0	23	63
		40	2180	10.0	25	43			40	6179	10.1	25	68
		50	2080	10.0	26	48			50	6079	10.0	26	74
25	27	00	1980	10.0	28	54	25	37	00	5978	10.1	28	79
		10	1881	9.9	30	59			10	5878	10.0	30	84
		20	1781	10.0	31	65			20	5778	10.0	31	90
		30	1681	10.0	33	70			30	5678	10.0	33	2.05895
		40	1582	9.9	35	75			40	5578	10.0	35	2.05900
		50	1482	10.0	36	81			50	5477	10.1	36	06
25	28	00	1383	9.9	38	86	25	38	00	5376	10.1	38	11
		10	1283	10.0	40	92			10	5276	10.0	40	16
		20	1183	10.0	41	2.05597			20	5175	10.1	41	22
		30	1084	9.9	43	2.05603			30	5075	10.0	43	27
		40	0984	10.0	45	08			40	4974	10.1	45	32
		50	0884	10.0	46	14			50	4874	10.0	46	38
25	29	00	0784	10.0	48	19	25	39	00	4773	10.1	48	43
		10	0684	10.0	50	24			10	4673	10.0	50	48
		20	0584	10.0	51	30			20	4572	10.1	51	54
		30	0485	9.9	53	35			30	4472	10.0	53	59
		40	0384	10.1	55	40			40	4371	10.1	55	64
		50	0285	9.9	56	46			50	4270	10.1	56	70
25	30	00	0184	9.9	58	51	25	40	00	4169	10.1	58	75

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
25 40 00	1.9614169	10.1	2.0041358	2.05975	25 50 00	1.9608110	10.2	2.0041459	2.06298
10	4069	10.0	60	81	10	8009	10.1	61	2.06303
20	3968	10.1	61	86	20	7907	10.2	62	09
30	3868	10.0	63	92	30	7806	10.1	64	14
40	3767	10.1	65	2.05997	40	7704	10.2	66	19
50	3666	10.1	66	2.06003	50	7603	10.1	67	25
25 41 00	3566	10.0	68	08	25 51 00	7501	10.2	69	30
10	3466	10.0	70	13	10	7400	10.1	71	35
20	3364	10.2	71	19	20	7298	10.2	72	41
30	3264	10.0	73	24	30	7197	10.1	74	46
40	3163	10.1	75	29	40	7096	10.1	76	51
50	3062	10.1	76	35	50	6994	10.2	77	57
25 42 00	2961	10.1	78	40	25 52 00	6893	10.1	79	62
10	2861	10.0	80	45	10	6791	10.2	81	67
20	2759	10.2	81	51	20	6689	10.2	82	73
30	2659	10.0	83	56	30	6588	10.1	84	78
40	2559	10.0	85	61	40	6486	10.2	86	83
50	2457	10.2	86	67	50	6385	10.1	87	89
25 43 00	2357	10.0	88	72	25 53 00	6283	10.2	89	94
10	2257	10.0	90	77	10	6182	10.1	91	2.06399
20	2155	10.2	91	83	20	6079	10.3	92	2.06405
30	2055	10.0	93	89	30	5978	10.1	94	11
40	1953	10.2	95	2.06094	40	5876	10.2	96	16
50	1853	10.0	96	2.06100	50	5775	10.1	97	22
25 44 00	1751	10.2	2.0041398	05	25 54 00	5673	10.2	2.0041499	27
10	1651	10.0	2.0041400	10	10	5571	10.2	2.0041501	32
20	1549	10.2	01	16	20	5469	10.2	02	38
30	1449	10.0	03	21	30	5368	10.1	04	43
40	1347	10.2	05	26	40	5267	10.1	06	48
50	1247	10.0	06	32	50	5164	10.3	07	54
25 45 00	1145	10.2	08	37	25 55 00	5063	10.1	09	59
10	1045	10.0	10	42	10	4962	10.1	11	64
20	0943	10.2	11	48	20	4859	10.3	12	70
30	0842	10.1	13	53	30	4758	10.1	14	75
40	0742	10.0	15	58	40	4656	10.2	16	80
50	0640	10.2	16	64	50	4554	10.2	17	86
25 46 00	0540	10.0	18	69	25 56 00	4452	10.2	19	91
10	0439	10.1	20	75	10	4350	10.2	21	2.06496
20	0337	10.2	21	80	20	4248	10.2	22	2.06502
30	0237	10.0	23	86	30	4147	10.1	24	07
40	0135	10.2	25	91	40	4044	10.3	26	13
50	1.9610034	10.1	26	2.06197	50	3943	10.1	27	18
25 47 00	1.9609933	10.1	28	2.06202	25 57 00	3840	10.3	29	23
10	9832	10.1	30	07	10	3739	10.1	31	28
20	9730	10.2	31	13	20	3636	10.3	32	34
30	9629	10.1	33	18	30	3535	10.1	34	39
40	9528	10.1	35	23	40	3433	10.2	36	44
50	9427	10.1	36	29	50	3331	10.2	37	50
25 48 00	9325	10.2	38	34	25 58 00	3229	10.2	39	55
10	9224	10.1	40	39	10	3128	10.1	41	60
20	9122	10.2	42	45	20	3025	10.3	42	66
30	9022	10.0	43	50	30	2924	10.1	44	71
40	8921	10.1	45	55	40	2821	10.3	46	76
50	8819	10.2	47	61	50	2719	10.2	47	82
25 49 00	8718	10.1	49	66	25 59 00	2617	10.2	49	87
10	8617	10.1	51	71	10	2515	10.2	51	92
20	8515	10.2	52	77	20	2413	10.2	52	2.06598
30	8414	10.1	54	82	30	2311	10.2	54	2.06603
40	8313	10.1	56	87	40	2209	10.2	56	08
50	8212	10.1	57	93	50	2107	10.2	57	14
25 50 00	8110	10.2	59	98	26 00 00	2005	10.2	59	19

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
26 00 00	1.9602005	10.2	2.0041559	2.06619	26 10 00	1.9595864	10.3	2.0041661	2.06938
10	1903	10.2	61	24	10	5751	10.3	63	43
20	1800	10.3	63	30	20	5648	10.3	64	49
30	1699	10.1	64	35	30	5545	10.3	66	54
40	1596	10.3	66	40	40	5443	10.2	68	59
50	1494	10.2	68	46	50	5339	10.4	69	65
26 01 00	1391	10.3	70	51	26 11 00	5237	10.2	71	70
10	1290	10.1	72	56	10	5134	10.3	73	75
20	1187	10.3	73	62	20	5030	10.4	74	81
30	1085	10.2	75	67	30	4928	10.2	76	86
40	0982	10.3	77	72	40	4824	10.4	78	91
50	0880	10.2	78	78	50	4722	10.2	79	2.06997
26 02 00	0778	10.2	80	83	26 12 00	4618	10.4	81	2.07002
10	0676	10.2	82	88	10	4516	10.2	83	07
20	0573	10.3	83	94	20	4412	10.4	84	13
30	0471	10.2	85	2.06699	30	4309	10.3	86	18
40	0369	10.2	87	2.06704	40	4207	10.2	88	23
50	0266	10.3	88	10	50	4103	10.4	89	29
26 03 00	0164	10.2	90	15	26 13 00	4000	10.3	91	34
10	1.9600062	10.2	92	21	10	3898	10.2	93	40
20	1.9599959	10.3	93	26	20	3794	10.4	95	45
30	9858	10.1	95	31	30	3691	10.3	96	50
40	9755	10.3	97	37	40	3588	10.3	2.0041698	56
50	9653	10.2	2.0041598	42	50	3485	10.3	2.0041700	61
26 04 00	9550	10.3	2.0041600	47	26 14 00	3381	10.4	02	66
10	9448	10.2	02	52	10	3278	10.3	04	71
20	9345	10.3	03	58	20	3174	10.4	05	77
30	9243	10.2	05	63	30	3072	10.2	07	82
40	9141	10.2	07	68	40	2969	10.3	09	87
50	9037	10.4	08	74	50	2865	10.4	10	93
26 05 00	8935	10.2	10	79	26 15 00	2762	10.3	12	2.07098
10	8833	10.2	12	84	10	2659	10.3	14	2.07103
20	8730	10.3	13	90	20	2556	10.3	15	09
30	8628	10.2	15	2.06795	30	2453	10.3	17	14
40	8525	10.3	17	2.06800	40	2349	10.4	19	19
50	8423	10.2	18	06	50	2246	10.3	20	25
26 06 00	8320	10.3	20	11	26 16 00	2142	10.4	22	30
10	8218	10.2	22	16	10	2039	10.3	24	35
20	8114	10.4	23	22	20	1935	10.4	25	40
30	8012	10.2	25	27	30	1832	10.3	27	45
40	7909	10.3	27	32	40	1728	10.4	29	51
50	7807	10.2	28	38	50	1625	10.3	30	56
26 07 00	7704	10.3	30	43	26 17 00	1521	10.4	32	61
10	7601	10.3	32	48	10	1418	10.3	34	66
20	7498	10.3	34	54	20	1314	10.4	35	72
30	7396	10.2	35	59	30	1211	10.3	37	77
40	7294	10.2	37	64	40	1108	10.3	39	82
50	7190	10.4	39	70	50	1004	10.4	40	88
26 08 00	7088	10.2	41	75	26 18 00	0901	10.3	42	93
10	6986	10.2	43	80	10	0798	10.3	44	2.07198
20	6882	10.4	44	86	20	0694	10.4	46	2.07204
30	6780	10.2	46	91	30	0591	10.3	47	09
40	6677	10.3	48	2.06896	40	0487	10.4	49	14
50	6574	10.3	49	2.06902	50	0384	10.3	51	20
26 09 00	6471	10.3	51	07	26 19 00	0280	10.4	53	25
10	6369	10.2	53	12	10	0176	10.4	55	30
20	6265	10.4	54	17	20	1.9590072	10.4	56	36
30	6163	10.2	56	22	30	1.9589969	10.3	58	41
40	6059	10.4	58	28	40	9865	10.4	60	46
50	5957	10.2	59	33	50	9762	10.3	61	52
26 10 00	5864	10.3	61	38	26 20 00	9658	10.4	63	57

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
26 20 00	1.9589658	10.4	2.0041763	2.07257	26 30 00	1.9583417	10.4	2.0041865	2.07573
10	9554	10.4	65	62	10	3313	10.4	67	78
20	9450	10.4	66	67	20	3208	10.5	68	84
30	9347	10.3	68	72	30	3104	10.4	70	89
40	9244	10.3	70	78	40	2999	10.5	72	2.07594
50	9139	10.5	71	83	50	2895	10.4	73	2.07600
26 21 00	9036	10.3	73	88	26 31 00	2790	10.5	75	05
10	8933	10.3	75	93	10	2686	10.4	77	10
20	8828	10.5	76	2.07299	20	2581	10.5	79	15
30	8725	10.3	78	2.07304	30	2477	10.4	81	21
40	8621	10.4	80	09	40	2371	10.6	82	26
50	8517	10.4	81	15	50	2267	10.4	84	31
26 22 00	8413	10.4	83	20	26 32 00	2162	10.5	86	36
10	8310	10.3	85	25	10	2058	10.4	88	41
20	8205	10.5	87	30	20	1953	10.5	89	47
30	8102	10.3	88	35	30	1849	10.4	91	52
40	7999	10.3	90	41	40	1745	10.4	93	58
50	7894	10.5	92	47	50	1639	10.6	94	64
26 23 00	7791	10.3	94	52	26 33 00	1535	10.4	96	69
10	7687	10.4	96	57	10	1431	10.4	98	74
20	7583	10.4	97	63	20	1326	10.5	2.0041899	79
30	7479	10.4	2.0041799	68	30	1221	10.5	2.0041901	85
40	7375	10.4	2.0041801	73	40	1116	10.5	03	90
50	7271	10.4	02	79	50	1012	10.4	04	2.07695
26 24 00	7167	10.4	04	84	26 34 00	0907	10.5	06	2.07700
10	7063	10.4	06	89	10	0802	10.5	08	05
20	6959	10.4	07	2.07395	20	0697	10.5	10	11
30	6855	10.4	09	2.07400	30	0593	10.4	12	16
40	6752	10.3	11	05	40	0488	10.5	13	21
50	6647	10.5	12	11	50	0383	10.5	15	27
26 25 00	6543	10.4	14	16	26 35 00	0279	10.4	17	32
10	6440	10.3	16	21	10	0174	10.5	19	37
20	6335	10.5	17	26	20	1.9580069	10.5	20	42
30	6232	10.3	19	31	30	1.9579965	10.4	22	48
40	6127	10.5	21	37	40	9859	10.6	24	53
50	6023	10.4	22	42	50	9755	10.4	25	58
26 26 00	5919	10.4	24	47	26 36 00	9649	10.6	27	63
10	5815	10.4	26	52	10	9545	10.4	29	68
20	5710	10.5	27	58	20	9439	10.6	30	73
30	5607	10.3	29	63	30	9335	10.4	32	79
40	5502	10.5	31	68	40	9231	10.4	34	84
50	5398	10.4	32	74	50	9125	10.6	35	89
26 27 00	5293	10.5	34	79	26 37 00	9021	10.4	37	94
10	5190	10.3	36	84	10	8916	10.5	39	2.07799
20	5085	10.5	38	90	20	8810	10.6	40	2.07805
30	4981	10.4	39	2.07495	30	8706	10.4	42	10
40	4877	10.4	41	2.07500	40	8600	10.6	44	15
50	4772	10.5	43	05	50	8496	10.4	45	21
26 28 00	4669	10.3	45	10	26 38 00	8390	10.6	47	26
10	4565	10.4	47	15	10	8286	10.4	49	31
20	4460	10.5	48	21	20	8180	10.6	51	36
30	4356	10.4	50	26	30	8075	10.5	53	42
40	4251	10.5	52	31	40	7970	10.5	54	47
50	4147	10.4	53	37	50	7865	10.5	56	52
26 29 00	4042	10.5	55	42	26 39 00	7759	10.6	58	57
10	3939	10.3	57	47	10	7655	10.4	60	62
20	3834	10.5	58	52	20	7549	10.6	61	68
30	3730	10.4	60	57	30	7444	10.5	63	73
40	3626	10.4	62	63	40	7340	10.4	65	78
50	3521	10.5	63	68	50	7234	10.6	66	84
26 30 00	3417	10.4	65	73	26 40 00	7129	10.5	68	89

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
26 40 00	1.9577129	10.5	2.0041968	2.07889	26 50 00	1.9570796	10.6	2.0042071	2.08203
10	7024	10.5	70	94	10	0690	10.6	73	08
20	6919	10.5	71	2.07899	20	0584	10.6	75	13
30	6814	10.5	73	2.07905	30	0478	10.6	77	19
40	6708	10.6	75	10	40	0372	10.6	78	24
50	6603	10.5	76	15	50	0266	10.6	80	29
26 41 00	6498	10.5	78	20	26 51 00	0160	10.6	82	34
10	6393	10.5	80	25	10	1.9570055	10.5	84	39
20	6287	10.6	82	30	20	1.9569948	10.7	85	44
30	6182	10.5	84	36	30	9842	10.6	87	50
40	6077	10.5	85	41	40	9736	10.6	89	55
50	5971	10.6	87	46	50	9630	10.6	90	60
26 42 00	5866	10.5	89	51	26 52 00	9524	10.6	92	65
10	5761	10.5	91	56	10	9418	10.6	94	71
20	5656	10.5	92	62	20	9311	10.7	95	76
30	5551	10.5	94	68	30	9206	10.5	97	82
40	5445	10.6	96	73	40	9100	10.6	2.0042099	87
50	5340	10.5	97	79	50	8993	10.7	2.0042100	92
26 43 00	5234	10.6	2.0041999	84	26 53 00	8887	10.6	02	2.08297
10	5129	10.5	2.0042001	89	10	8782	10.5	04	2.08302
20	5023	10.6	02	2.07994	20	8675	10.7	06	07
30	4918	10.5	04	2.08000	30	8569	10.6	08	13
40	4813	10.5	06	05	40	8462	10.7	09	18
50	4707	10.6	07	10	50	8356	10.6	11	23
26 44 00	4602	10.5	09	15	26 54 00	8250	10.6	13	28
10	4497	10.5	11	20	10	8144	10.6	15	33
20	4391	10.6	13	25	20	8037	10.7	16	38
30	4286	10.5	15	31	30	7931	10.6	18	44
40	4179	10.7	16	36	40	7824	10.7	20	49
50	4074	10.5	18	41	50	7718	10.6	21	54
26 45 00	3968	10.6	20	46	26 55 00	7612	10.6	23	59
10	3863	10.5	22	51	10	7506	10.6	25	64
20	3757	10.6	23	57	20	7399	10.7	26	70
30	3652	10.5	25	62	30	7293	10.6	28	75
40	3546	10.6	27	67	40	7187	10.6	30	80
50	3440	10.6	28	73	50	7080	10.7	31	86
26 46 00	3334	10.6	30	78	26 56 00	6974	10.6	33	91
10	3229	10.5	32	83	10	6868	10.6	35	2.08396
20	3123	10.6	33	88	20	6761	10.7	37	2.08401
30	3018	10.5	35	94	30	6655	10.6	39	07
40	2912	10.6	37	2.08099	40	6548	10.7	40	12
50	2806	10.6	38	2.08104	50	6442	10.6	42	17
26 47 00	2701	10.5	40	09	26 57 00	6335	10.7	44	22
10	2595	10.6	42	14	10	6229	10.6	46	27
20	2489	10.6	44	19	20	6122	10.7	47	32
30	2384	10.5	46	25	30	6016	10.6	49	38
40	2278	10.6	47	30	40	5910	10.6	51	43
50	2172	10.6	49	35	50	5802	10.8	52	48
26 48 00	2066	10.6	51	40	26 58 00	5696	10.6	54	53
10	1960	10.6	53	45	10	5590	10.6	56	58
20	1854	10.6	54	50	20	5483	10.7	58	63
30	1749	10.5	56	56	30	5377	10.6	60	69
40	1643	10.6	58	61	40	5270	10.7	61	74
50	1537	10.6	59	66	50	5163	10.7	63	79
26 49 00	1431	10.6	61	71	26 59 00	5056	10.7	65	84
10	1326	10.5	63	76	10	4950	10.6	67	89
20	1220	10.6	64	82	20	4843	10.7	68	2.08494
30	1114	10.6	66	87	30	4737	10.6	70	2.08500
40	1008	10.6	68	92	40	4630	10.7	72	05
50	0902	10.6	69	2.08198	50	4523	10.7	73	10
26 50 00	0796	10.6	71	2.08203	27 00 00	4417	10.6	75	15

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
27 00 00	1.9564417	10.6	2.0042175	2.08515	27 10 00	1.9557991	10.8	2.0042279	2.08826
10	4311	10.6	77	20	10	7884	10.7	81	31
20	4203	10.8	78	25	20	7776	10.8	82	36
30	4097	10.6	80	31	30	7669	10.7	84	42
40	3990	10.7	82	36	40	7561	10.8	86	47
50	3883	10.7	83	41	50	7453	10.8	87	52
27 01 00	3776	10.7	85	46	27 11 00	7346	10.7	89	57
10	3670	10.6	87	51	10	7239	10.7	91	62
20	3562	10.8	89	56	20	7131	10.8	93	68
30	3456	10.6	91	62	30	7024	10.7	95	74
40	3349	10.7	92	68	40	6916	10.8	96	79
50	3242	10.7	94	73	50	6808	10.8	2.0042298	84
27 02 00	3136	10.6	96	78	27 12 00	6700	10.8	2.0042300	89
10	3029	10.7	98	83	10	6593	10.7	02	94
20	2922	10.7	2.0042199	88	20	6485	10.8	03	2.08899
30	2815	10.7	2.0042201	94	30	6378	10.7	05	2.08905
40	2708	10.7	03	2.08599	40	6270	10.8	07	10
50	2601	10.7	04	2.08604	50	6162	10.8	08	15
27 03 00	2494	10.7	06	09	27 13 00	6055	10.7	10	20
10	2387	10.7	08	14	10	5947	10.8	12	25
20	2280	10.7	10	19	20	5839	10.8	14	30
30	2173	10.7	12	25	30	5732	10.7	16	36
40	2067	10.6	13	30	40	5623	10.9	17	41
50	1959	10.8	15	35	50	5516	10.7	19	46
27 04 00	1852	10.7	17	40	27 14 00	5408	10.8	21	51
10	1746	10.6	19	45	10	5300	10.8	23	56
20	1638	10.8	20	50	20	5192	10.8	24	61
30	1532	10.6	22	56	30	5085	10.7	26	67
40	1424	10.8	24	61	40	4977	10.8	28	72
50	1317	10.7	25	66	50	4869	10.8	29	77
27 05 00	1210	10.7	27	71	27 15 00	4761	10.8	31	82
10	1103	10.7	29	76	10	4654	10.7	33	87
20	0995	10.8	30	81	20	4545	10.9	35	92
30	0889	10.6	32	87	30	4438	10.7	37	2.08998
40	0782	10.7	34	92	40	4329	10.9	38	2.09003
50	0674	10.8	35	2.08697	50	4222	10.7	40	08
27 06 00	0567	10.7	37	2.08702	27 16 00	4113	10.9	42	13
10	0461	10.6	39	07	10	4006	10.7	44	18
20	0353	10.8	41	12	20	3897	10.9	45	23
30	0246	10.7	43	18	30	3790	10.7	47	29
40	0138	10.8	44	23	40	3682	10.8	49	34
50	1.9560031	10.7	46	28	50	3574	10.8	50	39
27 07 00	1.9559924	10.7	48	33	27 17 00	3466	10.8	52	44
10	9817	10.7	50	38	10	3359	10.7	54	49
20	9709	10.8	51	43	20	3250	10.9	56	54
30	9602	10.7	53	49	30	3142	10.8	58	60
40	9495	10.7	55	54	40	3034	10.8	59	65
50	9387	10.8	56	59	50	2926	10.8	61	70
27 08 00	9281	10.6	58	64	27 18 00	2817	10.9	63	75
10	9174	10.7	60	69	10	2710	10.7	65	80
20	9066	10.8	62	74	20	2601	10.9	66	85
30	8959	10.7	64	80	30	2493	10.8	68	90
40	8851	10.8	65	85	40	2386	10.7	70	2.09095
50	8744	10.7	67	90	50	2277	10.9	71	2.09100
27 09 00	8636	10.8	69	2.08795	27 19 00	2169	10.8	73	05
10	8529	10.7	71	2.08800	10	2061	10.8	75	10
20	8421	10.8	72	05	20	1953	10.8	77	15
30	8314	10.7	74	11	30	1845	10.8	79	21
40	8206	10.8	76	16	40	1736	10.9	80	26
50	8099	10.7	77	21	50	1628	10.8	82	31
27 10 00	7991	10.8	79	26	27 20 00	1519	10.9	84	36

Table for transformation of coordinates—Continued.

Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
°	′	″					°	′	″				
27	20	00	1.9551519	10.9	2.0042384	2.09136	27	30	00	1.9545001	11.0	2.0042489	2.09445
		10	1411	10.8	86	41			10	4893	10.8	91	50
		20	1303	10.8	87	46			20	4783	11.0	92	55
		30	1195	10.8	89	52			30	4674	10.9	94	61
		40	1087	10.8	91	57			40	4566	10.8	96	67
		50	0978	10.9	92	62			50	4456	11.0	97	72
27	21	00	0870	10.8	94	68	27	31	00	4347	10.9	2.0042499	77
		10	0762	10.8	96	73			10	4239	10.8	2.0042501	82
		20	0653	10.9	2.0042398	78			20	4129	11.0	03	87
		30	0545	10.8	2.0042400	84			30	4020	10.9	05	92
		40	0436	10.9	01	89			40	3911	10.9	06	2.09497
		50	0328	10.8	03	94			50	3802	10.9	08	2.09502
27	22	00	0219	10.8	05	2.09199	27	32	00	3692	11.0	10	07
		10	0111	10.8	07	2.09204			10	3583	10.9	12	12
		20	1.9550002	10.9	08	09			20	3473	11.0	13	17
		30	1.9549894	10.8	10	15			30	3365	10.8	15	23
		40	9786	10.8	12	20			40	3256	10.9	17	28
		50	9677	10.9	13	25			50	3146	11.0	18	33
27	23	00	9569	10.8	15	30	27	33	00	3037	10.9	20	38
		10	9461	10.8	17	35			10	2928	10.9	22	43
		20	9352	10.9	19	40			20	2819	10.9	24	48
		30	9244	10.8	21	45			30	2710	10.9	26	54
		40	9135	10.9	22	50			40	2600	11.0	27	59
		50	9027	10.8	24	55			50	2491	10.9	29	64
27	24	00	8918	10.9	26	60	27	34	00	2381	11.0	31	69
		10	8810	10.8	28	65			10	2272	10.9	33	74
		20	8700	11.0	29	70			20	2162	11.0	34	79
		30	8592	10.8	31	76			30	2053	10.9	36	84
		40	8484	10.8	33	81			40	1944	10.9	38	89
		50	8375	10.9	34	86			50	1834	11.0	39	94
27	25	00	8267	10.8	36	91	27	35	00	1725	10.9	41	2.09599
		10	8158	10.9	38	2.09296			10	1616	10.9	43	2.09604
		20	8049	10.9	40	2.09301			20	1506	11.0	45	09
		30	7941	10.8	42	07			30	1397	10.9	47	15
		40	7832	10.9	43	12			40	1288	10.9	48	20
		50	7723	10.9	45	17			50	1178	11.0	50	25
27	26	00	7614	10.9	47	22	27	36	00	1069	10.9	52	30
		10	7506	10.8	49	27			10	0960	10.9	54	35
		20	7396	11.0	50	32			20	0850	11.0	55	40
		30	7288	10.8	52	38			30	0741	10.9	57	46
		40	7180	10.8	54	43			40	0631	11.0	59	51
		50	7070	11.0	55	48			50	0521	11.0	60	56
27	27	00	6962	10.8	57	53	27	37	00	0411	11.0	62	61
		10	6854	10.8	59	58			10	0302	10.9	64	66
		20	6744	11.0	61	63			20	0192	11.0	66	71
		30	6636	10.8	63	69			30	1.9540083	10.9	68	76
		40	6526	11.0	64	74			40	1.9539974	10.9	69	81
		50	6418	10.8	66	79			50	9863	11.1	71	86
27	28	00	6309	10.9	68	84	27	38	00	9754	10.9	73	91
		10	6200	10.9	70	89			10	9645	10.9	75	2.09696
		20	6091	10.9	71	94			20	9535	11.0	77	2.09701
		30	5982	10.9	73	2.09399			30	9425	11.0	79	07
		40	5874	10.8	75	2.09404			40	9315	11.0	80	12
		50	5764	11.0	76	09			50	9206	10.9	82	17
27	29	00	5656	10.8	78	14	27	39	00	9096	11.0	84	22
		10	5547	10.9	80	19			10	8986	11.0	86	27
		20	5438	10.9	82	24			20	8876	11.0	87	32
		30	5329	10.9	84	30			30	8767	10.9	89	37
		40	5219	11.0	85	35			40	8657	11.0	91	42
		50	5111	10.8	87	40			50	8547	11.0	92	48
27	30	00	5001	11.0	89	45	27	40	00	8437	11.0	94	53

Table for transformation of coordinates—Continued.

Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*	Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*
° ′ ″					° ′ ″				
27 40 00	1.9538437	11.0	2.0042594	2.09753	27 50 00	1.9531826	11.0	2.0042700	2.10060
10	8328	10.9	96	58	10	1716	11.0	02	65
20	8218	11.0	2.0042598	63	20	1605	11.1	04	70
30	8108	11.0	2.0042600	69	30	1494	11.1	06	75
40	7998	11.0	01	74	40	1383	11.1	07	80
50	7888	11.0	03	79	50	1273	11.0	09	85
27 41 00	7778	11.0	05	84	27 51 00	1162	11.1	11	90
10	7668	11.0	07	89	10	1051	11.1	13	2.10095
20	7558	11.0	08	94	20	0940	11.1	14	2.10100
30	7448	11.0	10	2.09799	30	0830	11.0	16	05
40	7339	10.9	12	2.09804	40	0720	11.0	18	10
50	7228	11.1	13	09	50	0608	11.2	19	15
27 42 00	7119	10.9	15	14	27 52 00	0498	11.0	21	20
10	7009	11.0	17	19	10	0388	11.0	23	25
20	6899	11.0	19	24	20	0276	11.2	25	30
30	6789	11.0	21	30	30	0166	11.0	27	36
40	6679	11.0	22	35	40	1.9530055	11.1	28	41
50	6569	11.0	24	40	50	1.9529944	11.1	30	46
27 43 00	6458	11.1	26	45	27 53 00	9833	11.1	32	51
10	6349	10.9	28	50	10	9722	11.1	34	56
20	6238	11.1	29	55	20	9611	11.1	35	61
30	6129	10.9	31	61	30	9500	11.1	37	66
40	6019	11.0	33	66	40	9390	11.0	39	71
50	5908	11.1	34	71	50	9279	11.1	40	76
27 44 00	5798	11.0	36	76	27 54 00	9168	11.1	42	81
10	5689	10.9	38	81	10	9058	11.0	44	86
20	5578	11.1	40	86	20	8946	11.2	46	91
30	5468	11.0	42	91	30	8836	11.0	48	2.10197
40	5358	11.0	43	2.09896	40	8725	11.1	49	2.10202
50	5248	11.0	45	2.09901	50	8614	11.1	51	07
27 45 00	5137	11.1	47	06	27 55 00	8503	11.1	53	12
10	5027	11.0	49	11	10	8392	11.1	55	17
20	4916	11.1	51	16	20	8281	11.1	57	22
30	4807	10.9	53	22	30	8170	11.1	59	27
40	4697	11.0	54	27	40	8059	11.1	60	32
50	4586	11.1	56	32	50	7948	11.1	62	37
27 46 00	4476	11.0	58	37	27 56 00	7836	11.2	64	42
10	4366	11.0	60	42	10	7726	11.0	66	47
20	4255	11.1	61	47	20	7614	11.2	67	52
30	4146	10.9	63	52	30	7503	11.1	69	57
40	4035	11.1	65	57	40	7393	11.0	71	62
50	3925	11.0	66	62	50	7281	11.2	72	67
27 47 00	3814	11.1	68	67	27 57 00	7170	11.1	74	72
10	3704	11.0	70	72	10	7060	11.0	76	77
20	3593	11.1	72	77	20	6948	11.2	78	82
30	3483	11.0	74	83	30	6837	11.1	80	88
40	3373	11.0	75	88	40	6725	11.2	81	93
50	3262	11.1	77	93	50	6615	11.0	83	2.10298
27 48 00	3152	11.0	79	2.09998	27 58 00	6503	11.2	85	2.10303
10	3042	11.0	81	2.10003	10	6392	11.1	87	08
20	2931	11.1	82	08	20	6280	11.2	89	13
30	2821	11.0	84	13	30	6169	11.1	91	18
40	2710	11.1	86	18	40	6058	11.1	92	24
50	2600	11.0	87	23	50	5947	11.1	94	29
27 49 00	2489	11.1	89	28	27 59 00	5836	11.1	96	34
10	2379	11.0	91	33	10	5725	11.1	98	39
20	2267	11.2	93	39	20	5613	11.2	2.0042799	44
30	2157	11.0	95	45	30	5502	11.1	2.0042801	49
40	2047	11.0	96	50	40	5390	11.2	03	54
50	1936	11.1	2.0042698	55	50	5279	11.1	04	59
27 50 00	1826	11.0	2.0042700	60	28 00 00	5167	11.2	06	64

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
28 00 00	1.9525167	11.2	2.0042806	2.10364	28 10 00	1.9518463	11.1	2.0042913	2.10668
10	5056	11.1	08	69	10	8351	11.2	15	73
20	4944	11.2	10	74	20	8238	11.3	17	78
30	4833	11.1	12	80	30	8126	11.2	19	83
40	4722	11.1	13	85	40	8013	11.3	20	88
50	4610	11.2	15	90	50	7902	11.1	22	93
28 01 00	4499	11.1	17	2.10395	28 11 00	7789	11.3	24	2.10698
10	4388	11.1	19	2.10400	10	7677	11.2	26	2.10703
20	4276	11.2	21	05	20	7564	11.3	27	08
30	4165	11.1	23	10	30	7452	11.2	29	14
40	4053	11.2	24	15	40	7340	11.2	31	19
50	3942	11.1	26	20	50	7228	11.2	32	24
28 02 00	3830	11.2	28	25	28 12 00	7116	11.2	34	29
10	3719	11.1	30	30	10	7004	11.2	36	34
20	3607	11.2	31	35	20	6891	11.3	38	39
30	3496	11.1	33	40	30	6779	11.2	40	44
40	3384	11.2	35	45	40	6666	11.3	41	49
50	3272	11.2	36	50	50	6554	11.2	43	54
28 03 00	3161	11.1	38	55	28 13 0.	6441	11.3	45	59
10	3050	11.1	40	60	10	6329	11.2	47	64
20	2938	11.2	42	65	20	6216	11.3	49	69
30	2826	11.2	44	71	30	6104	11.2	51	74
40	2714	11.2	45	76	40	5992	11.2	52	79
50	2603	11.1	47	81	50	5879	11.3	54	84
28 04 00	2491	11.2	49	86	28 14 00	5767	11.2	56	89
10	2379	11.2	51	91	10	5655	11.2	58	94
20	2267	11.2	53	2.10496	20	5542	11.3	60	2.10799
30	2156	11.1	55	2.10501	30	5430	11.2	62	2.10804
40	2044	11.2	56	06	40	5318	11.2	63	09
50	1932	11.2	58	11	50	5205	11.3	65	14
28 05 00	1821	11.1	60	16	28 15 00	5092	11.3	67	19
10	1709	11.2	62	21	10	4980	11.2	69	24
20	1597	11.2	63	26	20	4867	11.3	70	29
30	1486	11.1	65	31	30	4755	11.2	72	34
40	1374	11.2	67	36	40	4642	11.3	74	39
50	1262	11.2	68	41	50	4530	11.2	75	44
28 06 00	1150	11.2	70	46	28 16 00	4416	11.4	77	49
10	1039	11.1	72	51	10	4304	11.2	79	54
20	0927	11.2	74	56	20	4191	11.3	81	59
30	0815	11.2	76	62	30	4079	11.2	83	64
40	0703	11.2	77	67	40	3966	11.3	84	69
50	0591	11.2	79	72	50	3853	11.3	86	74
28 07 00	0479	11.2	81	77	28 17 00	3741	11.2	88	79
10	0367	11.2	83	82	10	3629	11.2	90	84
20	0255	11.2	85	87	20	3515	11.4	92	90
30	0143	11.2	87	92	30	3403	11.2	94	2.10896
40	1 9520032	11.1	88	2.10597	40	3290	11.3	95	2.10901
50	1 9519919	11.3	90	2.10602	50	3177	11.3	97	06
28 08 00	9807	11.2	92	07	28 18 00	3064	11.3	2.0042999	11
10	9696	11.1	94	13	10	2952	11.2	2.0043001	16
20	9583	11.3	95	18	20	2838	11.4	02	21
30	9472	11.1	97	23	30	2726	11.2	04	26
40	9359	11.3	2.0042899	28	40	2613	11.3	06	31
50	9247	11.2	2.0042900	33	50	2500	11.3	07	36
28 09 00	9135	11.2	02	38	28 19 00	2387	11.3	09	41
10	9023	11.2	04	43	10	2275	11.2	11	46
20	8910	11.3	06	48	20	2162	11.3	13	51
30	8799	11.1	08	53	30	2049	11.3	15	56
40	8687	11.2	09	58	40	1937	11.2	16	61
50	8574	11.3	11	63	50	1823	11.4	18	66
28 10 00	8463	11.1	13	68	28 20 00	1711	11.2	20	71

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
28 20 00	1.9511711	11.2	2.0043020	2.10971	28 30 00	1.9504910	11.4	2.0043128	2.11272
10	1598	11.3	22	76	10	4797	11.3	30	77
20	1484	11.4	24	81	20	4682	11.5	31	82
30	1372	11.2	26	86	30	4569	11.3	33	87
40	1258	11.4	27	91	40	4456	11.3	35	92
50	1146	11.2	29	2.10996	50	4341	11.5	36	2.11297
28 21 00	1032	11.4	31	2.11001	28 31 00	4228	11.3	38	2.11302
10	0919	11.3	33	06	10	4114	11.4	40	07
20	0806	11.3	35	11	20	4000	11.4	42	12
30	0693	11.3	37	16	30	3887	11.3	44	17
40	0581	11.2	38	21	40	3773	11.4	45	22
50	0467	11.3	40	26	50	3659	11.4	47	27
28 22 00	0354	11.3	42	31	28 32 00	3545	11.4	49	32
10	0242	11.2	44	36	10	3432	11.3	51	37
20	0128	11.4	45	41	20	3317	11.5	53	42
30	1.9510015	11.3	47	46	30	3204	11.3	55	47
40	1.9509901	11.4	49	51	40	3089	11.5	56	52
50	9789	11.2	50	56	50	2976	11.3	58	57
28 23 00	9675	11.4	52	61	28 33 00	2861	11.5	60	62
10	9562	11.3	54	66	10	2748	11.3	62	67
20	9448	11.4	56	71	20	2633	11.5	64	72
30	9335	11.3	58	76	30	2519	11.4	66	77
40	9223	11.2	59	81	40	2406	11.3	67	82
50	9109	11.4	61	86	50	2291	11.5	69	87
28 24 00	8996	11.3	63	91	28 34 00	2178	11.3	71	92
10	8883	11.3	65	2.11096	10	2064	11.4	73	2.11397
20	8769	11.4	67	2.11101	20	1949	11.5	74	2.11402
30	8656	11.3	69	06	30	1836	11.3	76	07
40	8543	11.3	70	11	40	1721	11.5	78	12
50	8430	11.3	72	16	50	1607	11.4	79	17
28 25 00	8316	11.4	74	21	28 35 00	1492	11.5	81	22
10	8203	11.3	76	26	10	1379	11.3	83	27
20	8089	11.4	78	31	20	1264	11.5	85	32
30	7976	11.3	80	36	30	1150	11.4	87	37
40	7863	11.3	81	41	40	1037	11.3	88	42
50	7749	11.4	83	46	50	0922	11.5	90	47
28 26 00	7636	11.3	85	51	28 36 00	0808	11.4	92	53
10	7523	11.3	87	56	10	0694	11.4	94	58
20	7409	11.4	88	61	20	0579	11.5	96	63
30	7296	11.3	90	66	30	0465	11.4	98	68
40	7183	11.3	92	71	40	0351	11.4	2.0043199	73
50	7069	11.4	93	77	50	0237	11.3	2.0043201	78
28 27 00	6956	11.3	95	82	28 37 00	0122	11.5	03	83
10	6843	11.3	97	87	10	1.9500008	11.4	05	88
20	6728	11.5	2.0043099	92	20	1.9499893	11.5	07	93
30	6615	11.3	2.0043101	2.11197	30	9779	11.4	09	2.11498
40	6501	11.4	02	2.11202	40	9665	11.4	10	2.11503
50	6388	11.3	04	07	50	9550	11.5	12	08
28 28 00	6274	11.4	06	12	28 38 00	9436	11.4	14	13
10	6161	11.3	08	17	10	9322	11.4	16	18
20	6047	11.4	10	22	20	9207	11.5	18	23
30	5933	11.4	12	27	30	9094	11.3	20	28
40	5820	11.3	13	32	40	8980	11.4	21	33
50	5706	11.4	15	37	50	8864	11.6	23	38
28 29 00	5593	11.3	17	42	28 39 00	8750	11.4	25	43
10	5479	11.4	19	47	10	8636	11.4	27	48
20	5365	11.4	21	52	20	8521	11.5	28	53
30	5252	11.3	23	57	30	8407	11.4	30	58
40	5138	11.4	24	62	40	8292	11.5	32	63
50	5024	11.4	26	67	50	8178	11.4	33	68
28 30 00	4910	11.4	28	72	28 40 00	8063	11.5	35	73

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
28 40 00	1.9498063	11.5	2.0043235	2.11573	28 50 00	1.9491168	11.6	2.0043344	2.11872
10	7949	11.4	37	78	10	1053	11.5	46	77
20	7834	11.5	39	83	20	0937	11.6	48	82
30	7720	11.4	41	88	30	0822	11.5	50	87
40	7605	11.5	42	92	40	0707	11.5	51	91
50	7490	11.5	44	2.11597	50	0592	11.5	53	2.11896
28 41 00	7376	11.4	46	2.11602	28 51 00	0477	11.5	55	2.11901
10	7262	11.4	48	07	10	0362	11.5	57	06
20	7147	11.5	50	12	20	0246	11.6	59	11
30	7032	11.5	52	17	30	0131	11.5	61	16
40	6918	11.4	53	22	40	1.9490015	11.6	62	21
50	6803	11.5	55	27	50	1.9489899	11.6	64	26
28 42 00	6689	11.4	57	32	28 52 00	9784	11.5	66	31
10	6574	11.5	59	37	10	9669	11.5	68	36
20	6459	11.5	61	42	20	9553	11.6	69	41
30	6345	11.4	63	47	30	9438	11.5	71	46
40	6229	11.6	64	52	40	9322	11.6	73	51
50	6115	11.4	66	57	50	9207	11.5	74	56
28 43 00	6000	11.5	68	62	28 53 00	9091	11.6	76	61
10	5885	11.5	70	67	10	8976	11.5	78	66
20	5770	11.5	72	72	20	8859	11.7	80	71
30	5656	11.4	74	77	30	8744	11.5	82	76
40	5541	11.5	75	82	40	8629	11.5	83	81
50	5426	11.5	77	87	50	8513	11.6	85	86
28 44 00	5311	11.5	79	92	28 54 00	8398	11.5	87	91
10	5197	11.4	81	2.11697	10	8282	11.6	89	2.11996
20	5082	11.5	83	2.11702	20	8166	11.6	91	2.12001
30	4967	11.5	85	07	30	8051	11.5	93	06
40	4852	11.5	86	12	40	7936	11.5	94	11
50	4737	11.5	88	17	50	7819	11.7	96	16
28 45 00	4622	11.5	90	22	28 55 00	7704	11.5	2.0043398	21
10	4507	11.5	92	27	10	7589	11.5	2.0043400	26
20	4392	11.5	93	33	20	7472	11.7	02	31
30	4277	11.5	95	38	30	7357	11.5	04	36
40	4162	11.5	97	43	40	7241	11.6	05	41
50	4047	11.5	2.0043298	48	50	7125	11.6	07	46
28 46 00	3932	11.5	2.0043300	53	28 56 00	7009	11.6	09	51
10	3818	11.4	02	58	10	6893	11.6	11	56
20	3702	11.6	04	63	20	6777	11.6	13	61
30	3587	11.5	06	68	30	6662	11.5	15	66
40	3473	11.4	07	72	40	6546	11.6	16	71
50	3357	11.6	09	77	50	6430	11.6	18	76
28 47 00	3242	11.5	11	82	28 57 00	6314	11.6	20	81
10	3128	11.4	13	87	10	6199	11.5	22	86
20	3012	11.6	15	92	20	6082	11.7	24	91
30	2897	11.5	17	2.11797	30	5967	11.5	26	2.12096
40	2782	11.5	18	2.11802	40	5850	11.7	27	2.12100
50	2667	11.5	20	07	50	5735	11.5	29	05
28 48 00	2551	11.6	22	12	28 58 00	5618	11.7	31	10
10	2436	11.5	24	17	10	5503	11.5	33	15
20	2321	11.5	26	22	20	5386	11.7	35	20
30	2206	11.5	28	27	30	5270	11.6	37	25
40	2091	11.5	29	32	40	5155	11.5	38	30
50	1975	11.6	31	37	50	5038	11.7	40	35
28 49 00	1860	11.5	33	42	28 59 00	4923	11.5	42	40
10	1746	11.4	35	47	10	4807	11.6	44	45
20	1630	11.6	37	52	20	4690	11.7	46	50
30	1515	11.5	39	57	30	4575	11.5	48	55
40	1399	11.6	40	62	40	4459	11.6	49	60
50	1284	11.5	42	67	50	4342	11.7	51	65
28 50 00	1168	11.6	44	72	29 00 00	4227	11.5	53	70

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
29 00 00	1.9484227	11.5	2.0043453	2.12170	29 10 00	1.9477236	11.6	2.0043562	2.12467
10	4111	11.6	55	75	10	7119	11.7	64	72
20	3994	11.7	57	80	20	7002	11.7	66	77
30	3878	11.6	59	85	30	6885	11.7	68	82
40	3762	11.6	60	89	40	6769	11.6	69	86
50	3646	11.6	62	94	50	6651	11.8	71	91
29 01 00	3529	11.7	64	2.12199	29 11 00	6535	11.6	73	2.12496
10	3413	11.6	66	2.12204	10	6418	11.7	75	2.12501
20	3296	11.7	67	09	20	6300	11 8	77	06
30	3181	11.5	69	14	30	6184	11.6	79	11
40	3065	11.6	71	19	40	6066	11.8	80	16
50	2948	11.7	72	24	50	5949	11.7	82	21
29 02 00	2832	11.6	74	29	29 12 00	5832	11.7	84	26
10	2716	11.6	76	34	10	5715	11.7	86	31
20	2599	11.7	78	39	20	5597	11.8	88	36
30	2483	11.6	80	44	30	5481	11.6	90	41
40	2368	11.5	81	49	40	5364	11.7	91	45
50	2251	11.7	83	54	50	5246	11.8	93	51
29 03 00	2135	11.6	85	59	29 13 00	5129	11.7	95	56
10	2019	11.6	87	64	10	5013	11.6	97	61
20	1902	11.7	89	69	20	4895	11.8	2.0043599	66
30	1786	11.6	91	74	30	4778	11.7	2.0043601	71
40	1669	11.7	92	79	40	4661	11.7	02	76
50	1553	11.6	94	84	50	4544	11.7	04	81
29 04 00	1436	11.7	96	89	29 14 00	4427	11.7	06	86
10	1320	11.6	2.0043498	94	10	4310	11.7	08	91
20	1203	11.7	2.0043500	2.12299	20	4192	11.8	09	2.12596
30	1087	11.6	02	2.12304	30	4075	11.7	11	2.12601
40	0970	11.7	03	09	40	3957	11.8	13	05
50	0853	11.7	05	14	50	3840	11.7	14	10
29 05 00	0737	11.6	07	19	29 15 00	3722	11.8	16	15
10	0621	11.6	09	24	10	3606	11.6	18	20
20	0504	11.7	11	29	20	3488	11.8	20	25
30	0388	11.6	13	34	30	3371	11.7	22	30
40	0272	11.6	14	38	40	3254	11.7	23	35
50	0155	11.7	16	43	50	3136	11.8	25	40
29 06 00	1.9480038	11.7	18	48	29 16 00	3019	11.7	27	45
10	1.9479922	11.6	20	53	10	2902	11.7	29	50
20	9805	11.7	22	58	20	2784	11.8	31	55
30	9689	11.6	24	63	30	2667	11.7	33	60
40	9571	11.8	25	68	40	2550	11.7	34	64
50	9455	11.6	27	73	50	2432	11.8	36	69
29 07 00	9338	11.7	29	78	29 17 00	2315	11.7	38	74
10	9222	11.6	31	83	10	2197	11.8	40	79
20	9104	11.8	33	88	20	2079	11.8	42	84
30	8988	11.6	35	93	30	1962	11.7	44	89
40	8872	11.6	36	2.12397	40	1844	11.8	45	94
50	8754	11.8	38	2.12402	50	1727	11.7	47	2.12699
29 08 00	8638	11.6	40	07	29 18 00	1609	11.8	49	2.12704
10	8522	11.6	42	12	10	1492	11.7	51	09
20	8404	11.8	44	17	20	1374	11.8	53	14
30	8288	11.6	46	22	30	1256	11.8	55	19
40	8171	11.7	47	27	40	1139	11.7	56	23
50	8054	11.7	49	32	50	1021	11.8	58	28
29 09 00	7937	11.7	51	37	29 19 00	0904	11.7	60	33
10	7820	11.7	53	42	10	0786	11.8	62	38
20	7703	11.7	55	47	20	0668	11.8	64	43
30	7586	11.7	57	52	30	0551	11.7	66	48
40	7470	11.6	58	57	40	0434	11.7	67	52
50	7352	11.8	60	62	50	0315	11.9	69	57
29 10 00	7236	11.6	62	67	29 20 00	0198	11.7	71	62

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
29 20 00	1.9470198	11.7	2.0043671	2.12762	29 30 00	1.9463111	11.9	2.0043781	2.13057
10	1.9470081	11.7	73	67	10	2993	11.8	83	62
20	1.9469962	11.9	75	72	20	2873	12.0	85	67
30	9845	11.7	77	77	30	2755	11.8	87	72
40	9727	11.8	78	82	40	2637	11.8	88	77
50	9609	11.8	80	87	50	2518	11.9	90	82
29 21 00	9491	11.8	82	92	29 31 00	2400	11.8	92	88
10	9373	11.8	84	2.12797	10	2282	11.8	94	93
20	9255	11.8	86	2.12802	20	2162	12.0	96	2.13098
30	9138	11.7	88	07	30	2044	11.8	98	2.13103
40	9020	11.8	89	11	40	1926	11.8	2.0043799	07
50	8902	11.8	91	16	50	1807	11.9	2.0043801	12
29 22 00	8784	11.8	93	22	29 32 00	1688	11.9	03	17
10	8667	11.7	95	27	10	1570	11.8	05	22
20	8548	11.9	97	32	20	1451	11.9	07	27
30	8131	11.7	2.0043699	37	30	1332	11.9	09	32
40	8313	11.8	2.0043700	42	40	1213	11.9	10	36
50	8195	11.8	02	47	50	1095	11.8	12	41
29 23 00	8077	11.8	04	52	29 33 00	0975	12.0	14	46
10	7960	11.7	06	57	10	0857	11.8	16	51
20	7841	11.9	08	62	20	0738	11.9	18	56
30	7723	11.8	10	67	30	0619	11.9	20	61
40	7605	11.8	11	71	40	0501	11.8	21	66
50	7487	11.8	13	76	50	0381	12.0	23	71
29 24 00	7369	11.8	15	81	29 34 00	0263	11.8	25	76
10	7251	11.8	17	86	10	0144	11.9	27	81
20	7132	11.9	19	91	20	1.9460025	11.9	29	86
30	7015	11.7	21	2.12896	30	1.9459906	11.9	31	91
40	6897	11.8	22	2.12901	40	9788	11.8	32	2.13195
50	6778	11.9	24	06	50	9668	12.0	34	2.13200
29 25 00	6660	11.8	26	11	29 35 00	9550	11.8	36	05
10	6543	11.7	28	16	10	9431	11.9	38	10
20	6424	11.9	30	21	20	9312	11.9	40	15
30	6306	11.8	32	26	30	9193	11.9	42	20
40	6188	11.8	33	30	40	9074	11.9	43	24
50	6070	11.8	35	35	50	8955	11.9	45	29
29 26 00	5952	11.8	37	40	29 36 00	8836	11.9	47	34
10	5834	11.8	39	45	10	8717	11.9	49	39
20	5715	11.9	41	50	20	8597	12.0	51	44
30	5597	11.8	43	55	30	8479	11.8	53	49
40	5479	11.8	44	59	40	8360	11.9	54	53
50	5361	11.8	46	64	50	8240	12.0	56	58
29 27 00	5242	11.9	48	69	29 37 00	8122	11.8	58	63
10	5124	11.8	50	74	10	8003	11.9	60	68
20	5005	11.9	52	79	20	7883	12.0	62	73
30	4887	11.8	54	84	30	7764	11.9	64	78
40	4769	11.8	55	89	40	7646	11.8	65	83
50	4650	11.9	57	94	50	7526	12.0	67	88
29 28 00	4532	11.8	59	2.12999	29 38 00	7407	11.9	69	93
10	4414	11.8	61	2.13004	10	7288	11.9	71	2.13298
20	4295	11.9	63	09	20	7169	11.9	73	2.13303
30	4177	11.8	65	14	30	7050	11.9	75	08
40	4059	11.8	66	18	40	6930	12.0	77	12
50	3940	11.9	68	23	50	6811	11.9	79	17
29 29 00	3822	11.8	70	28	29 39 00	6691	12.0	81	22
10	3704	11.8	72	33	10	6573	11.8	83	27
20	3585	11.9	74	38	20	6453	12.0	85	32
30	3467	11.8	76	43	30	6334	11.9	87	37
40	3348	11.9	77	47	40	6215	11.9	88	41
50	3230	11.8	79	52	50	6095	12.0	90	46
29 30 00	3111	11.9	81	57	29 40 00	5976	11.9	92	51

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
29 40 00	1.9455976	11.9	2.0043892	2.13351	29 50 00	1.9448793	11.9	2.0044002	2.13645
10	5857	11.9	94	57	10	8673	12.0	04	50
20	5737	12.0	96	62	20	8552	12.1	06	55
30	5618	11.9	98	67	30	8432	12.0	08	60
40	5499	11.9	2.0043899	71	40	8312	12.0	09	64
50	5379	12.0	2.0043901	76	50	8192	12.0	11	69
29 41 00	5260	11.9	03	81	29 51 00	8072	12.0	13	74
10	5141	11.9	05	86	10	7952	12.0	15	79
20	5021	12.0	07	91	20	7831	12.1	17	84
30	4902	11.9	09	2.13396	30	7711	12.0	19	89
40	4782	12.0	10	2.13400	40	7590	12.1	20	93
50	4663	11.9	12	05	50	7471	11.9	22	2.13698
29 42 00	4543	12.0	14	10	29 52 00	7350	12.1	24	2.13703
10	4424	11.9	16	15	10	7230	12.0	26	08
20	4304	12.0	18	20	20	7109	12.1	28	13
30	4184	12.0	20	25	30	6989	12.0	30	18
40	4065	11.9	21	30	40	6869	12.0	32	22
50	3945	12.0	23	35	50	6748	12.1	34	27
29 43 00	3826	11.9	25	40	29 53 00	6628	12.0	36	32
10	3707	11.9	27	45	10	6508	12.0	38	37
20	3587	12.0	29	50	20	6387	12.1	40	42
30	3467	12.0	31	55	30	6267	12.0	42	47
40	3348	11.9	32	59	40	6147	12.0	43	51
50	3228	12.0	34	64	50	6026	12.0	45	56
29 44 00	3109	11.9	36	69	29 54 00	5906	12.0	47	61
10	2989	12.0	38	74	10	5786	12.0	49	66
20	2869	12.0	40	79	20	5665	12.1	51	71
30	2750	11.9	42	84	30	5544	12.1	53	76
40	2630	12.0	43	88	40	5423	12.1	54	80
50	2510	12.0	45	93	50	5303	12.0	56	85
29 45 00	2390	12.0	47	2.13498	29 55 00	5182	12.1	58	90
10	2271	11.9	49	2.13503	10	5062	12.0	60	2.13795
20	2150	12.1	51	08	20	4941	12.1	62	2.13800
30	2031	11.9	53	13	30	4821	12.0	64	05
40	1911	12.0	54	17	40	4700	12.1	65	09
50	1791	12.0	56	22	50	4579	12.1	67	14
29 46 00	1672	11.9	58	27	29 56 00	4459	12.0	69	19
10	1552	12.0	60	32	10	4339	12.0	71	24
20	1432	12.0	62	37	20	4217	12.2	73	29
30	1312	12.0	64	42	30	4097	12.0	75	34
40	1193	11.9	65	46	40	3977	12.0	76	38
50	1072	12.1	67	51	50	3856	12.1	78	43
29 47 00	0953	11.9	69	56	29 57 00	3735	12.1	80	48
10	0833	12.0	71	61	10	3615	12.0	82	53
20	0713	12.0	73	66	20	3494	12.1	84	58
30	0593	12.0	75	71	30	3373	12.1	86	63
40	0473	12.0	76	76	40	3252	12.1	87	67
50	0353	12.0	78	81	50	3131	12.1	89	72
29 48 00	0233	12.0	80	86	29 58 00	3010	12.1	91	77
10	1.9450113	12.0	82	91	10	2890	12.0	93	82
20	1.9449992	12.1	84	2.13596	20	2768	12.2	95	87
30	9873	11.9	86	2.13601	30	2648	12.0	97	92
40	9753	12.0	87	05	40	2527	12.1	2.0044098	2.13897
50	9632	12.1	89	10	50	2407	12.0	2.0044100	2.13902
29 49 00	9513	11.9	91	15	29 59 00	2285	12.2	02	07
10	9393	12.0	93	21	10	2165	12.0	04	12
20	9272	12.1	95	26	20	2043	12.2	06	17
30	9153	11.9	97	31	30	1923	12.0	08	22
40	9033	12.0	2.0043998	35	40	1802	12.1	09	26
50	8912	12.1	2.0044000	40	50	1681	12.1	11	31
29 50 00	8793	11.9	02	45	30 00 00	1560	12.1	13	37

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
30 00 00	1.9441560	12.1	2.0044113	2.13937	30 10 00	1.9434279	12.1	2.0044225	2.14227
10	1440	12.0	15	42	10	4158	12.1	27	32
20	1318	12.2	17	47	20	4035	12.3	29	37
30	1198	12.0	19	52	30	3914	12.1	31	42
40	1077	12.1	20	56	40	3792	12.2	32	46
50	0955	12.2	22	61	50	3670	12.2	34	51
30 01 00	0835	12.0	24	66	30 11 00	3549	12.1	36	56
10	0714	12.1	26	71	10	3427	12.2	38	61
20	0592	12.2	28	76	20	3305	12.2	40	66
30	0472	12.0	30	81	30	3183	12.2	42	71
40	0350	12.2	32	85	40	3062	12.1	43	75
50	0229	12.1	34	90	50	2939	12.3	45	80
30 02 00	1.9440108	12.1	36	2.13995	30 12 00	2818	12.1	47	85
10	1.9439987	12.1	38	2.14000	10	2696	12.2	49	90
20	9865	12.2	40	04	20	2573	12.3	51	2.14295
30	9744	12.1	42	09	30	2452	12.1	53	2.14300
40	9624	12.0	43	14	40	2329	12.3	54	04
50	9502	12.2	45	18	50	2208	12.1	56	09
30 03 00	9381	12.1	47	23	30 13 00	2085	12.3	58	14
10	9260	12.1	49	28	10	1963	12.2	60	19
20	9138	12.2	51	33	20	1841	12.2	62	24
30	9018	12.0	53	38	30	1719	12.2	64	29
40	8897	12.1	54	42	40	1597	12.2	65	33
50	8775	12.2	56	47	50	1475	12.2	67	38
30 04 00	8654	12.1	58	52	30 14 00	1353	12.2	69	43
10	8533	12.1	60	57	10	1231	12.2	71	48
20	8411	12.2	62	62	20	1109	12.2	73	53
30	8290	12.1	64	67	30	0987	12.2	75	58
40	8169	12.1	65	71	40	0865	12.2	77	62
50	8047	12.2	67	76	50	0742	12.3	79	67
30 05 00	7926	12.1	69	81	30 15 00	0621	12.1	81	72
10	7805	12.1	71	86	10	0499	12.2	83	77
20	7683	12.2	73	91	20	0376	12.3	85	82
30	7562	12.1	75	2.14096	30	0254	12.2	87	87
40	7440	12.2	76	2.14100	40	0131	12.3	88	91
50	7319	12.1	78	05	50	1.9430009	12.2	90	2.14396
30 06 00	7197	12.2	80	10	30 16 00	1.9429887	12.2	92	2.14401
10	7076	12.1	82	15	10	9765	12.2	94	07
20	6954	12.2	84	20	20	9642	12.3	96	12
30	6833	12.1	86	25	30	9520	12.2	98	17
40	6712	12.1	87	29	40	9398	12.2	2.0044299	21
50	6590	12.2	89	34	50	9275	12.3	2.0044301	26
30 07 00	6469	12.1	91	39	30 17 00	9153	12.2	03	31
10	6348	12.1	93	45	10	9031	12.2	05	36
20	6225	12.3	95	50	20	8908	12.3	07	40
30	6104	12.1	97	55	30	8786	12.2	09	45
40	5983	12.1	2.0044198	59	40	8664	12.2	10	50
50	5861	12.2	2.0044200	64	50	8541	12.3	12	54
30 08 00	5740	12.1	02	69	30 18 00	8419	12.2	14	59
10	5618	12.2	04	74	10	8297	12.2	16	64
20	5496	12.2	06	79	20	8174	12.3	18	69
30	5375	12.1	08	84	30	8052	12.2	20	74
40	5253	12.2	10	88	40	7930	12.2	21	78
50	5131	12.2	12	93	50	7807	12.3	23	83
30 09 00	5009	12.2	14	2.14198	30 19 00	7685	12.2	25	88
10	4888	12.1	16	2.14203	10	7562	12.3	27	93
20	4765	12.3	18	08	20	7439	12.3	29	2.14498
30	4644	12.1	20	13	30	7317	12.2	31	2.14503
40	4523	12.1	21	17	40	7194	12.3	33	07
50	4400	12.3	23	22	50	7072	12.2	35	12
30 10 00	4279	12.1	25	27	30 20 00	6949	12.3	37	17

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
30 20 00	1.9426949	12.3	2.0044337	2.14517	30 30 00	1.9419570	12.4	2.0044449	2.14806
10	6826	12.3	39	22	10	9447	12.3	51	11
20	6703	12.3	41	27	20	9323	12.4	53	16
30	6581	12.2	43	32	30	9200	12.3	55	21
40	6459	12.2	44	36	40	9077	12.3	56	25
50	6335	12.4	46	41	50	8953	12.4	58	30
30 21 00	6213	12.2	48	46	30 31 00	8829	12.4	60	35
10	6091	12.2	50	51	10	8706	12.3	62	40
20	5968	12.3	52	56	20	8582	12.4	64	44
30	5845	12.3	54	61	30	8459	12.3	66	49
40	5723	12.2	55	65	40	8335	12.4	67	54
50	5600	12.3	57	70	50	8212	12.3	69	58
30 22 00	5477	12.3	59	75	30 32 00	8088	12.4	71	63
10	5355	12.2	61	80	10	7964	12.4	73	68
20	5231	12.4	63	85	20	7840	12.4	75	73
30	5109	12.2	65	90	30	7717	12.3	77	78
40	4987	12.2	66	94	40	7594	12.3	79	82
50	4863	12.4	68	2.14599	50	7469	12.5	81	87
30 23 00	4741	12.2	70	2.14604	30 33 00	7346	12.3	83	92
10	4618	12.3	72	09	10	7223	12.3	85	2.14897
20	4495	12.3	74	13	20	7099	12.4	87	2.14902
30	4372	12.3	76	18	30	6975	12.4	89	07
40	4249	12.3	77	23	40	6852	12.3	90	11
50	4126	12.3	79	27	50	6728	12.4	92	16
30 24 00	4003	12.3	81	32	30 34 00	6604	12.4	94	22
10	3880	12.3	83	37	10	6481	12.3	96	27
20	3757	12.3	85	42	20	6357	12.4	2.0044498	31
30	3634	12.3	87	47	30	6233	12.4	2.0044500	36
40	3512	12.2	89	51	40	6110	12.3	01	41
50	3388	12.4	91	56	50	5985	12.5	03	45
30 25 00	3265	12.3	93	62	30 35 00	5862	12.3	05	50
10	3143	12.2	95	67	10	5739	12.3	07	55
20	3019	12.4	97	72	20	5614	12.5	09	60
30	2897	12.2	2.0044399	77	30	5491	12.3	11	65
40	2774	12.3	2.0044400	81	40	5366	12.5	12	69
50	2650	12.4	02	86	50	5243	12.3	14	74
30 26 00	2528	12.2	04	91	30 36 00	5118	12.5	16	79
10	2405	12.3	06	2.14696	10	4995	12.3	18	84
20	2281	12.3	08	2.14701	20	4870	12.5	20	89
30	2158	12.3	10	06	30	4746	12.4	22	94
40	2035	12.3	11	10	40	4623	12.3	24	2.14998
50	1912	12.3	13	15	50	4498	12.5	26	2.15003
30 27 00	1788	12.4	15	20	30 37 00	4375	12.3	28	08
10	1665	12.3	17	25	10	4251	12.4	30	13
20	1542	12.3	19	29	20	4126	12.5	32	18
30	1419	12.3	21	34	30	4003	12.3	34	23
40	1296	12.3	22	39	40	3879	12.4	35	27
50	1172	12.4	24	43	50	3755	12.4	37	32
30 28 00	1049	12.3	26	48	30 38 00	3631	12.4	39	37
10	0926	12.3	28	53	10	3507	12.4	41	42
20	0802	12.4	30	58	20	3382	12.5	43	46
30	0680	12.2	32	63	30	3259	12.3	45	51
40	0557	12.3	34	67	40	3135	12.4	46	56
50	0433	12.4	36	72	50	3010	12.5	48	60
30 29 00	0310	12.3	38	77	30 39 00	2886	12.4	50	65
10	0187	12.3	40	82	10	2763	12.3	52	70
20	1.9420063	12.4	42	87	20	2638	12.5	54	75
30	1.9419940	12.3	44	92	30	2514	12.4	56	80
40	9817	12.3	45	2.14796	40	2389	12.5	57	84
50	9694	12.3	47	2.14801	50	2265	12.4	59	89
30 30 00	9570	12.4	49	06	30 40 00	2141	12.4	61	94

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
30 40 00	1.9412141	12.4	2.0044561	2.15094	30 50 00	1.9404663	12.4	2.0044674	2.15381
10	2017	12.4	63	2.15099	10	4538	12.5	76	86
20	1892	12.5	65	2.15104	20	4412	12.6	78	91
30	1768	12.4	67	09	30	4288	12.4	80	2.15396
40	1641	12.4	69	13	40	4163	12.5	82	2.15400
50	1519	12.5	71	18	50	4037	12.6	84	05
30 41 00	1395	12.4	73	23	30 51 00	3912	12.5	86	10
10	1271	12.4	75	28	10	3788	12.4	88	15
20	1146	12.5	77	32	20	3662	12.6	90	19
30	1022	12.4	79	37	30	3537	12.5	92	24
40	0898	12.4	80	42	40	3411	12.6	93	29
50	0773	12.5	82	46	50	3286	12.5	95	34
30 42 00	0649	12.4	84	51	30 52 00	3161	12.5	97	39
10	0525	12.4	86	56	10	3036	12.5	2.0044699	44
20	0400	12.5	88	61	20	2910	12.6	2.0044701	49
30	0276	12.4	90	66	30	2785	12.5	03	54
40	0152	12.4	91	70	40	2660	12.5	04	58
50	1.9410027	12.5	93	76	50	2534	12.6	06	63
30 43 00	1.9409903	12.4	95	81	30 53 00	2409	12.5	08	68
10	9779	12.4	97	86	10	2284	12.5	10	73
20	9654	12.5	2.0044599	90	20	2158	12.6	12	77
30	9530	12.4	2.0044601	2.15195	30	2033	12.5	14	82
40	9405	12.5	03	2.15200	40	1908	12.5	16	87
50	9280	12.5	05	04	50	1782	12.6	18	91
30 44 00	9155	12.5	07	09	30 54 00	1657	12.5	20	2.15496
10	9031	12.4	09	14	10	1532	12.5	22	2.15501
20	8906	12.5	11	19	20	1406	12.6	24	06
30	8782	12.4	13	24	30	1281	12.5	26	11
40	8657	12.5	14	28	40	1156	12.5	27	15
50	8532	12.5	16	33	50	1031	12.5	29	20
30 45 00	8408	12.4	18	38	30 55 00	0905	12.6	31	25
10	8284	12.4	20	43	10	0780	12.5	33	30
20	8158	12.6	22	48	20	0654	12.6	35	34
30	8034	12.4	24	53	30	0529	12.5	37	39
40	7910	12.4	25	57	40	0404	12.5	38	44
50	7784	12.6	27	62	50	0277	12.7	40	48
30 46 00	7660	12.4	29	67	30 56 00	0152	12.5	42	53
10	7536	12.4	31	72	10	1.9400027	12.5	44	58
20	7410	12.6	33	76	20	1.9399901	12.6	46	63
30	7286	12.4	35	81	30	9776	12.5	48	68
40	7162	12.4	36	86	40	9649	12.7	50	72
50	7036	12.6	38	90	50	9524	12.5	52	77
30 47 00	6912	12.4	40	2.15295	30 57 00	9398	12.6	54	82
10	6787	12.5	42	2.15300	10	9273	12.5	56	87
20	6662	12.5	44	05	20	9146	12.7	58	91
30	6537	12.5	46	10	30	9021	12.5	60	2.15596
40	6412	12.5	48	14	40	8896	12.5	61	2.15601
50	6287	12.5	50	19	50	8769	12.7	63	05
30 48 00	6162	12.5	52	24	30 58 00	8644	12.5	65	10
10	6037	12.5	54	29	10	8519	12.5	67	15
20	5912	12.5	56	33	20	8392	12.7	69	20
30	5787	12.5	58	38	30	8267	12.5	71	25
40	5663	12.4	59	43	40	8142	12.5	72	29
50	5537	12.6	61	47	50	8015	12.5	74	34
30 49 00	5413	12.4	63	52	30 59 00	7890	12.5	76	39
10	5288	12.5	65	57	10	7764	12.6	78	44
20	5162	12.6	67	62	20	7638	12.6	80	48
30	5038	12.4	69	67	30	7512	12.6	82	53
40	4913	12.5	70	71	40	7387	12.5	84	58
50	4787	12.6	72	76	50	7260	12.7	86	62
30 50 00	4663	12.4	74	81	31 00 00	7135	12.5	88	67

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
31 00 00	1.9397135	12.5	2.0044788	2.15667	31 10 00	1.9389557	12.7	2.0044901	2.15953
10	7009	12.6	90	72	10	9431	12.6	03	58
20	6883	12.6	92	78	20	9303	12.8	05	63
30	6757	12.6	94	83	30	9177	12.6	07	68
40	6631	12.6	95	87	40	9050	12.7	09	72
50	6505	12.6	97	92	50	8923	12.7	11	77
31 01 00	6379	12.6	2.0044799	2.15697	31 11 00	8796	12.7	13	82
10	6253	12.6	2.0044801	2.15702	10	8669	12.7	15	87
20	6126	12.7	03	06	20	8542	12.7	17	91
30	6001	12.5	05	11	30	8415	12.7	19	2.15996
40	5875	12.6	06	16	40	8289	12.6	20	2.16001
50	5748	12.7	08	20	50	8162	12.7	22	05
31 02 00	5623	12.5	10	25	31 12 00	8035	12.7	24	10
10	5497	12.6	12	30	10	7908	12.7	26	15
20	5370	12.7	14	34	20	7781	12.7	28	19
30	5245	12.5	16	39	30	7654	12.7	30	24
40	5119	12.6	18	44	40	7528	12.6	31	29
50	4992	12.7	20	48	50	7400	12.8	33	33
31 03 00	4866	12.6	22	53	31 13 00	7274	12.6	35	38
10	4741	12.5	24	58	10	7147	12.7	37	43
20	4614	12.7	26	63	20	7019	12.8	39	47
30	4488	12.6	28	68	30	6893	12.6	41	52
40	4362	12.6	29	72	40	6766	12.7	43	57
50	4235	12.7	31	77	50	6638	12.8	45	61
31 04 00	4110	12.5	33	82	31 14 00	6512	12.6	47	66
10	3984	12.6	35	87	10	6385	12.7	49	71
20	3857	12.7	37	91	20	6257	12.8	51	76
30	3731	12.6	39	2.15796	30	6131	12.6	53	81
40	3605	12.6	40	2.15801	40	6004	12.7	54	85
50	3478	12.7	42	05	50	5876	12.8	56	90
31 05 00	3352	12.6	44	10	31 15 00	5749	12.7	58	2.16095
10	3226	12.6	46	15	10	5623	12.6	60	2.16100
20	3099	12.7	48	20	20	5495	12.8	62	04
30	2973	12.6	50	25	30	5368	12.7	64	09
40	2846	12.7	52	29	40	5240	12.8	66	14
50	2721	12.5	54	34	50	5113	12.7	68	18
31 06 00	2593	12.8	56	39	31 16 00	4986	12.7	70	23
10	2467	12.6	58	44	10	4859	12.7	72	28
20	2340	12.7	60	48	20	4731	12.8	74	32
30	2214	12.6	62	53	30	4604	12.7	76	37
40	2088	12.6	63	58	40	4477	12.7	77	42
50	1961	12.7	65	62	50	4349	12.8	79	46
31 07 00	1835	12.7	67	67	31 17 00	4222	12.7	81	51
10	1709	12.6	69	72	10	4095	12.7	83	56
20	1582	12.7	71	76	20	3967	12.8	85	61
30	1456	12.6	73	81	30	3840	12.7	87	66
40	1330	12.6	74	86	40	3713	12.7	88	70
50	1203	12.7	76	90	50	3585	12.8	90	75
31 08 00	1076	12.7	78	2.15895	31 18 00	3458	12.7	92	80
10	0950	12.6	80	2.15900	10	3331	12.7	94	85
20	0823	12.7	82	05	20	3203	12.8	96	90
30	0697	12.6	84	10	30	3076	12.7	2.0044998	2.16195
40	0571	12.6	86	14	40	2949	12.7	2.0045000	2.16200
50	0443	12.8	88	19	50	2821	12.8	02	04
31 09 00	0317	12.6	90	24	31 19 00	2694	12.7	04	09
10	0191	12.6	92	29	10	2567	12.7	06	14
20	1.9390063	12.8	94	34	20	2439	12.8	08	18
30	1.9389937	12.6	96	39	30	2312	12.7	10	23
40	9811	12.6	97	44	40	2185	12.7	11	28
50	9684	12.7	2.0044899	48	50	2056	12.9	13	32
31 10 00	9557	12.7	2.0044901	53	31 20 00	1929	12.7	15	37

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
31 20 00	1.9381929	12.7	2.0045015	2.16237	31 30 00	1.9374251	12.8	2.0045129	2.16521
10	1802	12.7	17	42	10	4123	12.8	31	26
20	1674	12.8	19	47	20	3994	12.9	33	30
30	1547	12.7	21	52	30	3866	12.8	35	35
40	1418	12.9	23	56	40	3737	12.9	37	40
50	1291	12.7	25	61	50	3609	12.8	39	44
31 21 00	1163	12.8	27	66	31 31 00	3479	13.0	41	49
10	1036	12.7	29	71	10	3351	12.8	43	54
20	0907	12.9	31	75	20	3222	12.9	45	58
30	0780	12.7	33	80	30	3094	12.8	47	63
40	0653	12.7	34	85	40	2966	12.8	48	68
50	0524	12.9	36	89	50	2837	12.9	50	72
31 22 00	0397	12.7	38	94	31 32 00	2709	12.8	52	77
10	0270	12.7	40	2.16299	10	2580	12.9	54	82
20	0141	12.9	42	2.16303	20	2451	12.9	56	87
30	1.9380014	12.7	44	08	30	2323	12.8	58	92
40	1.9379886	12.8	45	13	40	2195	12.8	60	2.16596
50	9758	12.8	47	17	50	2065	13.0	62	2.16601
31 23 00	9631	12.7	49	22	31 33 00	1937	12.8	64	06
10	9503	12.8	51	27	10	1809	12.8	66	11
20	9375	12.8	53	31	20	1680	12.9	68	15
30	9247	12.8	55	36	30	1551	12.9	70	20
40	9120	12.7	57	41	40	1423	12.8	71	25
50	8991	12.9	59	45	50	1294	12.9	73	29
31 24 00	8864	12.7	61	50	31 34 00	1165	12.9	75	34
10	8736	12.8	63	55	10	1037	12.8	77	39
20	8608	12.8	65	60	20	0907	13.0	79	43
30	8480	12.8	67	65	30	0779	12.8	81	48
40	8353	12.7	68	69	40	0651	12.8	83	53
50	8224	12.9	70	74	50	0521	13.0	85	57
31 25 00	8096	12.8	72	79	31 35 00	0393	12.8	87	62
10	7969	12.7	74	84	10	0264	12.9	89	67
20	7840	12.9	76	88	20	0135	12.9	91	72
30	7712	12.8	78	93	30	1.9370006	12.9	93	77
40	7584	12.8	80	2.16398	40	1.9369878	12.8	94	82
50	7456	12.8	82	2.16402	50	9748	13.0	96	86
31 26 00	7327	12.9	84	07	31 36 00	9620	12.8	2.0045198	91
10	7200	12.7	86	12	10	9491	12.9	2.0045200	2.16696
20	7071	12.9	88	16	20	9362	12.9	02	2.16700
30	6943	12.8	90	21	30	9233	12.9	04	05
40	6816	12.7	91	26	40	9104	12.9	06	10
50	6687	12.9	93	31	50	8975	12.9	08	14
31 27 00	6559	12.8	95	36	31 37 00	8845	13.0	10	19
10	6431	12.8	97	41	10	8717	12.8	12	24
20	6302	12.9	2.0045099	45	20	8587	13.0	14	28
30	6175	12.7	2.0045101	50	30	8458	12.9	16	33
40	6047	12.8	03	55	40	8330	12.8	17	38
50	5918	12.9	05	59	50	8200	13.0	19	42
31 28 00	5790	12.8	07	64	31 38 00	8071	12.9	21	47
10	5662	12.8	09	69	10	7943	12.8	23	52
20	5533	12.9	11	74	20	7813	13.0	25	57
30	5406	12.7	13	79	30	7684	12.9	27	62
40	5278	12.8	14	83	40	7555	12.9	29	66
50	5149	12.9	16	88	50	7426	12.9	31	71
31 29 00	5021	12.8	18	93	31 39 00	7297	12.9	33	76
10	4893	12.8	20	2.16498	10	7168	12.9	35	81
20	4764	12.9	22	2.16502	20	7038	13.0	37	85
30	4636	12.8	24	07	30	6910	12.8	39	90
40	4508	12.8	25	12	40	6781	12.9	40	95
50	4379	12.9	27	16	50	6651	13.0	42	2.16799
31 30 00	4251	12.8	29	21	31 40 00	6522	12.9	44	2.16804

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
31 40 00	1.9366522	12.9	2.0045244	2.16804	31 50 00	1.9358742	13.0	2.0045359	2.17085
10	6393	12.9	46	09	10	8613	12.9	61	90
20	6263	13.0	48	13	20	8482	13.1	63	94
30	6134	12.9	50	18	30	8352	13.0	65	2.17099
40	6005	12.9	52	23	40	8222	13.0	67	2.17104
50	5875	13.0	54	27	50	8092	13.0	69	08
31 41 00	5747	12.8	56	32	31 51 00	7962	13.0	71	13
10	5618	12.9	58	37	10	7832	13.0	73	18
20	5488	13.0	60	41	20	7701	13.1	75	22
30	5359	12.9	62	46	30	7571	13.0	77	27
40	5230	12.9	63	51	40	7441	13.0	78	32
50	5100	13.0	65	55	50	7311	13.0	80	36
31 42 00	4971	12.9	67	60	31 52 00	7181	13.0	82	41
10	4841	13.0	69	65	10	7051	13.0	84	46
20	4711	13.0	71	69	20	6920	13.1	86	50
30	4582	12.9	73	74	30	6790	13.0	88	55
40	4452	13.0	75	79	40	6660	13.0	90	60
50	4323	12.9	77	83	50	6529	13.1	92	65
31 43 00	4193	13.0	79	88	31 53 00	6399	13.0	94	70
10	4064	12.9	81	93	10	6269	13.0	96	75
20	3934	13.0	83	2.16897	20	6138	13.1	2.0045398	79
30	3805	12.9	85	2.16902	30	6008	13.0	2.0045400	84
40	3675	13.0	86	07	40	5878	13.0	01	89
50	3545	13.0	88	11	50	5747	13.1	03	93
31 44 00	3416	12.9	90	16	31 54 00	5617	13.0	05	2.17198
10	3287	12.9	92	21	10	5487	13.0	07	2.17203
20	3157	13.0	94	26	20	5356	13.1	09	07
30	3027	13.0	96	31	30	5226	13.0	11	12
40	2898	12.9	2.0045298	36	40	5095	13.1	13	17
50	2768	13.0	2.0045300	40	50	4965	13.0	15	21
31 45 00	2639	12.9	02	45	31 55 00	4833	13.2	17	26
10	2509	13.0	04	50	10	4703	13.0	19	31
20	2379	13.0	06	54	20	4572	13.1	21	35
30	2250	12.9	08	59	30	4442	13.0	23	40
40	2120	13.0	09	64	40	4312	13.0	24	45
50	1990	13.0	11	68	50	4181	13.1	26	49
31 46 00	1861	12.9	13	73	31 56 00	4050	13.1	28	54
10	1731	13.0	15	78	10	3920	13.0	30	59
20	1601	13.0	17	82	20	3789	13.1	32	63
30	1471	13.0	19	87	30	3659	13.0	34	68
40	1342	12.9	21	92	40	3528	13.1	36	73
50	1211	13.1	23	2.16996	50	3397	13.1	38	77
31 47 00	1082	12.9	25	2.17001	31 57 00	3267	13.0	40	82
10	0953	12.9	27	06	10	3136	13.1	42	87
20	0822	13.1	29	10	20	3005	13.1	44	91
30	0693	12.9	31	15	30	2875	13.0	46	2.17296
40	0562	13.1	32	20	40	2744	13.1	47	2.17301
50	0432	13.0	34	24	50	2613	13.1	49	05
31 48 00	0302	13.0	36	29	31 58 00	2483	13.0	51	10
10	0172	13.0	38	34	10	2352	13.1	53	15
20	1.9360042	13.0	40	38	20	2221	13.1	55	19
30	1.9359912	13.0	42	43	30	2090	13.1	57	24
40	9783	12.9	44	48	40	1960	13.0	59	29
50	9652	13.1	46	52	50	1828	13.2	61	33
31 49 00	9522	13.0	48	57	31 59 00	1698	13.1	63	38
10	9393	12.9	50	62	10	1567	13.1	65	43
20	9262	13.1	52	66	20	1436	13.1	67	47
30	9132	13.0	54	71	30	1305	13.1	69	52
40	9003	12.9	55	76	40	1175	13.0	70	57
50	8872	13.1	57	80	50	1043	13.2	72	61
31 50 00	8742	13.0	59	85	32 00 00	0913	13.0	74	66

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
32 00 00	1.9350913	13.0	2.0045474	2.17366	32 10 00	1.9343031	13.2	2.0045590	2.17646
10	0782	13.1	76	71	10	2900	13.1	92	51
20	0651	13.1	78	75	20	2767	13.3	94	56
30	0520	13.1	80	80	30	2636	13.1	96	61
40	0388	13.2	82	85	40	2504	13.2	2.0045598	66
50	0258	13.0	84	89	50	2372	13.2	2.0045600	70
32 01 00	1.9350126	13.2	86	94	32 11 00	2240	13.2	02	75
10	1.9349996	13.0	88	2.17399	10	2109	13.1	04	80
20	9864	13.2	90	2.17403	20	1976	13.3	06	84
30	9733	13.1	92	08	30	1845	13.1	08	89
40	9602	13.1	94	13	40	1713	13.2	09	94
50	9471	13.1	96	18	50	1581	13.2	11	2.17698
32 02 00	9340	13.1	2.0045498	23	32 12 00	1449	13.2	13	2.17703
10	9209	13.1	2.0045500	28	10	1318	13.1	15	08
20	9077	13.2	02	32	20	1185	13.3	17	12
30	8947	13.0	04	37	30	1053	13.2	19	17
40	8816	13.1	05	42	40	0922	13.1	21	22
50	8684	13.2	07	46	50	0789	13.3	23	26
32 03 00	8553	13.1	09	51	32 13 00	0657	13.2	25	31
10	8422	13.1	11	56	10	0526	13.1	27	36
20	8291	13.1	13	60	20	0393	13.3	29	40
30	8160	13.1	15	65	30	0261	13.2	31	45
40	8029	13.1	17	70	40	1.9340130	13.1	33	50
50	7897	13.2	19	74	50	1.9339997	13.3	35	54
32 04 00	7766	13.1	21	79	32 14 00	9865	13.2	37	59
10	7635	13.1	23	84	10	9733	13.2	39	64
20	7503	13.2	25	88	20	9600	13.3	41	68
30	7372	13.1	27	93	30	9469	13.1	43	73
40	7241	13.1	28	2.17498	40	9337	13.2	44	78
50	7109	13.2	30	2.17502	50	9204	13.3	46	82
32 05 00	6978	13.1	32	07	32 15 00	9072	13.2	48	87
10	6847	13.1	34	12	10	8940	13.2	50	92
20	6715	13.2	36	16	20	8807	13.3	52	2.17796
30	6584	13.1	38	21	30	8676	13.1	54	2.17801
40	6453	13.1	40	26	40	8543	13.3	56	06
50	6321	13.2	42	30	50	8411	13.2	58	10
32 06 00	6190	13.1	44	35	32 16 00	8278	13.3	60	15
10	6059	13.1	46	40	10	8146	13.2	62	19
20	5927	13.2	48	44	20	8013	13.3	64	24
30	5796	13.1	50	49	30	7881	13.2	66	29
40	5665	13.1	51	54	40	7749	13.2	67	33
50	5533	13.2	53	58	50	7616	13.3	69	37
32 07 00	5401	13.2	55	63	32 17 00	7484	13.2	71	42
10	5270	13.1	57	68	10	7352	13.2	73	47
20	5138	13.2	59	72	20	7219	13.3	75	51
30	5007	13.1	61	77	30	7087	13.2	77	56
40	4875	13.2	63	82	40	6955	13.2	79	61
50	4743	13.2	65	86	50	6822	13.3	81	65
32 08 00	4611	13.2	67	91	32 18 00	6690	13.2	83	70
10	4480	13.1	69	2.17596	10	6557	13.3	85	75
20	4348	13.2	71	2.17600	20	6424	13.3	87	79
30	4216	13.2	73	05	30	6292	13.2	89	84
40	4085	13.1	75	10	40	6160	13.2	91	89
50	3953	13.2	77	14	50	6027	13.3	93	94
32 09 00	3821	13.2	79	19	32 19 00	5895	13.2	95	2.17899
10	3690	13.1	81	24	10	5763	13.2	97	2.17904
20	3558	13.2	83	28	20	5629	13.4	2.0045699	08
30	3426	13.2	85	33	30	5497	13.2	2.0045701	13
40	3295	13.1	86	37	40	5365	13.2	02	18
50	3163	13.2	88	42	50	5232	13.3	04	22
32 10 00	3031	13.2	90	46	32 20 00	5099	13.3	06	27

Table for transformation of coordinates—Continued.

Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*	Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*
° ′ ″					° ′ ″				
32 20 00	1.9335099	13.3	2.0045706	2.17927	32 30 00	1.9327116	13.3	2.0045822	2.18206
10	4967	13.2	08	32	10	6982	13.4	24	10
20	4834	13.3	10	36	20	6849	13.3	26	15
30	4701	13.3	12	41	30	6715	13.4	28	20
40	4569	13.2	14	46	40	6581	13.4	30	24
50	4436	13.3	16	50	50	6447	13.4	32	28
32 21 00	4303	13.3	18	55	32 31 00	6314	13.3	34	33
10	4171	13.2	20	60	10	6181	13.3	36	38
20	4038	13.3	22	64	20	6046	13.5	38	42
30	3905	13.3	24	69	30	5913	13.3	40	47
40	3773	13.2	25	74	40	5780	13.3	42	52
50	3639	13.4	27	78	50	5646	13.4	44	56
32 22 00	3507	13.2	29	83	32 32 00	5512	13.4	46	61
10	3374	13.3	31	87	10	5379	13.3	48	66
20	3241	13.3	33	92	20	5245	13.4	50	70
30	3109	13.2	35	2.17997	30	5111	13.4	52	75
40	2975	13.4	37	2.18001	40	4978	13.3	53	80
50	2843	13.2	39	05	50	4844	13.4	55	84
32 23 00	2709	13.4	41	10	32 33 00	4710	13.4	57	89
10	2576	13.3	43	15	10	4577	13.3	59	93
20	2443	13.3	45	19	20	4442	13.5	61	2.18298
30	2310	13.3	47	24	30	4309	13.3	63	2.18303
40	2178	13.2	49	29	40	4175	13.4	65	07
50	2044	13.4	51	33	50	4041	13.4	67	11
32 24 00	1912	13.2	53	38	32 34 00	3908	13.3	69	16
10	1779	13.3	55	43	10	3774	13.4	71	21
20	1645	13.4	57	47	20	3640	13.4	73	25
30	1513	13.2	59	52	30	3506	13.4	75	30
40	1380	13.3	60	57	40	3372	13.4	77	35
50	1246	13.4	62	61	50	3238	13.4	79	39
32 25 00	1114	13.2	64	66	32 35 00	3104	13.4	81	44
10	0981	13.3	66	71	10	2971	13.3	83	49
20	0847	13.4	68	75	20	2836	13.5	85	53
30	0714	13.3	70	80	30	2703	13.3	87	58
40	0582	13.2	72	85	40	2569	13.4	88	63
50	0448	13.4	74	89	50	2434	13.5	90	67
32 26 00	0315	13.3	76	94	32 36 00	2301	13.3	92	72
10	0182	13.3	78	2.18098	10	2167	13.4	94	76
20	1.9330048	13.4	80	2.18103	20	2032	13.5	96	81
30	1.9329916	13.2	82	08	30	1899	13.3	2.0045898	86
40	9783	13.3	84	12	40	1765	13.4	2.0045900	90
50	9649	13.4	86	16	50	1630	13.5	02	94
32 27 00	9516	13.3	88	21	32 37 00	1497	13.3	04	2.18399
10	9383	13.3	90	26	10	1363	13.4	06	2.18404
20	9249	13.4	92	31	20	1228	13.5	08	08
30	9116	13.3	94	36	30	1094	13.4	10	13
40	8983	13.3	95	41	40	0960	13.4	12	18
50	8849	13.4	97	45	50	0826	13.4	14	22
32 28 00	8717	13.2	2.0045799	50	32 38 00	0692	13.4	16	27
10	8584	13.3	2.0045801	55	10	0558	13.4	18	32
20	8450	13.4	03	59	20	0423	13.5	20	36
30	8317	13.3	05	64	30	0289	13.4	22	41
40	8184	13.3	07	69	40	0155	13.4	23	46
50	8050	13.4	09	73	50	1.9320021	13.4	25	50
32 29 00	7916	13.4	11	78	32 39 00	1.9319887	13.4	27	55
10	7783	13.3	13	83	10	9753	13.4	29	59
20	7649	13.4	15	87	20	9618	13.5	31	64
30	7516	13.3	17	92	30	9483	13.4	33	69
40	7383	13.3	18	2.18197	40	9349	13.5	35	73
50	7249	13.4	20	2.18201	50	9214	13.4	37	77
32 30 00	7116	13.3	22	06	32 40 00	9080	13 4	39	82

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
32 40 00	1.9319080	13.4	2.0045939	2.18482	32 50 00	1.9310994	13.5	2.0046056	2.18760
10	8946	13.4	41	87	10	0859	13.5	58	65
20	8811	13.5	43	91	20	0723	13.6	60	69
30	8677	13.4	45	2.18496	30	0588	13.5	62	74
40	8543	13.4	47	2.18501	40	0452	13.6	64	79
50	8408	13.5	49	05	50	0317	13.5	66	83
32 41 00	8274	13.4	51	10	32 51 00	0182	13.5	68	88
10	8140	13.4	53	15	10	1.9310047	13.5	70	92
20	8004	13.6	55	19	20	1.9309911	13.6	72	2.18797
30	7870	13.4	57	24	30	9776	13.5	74	2.18802
40	7736	13.4	59	29	40	9641	13.5	75	06
50	7601	13.5	61	33	50	9505	13.6	77	10
32 42 00	7467	13.4	63	38	32 52 00	9370	13.5	79	15
10	7333	13.4	65	42	10	9235	13.5	81	20
20	7197	13.6	67	47	20	9098	13.7	83	24
30	7063	13.4	69	52	30	8963	13.5	85	29
40	6929	13.4	70	56	40	8828	13.5	87	34
50	6794	13.5	72	60	50	8692	13.6	89	38
32 43 00	6660	13.4	74	65	32 53 00	8557	13.5	91	43
10	6525	13.5	76	70	10	8422	13.5	93	48
20	6390	13.5	78	74	20	8286	13.6	95	52
30	6256	13.4	80	79	30	8151	13.5	97	57
40	6121	13.5	82	84	40	8015	13.6	2.0046099	62
50	5986	13.5	84	88	50	7879	13.6	2.0046101	66
32 44 00	5852	13.4	86	93	32 54 00	7744	13.5	03	71
10	5717	13.5	88	2.18598	10	7609	13.5	05	75
20	5582	13.5	90	2.18603	20	7473	13.6	07	80
30	5448	13.4	92	08	30	7337	13.6	09	85
40	5313	13.5	94	13	40	7202	13.5	11	89
50	5178	13.5	96	17	50	7066	13.6	13	93
32 45 00	5043	13.5	2.0045998	22	32 55 00	6931	13.5	15	2.18898
10	4909	13.4	2.0046000	27	10	6795	13.6	17	2.18903
20	4774	13.5	02	31	20	6659	13.6	19	07
30	4639	13.5	04	36	30	6524	13.5	21	12
40	4505	13.4	05	41	40	6388	13.6	22	17
50	4369	13.6	07	45	50	6252	13.6	24	21
32 46 00	4235	13.4	09	50	32 56 00	6116	13.6	26	26
10	4100	13.5	11	55	10	5981	13.5	28	30
20	3965	13.5	13	59	20	5845	13.6	30	35
30	3830	13.5	15	64	30	5709	13.6	32	40
40	3695	13.5	17	69	40	5574	13.5	34	44
50	3560	13.5	19	73	50	5437	13.7	36	48
32 47 00	3425	13.5	21	78	32 57 00	5302	13.5	38	53
10	3291	13.4	23	82	10	5166	13.6	40	58
20	3155	13.6	25	87	20	5030	13.6	42	62
30	3020	13.5	27	92	30	4894	13.6	44	67
40	2886	13.4	29	2.18696	40	4759	13.5	46	72
50	2750	13.6	31	2.18700	50	4622	13.7	48	76
32 48 00	2615	13.5	33	05	32 58 00	4487	13.5	50	81
10	2481	13.4	35	10	10	4351	13.6	52	85
20	2345	13.6	37	14	20	4215	13.6	54	90
30	2210	13.5	39	19	30	4079	13.6	56	95
40	2075	13.5	40	24	40	3943	13.6	58	2.18999
50	1940	13.5	42	28	50	3807	13.6	60	2.19003
32 49 00	1805	13.5	44	33	32 59 00	3671	13.6	62	08
10	1670	13.5	46	37	10	3536	13.5	64	13
20	1534	13.6	48	42	20	3399	13.7	66	18
30	1400	13.4	50	47	30	3263	13.6	68	23
40	1265	13.5	52	51	40	3127	13.6	69	28
50	1129	13.6	54	55	50	2991	13.6	71	32
32 50 00	0994	13.5	56	60	33 00 00	2855	13.6	73	37

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
33 00 00	1.9302855	13.6	2.0046173	2.19037	33 10 00	1.9294664	13.6	2.0046291	2.19313
10	2719	13.6	75	41	10	4527	13.7	93	18
20	2583	13.6	77	46	20	4390	13.7	95	23
30	2447	13.6	79	51	30	4253	13.7	97	28
40	2310	13.7	81	55	40	4116	13.7	2.0046299	32
50	2174	13.6	83	59	50	3979	13.7	2.0046301	36
33 01 00	2038	13.6	85	64	33 11 00	3842	13.7	03	41
10	1903	13.5	87	69	10	3705	13.7	05	45
20	1766	13.7	89	73	20	3568	13.7	07	50
30	1630	13.6	91	78	30	3431	13.7	09	55
40	1493	13.7	93	84	40	3294	13.7	10	59
50	1357	13.6	95	88	50	3156	13.8	12	63
33 02 00	1220	13.7	97	93	33 12 00	3020	13.6	14	68
10	1084	13.6	2.0046199	2.19097	10	2883	13.7	16	73
20	0947	13.7	2.0046201	2.19102	20	2745	13.8	18	77
30	0811	13.6	03	07	30	2608	13.7	20	82
40	0675	13.6	05	11	40	2470	13.8	22	87
50	0538	13.7	07	15	50	2333	13.7	24	91
33 03 00	0402	13.6	09	20	33 13 00	2196	13.7	26	2.19396
10	0266	13.6	11	25	10	2059	13.7	28	2.19400
20	1.9300129	13.7	13	29	20	1921	13.8	30	05
30	1.9299993	13.6	15	34	30	1784	13.7	32	10
40	9857	13.6	16	39	40	1647	13.7	34	14
50	9720	13.7	18	43	50	1509	13.8	36	18
33 04 00	9584	13.6	20	48	33 14 00	1372	13.7	38	23
10	9448	13.6	22	52	10	1235	13.7	40	28
20	9311	13.7	24	57	20	1097	13.8	42	32
30	9175	13.6	26	62	30	0960	13.7	44	37
40	9039	13.6	28	66	40	0823	13.7	46	42
50	8902	13.7	30	70	50	0685	13.8	48	46
33 05 00	8765	13.7	32	75	33 15 00	0548	13.7	50	51
10	8629	13.6	34	80	10	0411	13.7	52	55
20	8492	13.7	36	84	20	0273	13.8	54	60
30	8356	13.6	38	89	30	1.9290136	13.7	56	65
40	8220	13.6	40	94	40	1.9289999	13.7	58	69
50	8082	13.8	42	2.19198	50	9861	13.8	60	73
33 06 00	7946	13.6	44	2.19203	33 16 00	9724	13.7	62	78
10	7810	13.6	46	07	10	9586	13.8	64	82
20	7673	13.7	48	12	20	9448	13.8	66	87
30	7536	13.7	50	17	30	9311	13.7	68	92
40	7400	13.6	52	21	40	9174	13.7	69	2.19496
50	7263	13.7	54	25	50	9036	13.8	71	2.19500
33 07 00	7126	13.7	56	30	33 17 00	8898	13.8	73	05
10	6990	13.6	58	35	10	8761	13.8	75	10
20	6853	13.7	60	39	20	8623	13.8	77	14
30	6716	13.7	62	44	30	8486	13.7	79	19
40	6580	13.6	63	49	40	8349	13.7	81	24
50	6442	13.8	65	53	50	8210	13.9	83	28
33 08 00	6306	13.6	67	58	33 18 00	8073	13.7	85	33
10	6170	13.6	69	62	10	7936	13.7	87	37
20	6032	13.8	71	67	20	7797	13.9	89	42
30	5896	13.6	73	72	30	7660	13.7	91	47
40	5759	13.7	75	76	40	7523	13.7	93	52
50	5622	13.7	77	80	50	7384	13.9	95	56
33 09 00	5485	13.7	79	85	33 19 00	7247	13.7	97	61
10	5349	13.6	81	90	10	7109	13.8	2.0046399	66
20	5211	13.8	83	94	20	6971	13.8	2.0046401	70
30	5075	13.6	85	2.19299	30	6834	13.7	03	75
40	4938	13.7	87	2.19304	40	6696	13.8	05	80
50	4800	13.8	89	08	50	6558	13.8	07	84
33 10 00	4664	13.6	91	13	33 20 00	6420	13.8	09	89

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
33 20 00	1.9286420	13.8	2.0046409	2.19589	33 30 00	1.9278124	13.8	2.0046527	2.19863
10	6283	13.7	11	93	10	7986	13.8	29	67
20	6144	13.9	13	2.19598	20	7846	14.0	31	72
30	6007	13.7	15	2.19603	30	7708	13.8	33	77
40	5869	13.8	17	07	40	7569	13.9	35	81
50	5731	13.8	19	11	50	7430	13.9	37	85
33 21 00	5593	13.8	21	16	33 31 00	7291	13.9	39	90
10	5455	13.8	23	20	10	7153	13.8	41	94
20	5317	13.8	25	25	20	7014	13.9	43	2.19899
30	5179	13.8	27	30	30	6875	13.9	45	2.19904
40	5042	13.7	28	34	40	6737	13.8	47	08
50	4903	13.9	30	38	50	6597	14.0	49	12
33 22 00	4765	13.8	32	43	33 32 00	6459	13.8	51	17
10	4628	13.7	34	48	10	6320	13.9	53	22
20	4489	13.9	36	52	20	6180	14.0	55	26
30	4351	13.8	38	57	30	6042	13.8	57	31
40	4214	13.7	40	62	40	5903	13.9	58	36
50	4075	13.9	42	66	50	5764	13.9	60	40
33 23 00	3937	13.8	44	71	33 33 00	5625	13.9	62	45
10	3799	13.8	46	75	10	5486	13.9	64	49
20	3661	13.8	48	80	20	5347	13.9	66	54
30	3523	13.8	50	85	30	5208	13.9	68	59
40	3385	13.8	52	89	40	5069	13.9	70	63
50	3246	13.9	54	93	50	4930	13.9	72	67
33 24 00	3108	13.8	56	2.19698	33 34 00	4791	13.9	74	72
10	2971	13.7	58	2.19702	10	4652	13.9	76	76
20	2832	13.9	60	07	20	4513	13.9	78	81
30	2694	13.8	62	12	30	4374	13.9	80	86
40	2556	13.8	64	16	40	4235	13.9	82	90
50	2417	13.9	66	21	50	4095	14.0	84	94
33 25 00	2279	13.8	68	26	33 35 00	3956	13.9	86	2.19999
10	2141	13.8	70	31	10	3818	13.8	88	2.20003
20	2002	13.9	72	35	20	3678	14.0	90	08
30	1864	13.8	74	40	30	3539	13.9	92	13
40	1726	13.8	76	45	40	3400	13.9	94	18
50	1587	13.9	78	49	50	3260	14.0	96	22
33 26 00	1449	13.8	80	54	33 36 00	3121	13.9	2.0046598	27
10	1310	13.9	82	58	10	2982	13.9	2.0046600	32
20	1172	13.8	84	63	20	2843	13.9	02	36
30	1034	13.8	86	68	30	2704	13.9	04	41
40	0896	13.8	87	72	40	2565	13.9	06	46
50	0757	13.9	89	76	50	2425	14.0	08	50
33 27 00	0619	13.8	91	81	33 37 00	2286	13.9	10	55
10	0481	13.8	93	85	10	2147	13.9	12	59
20	0342	13.9	95	90	20	2007	14.0	14	64
30	0204	13.8	97	95	30	1868	13.9	16	69
40	1.9280066	13.8	2.0046499	2.19799	40	1729	13.9	18	73
50	1.9279926	14.0	2.0046501	2.19803	50	1589	14.0	20	77
33 28 00	9788	13.8	03	08	33 38 00	1450	13.9	22	82
10	9650	13.8	05	13	10	1311	13.9	24	86
20	9511	13.9	07	17	20	1170	14.1	26	91
30	9373	13.8	09	22	30	1031	13.9	28	2.20096
40	9233	14.0	11	27	40	0892	13.9	29	2.20100
50	9095	13.8	13	31	50	0752	14.0	31	04
33 29 00	8956	13.9	15	36	33 39 00	0613	13.9	33	09
10	8818	13.8	17	40	10	0474	13.9	35	13
20	8678	14.0	19	45	20	0334	14.0	37	18
30	8540	13.8	21	50	30	0194	14.0	39	23
40	8402	13.8	23	54	40	1.9270055	13.9	41	27
50	8262	14.0	25	58	50	1.9269915	14.0	43	31
33 30 00	8124	13.8	27	63	33 40 00	9776	13.9	45	36

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
33 40 00	1.9269776	13.9	2.0046645	2.20136	33 50 00	1.9261375	14.0	2.0046764	2.20409
10	9637	13.9	47	40	10	1234	14.1	66	13
20	9496	14.1	49	45	20	1093	14.1	68	18
30	9357	13.9	51	50	30	0953	14.0	70	23
40	9218	13.9	53	54	40	0812	14.1	72	27
50	9077	14.1	55	58	50	0672	14.0	74	31
33 41 00	8938	13.9	57	63	33 51 00	0531	14.1	76	36
10	8799	13.9	59	68	10	0390	14.1	78	40
20	8658	14.1	61	72	20	0249	14.1	80	45
30	8519	13.9	63	77	30	1.9260109	14.0	82	50
40	8380	13.9	65	82	40	1.9259969	14.0	84	54
50	8239	14.1	67	86	50	9827	14.2	86	58
33 42 00	8100	13.9	69	91	33 52 00	9687	14.0	88	63
10	7960	14.0	71	2.20195	10	9547	14.0	90	68
20	7820	14.0	73	2.20200	20	9405	14.2	92	73
30	7680	14.0	75	05	30	9265	14.0	94	78
40	7541	13.9	77	09	40	9125	14.0	96	83
50	7400	14.1	79	13	50	8983	14.2	2.0046798	87
33 43 00	7261	13.9	81	18	33 53 00	8843	14.0	2.0046800	92
10	7121	14.0	83	23	10	8702	14.1	02	2.20496
20	6981	14.0	85	28	20	8561	14.1	04	2.20501
30	6841	14.0	87	32	30	8421	14.0	06	06
40	6702	13.9	89	36	40	8280	14.1	08	10
50	6561	14.1	91	41	50	8139	14.1	10	14
33 44 00	6422	13.9	93	46	33 54 00	7998	14.1	12	19
10	6282	14.0	95	50	10	7858	14.0	14	23
20	6141	14.1	97	55	20	7716	14.2	16	28
30	6002	13.9	2.0046699	60	30	7576	14.0	18	33
40	5862	14.0	2.0046701	64	40	7435	14.1	20	37
50	5721	14.1	03	68	50	7294	14.1	22	41
33 45 00	5582	13.9	05	73	33 55 00	7153	14.1	24	46
10	5442	14.0	07	77	10	7012	14.1	26	50
20	5301	14.1	09	82	20	6871	14.1	28	55
30	5162	13.9	11	87	30	6730	14.1	30	60
40	5022	14.0	13	91	40	6590	14.0	32	64
50	4881	14.1	15	2.20295	50	6448	14.2	34	68
33 46 00	4741	14.0	17	2.20300	33 56 00	6307	14.1	36	73
10	4602	13.9	19	05	10	6167	14.0	38	77
20	4461	14.1	21	09	20	6025	14.2	40	82
30	4321	14.0	23	14	30	5884	14.1	41	87
40	4181	14.0	25	19	40	5744	14.0	43	91
50	4040	14.1	27	23	50	5602	14.2	45	2.20595
33 47 00	3901	13.9	29	28	33 57 00	5461	14.1	47	2.20600
10	3761	14.0	31	32	10	5320	14.1	49	04
20	3620	14.1	33	37	20	5179	14.1	51	09
30	3480	14.0	35	42	30	5038	14.1	53	14
40	3340	14.0	36	46	40	4897	14.1	55	18
50	3199	14.1	38	50	50	4755	14.2	57	22
33 48 00	3059	14.0	40	55	33 58 00	4614	14.1	59	27
10	2919	14.0	42	59	10	4473	14.1	61	31
20	2778	14.1	44	64	20	4332	14.1	63	36
30	2638	14.0	46	69	30	4191	14.1	65	41
40	2498	14.0	48	73	40	4050	14.1	67	45
50	2357	14.1	50	77	50	3908	14.2	69	49
33 49 00	2217	14.0	52	82	33 59 00	3767	14.1	71	54
10	2077	14.0	54	86	10	3626	14.1	73	58
20	1936	14.1	56	91	20	3484	14.2	75	63
30	1796	14.0	58	2.20396	30	3343	14.1	77	68
40	1656	14.0	60	2.20400	40	3202	14.1	79	72
50	1515	14.1	62	04	50	3060	14.2	81	76
33 50 00	1375	14.0	64	09	34 00 00	2919	14.1	83	81

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
34 00 00	1.9252919	14.1	2.0046883	2.20681	34 10 00	1.9244411	14.2	2.0047002	2.20954
10	2778	14.1	85	86	10	4269	14.2	04	58
20	2636	14.2	87	90	20	4126	14.3	06	63
30	2495	14.1	89	2.20695	30	3984	14.2	08	68
40	2354	14.1	91	2.20700	40	3842	14.2	10	72
50	2212	14.2	93	05	50	3699	14.3	12	76
34 01 00	2071	14.1	95	10	34 11 00	3557	14.2	14	81
10	1930	14.1	97	14	10	3415	14.2	16	85
20	1788	14.2	2.0046899	19	20	3272	14.3	18	90
30	1646	14.2	2.0046901	24	30	3130	14.2	20	95
40	1505	14.1	03	28	40	2988	14.2	22	2.20999
50	1363	14.2	05	32	50	2845	14.3	24	2.21003
34 02 00	1222	14.1	07	37	34 12 00	2703	14.2	26	08
10	1081	14.1	09	41	10	2561	14.2	28	12
20	0938	14.3	11	46	20	2418	14.3	30	17
30	0797	14.1	13	51	30	2276	14.2	32	22
40	0656	14.1	15	55	40	2134	14.2	34	26
50	0514	14.2	17	59	50	1991	14.3	36	30
34 03 00	0372	14.2	19	64	34 13 00	1848	14.3	38	35
10	0231	14.1	21	68	10	1706	14.2	40	39
20	1.9250089	14.2	23	73	20	1563	14.3	42	44
30	1.9249947	14.2	25	78	30	1421	14.2	44	49
40	9806	14.1	27	82	40	1279	14.2	46	53
50	9664	14.2	29	86	50	1135	14.4	48	57
34 04 00	9522	14.2	31	91	34 14 00	0993	14.2	50	62
10	9381	14.1	33	2.20795	10	0851	14.2	52	66
20	9239	14.2	35	2.20800	20	0707	14.4	54	71
30	9097	14.2	37	05	30	0565	14.2	56	76
40	8956	14.1	39	09	40	0423	14.2	58	80
50	8813	14.3	41	13	50	0280	14.3	60	84
34 05 00	8672	14.1	43	18	34 15 00	1.9240137	14.3	62	89
10	8530	14.2	45	22	10	1.9239995	14.2	64	93
20	8388	14.2	47	27	20	9851	14.4	66	2.21098
30	8246	14.2	49	32	30	9709	14.2	68	2.21103
40	8105	14.1	51	36	40	9567	14.2	70	07
50	7962	14.3	53	40	50	9423	14.4	72	11
34 06 00	7821	14.1	55	45	34 16 00	9281	14.2	74	16
10	7679	14.2	57	49	10	9138	14.3	76	20
20	7537	14.2	59	54	20	8995	14.3	78	25
30	7395	14.2	61	59	30	8852	14.3	80	30
40	7253	14.2	63	63	40	8710	14.2	82	34
50	7111	14.2	65	67	50	8566	14.4	84	38
34 07 00	6969	14.2	67	72	34 17 00	8424	14.2	86	43
10	6828	14.1	69	76	10	8281	14.3	88	47
20	6685	14.3	71	81	20	8138	14.3	90	52
30	6543	14.2	73	86	30	7995	14.3	92	58
40	6402	14.1	75	90	40	7852	14.3	94	62
50	6259	14.3	77	94	50	7709	14.3	96	66
34 08 00	6117	14.2	79	2.20899	34 18 00	7566	14.3	2.0047098	71
10	5975	14.2	81	2.20903	10	7424	14.2	2.0047100	75
20	5833	14.2	83	08	20	7280	14.4	02	80
30	5691	14.2	85	13	30	7137	14.3	04	85
40	5549	14.2	87	17	40	6995	14.2	06	89
50	5406	14.3	89	21	50	6851	14.4	08	93
34 09 00	5264	14.2	91	26	34 19 00	6708	14.3	10	2.21198
10	5123	14.1	93	31	10	6565	14.3	12	2.21202
20	4980	14.3	95	36	20	6422	14.3	14	07
30	4838	14.2	97	41	30	6279	14.3	16	12
40	4696	14.2	2.0046998	45	40	6136	14.3	18	16
50	4553	14.3	2.0047000	49	50	5992	14.4	20	20
34 10 00	4411	14.2	02	54	34 20 00	5850	14.2	22	25

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
34 20 00	1.9235850	14.2	2.0047122	2.21225	34 30 00	1.9227234	14.4	2.0047242	2.21495
10	5707	14.3	24	29	10	7090	14.4	44	2.21499
20	5563	14.4	26	34	20	6946	14.4	46	2.21504
30	5420	14.3	28	39	30	6802	14.4	48	09
40	5277	14.3	30	43	40	6658	14.4	50	13
50	5133	14.4	32	47	50	6513	14.5	52	17
34 21 00	4991	14.2	34	52	34 31 00	6370	14.3	54	22
10	4848	14.3	36	56	10	6226	14.4	56	26
20	4704	14.4	38	61	20	6081	14.5	58	31
30	4561	14.3	40	66	30	5937	14.4	60	36
40	4418	14.3	42	70	40	5793	14.4	62	40
50	4274	14.4	44	74	50	5648	14.5	64	44
34 22 00	4131	14.3	46	79	34 32 00	5505	14.3	66	49
10	3988	14.3	48	83	10	5361	14.4	68	53
20	3844	14.4	50	88	20	5216	14.5	70	58
30	3701	14.3	52	93	30	5072	14.4	72	63
40	3558	14.3	54	2.21297	40	4928	14.4	74	67
50	3414	14.4	56	2.21301	50	4783	14.5	76	71
34 23 00	3271	14.3	58	06	34 33 00	4639	14.4	78	76
10	3128	14.3	60	10	10	4495	14.4	80	80
20	2983	14.5	62	15	20	4350	14.5	82	85
30	2840	14.3	64	20	30	4206	14.4	84	90
40	2697	14.3	66	24	40	4062	14.4	86	94
50	2553	14.4	68	28	50	3917	14.5	88	2.21598
34 24 00	2410	14.3	70	33	34 34 00	3773	14.4	90	2.21603
10	2267	14.3	72	37	10	3629	14.4	92	08
20	2123	14.4	74	42	20	3484	14.5	94	13
30	1979	14.4	76	47	30	3340	14.4	96	18
40	1836	14.3	78	51	40	3195	14.5	2.0047298	22
50	1692	14.4	80	55	50	3050	14.5	2.0047300	26
34 25 00	1549	14.3	82	60	34 35 00	2906	14.4	02	31
10	1405	14.4	84	64	10	2762	14.4	04	35
20	1261	14.4	86	69	20	2617	14.5	06	40
30	1118	14.3	88	74	30	2473	14.4	08	45
40	0974	14.4	90	78	40	2328	14.5	10	49
50	0830	14.4	92	83	50	2183	14.5	12	53
34 26 00	0687	14.3	94	88	34 36 00	2039	14.4	14	58
10	0543	14.4	96	92	10	1895	14.4	16	62
20	0399	14.4	2.0047198	2.21397	20	1749	14.6	18	67
30	0256	14.3	2.0047200	2.21402	30	1605	14.4	20	72
40	1.9230112	14.4	02	06	40	1461	14.4	22	76
50	1.9229968	14.4	04	10	50	1315	14.6	24	80
34 27 00	9824	14.4	06	15	34 37 00	1171	14.4	26	85
10	9681	14.3	08	19	10	1027	14.4	28	89
20	9537	14.4	10	24	20	0881	14.6	30	94
30	9393	14.4	12	28	30	0737	14.4	32	2.21698
40	9250	14.3	14	32	40	0593	14.4	34	2.21702
50	9105	14.5	16	37	50	0447	14.6	36	07
34 28 00	8962	14.3	18	41	34 38 00	0303	14.4	38	11
10	8818	14.4	20	45	10	0158	14.5	40	15
20	8673	14.5	22	50	20	1.9220013	14.5	42	20
30	8530	14.3	24	55	30	1.9219868	14.5	44	25
40	8386	14.4	26	59	40	9724	14.4	46	29
50	8242	14.4	28	63	50	9578	14.6	48	33
34 29 00	8098	14.4	30	68	34 39 00	9434	14.4	50	38
10	7955	14.3	32	72	10	9289	14.5	52	42
20	7810	14.5	34	77	20	9144	14.5	54	47
30	7666	14.4	36	82	30	8999	14.5	56	52
40	7523	14.3	38	86	40	8855	14.4	58	56
50	7378	14.5	40	90	50	8709	14.6	60	60
34 30 00	7234	14.4	42	95	34 40 00	8565	14.4	62	56

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
34 40 00	1.9218565	14.4	2.0047362	2.21765	34 50 00	1.9209841	14.5	2.0047482	2.22034
10	8420	14.5	64	69	10	9695	14.6	84	38
20	8274	14.6	66	74	20	9549	14.6	86	43
30	8130	14.4	68	79	30	9403	14.6	88	48
40	7985	14.5	70	83	40	9257	14.6	90	52
50	7839	14.6	72	87	50	9111	14.6	92	57
34 41 00	7695	14.4	74	92	34 51 00	8965	14.6	94	62
10	7550	14.5	76	2.21796	10	8820	14.5	96	66
20	7404	14.6	78	2.21801	20	8673	14.7	2.0047498	71
30	7259	14.5	80	06	30	8527	14.6	2.0047501	76
40	7115	14.4	82	10	40	8382	14.5	03	80
50	6969	14.6	84	14	50	8235	14.7	05	84
34 42 00	6824	14.5	86	19	34 52 00	8089	14.6	07	89
10	6679	14.5	88	23	10	7944	14.5	09	93
20	6534	14.5	90	28	20	7797	14.7	11	2.22098
30	6389	14.5	92	34	30	7651	14.6	13	2.22103
40	6244	14.5	94	38	40	7505	14.6	15	07
50	6098	14.6	96	42	50	7359	14.6	17	11
34 43 00	5953	14.5	2.0047398	47	34 53 00	7213	14.6	19	16
10	5808	14.5	2.0047400	51	10	7067	14.6	21	20
20	5662	14.6	02	56	20	6920	14.7	23	25
30	5517	14.5	04	60	30	6774	14.6	25	29
40	5372	14.5	06	64	40	6629	14.5	27	33
50	5226	14.6	08	69	50	6482	14.7	29	38
34 44 00	5082	14.4	10	73	34 54 00	6336	14.6	31	42
10	4937	14.5	12	77	10	6189	14.7	33	46
20	4791	14.6	14	82	20	6043	14.6	35	51
30	4646	14.5	16	87	30	5897	14.6	37	56
40	4501	14.5	18	91	40	5751	14.6	39	60
50	4354	14.7	20	2.21895	50	5604	14.7	41	64
34 45 00	4209	14.5	22	2.21900	34 55 00	5458	14.6	43	69
10	4064	14.5	24	04	10	5312	14.6	45	73
20	3918	14.6	26	09	20	5165	14.7	47	78
30	3773	14.5	28	14	30	5019	14.6	49	83
40	3628	14.5	30	18	40	4873	14.6	51	87
50	3482	14.6	32	22	50	4726	14.7	53	91
34 46 00	3337	14.5	34	27	34 56 00	4580	14.6	55	2.22196
10	3192	14.5	36	31	10	4434	14.6	57	2.22200
20	3045	14.7	38	36	20	4287	14.7	59	05
30	2900	14.5	40	41	30	4141	14.6	61	10
40	2755	14.5	42	45	40	3995	14.6	63	14
50	2609	14.6	44	49	50	3848	14.7	65	18
34 47 00	2464	14.5	46	54	34 57 00	3701	14.7	67	23
10	2318	14.6	48	58	10	3555	14.6	69	27
20	2172	14.6	50	63	20	3408	14.7	71	32
30	2027	14.5	52	68	30	3262	14.6	73	36
40	1881	14.6	54	72	40	3116	14.6	75	40
50	1735	14.3	56	76	50	2968	14.8	77	45
34 48 00	1590	14.5	58	81	34 58 00	2822	14.6	79	49
10	1444	14.6	60	85	10	2676	14.6	81	53
20	1298	14.6	62	90	20	2529	14.7	83	58
30	1153	14.5	64	94	30	2382	14.7	85	63
40	1007	14.6	66	2.21998	40	2236	14.6	87	67
50	0861	14.6	68	2.22003	50	2089	14.7	89	71
34 49 00	0715	14.6	70	07	34 59 00	1943	14.6	91	76
10	0570	14.5	72	11	10	1796	14.7	93	81
20	0424	14.6	74	16	20	1649	14.7	95	86
30	0278	14.6	76	21	30	1502	14.7	97	91
40	1.9210133	14.5	78	25	40	1356	14.6	2.0047599	95
50	1.9209986	14.7	80	29	50	1209	14.7	2.0047601	2.22299
35 50 00	9841	14.5	82	34	35 00 00	1062	14.7	03	2.22304

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
35 00 00	1.9201062	14.7	2.0047603	2.22304	35 10 00	1.9192230	14.7	2.0047724	2.22572
10	0916	14.7	05	08	10	2083	14.7	26	76
20	0768	14.8	07	13	20	1934	14.9	28	81
30	0622	14.6	09	17	30	1787	14.7	30	85
40	0475	14.7	11	21	40	1639	14.8	32	89
50	0328	14.7	13	26	50	1491	14.8	34	94
35 01 00	0181	14.7	15	30	35 11 00	1344	14.7	36	2.22598
10	1.9200035	14.6	17	34	10	1196	14.8	38	2 22602
20	1.9199887	14.8	19	39	20	1048	14.8	40	07
30	9741	14.6	21	44	30	0900	14.8	42	12
40	9594	14.7	23	48	40	0753	14.7	44	16
50	9447	14.7	25	52	50	0604	14.9	46	20
35 02 00	9300	14.7	27	57	35 12 00	0457	14.7	48	25
10	9153	14.7	29	61	10	0309	14.8	50	29
20	9006	14.7	31	66	20	0161	14.8	52	34
30	8859	14.7	33	71	30	1.9190013	14.8	54	39
40	8712	14.7	35	75	40	1.9189866	14.7	56	43
50	8565	14.7	37	79	50	9717	14.9	58	47
35 03 00	8418	14.7	39	84	35 13 00	9569	14.8	60	52
10	8271	14.7	41	88	10	9422	14.7	62	56
20	8124	14.7	43	93	20	9273	14.9	64	61
30	7977	14.7	45	2.22398	30	9125	14.8	66	65
40	7830	14.7	47	2.22402	40	8978	14.7	68	69
50	7682	14.8	49	06	50	8829	14.9	70	74
35 04 00	7535	14.7	51	11	35 14 00	8681	14.8	72	78
10	7389	14.6	53	15	10	8534	14.7	74	82
20	7241	14.8	55	20	20	8385	14.9	76	87
30	7094	14.7	58	24	30	8237	14.8	79	92
40	6947	14.7	60	28	40	8089	14.9	81	2.22696
50	6799	14.8	62	33	50	7941	14.8	83	2.22700
35 05 00	6652	14.7	64	37	35 15 00	7793	14.8	85	05
10	6506	14.6	66	41	10	7645	14.8	87	09
20	6358	14.8	68	46	20	7496	14.9	89	14
30	6211	14.7	70	51	30	7348	14.8	91	19
40	6064	14.7	72	55	40	7200	14.8	93	24
50	5916	14.8	74	59	50	7052	14.8	95	28
35 06 00	5769	14.7	76	64	35 16 00	6904	14.8	97	33
10	5622	14.7	78	68	10	6756	14.8	2.0047799	37
20	5475	14.7	80	73	20	6607	14.9	2.0047801	42
30	5328	14.7	82	78	30	6459	14.8	03	46
40	5180	14.8	84	82	40	6311	14.8	05	50
50	5033	14.7	86	86	50	6162	14.9	07	55
35 07 00	4886	14.7	88	91	35 17 00	6014	14.8	09	59
10	4739	14.7	90	2.22495	10	5866	14.8	11	63
20	4591	14.8	92	2.22500	20	5717	14.9	13	68
30	4443	14.8	94	05	30	5569	14.8	15	73
40	4296	14.7	96	09	40	5421	14.8	17	77
50	4148	14.8	2.0047698	14	50	5272	14.9	19	81
35 08 00	4001	14.7	2.0047700	18	35 18 00	5124	14.8	21	86
10	3854	14.7	02	22	10	4976	14.8	23	90
20	3706	14.8	04	27	20	4827	14.9	25	2.22795
30	3558	14.8	06	32	30	4679	14.8	27	2.22800
40	3411	14.7	08	36	40	4530	14.9	29	04
50	3263	14.8	10	40	50	4381	14.9	31	08
35 09 00	3116	14.7	12	45	35 19 00	4233	14.8	33	13
10	2969	14.7	14	49	10	4085	14.8	35	17
20	2820	14.9	16	54	20	3936	14.9	37	22
30	2673	14.7	18	59	30	3787	14.9	39	26
40	2526	14.7	20	63	40	3639	14.8	41	30
50	2377	14.9	22	67	50	3490	14.9	43	35
35 10 00	2230	14.7	24	72	35 20 00	3342	14.8	45	39

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
35 20 00	1.9183342	14.8	2.0047845	2.22839	35 30 00	1.9174399	14.9	2.0047967	2.23106
10	3193	14.9	47	43	10	4249	15.0	69	10
20	3044	14.9	49	48	20	4099	15.0	71	15
30	2896	14.8	51	53	30	3950	14.9	73	20
40	2748	14.8	53	57	40	3800	15.0	75	24
50	2598	15.0	55	61	50	3650	15.0	77	28
35 21 00	2450	14.8	57	66	35 31 00	3501	14.9	79	33
10	2302	14.8	59	70	10	3352	14.9	81	37
20	2152	15.0	61	75	20	3201	15.1	83	42
30	2004	14.8	64	79	30	3052	14.9	85	46
40	1855	14.9	66	83	40	2903	14.9	87	50
50	1706	14.9	68	88	50	2752	15.1	89	55
35 22 00	1557	14.9	70	92	35 32 00	2603	14.9	91	59
10	1409	14.8	72	2.22896	10	2454	14.9	93	64
20	1260	14.9	74	2.22901	20	2303	15.1	95	69
30	1111	14.9	76	06	30	2154	14.9	97	74
40	0963	14.8	78	10	40	2004	15.0	2.0047999	78
50	0813	15.0	80	14	50	1854	15.0	2.0048001	82
35 23 00	0665	14.8	82	19	35 33 00	1705	14.9	03	87
10	0516	14.9	84	23	10	1555	15.0	05	91
20	0366	15.0	86	28	20	1406	14.9	07	2.23196
30	0218	14.8	88	33	30	1256	15.0	09	2.23200
40	1.9180069	14.9	90	37	40	1106	15.0	11	04
50	1.9179920	14.9	92	42	50	0956	15.0	13	09
35 24 00	9771	14.9	94	47	35 34 00	0806	15.0	15	13
10	9622	14.9	96	51	10	0657	14.9	17	17
20	9473	14.9	2.0047898	56	20	0506	15.1	19	22
30	9324	14.9	2.0047900	60	30	0357	14.9	21	27
40	9175	14.9	02	64	40	0207	15.0	23	31
50	9026	14.9	04	69	50	1.9170056	15.1	25	35
35 25 00	8877	14.9	06	73	35 35 00	1.9169907	14.9	27	40
10	8728	14.9	08	77	10	9756	15.1	29	44
20	8578	15.0	10	82	20	9607	14.9	31	49
30	8430	14.8	12	87	30	9457	15.0	34	53
40	8281	14.9	14	91	40	9307	15.0	36	57
50	8131	15.0	16	2.22995	50	9156	15.1	38	62
35 26 00	7982	14.9	18	2.23000	35 36 00	9007	14.9	40	66
10	7834	14.8	20	04	10	8857	15.0	42	70
20	7684	15.0	22	09	20	8706	15.1	44	75
30	7535	14.9	24	13	30	8556	15.0	46	80
40	7386	14.9	26	17	40	8407	14.9	48	84
50	7236	15.0	28	22	50	8256	15.1	50	88
35 27 00	7087	14.9	30	26	35 37 00	8106	15.0	52	93
10	6938	14.9	32	30	10	7956	15.0	54	2.23297
20	6788	15.0	34	35	20	7805	15.1	56	2.23302
30	6639	14.9	36	40	30	7655	15.0	58	06
40	6490	14.9	38	44	40	7505	15.0	60	10
50	6340	15.0	40	48	50	7355	15.0	62	15
35 28 00	6191	14.9	42	53	35 38 00	7205	15.0	64	19
10	6042	14.9	44	57	10	7055	15.0	66	23
20	5892	15.0	46	62	20	6904	15.1	68	28
30	5743	14.9	49	66	30	6754	15.0	70	33
40	5594	14.9	51	70	40	6604	15.0	72	37
50	5444	15.0	53	75	50	6453	15.1	74	41
35 29 00	5295	14.9	55	79	35 39 00	6303	15.0	76	46
10	5146	14.9	57	83	10	6153	15.0	78	50
20	4996	15.0	59	88	20	6002	15.1	80	55
30	4847	14.9	61	93	30	5852	15.0	82	59
40	4698	14.9	63	2.23097	40	5702	15.0	84	63
50	4548	15.0	65	2.23101	50	5551	15.1	86	68
35 30 00	4399	14.9	67	06	35 40 00	5400	15.1	88	72

Table for transformation of coordinates—Continued.

Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
°	′	″					°	′	″				
35	40	00	1.9165400	15.1	2.0048088	2.23372	35	50	00	1.9156347	15.1	2.0048210	2.23639
		10	5250	15.0	90	76			10	6196	15.1	12	43
		20	5099	15.1	92	81			20	6044	15.2	14	48
		30	4949	15.0	95	86			30	5893	15.1	16	53
		40	4799	15.0	97	91			40	5742	15.1	18	57
		50	4648	15.1	2.0048099	2.23395			50	5590	15.2	20	61
35	41	00	4498	15.0	2.0048101	2.23400	35	51	00	5438	15.2	22	66
		10	4347	15.1	03	04			10	5287	15.1	24	70
		20	4196	15.1	05	09			20	5135	15.2	26	75
		30	4046	15.0	07	13			30	4984	15.1	29	79
		40	3896	15.0	09	17			40	4833	15.1	31	83
		50	3744	15.2	11	22			50	4681	15.2	33	88
35	42	00	3594	15.0	13	26	35	52	00	4529	15.2	35	92
		10	3444	15.0	15	30			10	4379	15.0	37	2.23696
		20	3292	15.2	17	35			20	4227	15.2	39	2.23701
		30	3142	15.0	19	40			30	4075	15.2	41	05
		40	2992	15.0	21	44			40	3923	15.2	43	09
		50	2840	15.2	23	48			50	3771	15.2	45	14
35	43	00	2690	15.0	25	53	35	53	00	3620	15.1	47	18
		10	2540	15.0	27	57			10	3468	15.2	49	22
		20	2388	15.2	29	62			20	3316	15.2	51	27
		30	2238	15.0	31	66			30	3165	15.1	53	32
		40	2087	15.1	33	70			40	3013	15.2	55	36
		50	1936	15.1	35	75			50	2861	15.2	57	40
35	44	00	1785	15.1	37	79	35	54	00	2709	15.2	59	45
		10	1635	15.0	39	83			10	2558	15.1	61	49
		20	1483	15.2	41	88			20	2406	15.2	63	54
		30	1333	15.0	43	93			30	2254	15.2	65	58
		40	1182	15.1	45	2.23497			40	2103	15.1	67	62
		50	1031	15.1	47	2.23501			50	1950	15.3	69	67
35	45	00	0880	15.1	49	06	35	55	00	1799	15.1	71	71
		10	0730	15.0	51	10			10	1647	15.2	73	75
		20	0578	15.2	53	15			20	1495	15.2	75	80
		30	0427	15.1	56	19			30	1343	15.2	78	85
		40	0277	15.0	58	23			40	1192	15.1	80	89
		50	1.9160125	15.2	60	28			50	1039	15.3	82	93
35	46	00	1.9159974	15.1	62	32	35	56	00	0887	15.2	84	2.23798
		10	9824	15.0	64	36			10	0736	15.1	86	2.23802
		20	9672	15.2	66	41			20	0583	15.3	88	07
		30	9521	15.1	68	46			30	0431	15.2	90	11
		40	9371	15.1	70	50			40	0280	15.1	92	16
		50	9219	15.2	72	54			50	1.9150127	15.3	94	21
35	47	00	9068	15.1	74	59	35	57	00	1.9149975	15.2	96	25
		10	8917	15.1	76	63			10	9824	15.1	2.0048298	29
		20	8766	15.1	78	68			20	9671	15.3	2.0048300	34
		30	8615	15.1	80	72			30	9519	15.2	02	39
		40	8464	15.1	82	76			40	9368	15.1	04	43
		50	8312	15.2	84	81			50	9215	15.3	06	47
35	48	00	8161	15.1	86	85	35	58	00	9063	15.2	08	52
		10	8010	15.1	88	89			10	8911	15.2	10	56
		20	7859	15.1	90	94			20	8758	15.3	12	61
		30	7708	15.1	92	2.23599			30	8607	15.1	14	65
		40	7557	15.1	94	2.23604			40	8455	15.2	16	69
		50	7405	15.2	96	08			50	8302	15.3	18	74
35	49	00	7254	15.1	2.0048198	13	35	59	00	8150	15.2	20	78
		10	7103	15.1	2.0048200	17			10	7998	15.2	22	82
		20	6952	15.1	02	22			20	7845	15.3	24	87
		30	6801	15.1	04	26			30	7693	15.2	26	91
		40	6649	15.2	06	30			40	7541	15.2	28	2.23895
		50	6498	15.1	08	35			50	7388	15.3	30	2.23900
35	50	00	6347	15.1	10	39	36	00	00	7236	15.2	32	03

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
36 00 00	1.9147236	15.2	2.0048332	2.23903	36 10 00	1.9138071	15.3	2.0048455	2.24168
10	7084	15.2	34	07	10	7918	15.3	57	72
20	6931	15.3	36	12	20	7764	15.4	59	77
30	6779	15.2	39	17	30	7611	15.3	61	82
40	6627	15.2	41	21	40	7458	15.3	63	86
50	6474	15.3	43	25	50	7304	15.4	65	90
36 01 00	6322	15.2	45	30	36 11 00	7151	15.3	67	95
10	6170	15.2	47	34	10	6998	15.3	69	2.24199
20	6017	15.3	49	39	20	6844	15.4	71	2.24204
30	5865	15.2	51	43	30	6691	15.3	73	08
40	5713	15.2	53	47	40	6538	15.3	75	12
50	5560	15.3	55	52	50	6384	15.4	77	17
36 02 00	5408	15.2	57	56	36 12 00	6231	15.3	79	21
10	5255	15.3	59	60	10	6078	15.3	81	25
20	5102	15.3	61	65	20	5924	15.4	83	30
30	4950	15.2	63	70	30	5770	15.4	86	34
40	4798	15.2	65	74	40	5617	15.3	88	38
50	4645	15.3	67	78	50	5463	15.4	90	43
36 03 00	4492	15.3	69	83	36 13 00	5310	15.3	92	48
10	4340	15.2	71	87	10	5157	15.3	94	52
20	4188	15.2	73	92	20	5002	15.5	96	57
30	4036	15.2	75	2.23996	30	4849	15.3	2.0048498	62
40	3882	15.4	77	2.24000	40	4696	15.3	2.0048500	66
50	3730	15.2	79	05	50	4542	15.4	02	76
36 04 00	3578	15.2	81	09	36 14 00	4388	15.4	04	75
10	3425	15.3	83	13	10	4235	15.3	06	79
20	3272	15.3	85	18	20	4081	15.4	08	84
30	3119	15.3	88	22	30	3927	15.3	10	88
40	2967	15.2	90	26	40	3774	15.3	12	92
50	2814	15.3	92	31	50	3620	15.4	14	2.24297
36 05 00	2661	15.3	94	36	36 15 00	3466	15.4	16	2.24302
10	2509	15.2	96	40	10	3313	15.3	18	06
20	2355	15.4	2.0048398	45	20	3160	15.3	20	11
30	2203	15.2	2.0048400	50	30	3006	15.4	22	15
40	2050	15.3	02	54	40	2852	15.4	24	19
50	1897	15.3	04	58	50	2698	15.4	26	24
36 06 00	1744	15.3	06	63	36 16 00	2545	15.3	28	28
10	1592	15.2	08	67	10	2391	15.4	30	32
20	1438	15.4	10	72	20	2237	15.4	32	37
30	1286	15.2	12	76	30	2083	15.4	35	42
40	1133	15.3	14	80	40	1930	15.3	37	46
50	0979	15.4	16	85	50	1775	15.5	39	50
36 07 00	0827	15.2	18	89	36 17 00	1622	15.3	41	55
10	0674	15.3	20	93	10	1468	15.4	43	59
20	0520	15.4	22	2.24098	20	1314	15.4	45	64
30	0368	15.2	24	2.24102	30	1160	15.4	47	68
40	0215	15.3	26	06	40	1006	15.4	49	72
50	1.9140061	15.4	28	11	50	0852	15.4	51	77
36 08 00	1.9139909	15.2	30	15	36 18 00	0698	15.4	53	81
10	9756	15.3	32	19	10	0544	15.4	55	85
20	9602	15.4	34	24	20	0390	15.4	57	90
30	9449	15.3	37	28	30	0236	15.4	59	94
40	9297	15.2	39	32	40	1.9130082	15.4	61	2.24398
50	9143	15.4	41	37	50	1.9129927	15.5	63	2.24403
36 09 00	8990	15.3	43	42	36 19 00	9774	15.3	65	07
10	8837	15.3	45	46	10	9620	15.4	67	11
20	8683	15.4	47	51	20	9465	15.5	69	16
30	8531	15.2	49	55	30	9311	15.4	71	21
40	8378	15.3	51	59	40	9158	15.3	73	25
50	8224	15.4	53	64	50	9003	15.5	75	29
36 10 00	8071	15.3	55	68	36 20 00	8849	15.4	77	34

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
36 20 00	1.9128849	15.4	2.0048577	2.24434	36 30 00	1.9119570	15.5	2.0048700	2.24698
10	8695	15.4	79	38	10	9415	15.5	02	2.24702
20	8540	15.5	81	43	20	9260	15.5	04	07
30	8386	15.4	84	47	30	9105	15.5	07	12
40	8232	15.4	86	51	40	8950	15.5	09	16
50	8077	15.5	88	56	50	8794	15.6	11	20
36 21 00	7923	15.4	90	60	36 31 00	8639	15.5	13	25
10	7769	15.4	92	65	10	8484	15.5	15	29
20	7615	15.4	94	70	20	8328	15.6	17	34
30	7461	15.4	96	74	30	8173	15.5	19	38
40	7307	15.4	2.0048598	78	40	8018	15.5	21	42
50	7151	15.6	2.0048600	83	50	7862	15.6	23	47
36 22 00	6997	15.4	02	87	36 32 00	7707	15.5	25	51
10	6843	15.4	04	91	10	7552	15.5	27	55
20	6688	15.5	06	2.24496	20	7396	15.6	29	60
30	6534	15.4	08	2.24500	30	7241	15.5	31	64
40	6380	15.4	10	04	40	7086	15.5	33	68
50	6225	15.5	12	09	50	6930	15.6	35	73
36 23 00	6071	15.4	14	13	36 33 00	6775	15.5	37	77
10	5917	15.4	16	17	10	6620	15.5	39	81
20	5762	15.5	18	22	20	6464	15.6	41	86
30	5607	15.5	21	27	30	6309	15.5	44	90
40	5453	15.4	23	31	40	6154	15.5	46	94
50	5298	15.5	25	35	50	5998	15.6	48	2.24799
36 24 00	5144	15.4	27	40	36 34 00	5842	15.6	50	2.24803
10	4990	15.4	29	44	10	5687	15.5	52	07
20	4835	15.5	31	49	20	5531	15.6	54	12
30	4680	15.5	33	53	30	5376	15.5	56	17
40	4526	15.4	35	57	40	5221	15.5	58	21
50	4370	15.4	37	62	50	5064	15.7	60	25
36 25 00	4216	15.4	39	66	36 35 00	4909	15.5	62	30
10	4062	15.4	41	70	10	4754	15.5	64	34
20	3907	15.5	43	75	20	4598	15.6	66	39
30	3753	15.4	45	79	30	4442	15.6	68	43
40	3598	15.4	47	83	40	4287	15.5	70	47
50	3443	15.5	49	88	50	4131	15.6	72	52
36 26 00	3289	15.4	51	92	36 36 00	3975	15.6	74	56
10	3134	15.5	53	2.24596	10	3820	15.5	76	60
20	2979	15.5	55	2.24601	20	3664	15.6	78	65
30	2825	15.4	57	06	30	3509	15.5	80	69
40	2670	15.5	59	10	40	3353	15.6	82	73
50	2515	15.5	61	14	50	3197	15.6	84	78
36 27 00	2360	15.5	63	19	36 37 00	3042	15.5	86	82
10	2206	15.4	65	23	10	2886	15.6	88	86
20	2050	15.6	67	28	20	2730	15.6	90	91
30	1895	15.5	70	32	30	2574	15.6	93	2.24896
40	1741	15.4	72	36	40	2419	15.5	95	2.24900
50	1585	15.6	74	41	50	2262	15.7	97	05
36 28 00	1431	15.4	76	45	36 38 00	2107	15.5	2.0048799	09
10	1276	15.5	78	49	10	1951	15.6	2.0048801	13
20	1120	15.6	80	54	20	1794	15.7	03	18
30	0966	15.4	82	58	30	1639	15.5	05	23
40	0811	15.5	84	62	40	1483	15.6	07	27
50	0655	15.6	86	67	50	1327	15.6	09	31
36 29 00	0501	15.4	88	71	36 39 00	1171	15.6	11	36
10	0346	15.5	90	75	10	1015	15.6	13	40
20	0190	15.6	92	80	20	0859	15.6	15	45
30	1.9120036	15.4	94	85	30	0703	15.6	17	49
40	1.9119881	15.5	96	89	40	0547	15.6	19	53
50	9725	15.6	2.0048698	94	50	0390	15.7	21	58
36 30 00	9570	15.5	2.0048700	98	36 40 00	0235	15.5	23	62

Table for transformation of coordinates—Continued.

Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
°	′	″					°	′	″				
36	40	00	1.9110235	15.5	2.0048823	2.24962	36	50	00	1.9100842	15.7	2.0048947	2.25225
		10	1.9110079	15.6	25	66			10	0685	15.7	49	29
		20	1.9109922	15.7	27	71			20	0528	15.7	51	34
		30	9766	15.6	30	75			30	0371	15.7	53	38
		40	9611	15.5	32	79			40	0214	15.7	55	42
		50	9454	15.7	34	84			50	1.9100056	15.8	57	47
36	41	00	9298	15.6	36	88	36	51	00	1.9099900	15.6	59	51
		10	9142	15.6	38	92			10	9743	15.7	61	55
		20	8985	15.7	40	2.24997			20	9585	15.6	63	60
		30	8829	15.6	42	2.25001			30	9428	15.7	65	64
		40	8673	15.6	44	05			40	9271	15.7	67	69
		50	8517	15.6	46	10			50	9113	15.8	69	73
36	42	00	8361	15.6	48	14	36	52	00	8957	15.6	71	77
		10	8205	15.6	50	18			10	8800	15.7	73	81
		20	8048	15.7	52	23			20	8642	15.8	75	86
		30	7892	15.6	54	27			30	8485	15.7	78	90
		40	7736	15.6	56	31			40	8328	15.7	80	94
		50	7579	15.7	58	36			50	8170	15.8	82	2.25299
36	43	00	7423	15.6	60	40	36	53	00	8013	15.7	84	2.25303
		10	7267	15.6	62	44			10	7856	15.7	86	07
		20	7110	15.7	64	49			20	7698	15.8	88	12
		30	6953	15.7	67	54			30	7541	15.7	90	16
		40	6797	15.6	69	58			40	7384	15.7	92	21
		50	6640	15.7	71	62			50	7226	15.8	94	26
36	44	00	6484	15.6	73	67	36	54	00	7069	15.7	96	30
		10	6328	15.6	75	71			10	6912	15.7	2.0048998	34
		20	6171	15.7	77	76			20	6754	15.8	2.0049000	39
		30	6015	15.6	79	80			30	6597	15.7	02	43
		40	5859	15.6	81	84			40	6439	15.8	04	47
		50	5701	15.8	83	89			50	6282	15.7	06	52
36	45	00	5545	15.6	85	93	36	55	00	6125	15.7	08	56
		10	5389	15.6	87	2.25097			10	5968	15.7	10	60
		20	5233	15.6	89	2.25102			20	5809	15.9	12	65
		30	5076	15.7	91	06			30	5652	15.7	15	69
		40	4919	15.7	93	11			40	5495	15.7	17	73
		50	4763	15.6	95	16			50	5337	15.8	19	78
36	46	00	4606	15.7	97	20	36	56	00	5179	15.8	21	82
		10	4450	15.6	2.0048899	24			10	5022	15.7	23	86
		20	4293	15.7	2.0048901	29			20	4864	15.8	25	91
		30	4136	15.7	04	33			30	4707	15.7	27	95
		40	3980	15.6	06	37			40	4548	15.9	29	2.25399
		50	3823	15.7	08	42			50	4391	15.7	31	2.25404
36	47	00	3666	15.7	10	46	36	57	00	4233	15.8	33	08
		10	3510	15.6	12	50			10	4076	15.7	35	12
		20	3352	15.8	14	55			20	3918	15.8	37	17
		30	3196	15.6	16	59			30	3760	15.8	39	22
		40	3039	15.7	18	63			40	3603	15.7	41	26
		50	2882	15.7	20	68			50	3444	15.9	43	30
36	48	00	2725	15.7	22	72	36	58	00	3287	15.7	45	35
		10	2569	15.6	24	76			10	3129	15.8	47	39
		20	2411	15.8	26	81			20	2971	15.8	49	44
		30	2255	15.6	28	85			30	2813	15.8	52	48
		40	2098	15.7	30	89			40	2656	15.7	54	52
		50	1941	15.7	32	94			50	2497	15.9	56	57
36	49	00	1784	15.7	34	2.25198	36	59	00	2340	15.7	58	61
		10	1627	15.7	36	2.25202			10	2182	15.8	60	65
		20	1470	15.7	38	07			20	2024	15.8	62	70
		30	1313	15.7	41	12			30	1866	15.8	64	74
		40	1157	15.6	43	16			40	1708	15.8	66	78
		50	0999	15.8	45	20			50	1550	15.8	68	83
36	50	00	0842	15.7	47	25	37	00	00	1392	15.8	70	87

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
37 00 00	1.9091392	15.8	2.0049070	2.25487	37 10 00	1.9081885	15.8	2.0049194	2.25750
10	1234	15.8	72	91	10	1726	15.9	96	54
20	1077	15.7	74	2.25496	20	1567	15.9	2.0049198	59
30	0918	15.9	76	2.25500	30	1409	15.8	2.0049200	63
40	0760	15.8	78	04	40	1249	16.0	02	67
50	0602	15.8	80	09	50	1090	15.9	04	72
37 01 00	0444	15.8	82	13	37 11 00	0932	15.8	06	76
10	0286	15.8	84	17	10	0773	15.9	08	80
20	1.9090127	15.9	86	22	20	0613	16.0	10	85
30	1.9089970	15.7	89	26	30	0454	15.9	13	89
40	9812	15.8	91	30	40	0296	15.8	15	93
50	9653	15.9	93	35	50	1.9080136	16.0	17	2.25798
37 02 00	9495	15.8	95	40	37 12 00	1.9079977	15.9	19	2.25802
10	9337	15.8	97	44	10	9818	15.9	21	06
20	9179	15.8	2.0049099	49	20	9658	16.0	23	11
30	9021	15.8	2.0049101	53	30	9499	15.9	25	15
40	8863	15.8	03	57	40	9341	15.8	27	19
50	8705	15.8	05	62	50	9181	16.0	29	24
37 03 00	8547	15.8	07	66	37 13 00	9022	15.9	31	28
10	8389	15.8	09	70	10	8863	15.9	33	32
20	8230	15.9	11	75	20	8703	16.0	35	36
30	8072	15.8	14	79	30	8544	15.9	37	41
40	7914	15.8	16	83	40	8385	15.9	39	45
50	7755	15.9	18	88	50	8225	16.0	41	50
37 04 00	7597	15.8	20	92	37 14 00	8066	15.9	43	54
10	7439	15.8	22	2.25596	10	7907	15.9	45	58
20	7280	15.9	24	2.25601	20	7747	16.0	47	63
30	7121	15.9	26	06	30	7588	15.9	50	67
40	6963	15.8	28	10	40	7429	15.9	52	71
50	6804	15.9	30	14	50	7269	16.0	54	76
37 05 00	6646	15.8	32	19	37 15 00	7110	15.9	56	80
10	6488	15.8	34	23	10	6950	16.0	58	84
20	6329	15.8	36	28	20	6790	16.0	60	89
30	6171	15.8	38	32	30	6631	15.9	62	93
40	6012	15.9	40	36	40	6472	15.9	64	2.25897
50	5853	15.9	42	41	50	6312	16.0	66	2.25902
37 06 00	5695	15.8	44	45	37 16 00	6153	15.9	68	06
10	5537	15.8	46	49	10	5993	16.0	70	10
20	5377	16.0	48	54	20	5833	16.0	72	15
30	5219	15.8	51	58	30	5674	15.9	75	19
40	5061	15.8	53	62	40	5515	15.9	77	23
50	4902	15.9	55	67	50	5354	16.1	79	28
37 07 00	4743	15.9	57	71	37 17 00	5195	15.9	81	32
10	4585	15.8	59	75	10	5036	15.9	83	36
20	4426	15.9	61	80	20	4876	16.0	85	41
30	4267	15.9	63	84	30	4716	16.0	87	45
40	4109	15.8	65	88	40	4557	15.9	89	49
50	3949	16.0	67	93	50	4396	16.1	91	54
37 08 00	3791	15.8	69	2.25697	37 18 00	4237	15.9	93	59
10	3632	15.9	71	2.25701	10	4078	15.9	95	63
20	3473	15.9	73	06	20	3918	16.0	97	68
30	3315	15.8	75	10	30	3759	15.9	2.0049299	72
40	3156	15.9	77	14	40	3598	16.1	2.0049301	76
50	2997	15.9	79	19	50	3439	15.9	03	81
37 09 00	2838	15.9	81	23	37 19 00	3279	16.0	05	85
10	2680	15.8	83	27	10	3120	15.9	07	89
20	2520	16.0	85	32	20	2959	16.1	09	94
30	2361	15.9	88	36	30	2800	15.9	12	2.25999
40	2203	15.8	90	40	40	2640	16.0	14	2.26003
50	2043	16.0	92	45	50	2480	16.0	16	07
37 10 00	1885	15.8	94	50	37 20 00	2320	16.0	18	12

Table for transformation of coordinates—Continued.

Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
°	′	″					°	′	″				
37	20	00	1.9072320	16.0	2.0049318	2.26012	37	30	00	1.9032697	16.0	2.0049442	2.26273
		10	2161	15.9	20	16			10	2536	16.1	44	77
		20	2000	16.1	22	21			20	2374	16.2	46	82
		30	1840	16.0	24	25			30	2214	16.0	48	86
		40	1681	15.9	26	29			40	2053	16.1	50	90
		50	1520	16.1	28	34			50	1892	16.1	52	95
37	21	00	1360	16.0	30	38	37	31	00	1731	16.1	54	2.26299
		10	1201	15.9	32	42			10	1570	16.1	56	2.26303
		20	1040	16.1	34	47			20	1409	16.1	58	08
		30	0880	16.0	36	51			30	1248	16.1	61	12
		40	0720	16.0	38	55			40	1087	16.1	63	16
		50	0560	16.0	40	60			50	0925	16.2	65	21
37	22	00	0400	16.0	42	64	37	32	00	0765	16.0	67	25
		10	0240	16.0	44	68			10	0604	16.1	69	29
		20	1.9070079	16.1	46	73			20	0442	16.2	71	34
		30	1.9069919	16.0	49	77			30	0281	16.1	73	38
		40	9760	15.9	51	81			40	1.9060120	16.1	75	42
		50	9599	16.1	53	86			50	1.9059959	16.1	77	47
37	23	00	9439	16.0	55	90	37	33	00	9798	16.1	79	51
		10	9279	16.0	57	94			10	9637	16.1	81	55
		20	9118	16.1	59	2.26099			20	9476	16.1	83	60
		30	8958	16.0	61	2.26103			30	9315	16.1	85	64
		40	8798	16.0	63	07			40	9153	16.2	87	68
		50	8637	16.1	65	12			50	8992	16.1	89	73
37	24	00	8477	16.0	67	16	37	34	00	8831	16.1	91	77
		10	8317	16.0	69	20			10	8670	16.1	93	82
		20	8156	16.1	71	25			20	8508	16.2	95	86
		30	7996	16.0	74	29			30	8347	16.1	2.0049498	91
		40	7836	16.0	76	33			40	8186	16.1	2.0049500	95
		50	7675	16.1	78	38			50	8024	16.2	02	2.26399
37	25	00	7515	16.0	80	42	37	35	00	7863	16.1	04	2.26403
		10	7355	16.0	82	46			10	7702	16.1	06	07
		20	7195	16.0	84	51			20	7540	16.2	08	12
		30	7035	16.0	86	55			30	7379	16.1	10	16
		40	6874	16.1	88	59			40	7218	16.1	12	20
		50	6714	16.0	90	64			50	7056	16.2	14	25
37	26	00	6553	16.1	92	69	37	36	00	6895	16.1	16	29
		10	6393	16.0	94	73			10	6734	16.1	18	33
		20	6232	16.1	96	78			20	6571	16.3	20	38
		30	6072	16.0	2.0049399	82			30	6410	16.1	23	42
		40	5912	16.0	2.0049401	86			40	6249	16.1	25	46
		50	5750	16.2	03	91			50	6087	16.2	27	51
37	27	00	5590	16.0	05	95	37	37	00	5926	16.1	29	55
		10	5430	16.0	07	2.26199			10	5764	16.2	31	59
		20	5268	16.2	09	2.26204			20	5602	16.2	33	64
		30	5108	16.0	11	08			30	5441	16.1	35	68
		40	4948	16.0	13	12			40	5280	16.1	37	72
		50	4786	16.2	15	17			50	5117	16.3	39	77
37	28	00	4626	16.0	17	21	37	38	00	4955	16.2	41	81
		10	4466	16.0	19	25			10	4794	16.1	43	85
		20	4304	16.2	21	30			20	4632	16.2	45	90
		30	4144	16.0	23	34			30	4471	16.1	48	94
		40	3984	16.0	25	38			40	4309	16.2	50	2.26498
		50	3822	16.2	27	43			50	4147	16.2	52	2.26503
37	29	00	3662	16.0	29	47	37	39	00	3986	16.1	54	07
		10	3501	16.1	31	51			10	3824	16.2	56	11
		20	3340	16.1	33	56			20	3662	16.2	58	16
		30	3179	16.1	36	60			30	3500	16.2	60	20
		40	3019	16.0	38	64			40	3339	16.1	62	24
		50	2857	16.2	40	69			50	3176	16.3	64	29
37	30	00	2697	16.0	42	73	37	40	00	3015	16.1	66	33

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
37 40 00	1.9053015	16.1	2.0049566	2.26533	37 50 00	1.9043275	16.2	2.0049691	2.26794
10	2853	16.2	68	37	10	3112	16.3	93	2.26799
20	2691	16.2	70	42	20	2949	16.3	95	2.26804
30	2530	16.1	72	46	30	2786	16.3	97	08
40	2367	16.3	74	50	40	2624	16.2	2.0049699	12
50	2206	16.1	76	55	50	2460	16.4	2.0049701	17
37 41 00	2044	16.2	78	59	37 51 00	2298	16.2	03	21
10	1882	16.2	80	63	10	2135	16.3	05	25
20	1720	16.2	82	68	20	1971	16.4	07	30
30	1558	16.2	85	72	30	1809	16.2	10	34
40	1396	16.2	87	76	40	1646	16.3	12	38
50	1234	16.2	89	81	50	1482	16.4	14	43
37 42 00	1072	16.2	91	85	37 52 00	1320	16.2	16	47
10	0910	16.2	93	90	10	1157	16.3	18	51
20	0747	16.3	95	95	20	0994	16.3	20	55
30	0586	16.1	97	2.26599	30	0831	16.3	22	60
40	0424	16.2	2.0049599	2.26603	40	0668	16.3	24	64
50	0261	16.3	2.0049601	08	50	0505	16.3	26	68
37 43 00	1.9050099	16.2	03	12	37 53 00	0342	16.3	28	72
10	1.9049937	16.2	05	16	10	0179	16.3	30	76
20	9775	16.2	07	21	20	1.9040015	16.4	32	81
30	9613	16.2	10	25	30	1.9039852	16.3	34	85
40	9451	16.2	12	29	40	9690	16.2	36	89
50	9288	16.3	14	34	50	9526	16.4	38	94
37 44 00	9126	16.2	16	38	37 54 00	9363	16.3	40	2.26898
10	8964	16.2	18	42	10	9200	16.3	42	2.26902
20	8801	16.3	20	47	20	9036	16.4	44	07
30	8639	16.2	22	51	30	8873	16.3	47	11
40	8477	16.2	24	55	40	8710	16.3	49	15
50	8314	16.3	26	60	50	8546	16.4	51	20
37 45 00	8152	16.2	28	64	37 55 00	8383	16.3	53	24
10	7990	16.2	30	68	10	8220	16.3	55	28
20	7827	16.3	32	73	20	8056	16.4	57	33
30	7665	16.2	35	77	30	7893	16.3	59	37
40	7503	16.2	37	81	40	7730	16.3	61	41
50	7340	16.3	39	86	50	7566	16.4	63	46
37 46 00	7178	16.2	41	90	37 56 00	7403	16.3	65	50
10	7016	16.2	43	94	10	7240	16.3	67	54
20	6853	16.3	45	2.26699	20	7075	16.5	69	59
30	6691	16.2	47	2.26703	30	6912	16.3	72	63
40	6528	16.3	49	07	40	6749	16.3	74	67
50	6366	16.2	51	12	50	6585	16.4	76	72
37 47 00	6204	16.2	53	16	37 57 00	6422	16.3	78	76
10	6041	16.3	55	20	10	6259	16.3	80	80
20	5878	16.3	57	25	20	6094	16.5	82	85
30	5716	16.2	60	29	30	5931	16.3	84	89
40	5554	16.2	62	33	40	5768	16.3	86	93
50	5390	16.4	64	38	50	5604	16.4	88	2.26998
37 48 00	5228	16.2	66	42	37 58 00	5440	16.4	90	2.27002
10	5066	16.2	68	46	10	5277	16.3	92	07
20	4902	16.4	70	51	20	5113	16.4	94	12
30	4740	16.2	72	55	30	4949	16.4	97	16
40	4578	16.2	74	59	40	4786	16.3	2.0049799	20
50	4414	16.4	76	64	50	4622	16.4	2.0049801	25
37 49 00	4252	16.2	78	68	37 59 00	4458	16.4	03	29
10	4089	16.3	80	72	10	4295	16.3	05	33
20	3926	16.3	82	77	20	4131	16.4	07	38
30	3763	16.3	85	81	30	3968	16.3	09	42
40	3601	16.2	87	85	40	3803	16.5	11	46
50	3437	16.4	89	90	50	3640	16.3	13	51
37 50 00	3275	16.2	91	94	38 00 00	3476	16.4	15	55

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
38 00 00	1.9033476	16.4	2.0049815	2.27055	38 10 00	1.9023618	16.4	2.0049940	2.27314
10	3313	16.3	17	59	10	3453	16.5	42	18
20	3148	16.5	19	63	20	3288	16.5	44	23
30	2985	16.3	22	68	30	3123	16.5	47	27
40	2821	16.4	24	72	40	2959	16.4	49	31
50	2657	16.4	26	76	50	2793	16.6	51	36
38 01 00	2493	16.4	28	80	38 11 00	2629	16.4	53	40
10	2330	16.3	30	84	10	2464	16.5	55	44
20	2165	16.5	32	89	20	2299	16.5	57	49
30	2001	16.4	34	93	30	2135	16.4	59	53
40	1838	16.3	36	2.27097	40	1969	16.6	61	57
50	1673	16.5	38	2.27102	50	1804	16.5	63	62
38 02 00	1509	16.4	40	06	38 12 00	1640	16.4	65	66
10	1346	16.3	42	10	10	1475	16.5	67	70
20	1181	16.5	44	15	20	1309	16.6	69	75
30	1017	16.4	47	19	30	1145	16.4	72	79
40	0853	16.4	49	23	40	0980	16.5	74	83
50	0689	16.4	51	28	50	0814	16.6	76	88
38 03 00	0525	16.4	53	32	38 13 00	0649	16.5	78	92
10	0361	16.4	55	36	10	0484	16.5	80	2.27396
20	0196	16.5	57	41	20	0319	16.5	82	2.27400
30	1.9030032	16.4	59	45	30	1.9020154	16.5	84	05
40	1.9029868	16.4	61	49	40	1.9019989	16.5	86	09
50	9704	16.4	63	54	50	9823	16.6	88	13
38 04 00	9540	16.4	65	58	38 14 00	9658	16.5	90	17
10	9376	16.4	67	62	10	9493	16.5	92	22
20	9211	16.5	69	67	20	9327	16.6	94	27
30	9047	16.4	72	71	30	9162	16.5	97	31
40	8883	16.4	74	75	40	8998	16.4	2.0049999	35
50	8718	16.5	76	80	50	8832	16.6	2.0050001	40
38 05 00	8554	16.4	78	84	38 15 00	8667	16.5	03	44
10	8390	16.4	80	88	10	8502	16.5	05	48
20	8226	16.4	82	93	20	8336	16.6	07	53
30	8062	16.4	84	2.27197	30	8171	16.5	09	57
40	7897	16.5	86	2.27201	40	8006	16.5	11	61
50	7733	16.4	88	06	50	7839	16.7	13	66
38 06 00	7569	16.4	90	10	38 16 00	7674	16.5	15	70
10	7405	16.4	92	15	10	7509	16.5	17	74
20	7240	16.5	94	20	20	7343	16.6	19	79
30	7075	16.5	97	24	30	7178	16.5	22	83
40	6911	16.4	2.0049899	28	40	7013	16.5	24	87
50	6746	16.5	2.0049901	33	50	6847	16.6	26	92
38 07 00	6582	16.4	03	37	38 17 00	6682	16.5	28	2.27496
10	6418	16.4	05	41	10	6516	16.6	30	2.27500
20	6252	16.6	07	45	20	6351	16.5	32	05
30	6088	16.4	09	50	30	6186	16.5	34	09
40	5924	16.4	11	54	40	6020	16.6	36	13
50	5759	16.5	13	58	50	5854	16.6	38	18
38 08 00	5594	16.5	15	62	38 18 00	5689	16.5	40	22
10	5430	16.4	17	66	10	5524	16.5	42	26
20	5265	16.5	19	71	20	5358	16.6	44	30
30	5100	16.5	22	75	30	5192	16.6	47	35
40	4936	16.4	24	79	40	5027	16.5	49	39
50	4771	16.5	26	84	50	4861	16.6	51	43
38 09 00	4606	16.5	28	88	38 19 00	4695	16.6	53	47
10	4442	16.4	30	92	10	4530	16.5	55	51
20	4277	16.5	32	2.27297	20	4363	16.7	57	56
30	4112	16.5	34	2.27301	30	4198	16.5	59	60
40	3948	16.4	36	05	40	4033	16.5	61	64
50	3782	16.6	38	10	50	3866	16.7	63	69
38 10 00	3618	16.4	40	14	38 20 00	3701	16.5	65	73

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
38 20 00	1.9013701	16.5	2.0050065	2.27573	38 30 00	1.9003724	16.6	2.0050190	2.27832
10	3535	16.6	67	77	10	3557	16.7	92	37
20	3369	16.6	69	82	20	3390	16.7	94	42
30	3203	16.6	72	86	30	3223	16.7	97	46
40	3038	16.5	74	90	40	3057	16.6	2.0050199	50
50	2871	16.7	76	95	50	2889	16.8	2.0050201	55
38 21 00	2705	16.6	78	2.27599	38 31 00	2723	16.6	03	59
10	2540	16.5	80	2.27603	10	2556	16.7	05	63
20	2373	16.7	82	08	20	2388	16.8	07	68
30	2208	16.5	84	12	30	2222	16.8	09	72
40	2042	16.6	86	16	40	2055	16.7	11	76
50	1875	16.7	88	21	50	1887	16.8	13	81
38 22 00	1710	16.5	90	25	38 32 00	1721	16.6	15	85
10	1544	16.6	92	30	10	1554	16.7	17	89
20	1377	16.7	94	34	20	1386	16.8	19	93
30	1211	16.6	97	39	30	1220	16.6	22	2.27898
40	1046	16.5	2.0050099	43	40	1053	16.7	24	2.27902
50	0879	16.7	2.0050101	48	50	0885	16.8	26	06
38 23 00	0713	16.6	03	52	38 33 00	0718	16.7	28	10
10	0547	16.6	05	56	10	0552	16.6	30	14
20	0382	16.5	07	60	20	0384	16.8	32	19
30	0216	16.6	09	65	30	0217	16.7	35	23
40	1.9010049	16.7	11	69	40	1.9000050	16.7	37	27
50	1.9009883	16.6	13	73	50	1.8999882	16.8	39	32
38 24 00	9717	16.6	15	77	38 34 00	9715	16.7	41	36
10	9551	16.6	17	81	10	9548	16.7	43	40
20	9384	16.7	19	86	20	9382	16.6	45	45
30	9218	16.6	22	90	30	9215	16.7	47	49
40	9053	16.5	24	94	40	9047	16.8	49	53
50	8886	16.7	26	2.27699	50	8880	16.7	51	58
38 25 00	8720	16.6	28	2.27703	38 35 00	8713	16.7	53	62
10	8554	16.6	30	07	10	8546	16.7	55	66
20	8387	16.7	32	12	20	8378	16.8	57	71
30	8221	16.6	35	16	30	8211	16.7	60	75
40	8055	16.6	37	20	40	8044	16.7	62	79
50	7888	16.7	39	25	50	7876	16.8	64	84
38 26 00	7721	16.7	41	29	38 36 00	7709	16.7	66	88
10	7555	16.6	43	33	10	7542	16.7	68	92
20	7388	16.7	45	38	20	7373	16.9	70	2.27996
30	7222	16.6	47	42	30	7206	16.7	72	2.28001
40	7056	16.6	49	46	40	7039	16.7	74	05
50	6889	16.7	51	51	50	6871	16.8	76	09
38 27 00	6723	16.6	53	55	38 37 00	6704	16.7	78	13
10	6556	16.7	55	59	10	6537	16.7	80	17
20	6389	16.7	57	64	20	6368	16.9	82	22
30	6223	16.6	59	68	30	6201	16.7	85	26
40	6057	16.6	61	72	40	6034	16.7	87	30
50	5890	16.7	63	77	50	5866	16.8	89	35
38 28 00	5723	16.7	65	81	38 38 00	5698	16.8	91	39
10	5557	16.6	67	85	10	5531	16.7	93	44
20	5391	16.6	69	89	20	5363	16.8	95	49
30	5224	16.7	72	94	30	5195	16.8	97	53
40	5057	16.7	74	2.27798	40	5028	16.7	2.0050299	57
50	4891	16.6	76	2.27802	50	4860	16.8	2.0050301	62
38 29 00	4724	16.7	78	06	38 39 00	4692	16.8	03	66
10	4558	16.6	80	10	10	4525	16.7	05	70
20	4390	16.8	82	15	20	4357	16.8	07	75
30	4224	16.6	84	19	30	4189	16.8	10	79
40	4058	16.6	86	23	40	4022	16.7	12	83
50	3890	16.8	88	28	50	3853	16.9	14	88
38 30 00	3724	16.6	90	32	38 40 00	3686	16.7	16	92

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
38 40 00	1.8993686	16.7	2.0050316	2.28092	38 50 00	1.8983589	16.8	2.0050441	2.28350
10	3518	16.8	18	2.28096	10	3420	16.9	43	54
20	3351	16.7	20	2.28100	20	3251	16.9	45	58
30	3183	16.8	22	05	30	3082	16.9	48	63
40	3015	16.8	24	09	40	2914	16.8	50	67
50	2847	16.8	26	13	50	2744	17.0	52	71
38 41 00	2680	16.7	28	17	38 51 00	2575	16.9	54	75
10	2512	16.8	30	21	10	2407	16.8	56	79
20	2343	16.9	32	26	20	2238	16.9	58	84
30	2176	16.7	35	30	30	2070	16.8	60	88
40	2008	16.8	37	34	40	1900	17.0	62	92
50	1839	16.9	39	39	50	1731	16.9	64	2.28397
38 42 00	1672	16.7	41	43	38 52 00	1563	16.8	66	2.28401
10	1504	16.8	43	47	10	1394	16.9	68	05
20	1335	16.9	45	52	20	1224	17.0	70	10
30	1168	16.7	48	56	30	1055	16.9	73	14
40	1000	16.8	50	60	40	0887	16.8	75	18
50	0831	16.9	52	65	50	0717	17.0	77	23
38 43 00	0663	16.8	54	69	38 53 00	0548	16.9	79	27
10	0496	16.7	56	73	10	0379	16.9	81	31
20	0327	16.9	58	77	20	0210	16.9	83	35
30	1.8990159	16.8	60	82	30	1.8980041	16.9	86	40
40	1.8989991	16.8	62	86	40	1.8979872	16.9	88	44
50	9822	16.9	64	90	50	9702	17.0	90	48
38 44 00	9654	16.8	66	94	38 54 00	9533	16.9	92	53
10	9487	16.7	68	2.28198	10	9364	16.9	94	57
20	9318	16.9	70	2.28203	20	9194	17.0	96	62
30	9150	16.8	73	07	30	9025	16.9	2.0050498	66
40	8982	16.8	75	11	40	8856	16.9	2.0050500	70
50	8813	16.9	77	16	50	8686	17.0	02	75
38 45 00	8645	16.8	79	20	38 55 00	8517	16.9	04	79
10	8477	16.8	81	24	10	8348	16.9	06	83
20	8309	16.8	83	29	20	8179	16.9	08	88
30	8141	16.8	85	33	30	8010	16.9	11	92
40	7972	16.9	87	37	40	7840	17.0	13	2.28496
50	7804	16.8	89	42	50	7671	16.9	15	2.28501
38 46 00	7636	16.8	91	46	38 56 00	7502	16.9	17	05
10	7467	16.9	93	51	10	7333	16.9	19	09
20	7298	16.8	95	56	20	7163	16.9	21	13
30	7130	16.8	2.0050398	60	30	6994	16.9	23	18
40	6962	16.8	2.0050400	64	40	6825	16.9	25	22
50	6793	16.9	02	69	50	6654	17.1	27	26
38 47 00	6625	16.8	04	73	38 57 00	6485	16.9	29	30
10	6457	16.8	06	77	10	6316	16.9	31	34
20	6287	17.0	08	81	20	6146	17.0	33	39
30	6119	16.8	10	86	30	5977	16.9	36	43
40	5951	16.8	12	90	40	5807	17.0	38	47
50	5782	16.9	14	94	50	5637	17.0	40	52
38 48 00	5613	16.9	16	2.28298	38 58 00	5468	16.9	42	56
10	5445	16.8	18	2.28302	10	5298	17.0	44	60
20	5276	16.9	20	07	20	5128	17.0	46	65
30	5107	16.9	23	11	30	4959	16.9	49	69
40	4939	16.8	25	15	40	4789	17.0	51	73
50	4770	16.9	27	20	50	4619	17.0	53	78
38 49 00	4601	16.9	29	24	38 59 00	4450	16.9	55	82
10	4433	16.8	31	28	10	4280	17.0	57	86
20	4263	17.0	33	33	20	4110	17.0	59	91
30	4095	16.8	35	37	30	3940	17.0	61	95
40	3927	16.8	37	41	40	3771	16.9	63	2.28599
50	3757	17.0	39	46	50	3600	17.1	65	2.28604
38 50 00	3589	16.8	41	50	39 00 00	3431	16.9	67	08

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
39 00 00	1.8973431	16.9	2.0050567	2.28608	39 10 00	1.8963212	17.1	2.0050693	2.28866
10	3261	17.0	69	12	10	3042	17.0	95	70
20	3091	17.0	71	16	20	2870	17.2	2.0050697	75
30	2921	17.0	74	21	30	2700	17.0	2.0050700	79
40	2752	16.9	76	25	40	2529	17.1	02	83
50	2581	17.1	78	29	50	2358	17.1	04	88
39 01 00	2412	16.9	80	33	39 11 00	2187	17.1	06	92
10	2242	17.0	82	37	10	2016	17.1	08	2.28896
20	2072	17.0	84	42	20	1846	17.0	10	2.28900
30	1903	16.9	86	46	30	1675	17.1	12	05
40	1732	17.1	88	50	40	1503	17.2	14	09
50	1562	17.0	90	55	50	1333	17.0	16	13
39 02 00	1393	16.9	92	60	39 12 00	1162	17.1	18	17
10	1223	17.0	94	64	10	0991	17.1	20	21
20	1052	17.1	96	68	20	0819	17.2	22	26
30	0883	16.9	2.0050599	73	30	0649	17.0	25	30
40	0713	17.0	2.0050601	77	40	0478	17.1	27	34
50	0542	17.1	03	81	50	0306	17.2	29	39
39 03 00	0372	17.0	05	85	39 13 00	1.8960135	17.1	31	43
10	0202	17.0	07	89	10	1.8959964	17.1	33	47
20	1.8970032	17.0	09	94	20	9793	17.1	35	52
30	1.8969862	17.0	11	2.28698	30	9622	17.1	38	56
40	9692	17.0	13	2.28702	40	9451	17.1	40	60
50	9521	17.1	15	07	50	9279	17.2	42	65
39 04 00	9351	17.0	17	11	39 14 00	9108	17.1	44	69
10	9181	17.0	19	15	10	8937	17.1	46	73
20	9010	17.1	21	20	20	8765	17.2	48	77
30	8840	17.0	24	24	30	8594	17.1	50	82
40	8670	17.0	26	28	40	8423	17.1	52	86
50	8499	17.1	28	33	50	8251	17.2	54	90
39 05 00	8329	17.0	30	37	39 15 00	8080	17.1	56	94
10	8159	17.0	32	41	10	7909	17.1	58	2.28998
20	7988	17.1	34	45	20	7737	17.2	60	2.29003
30	7818	17.0	37	50	30	7566	17.1	63	07
40	7648	17.0	39	54	40	7395	17.1	65	11
50	7477	17.1	41	58	50	7223	17.2	67	16
39 06 00	7307	17.0	43	62	39 16 00	7052	17.1	69	20
10	7137	17.0	45	66	10	6881	17.1	71	24
20	6967	17.0	47	71	20	6709	17.2	73	28
30	6797	17.0	49	75	30	6538	17.1	75	33
40	6625	17.2	51	79	40	6366	17.2	77	37
50	6455	17.0	53	84	50	6195	17.1	79	41
39 07 00	6285	17.0	55	88	39 17 00	6024	17.1	81	45
10	6115	17.0	57	92	10	5852	17.2	83	49
20	5943	17.2	59	2.28797	20	5680	17.2	85	54
30	5773	17.0	62	2.28801	30	5509	17.1	88	58
40	5603	17.0	64	05	40	5338	17.1	90	62
50	5432	17.1	66	10	50	5165	17.3	92	67
39 08 00	5261	17.1	68	14	39 18 00	4994	17.1	94	72
10	5091	17.0	70	18	10	4823	17.1	96	76
20	4920	17.1	72	22	20	4650	17.3	2.0050798	81
30	4749	17.1	74	27	30	4479	17.1	2.0050800	85
40	4579	17.0	76	31	40	4307	17.2	02	89
50	4408	17.1	78	35	50	4135	17.2	04	94
39 09 00	4237	17.1	80	39	39 19 00	3964	17.1	06	2.29098
10	4067	17.0	82	43	10	3792	17.2	08	2.29102
20	3895	17.2	84	48	20	3620	17.2	10	06
30	3725	17.0	87	52	30	3448	17.2	13	11
40	3554	17.1	89	56	40	3277	17.1	15	15
50	3383	17.1	91	61	50	3104	17.3	17	19
39 10 00	3212	17.1	93	66	39 20 00	2933	17.1	19	23

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
39 20 00	1.8952933	17.1	2.0050819	2.29123	39 30 00	1.8942592	17.3	2.0050945	2.29380
10	2761	17.2	21	27	10	2419	17.3	47	84
20	2589	17.2	24	32	20	2245	17.4	49	88
30	2417	17.2	26	36	30	2073	17.2	52	93
40	2245	17.2	28	40	40	1900	17.3	54	2.29397
50	2073	17.2	30	45	50	1727	17.3	56	2.29401
39 21 00	1901	17.2	32	49	39 31 00	1554	17.3	58	05
10	1729	17.2	34	53	10	1381	17.3	60	09
20	1558	17.1	36	57	20	1208	17.3	62	14
30	1386	17.2	38	62	30	1036	17.2	64	18
40	1213	17.3	40	66	40	0862	17.4	66	22
50	1042	17.1	42	70	50	0689	17.3	68	27
39 22 00	0870	17.2	44	74	39 32 00	0517	17.2	70	31
10	0698	17.2	46	78	10	0345	17.2	72	35
20	0525	17.3	48	83	20	1.8940170	17.5	74	40
30	0354	17.1	51	87	30	1.8939997	17.3	77	44
40	0182	17.2	53	91	40	9824	17.3	79	48
50	1.8950009	17.3	55	2.29196	50	9650	17.4	81	53
39 23 00	1.8949837	17.2	57	2.29200	39 33 00	9478	17.2	83	57
10	9665	17.2	59	04	10	9305	17.3	85	61
20	9492	17.3	61	08	20	9131	17.4	87	65
30	9321	17.1	63	13	30	8958	17.3	90	70
40	9149	17.2	65	17	40	8785	17.3	92	74
50	8976	17.3	67	21	50	8611	17.4	94	79
39 24 00	8804	17.2	69	25	39 34 00	8438	17.3	96	83
10	8632	17.2	71	29	10	8265	17.3	2.0050998	87
20	8459	17.3	73	34	20	8091	17.4	2.0051000	92
30	8287	17.2	76	38	30	7918	17.3	02	2.29496
40	8115	17.2	78	42	40	7745	17.3	04	2.29500
50	7942	17.3	80	47	50	7571	17.4	06	05
39 25 00	7770	17.2	82	51	39 35 00	7398	17.3	08	09
10	7598	17.2	84	55	10	7225	17.3	10	13
20	7425	17.3	86	60	20	7051	17.4	12	17
30	7253	17.2	89	64	30	6878	17.3	15	22
40	7080	17.3	91	68	40	6704	17.4	17	26
50	6907	17.3	93	74	50	6530	17.4	19	30
39 26 00	6735	17.2	95	78	39 36 00	6357	17.3	21	34
10	6563	17.2	97	82	10	6184	17.3	23	38
20	6391	17.2	2.0050899	86	20	6011	17.3	25	43
30	6219	17.2	2.0050901	91	30	5837	17.4	28	47
40	6045	17.4	03	95	40	5663	17.4	30	51
50	5873	17.2	05	2.29299	50	5490	17.3	32	56
39 27 00	5701	17.2	07	2.29303	39 37 00	5317	17.3	34	60
10	5529	17.2	09	07	10	5143	17.4	36	64
20	5355	17.4	11	12	20	4969	17.4	38	68
30	5183	17.2	14	16	30	4796	17.3	40	73
40	5011	17.2	16	20	40	4622	17.4	42	77
50	4837	17.4	18	25	50	4448	17.4	44	81
39 28 00	4665	17.2	20	29	39 38 00	4275	17.3	46	85
10	4493	17.2	22	33	10	4101	17.4	48	89
20	4319	17.4	24	37	20	3927	17.4	50	94
30	4147	17.2	27	42	30	3753	17.4	53	2.29598
40	3975	17.2	29	46	40	3580	17.3	55	2.29602
50	3801	17.4	31	50	50	3405	17.5	57	07
39 29 00	3629	17.2	33	54	39 39 00	3232	17.3	59	11
10	3456	17.3	35	58	10	3058	17.4	61	15
20	3283	17.3	37	63	20	2884	17.4	63	20
30	3110	17.3	39	67	30	2710	17.4	65	24
40	2938	17.2	41	71	40	2537	17.3	67	28
50	2765	17.3	43	76	50	2362	17.5	69	33
39 30 00	2592	17.3	45	80	39 40 00	2189	17.3	71	37

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
39 40 00	1.8932189	17.3	2.0051071	2.29637	39 50 00	1.8921724	17.4	2.0051198	2.29894
10	2015	17.4	73	41	10	1549	17.5	2.0051200	2.29898
20	1841	17.4	75	45	20	1375	17.4	02	2.29902
30	1668	17.3	78	50	30	1200	17.5	05	07
40	1493	17.5	80	54	40	1024	17.6	07	11
50	1320	17.3	82	58	50	0849	17.5	09	15
39 41 00	1146	17.4	84	62	39 51 00	0675	17.4	11	19
10	0972	17.4	86	66	10	0500	17.5	13	23
20	0797	17.5	88	71	20	0324	17.6	15	28
30	0624	17.3	91	75	30	1.8920149	17.5	17	32
40	0450	17.4	93	80	40	1.8919975	17.4	19	36
50	0275	17.5	95	85	50	9799	17.6	21	41
39 42 00	1.8930101	17.4	97	89	39 52 00	9624	17.5	23	45
10	1.8929927	17.4	2.0051099	93	10	9449	17.5	25	49
20	9753	17.4	2.0051101	2.29697	20	9273	17.6	27	53
30	9579	17.4	03	2.29702	30	9098	17.5	30	58
40	9405	17.4	05	06	40	8924	17.4	32	62
50	9230	17.5	07	10	50	8748	17.6	34	66
39 43 00	9056	17.4	09	14	39 53 00	8573	17.5	36	70
10	8882	17.4	11	18	10	8398	17.5	38	74
20	8707	17.5	13	23	20	8222	17.6	40	79
30	8533	17.4	16	27	30	8047	17.5	43	83
40	8359	17.4	18	31	40	7872	17.5	45	87
50	8184	17.5	20	36	50	7696	17.6	47	92
39 44 00	8010	17.4	22	40	39 54 00	7521	17.5	49	2.29996
10	7836	17.4	24	44	10	7346	17.5	51	2.30000
20	7661	17.5	26	48	20	7170	17.6	53	04
30	7487	17.4	29	53	30	6994	17.6	55	09
40	7313	17.4	31	57	40	6819	17.5	57	13
50	7138	17.5	33	61	50	6643	17.6	59	17
39 45 00	6964	17.4	35	65	39 55 00	6468	17.5	61	21
10	6790	17.4	37	69	10	6293	17.5	63	25
20	6616	17.4	39	74	20	6118	17.5	65	30
30	6442	17.4	41	78	30	5943	17.5	68	34
40	6266	17.6	43	82	40	5766	17.7	70	38
50	6092	17.4	45	87	50	5591	17.5	72	43
39 46 00	5918	17.4	47	91	39 56 00	5416	17.5	74	47
10	5744	17.4	49	95	10	5241	17.5	76	51
20	5569	17.5	51	2.29799	20	5064	17.7	78	55
30	5394	17.5	54	2.29804	30	4889	17.5	81	60
40	5220	17.4	56	08	40	4714	17.5	83	64
50	5045	17.5	58	12	50	4537	17.7	85	68
39 47 00	4870	17.5	60	16	39 57 00	4362	17.5	87	72
10	4696	17.4	62	20	10	4187	17.5	89	76
20	4521	17.5	64	25	20	4010	17.7	91	81
30	4346	17.5	67	29	30	3835	17.5	93	86
40	4162	17.4	69	33	40	3659	17.6	95	90
50	3997	17.5	71	38	50	3483	17.5	97	95
39 48 00	3822	17.5	73	42	39 58 00	3308	17.5	2.0051299	2.30099
10	3648	17.4	75	46	10	3132	17.6	2.0051301	2.30103
20	3472	17.6	77	50	20	2956	17.6	03	07
30	3298	17.4	79	55	30	2780	17.6	06	12
40	3123	17.5	81	59	40	2605	17.5	08	16
50	2948	17.5	83	63	50	2428	17.7	10	20
39 49 00	2773	17.5	85	67	39 59 00	2252	17.6	12	24
10	2599	17.4	87	71	10	2077	17.5	14	28
20	2423	17.6	89	76	20	1901	17.6	16	33
30	2249	17.4	92	80	30	1726	17.5	19	37
40	2074	17.5	94	85	40	1549	17.7	21	41
50	1898	17.6	96	90	50	1373	17.6	23	46
39 50 00	1724	17.4	98	94	40 00 00	1198	17.5	25	50

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
40 00 00	1.8911198	17.5	2.0051325	2.30150	40 10 00	1.8900608	17.7	2.0051451	2.30406
10	1022	17.6	27	54	10	0431	17.7	53	10
20	0845	17.7	29	58	20	0253	17.8	55	14
30	0670	17.5	31	63	30	1.8900077	17.6	58	19
40	0494	17.6	33	67	40	1.8899900	17.7	60	23
50	0317	17.7	35	71	50	9722	17.8	62	27
40 01 00	1.8910141	17.6	37	75	40 11 00	9545	17.7	64	31
10	1.8909966	17.5	39	79	10	9368	17.7	66	35
20	9789	17.7	41	84	20	9191	17.7	68	40
30	9613	17.6	44	88	30	9014	17.7	71	44
40	9437	17.6	46	92	40	8837	17.7	73	48
50	9260	17.7	48	2.30197	50	8659	17.8	75	53
40 02 00	9084	17.6	50	2.30201	40 12 00	8482	17.7	77	57
10	8908	17.6	52	05	10	8305	17.7	79	61
20	8732	17.6	54	09	20	8128	17.7	81	65
30	8556	17.6	57	14	30	7951	17.7	83	70
40	8380	17.6	59	18	40	7773	17.8	85	74
50	8203	17.7	61	22	50	7596	17.7	87	78
40 03 00	8027	17.6	63	26	40 13 00	7419	17.7	89	82
10	7851	17.6	65	30	10	7242	17.7	91	86
20	7675	17.6	67	35	20	7064	17.8	93	91
30	7499	17.6	69	39	30	6887	17.7	96	2.30496
40	7322	17.7	71	43	40	6710	17.7	2.0051498	2.30500
50	7146	17.6	73	48	50	6532	17.8	2.0051500	04
40 04 00	6969	17.7	75	52	40 14 00	6355	17.7	02	08
10	6793	17.6	77	56	10	6177	17.8	04	12
20	6616	17.7	79	60	20	5999	17.8	06	17
30	6440	17.6	82	65	30	5822	17.7	09	21
40	6264	17.6	84	69	40	5645	17.7	11	25
50	6087	17.7	86	73	50	5467	17.8	13	29
40 05 00	5911	17.6	88	77	40 15 00	5289	17.8	15	34
10	5734	17.7	90	81	10	5112	17.7	17	38
20	5557	17.7	92	86	20	4934	17.8	19	42
30	5381	17.6	95	91	30	4757	17.7	21	47
40	5205	17.6	97	2.30295	40	4579	17.8	23	51
50	5027	17.8	2.0051399	2.30300	50	4401	17.8	25	55
40 06 00	4851	17.6	2.0051401	04	40 16 00	4224	17.7	27	59
10	4675	17.6	03	08	10	4046	17.8	29	63
20	4497	17.8	05	12	20	3869	17.7	31	68
30	4321	17.6	07	17	30	3691	17.8	34	72
40	4145	17.6	09	21	40	3513	17.8	36	76
50	3967	17.8	11	25	50	3336	17.7	38	81
40 07 00	3791	17.6	13	29	40 17 00	3158	17.8	40	85
10	3615	17.6	15	33	10	2981	17.7	42	89
20	3438	17.7	17	38	20	2802	17.9	44	93
30	3262	17.6	20	42	30	2625	17.7	47	2.30598
40	3084	17.8	22	46	40	2447	17.8	49	2.30602
50	2908	17.6	24	51	50	2269	17.8	51	06
40 08 00	2731	17.7	26	55	40 18 00	2091	17.8	53	10
10	2555	17.6	28	59	10	1914	17.7	55	14
20	2377	17.8	30	63	20	1735	17.9	57	19
30	2201	17.6	33	68	30	1557	17.8	59	23
40	2024	17.7	35	72	40	1380	17.7	61	27
50	1846	17.8	37	76	50	1201	17.9	63	32
40 09 00	1670	17.6	39	80	40 19 00	1023	17.8	65	36
10	1493	17.7	41	84	10	0846	17.7	67	40
20	1316	17.7	43	89	20	0667	17.9	69	44
30	1139	17.7	45	93	30	0489	17.8	72	49
40	0962	17.7	47	2.30397	40	0312	17.7	74	53
50	0785	17.7	49	2.30402	50	1.8890133	17.9	76	57
40 10 00	0608	17.7	51	06	40 20 00	1.8889955	17.8	78	61

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
40 20 00	1.8889955	17.8	2.0051578	2.30661	40 30 00	1.8879240	17.9	2.0051705	2.30917
10	9777	17.8	80	65	10	9061	17.9	07	21
20	9599	17.8	82	70	20	8881	18.0	09	26
30	9421	17.8	85	74	30	8703	17.8	12	30
40	9243	17.8	87	78	40	8524	17.9	14	34
50	9064	17.9	89	83	50	8344	18.0	16	39
40 21 00	8886	17.8	91	87	40 31 00	8165	17.9	18	43
10	8708	17.8	93	92	10	7986	17.9	20	47
20	8530	17.8	95	2.30696	20	7806	18.0	22	51
30	8352	17.8	2.0051598	2.30701	30	7627	17.9	25	56
40	8174	17.8	2.0051600	05	40	7448	17.9	27	60
50	7996	17.8	02	09	50	7268	18.0	29	64
40 22 00	7818	17.8	04	13	40 32 00	7089	17.9	31	68
10	7640	17.8	06	17	10	6910	17.9	33	72
20	7461	17.9	08	21	20	6730	18.0	35	77
30	7283	17.8	10	26	30	6551	17.9	37	81
40	7105	17.8	12	30	40	6372	17.9	39	85
50	6925	18.0	14	34	50	6192	18.0	41	90
40 23 00	6747	17.8	16	38	40 33 00	6012	18.0	43	94
10	6569	17.8	18	42	10	5833	17.9	45	2.30998
20	6390	17.9	20	47	20	5653	18.0	47	2.31002
30	6212	17.8	23	51	30	5474	17.9	50	07
40	6034	17.8	25	55	40	5295	17.9	52	11
50	5855	17.9	27	60	50	5114	18.1	54	15
40 24 00	5677	17.8	29	64	40 34 00	4935	17.9	56	19
10	5498	17.9	31	68	10	4756	17.9	58	23
20	5319	17.9	33	72	20	4577	17.9	60	27
30	5141	17.8	36	77	30	4397	18.0	63	32
40	4963	17.8	38	81	40	4217	18.0	65	36
50	4783	18.0	40	85	50	4038	17.9	67	40
40 25 00	4605	17.8	42	89	40 35 00	3858	18.0	69	44
10	4427	17.8	44	93	10	3679	17.9	71	48
20	4248	17.9	46	2.30798	20	3499	18.0	73	53
30	4070	17.8	48	2.30802	30	3319	18.0	75	57
40	3891	17.9	50	06	40	3140	17.9	77	61
50	3712	17.9	52	11	50	2959	18.1	79	66
40 26 00	3534	17.8	54	15	40 36 00	2780	17.9	81	70
10	3356	17.8	56	19	10	2600	18.0	83	74
20	3176	18.0	58	23	20	2420	18.0	85	78
30	2998	17.8	61	28	30	2240	18.0	88	83
40	2819	17.9	63	32	40	2061	17.9	90	87
50	2641	17.8	65	36	50	1880	18.1	92	91
40 27 00	2461	18.0	67	40	40 37 00	1701	17.9	94	2.31096
10	2283	17.8	69	44	10	1521	18.0	96	2.31100
20	2105	17.8	71	49	20	1341	18.0	2.0051798	05
30	1925	18.0	74	53	30	1161	18.0	2.0051801	09
40	1746	17.9	76	57	40	0981	18.0	03	13
50	1566	18.0	78	62	50	0801	18.0	05	18
40 28 00	1388	17.8	80	66	40 38 00	0621	18.0	07	22
10	1209	17.9	82	70	10	0441	18.0	09	26
20	1030	17.9	84	74	20	0262	17.9	11	30
30	0851	17.9	86	79	30	1.8870082	18.0	13	35
40	0672	17.9	88	83	40	1.8869901	18.1	15	39
50	0493	17.9	90	87	50	9721	18.0	17	43
40 29 00	0314	17.9	92	91	40 39 00	9542	17.9	19	47
10	1.8880135	17.9	94	2.30896	10	9362	18.0	21	51
20	1.8879956	17.9	96	2.30900	20	9181	18.1	23	55
30	9778	17.8	2.0051699	05	30	9001	18.0	26	60
40	9598	18.0	2.0051701	09	40	8820	18.1	28	64
50	9419	17.9	03	13	50	8641	17.9	30	68
40 30 00	9240	17.9	05	17	40 40 00	8461	18.0	32	72

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
40 40 00	1.8868461	18.0	2.0051832	2.31172	40 50 00	1.8857617	18.1	2.0051959	2.31427
10	8281	18.0	34	76	10	7436	18.1	61	31
20	8100	18.1	36	81	20	7255	18.1	63	35
30	7920	18.0	39	85	30	7074	18.1	66	40
40	7740	18.0	41	89	40	6892	18.2	68	44
50	7559	18.1	43	94	50	6711	18.2	70	48
40 41 00	7379	18.0	45	2.31198	40 51 00	6530	18.1	72	52
10	7199	18.0	47	2.31202	10	6349	18.1	74	56
20	7018	18.1	49	06	20	6167	18.2	76	61
30	6838	18.0	52	11	30	5986	18.1	78	65
40	6658	18.0	54	15	40	5805	18.1	81	69
50	6477	18.1	56	19	50	5623	18.2	83	74
40 42 00	6297	18.0	58	23	40 52 00	5441	18.2	85	78
10	6117	18.0	60	27	10	5260	18.1	87	82
20	5936	18.1	62	31	20	5078	18.2	89	86
30	5756	18.0	64	36	30	4897	18.1	92	91
40	5575	18.1	66	40	40	4716	18.1	94	2.31496
50	5395	18.0	68	44	50	4533	18.3	96	2.31500
40 43 00	5215	18.0	70	48	40 53 00	4352	18.1	2.0051998	04
10	5035	18.0	72	52	10	4171	18.1	2.0052000	08
20	4853	18.2	74	57	20	3989	18.2	02	13
30	4673	18.0	77	61	30	3807	18.2	04	17
40	4493	18.0	79	65	40	3626	18.1	06	21
50	4311	18.2	81	70	50	3443	18.3	08	26
40 44 00	4131	18.0	83	74	40 54 00	3262	18.1	10	30
10	3951	18.0	85	78	10	3081	18.1	12	34
20	3769	18.2	87	82	20	2898	18.3	14	38
30	3589	18.0	90	87	30	2717	18.1	17	43
40	3409	18.0	92	91	40	2535	18.2	19	47
50	3227	18.2	94	2.31296	50	2353	18.2	21	51
40 45 00	3047	18.0	96	2.31300	40 55 00	2171	18.2	23	55
10	2866	18.1	2.0051898	04	10	1990	18.1	25	59
20	2685	18.1	2.0051900	09	20	1808	18.2	27	63
30	2505	18.0	03	13	30	1627	18.1	30	68
40	2324	18.1	05	17	40	1444	18.3	32	72
50	2143	18.1	07	22	50	1263	18.1	34	76
40 46 00	1962	18.1	09	26	40 56 00	1081	18.2	36	80
10	1782	18.0	11	30	10	0900	18.1	38	84
20	1601	18.1	13	34	20	0717	18.3	40	89
30	1420	18.1	15	39	30	0535	18.2	43	93
40	1239	18.1	17	43	40	0354	18.1	45	2.31597
50	1058	18.1	19	47	50	1.8850171	18.3	47	2.31602
40 47 00	0878	18.0	21	51	40 57 00	1.8849989	18.2	49	06
10	0697	18.1	23	55	10	9808	18.1	51	10
20	0515	18.2	25	59	20	9625	18.3	53	14
30	0335	18.0	28	64	30	9443	18.2	55	19
40	1.8860154	18.1	30	68	40	9261	18.2	57	23
50	1.8859972	18.2	32	72	50	9079	18.2	59	27
40 48 00	9791	18.1	34	76	40 58 00	8897	18.2	61	31
10	9611	18.0	36	80	10	8715	18.2	63	35
20	9429	18.2	38	85	20	8533	18.2	65	39
30	9248	18.1	41	89	30	8351	18.2	68	44
40	9067	18.1	43	93	40	8168	18.3	70	48
50	8885	18.2	45	2.31398	50	7986	18.2	72	52
40 49 00	8705	18.0	47	2.31402	40 59 00	7804	18.2	74	56
10	8524	18.1	49	06	10	7623	18.1	76	60
20	8342	18.2	51	10	20	7440	18.3	78	65
30	8161	18.1	53	15	30	7258	18.2	81	69
40	7980	18.1	55	19	40	7076	18.2	83	73
50	7798	18.2	57	23	50	6893	18.3	85	78
40 50 00	7617	18.1	59	27	41 00 00	6711	18.2	87	82

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
41 00 00	1.8846711	18.2	2.0052087	2.31682	41 10 00	1.8835739	18.3	2.0052214	2.31937
10	6529	18.2	89	86	10	5555	18.4	16	41
20	6346	18.3	91	90	20	5372	18.3	18	45
30	6163	18.3	94	2.31695	30	5189	18.3	21	50
40	5981	18.2	96	2.31700	40	5005	18.4	23	54
50	5798	18.3	2.0052098	04	50	4822	18.3	25	58
41 01 00	5616	18.2	2.0052100	08	41 11 00	4639	18.3	27	62
10	5434	18.2	02	12	10	4455	18.4	29	66
20	5251	18.3	04	16	20	4271	18.4	31	71
30	5069	18.2	06	20	30	4088	18.3	34	75
40	4886	18.3	08	25	40	3905	18.3	36	79
50	4603	18.3	10	29	50	3720	18.5	38	84
41 02 00	4521	18.2	12	33	41 12 00	3537	18.3	40	88
10	4339	18.2	14	37	10	3354	18.3	42	92
20	4155	18.4	16	42	20	3169	18.5	44	2.31996
30	3973	18.2	19	46	30	2986	18.3	46	2.32001
40	3791	18.2	21	50	40	2802	18.4	48	05
50	3608	18.3	23	55	50	2618	18.4	50	09
41 03 00	3425	18.3	25	59	41 13 00	2435	18.3	52	13
10	3243	18.2	27	63	10	2251	18.4	54	17
20	3060	18.3	29	67	20	2067	18.4	56	21
30	2878	18.2	32	72	30	1883	18.4	59	26
40	2695	18.3	34	76	40	1700	18.3	61	30
50	2512	18.3	36	80	50	1515	18.5	63	34
41 04 00	2330	18.2	38	84	41 14 00	1332	18.3	65	38
10	2147	18.3	40	88	10	1148	18.4	67	42
20	1964	18.3	42	92	20	0964	18.4	69	47
30	1781	18.3	45	2.31797	30	0780	18.4	72	51
40	1599	18.2	47	2.31801	40	0596	18.4	74	55
50	1415	18.4	49	05	50	0412	18.4	76	60
41 05 00	1233	18.2	51	09	41 15 00	0228	18.4	78	64
10	1050	18.3	53	13	10	1.8830045	18.3	80	68
20	0866	18.4	55	18	20	1.8829861	18.4	82	72
30	0684	18.2	57	22	30	9677	18.4	85	77
40	0501	18.3	59	26	40	9492	18.5	87	81
50	0318	18.3	61	31	50	9309	18.3	89	85
41 06 00	1.8840135	18.3	63	35	41 16 00	9125	18.4	91	89
10	1.8839952	18.3	65	39	10	8941	18.4	93	94
20	9770	18.2	67	43	20	8756	18.5	95	2.32098
30	9587	18.3	70	48	30	8573	18.3	97	2.32103
40	9403	18.4	72	52	40	8389	18.4	2.0052299	07
50	9220	18.3	74	56	50	8204	18.5	2.0052301	11
41 07 00	9038	18.2	76	60	41 17 00	8020	18.4	03	15
10	8855	18.3	78	64	10	7836	18.4	05	19
20	8671	18.4	80	68	20	7651	18.5	07	24
30	8488	18.3	83	73	30	7467	18.4	10	28
40	8305	18.3	85	77	40	7283	18.4	12	32
50	8121	18.4	87	81	50	7099	18.4	14	37
41 08 00	7939	18.2	89	85	41 18 00	6915	18.4	16	41
10	7756	18.3	91	89	10	6731	18.4	18	45
20	7572	18.4	93	95	20	6547	18.4	20	49
30	7389	18.3	96	2.31899	30	6363	18.4	23	54
40	7206	18.3	2.0052198	2.31903	40	6178	18.5	25	58
50	7022	18.4	2.0052200	08	50	5993	18.5	27	62
41 09 00	6839	18.3	02	12	41 19 00	5809	18.4	29	66
10	6656	18.3	04	16	10	5625	18.4	31	70
20	6472	18.4	06	20	20	5440	18.5	33	74
30	6289	18.3	08	25	30	5256	18.4	36	79
40	6106	18.3	10	29	40	5072	18.4	38	83
50	5922	18.4	12	33	50	4887	18.5	40	87
41 10 00	5739	18.3	14	37	41 20 00	4703	18.4	42	91

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
41 20 00	1.8824703	18.4	2.0052342	2.32191	41 30 00	1.8813600	18.6	2.0052469	2.32445
10	4518	18.5	44	2.32195	10	3415	18.5	71	49
20	4333	18.5	46	2.32200	20	3230	18.5	73	53
30	4149	18.4	48	04	30	3045	18.5	76	58
40	3965	18.4	50	08	40	2858	18.7	78	62
50	3779	18.6	52	13	50	2673	18.5	80	66
41 21 00	3595	18.4	54	17	41 31 00	2487	18.5	82	70
10	3411	18.4	56	21	10	2302	18.5	84	74
20	3225	18.6	58	25	20	2115	18.7	86	79
30	3041	18.4	61	30	30	1930	18.5	89	83
40	2857	18.4	63	34	40	1745	18.5	91	88
50	2671	18.6	65	38	50	1558	18.7	93	93
41 22 00	2487	18.4	67	42	41 32 00	1373	18.5	95	2.32497
10	2303	18.4	69	46	10	1187	18.6	97	2.32501
20	2118	18.5	71	50	20	1001	18.6	2.0052499	05
30	1934	18.4	74	55	30	0815	18.6	2.0052502	10
40	1748	18.6	76	59	40	0630	18.5	04	14
50	1564	18.4	78	63	50	0443	18.7	06	18
41 23 00	1379	18.5	80	67	41 33 00	0257	18.6	08	22
10	1195	18.4	82	71	10	1.8810072	18.5	10	26
20	1009	18.6	84	75	20	1.8809885	18.7	12	30
30	0825	18.4	87	80	30	9700	18.5	14	35
40	0640	18.5	89	84	40	9514	18.6	16	39
50	0454	18.6	91	88	50	9327	18.7	18	43
41 24 00	0270	18.4	93	93	41 34 00	9141	18.6	20	47
10	1.8820085	18.5	95	2.32297	10	8956	18.5	22	51
20	1.8819899	18.6	2.0052397	2.32302	20	8770	18.6	24	55
30	9715	18.4	2.0052400	06	30	8584	18.6	27	60
40	9530	18.5	02	10	40	8397	18.7	29	64
50	9344	18.6	04	15	50	8212	18.5	31	68
41 25 00	9160	18.4	06	19	41 35 00	8026	18.6	33	72
10	8975	18.5	08	23	10	7840	18.6	35	76
20	8789	18.6	10	27	20	7653	18.7	37	81
30	8604	18.5	12	32	30	7467	18.6	40	85
40	8420	18.4	14	36	40	7281	18.6	42	89
50	8234	18.6	16	40	50	7094	18.7	44	94
41 26 00	8049	18.5	18	44	41 36 00	6909	18.5	46	2.32598
10	7864	18.5	20	48	10	6723	18.6	48	2.32602
20	7679	18.5	22	52	20	6536	18.7	50	06
30	7494	18.5	25	57	30	6350	18.6	53	11
40	7308	18.6	27	61	40	6164	18.6	55	15
50	7123	18.5	29	65	50	5977	18.7	57	19
41 27 00	6939	18.4	31	69	41 37 00	5791	18.6	59	23
10	6754	18.5	33	73	10	5605	18.6	61	27
20	6568	18.6	35	77	20	5417	18.8	63	31
30	6383	18.5	38	82	30	5231	18.6	66	36
40	6198	18.5	40	86	40	5044	18.7	68	40
50	6012	18.6	42	90	50	4858	18.6	70	44
41 28 00	5826	18.6	44	94	41 38 00	4672	18.6	72	48
10	5641	18.5	46	2.32398	10	4485	18.7	74	52
20	5455	18.6	48	2.32403	20	4300	18.5	76	57
30	5270	18.5	51	07	30	4113	18.7	78	61
40	5085	18.5	53	11	40	3926	18.7	80	65
50	4899	18.6	55	16	50	3740	18.6	82	70
41 29 00	4714	18.5	57	20	41 39 00	3554	18.6	84	74
10	4529	18.5	59	24	10	3367	18.7	86	78
20	4342	18.7	61	28	20	3180	18.7	88	82
30	4157	18.5	63	33	30	2994	18.6	91	87
40	3972	18.5	65	37	40	2807	18.7	93	92
50	3786	18.6	67	41	50	2620	18.7	95	2.32696
41 30 00	3600	18.6	69	45	41 40 00	2434	18.6	97	2.32700

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
41 40 00	1.8802434	18.6	2.0052597	2.32700	41 50 00	1.8791200	18.8	2.0052725	2.32954
10	2247	18.7	2.0052599	04	10	1013	18.7	27	58
20	2060	18.7	2.0052601	08	20	0825	18.8	29	62
30	1874	18.6	04	13	30	0638	18.7	32	67
40	1687	18.7	06	17	40	0449	18.9	34	71
50	1500	18.7	08	21	50	0262	18.7	36	75
41 41 00	1313	18.7	10	25	41 51 00	1.8790075	18.7	38	79
10	1127	18.6	12	29	10	1.8789886	18.9	40	83
20	0939	18.8	14	33	20	9698	18.8	42	87
30	0753	18.6	17	38	30	9510	18.8	45	92
40	0566	18.7	19	42	40	9323	18.7	47	2.32996
50	0379	18.7	21	46	50	9134	18.9	49	2.33000
41 42 00	0192	18.7	23	50	41 52 00	8946	18.8	51	04
10	1.8800005	18.7	25	54	10	8759	18.7	53	08
20	1.8799819	18.6	27	59	20	8570	18.9	55	12
30	9632	18.7	29	63	30	8382	18.8	57	17
40	9444	18.8	31	67	40	8194	18.8	59	21
50	9258	18.6	33	72	50	8006	18.8	61	25
41 43 00	9071	18.7	35	76	41 53 00	7818	18.8	63	29
10	8884	18.7	37	80	10	7630	18.8	65	33
20	8697	18.7	39	84	20	7442	18.8	67	37
30	8510	18.7	42	89	30	7254	18.8	70	42
40	8323	18.7	44	93	40	7065	18.9	72	46
50	8135	18.8	46	2.32797	50	6877	18.8	74	50
41 44 00	7948	18.7	48	2.32801	41 54 00	6690	18.7	76	54
10	7762	18.6	50	05	10	6502	18.8	78	58
20	7574	18.8	52	09	20	6313	18.9	80	63
30	7387	18.7	55	14	30	6125	18.8	83	67
40	7200	18.7	57	18	40	5937	18.8	85	71
50	7012	18.8	59	22	50	5748	18.9	87	76
41 45 00	6825	18.7	61	26	41 55 00	5560	18.8	99	80
10	6638	18.7	63	30	10	5372	18.8	91	84
20	6450	18.8	65	35	20	5183	18.9	93	89
30	6263	18.7	68	39	30	4995	18.8	96	94
40	6076	18.7	70	43	40	4806	18.9	2.0052798	2.33098
50	5888	18.8	72	48	50	4617	18.9	2.0052800	2.33102
41 46 00	5701	18.7	74	52	41 56 00	4429	18.8	02	06
10	5514	18.7	76	56	10	4241	18.8	04	10
20	5327	18.7	78	60	20	4052	18.9	06	14
30	5140	18.7	81	65	30	3864	18.8	09	18
40	4952	18.8	83	69	40	3676	18.8	11	23
50	4765	18.7	85	73	50	3486	19.0	13	27
41 47 00	4578	18.7	87	77	41 57 00	3298	18.8	15	31
10	4391	18.7	89	81	10	3110	18.8	17	35
20	4203	18.8	91	85	20	2922	18.8	19	39
30	4015	18.8	93	91	30	2733	18.9	21	44
40	3828	18.7	95	95	40	2544	18.9	23	48
50	3640	18.8	97	2.32899	50	2356	18.8	25	52
41 48 00	3453	18.7	2.0052699	2.32903	41 58 00	2167	18.9	27	56
10	3265	18.8	2.0052701	07	10	1979	18.8	29	60
20	3077	18.8	03	11	20	1789	19.0	31	65
30	2890	18.7	06	16	30	1601	18.8	34	69
40	2702	18.8	08	20	40	1413	18.8	36	73
50	2514	18.8	10	24	50	1223	19.0	38	78
41 49 00	2327	18.7	12	28	41 59 00	1035	18.8	40	82
10	2139	18.8	14	32	10	0846	18.9	42	86
20	1951	18.8	16	37	20	0657	18.9	44	90
30	1764	18.7	19	41	30	0468	18.9	47	95
40	1576	18.8	21	45	40	0280	18.8	49	2.33199
50	1388	18.8	23	50	50	1.8780090	19.0	51	2.33203
41 50 00	1200	18.8	25	54	42 00 00	1.8779962	18.8	53	07

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
42 00 00	1.8779902	18.8	2.0052853	2.33207	42 10 00	1.8768536	19.0	2.0052981	2.33460
10	9713	18.9	55	11	10	8347	18.9	83	64
20	9523	19.0	57	15	20	8156	19.1	85	68
30	9335	18.8	60	19	30	7966	19.0	87	72
40	9146	18.9	62	24	40	7776	19.0	90	77
50	8956	19.0	64	28	50	7586	19.0	92	82
42 01 00	8768	18.8	66	32	42 11 00	7396	19.0	94	86
10	8579	18.9	68	36	10	7206	19.0	96	90
20	8391	18.8	70	40	20	7015	19.1	2.0052998	95
30	8201	19.0	72	44	30	6825	19.0	2.0053000	2.33499
40	8012	18.9	74	49	40	6635	19.0	02	2.33503
50	7823	18.9	76	53	50	6446	18.9	04	08
42 02 00	7634	18.9	78	57	42 12 00	6255	19.1	06	12
10	7445	18.9	80	61	10	6065	19.0	08	16
20	7256	18.9	82	66	20	5875	19.0	10	20
30	7067	18.9	84	70	30	5684	19.1	12	24
40	6878	18.9	87	74	40	5494	19.0	15	29
50	6688	19.0	89	79	50	5304	19.0	17	33
42 03 00	6499	18.9	91	83	42 13 00	5114	19.0	19	37
10	6310	18.9	93	88	10	4924	19.0	21	41
20	6120	19.0	95	92	20	4733	19.1	23	45
30	5931	18.9	2.0052898	2.33296	30	4543	19.0	25	49
40	5742	18.9	2.0052900	2.33301	40	4353	19.0	28	54
50	5552	19.0	02	05	50	4161	19.2	30	58
42 04 00	5363	18.9	04	09	42 14 00	3971	19.0	32	62
10	5174	18.9	06	13	10	3781	19.0	34	66
20	4984	19.0	08	17	20	3590	19.1	36	70
30	4795	18.9	11	21	30	3400	19.0	38	74
40	4606	18.9	13	26	40	3210	19.0	41	79
50	4416	19.0	15	30	50	3018	19.2	43	83
42 05 00	4227	18.9	17	34	42 15 00	2828	19.0	45	87
10	4038	18.9	19	38	10	2638	19.0	47	91
20	3848	19.0	21	42	20	2447	19.1	49	2.33596
30	3658	19.0	23	46	30	2256	19.1	51	2.33600
40	3468	19.0	26	51	40	2066	19.0	54	04
50	3280	18.8	28	55	50	1875	19.1	56	08
42 06 00	3091	18.9	30	59	42 16 00	1684	19.1	58	12
10	2901	19.0	32	63	10	1494	19.0	60	16
20	2711	19.0	34	68	20	1304	19.0	62	21
30	2522	18.9	36	72	30	1112	19.2	64	25
40	2333	18.9	38	76	40	0922	19.0	66	30
50	2142	19.1	40	81	50	0731	19.1	68	34
42 07 00	1953	18.9	42	85	42 17 00	0541	19.0	70	38
10	1763	19.0	44	89	10	0350	19.1	72	42
20	1573	19.0	46	93	20	1.8760159	19.1	74	46
30	1384	18.9	48	2.33397	30	1.8759968	19.1	76	50
40	1194	19.0	50	2.33402	40	9778	19.0	79	55
50	1004	19.0	52	06	50	9586	19.2	81	59
42 08 00	0814	19.0	54	10	42 18 00	9396	19.0	83	63
10	0625	18.9	56	14	10	9205	19.1	85	67
20	0436	18.9	59	18	20	9013	19.2	87	71
30	0245	19.1	61	22	30	8822	19.1	89	75
40	1.8770055	19.0	63	27	40	8632	19.0	91	80
50	1.8769866	18.9	66	31	50	8440	19.2	93	85
42 09 00	9676	19.0	68	35	42 19 00	8250	19.0	95	89
10	9487	18.9	70	39	10	8059	19.1	2.0053097	93
20	9296	19.1	72	43	20	7867	19.2	2.0053100	2.33697
30	9105	19.1	74	47	30	7677	19.0	02	2.33701
40	8916	18.9	77	52	40	7486	19.1	04	06
50	8726	19.0	79	56	50	7294	19.2	07	10
42 10 00	8536	19.0	81	60	42 20 00	7102	19.2	09	14

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
42 20 00	1.8757102	19.2	2.0053109	2.33714	42 30 00	1.8745604	19.2	2.0053237	2.33967
10	6912	19.0	11	18	10	5412	19.2	39	71
20	6722	19.0	13	22	20	5219	19.3	41	75
30	6530	19.2	15	26	30	5027	19.2	43	79
40	6339	19.1	18	31	40	4835	19.2	46	84
50	6148	19.1	20	35	50	4642	19.3	48	88
42 21 00	5957	19.1	22	39	42 31 00	4450	19.2	50	92
10	5766	19.1	24	43	10	4258	19.2	52	2.33996
20	5574	19.2	26	48	20	4065	19.3	54	2.34000
30	5383	19.1	28	52	30	3873	19.2	56	05
40	5192	19.1	31	56	40	3681	19.2	59	09
50	5000	19.2	33	61	50	3487	19.2	61	14
42 22 00	4809	19.1	35	65	42 32 00	3295	19.2	63	18
10	4618	19.1	37	69	10	3103	19.2	65	22
20	4426	19.2	39	73	20	2911	19.2	67	26
30	4235	19.1	41	77	30	2718	19.3	69	30
40	4044	19.1	43	82	40	2525	19.3	71	35
50	3852	19.2	45	86	50	2333	19.2	73	39
42 23 00	3661	19.1	47	90	42 33 00	2141	19.2	75	43
10	3469	19.2	49	94	10	1949	19.2	77	47
20	3278	19.1	51	2.33798	20	1755	19.4	79	51
30	3086	19.2	53	2.33802	30	1563	19.2	81	55
40	2895	19.1	56	07	40	1371	19.2	84	60
50	2704	19.1	58	11	50	1177	19.4	86	64
42 24 00	2512	19.2	60	15	42 34 00	0985	19.2	88	68
10	2321	19.1	62	19	10	0793	19.2	90	72
20	2129	19.2	64	23	20	0600	19.3	92	76
30	1937	19.2	66	28	30	0407	19.3	94	81
40	1746	19.1	69	32	40	0214	19.3	97	86
50	1554	19.2	71	36	50	1.8740022	19.2	2.0053299	90
42 25 00	1362	19.2	73	40	42 35 00	1.8739829	19.3	2.0053301	94
10	1171	19.1	75	44	10	9637	19.2	03	2.34098
20	0979	19.2	77	48	20	9443	19.4	05	2.34102
30	0787	19.2	79	52	30	9251	19.2	07	06
40	0596	19.1	82	57	40	9058	19.3	10	10
50	0403	19.3	84	61	50	8866	19.2	12	15
42 26 00	0212	19.1	86	65	42 36 00	8672	19.4	14	19
10	1.8750020	19.2	88	69	10	8479	19.3	16	23
20	1.8749828	19.2	90	74	20	8286	19.3	18	28
30	9636	19.2	92	78	30	8093	19.3	20	32
40	9445	19.1	95	83	40	7900	19.3	23	36
50	9252	19.3	97	88	50	7707	19.3	25	41
42 27 00	9061	19.1	2.0053199	92	42 37 00	7514	19.3	27	45
10	8869	19.2	2.0053201	2.33896	10	7321	19.3	29	49
20	8677	19.2	03	2.33900	20	7127	19.4	31	53
30	8485	19.2	05	04	30	6935	19.2	33	57
40	8293	19.2	07	09	40	6742	19.3	36	62
50	8101	19.2	09	13	50	6548	19.4	38	66
42 28 00	7910	19.1	11	17	42 38 00	6355	19.3	40	70
10	7718	19.2	13	21	10	6162	19.3	42	74
20	7525	19.3	15	25	20	5970	19.2	44	78
30	7334	19.1	17	29	30	5776	19.4	46	82
40	7142	19.2	20	34	40	5583	19.3	48	87
50	6949	19.3	22	38	50	5390	19.3	50	91
42 29 00	6757	19.2	24	42	42 39 00	5197	19.3	52	95
10	6565	19.2	26	46	10	5004	19.3	54	2.34199
20	6372	19.3	28	50	20	4810	19.4	56	2.34203
30	6181	19.1	30	54	30	4617	19.3	58	07
40	5989	19.2	33	59	40	4424	19.3	61	12
50	5796	19.3	35	63	50	4230	19.4	63	16
42 30 00	5604	19.2	37	67	42 40 00	4037	19.3	65	20

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
42 40 00	1.8734037	19.3	2.0053365	2.34220	42 50 00	1.8722402	19.4	2.0053494	2.34474
10	3844	19.3	67	24	10	2208	19.4	96	78
20	3650	19.4	69	28	20	2012	19.6	2.0053498	82
30	3457	19.3	71	32	30	1818	19.4	2.0053500	86
40	3263	19.4	74	37	40	1624	19.4	02	91
50	3069	19.4	76	41	50	1429	19.5	04	95
42 41 00	2876	19.3	78	45	42 51 00	1234	19.5	06	2.34499
10	2683	19.3	80	49	10	1040	19.4	08	2.34503
20	2489	19.4	82	54	20	0845	19.5	10	07
30	2296	19.3	84	58	30	0650	19.5	12	11
40	2102	19.4	87	62	40	0456	19.4	15	16
50	1908	19.4	89	67	50	0261	19.5	17	20
42 42 00	1715	19.3	91	71	42 52 00	1.8720066	19.5	19	24
10	1521	19.4	93	76	10	1.8719872	19.4	21	28
20	1328	19.3	95	80	20	9677	19.5	23	32
30	1134	19.4	2.0053397	84	30	9482	19.5	25	36
40	0940	19.4	2.0053400	89	40	9287	19.5	28	41
50	0747	19.3	02	93	50	9093	19.4	30	45
42 43 00	0554	19.3	04	2.34297	42 53 00	8898	19.5	32	49
10	0360	19.4	06	2.34301	10	8704	19.4	34	53
20	1.8730166	19.4	08	05	20	8508	19.6	36	57
30	1.8729972	19.4	10	09	30	8314	19.4	38	61
40	9779	19.3	13	14	40	8119	19.5	41	66
50	9584	19.5	15	18	50	7923	19.6	43	70
42 44 00	9391	19.3	17	22	42 54 00	7729	19.4	45	74
10	9198	19.3	19	26	10	7534	19.5	47	78
20	9003	19.5	21	30	20	7338	19.6	49	83
30	8809	19.4	23	34	30	7144	19.4	51	87
40	8616	19.3	25	39	40	6949	19.5	54	91
50	8421	19.5	27	43	50	6753	19.6	56	2.34596
42 45 00	8227	19.4	29	47	42 55 00	6558	19.5	58	2.34600
10	8034	19.3	31	51	10	6364	19.4	60	04
20	7840	19.4	33	55	20	6168	19.6	62	08
30	7647	19.3	35	59	30	5973	19.5	64	12
40	7452	19.5	38	64	40	5778	19.5	67	17
50	7258	19.4	40	68	50	5582	19.6	69	21
2 46 00	7064	19.4	42	72	42 56 00	5387	19.5	71	25
10	6871	19.3	44	76	10	5192	19.5	73	29
20	6676	19.5	46	80	20	4998	19.4	75	33
30	6482	19.4	48	84	30	4802	19.6	77	37
40	6288	19.4	51	89	40	4607	19.5	79	42
50	6093	19.5	53	93	50	4412	19.5	81	46
42 47 00	5899	19.4	55	2.34397	42 57 00	4217	19.5	83	50
10	5706	19.3	57	2.34401	10	4022	19.5	85	54
20	5511	19.5	59	06	20	3826	19.6	87	58
30	5317	19.4	61	10	30	3631	19.5	89	62
40	5123	19.4	64	14	40	3436	19.5	92	67
50	4928	19.5	66	19	50	3239	19 7	94	72
42 48 00	4734	19.4	68	23	42 58 00	3044	19.5	96	76
10	4540	19.4	70	27	10	2849	19.5	2.0053598	80
20	4345	19.5	72	31	20	2653	19.6	2.0053600	84
30	4151	19.4	74	35	30	2458	19.5	02	88
40	3957	19.4	77	40	40	2263	19.5	05	93
50	3762	19.5	79	44	50	2067	19.6	07	2.34697
42 49 00	3568	19.4	81	48	42 59 00	1871	19.6	09	2.34701
10	3374	19.4	83	52	10	1676	19.5	11	05
20	3180	19.4	85	56	20	1480	19.6	13	09
30	2984	19.6	87	60	30	1285	19.5	15	13
40	2789	19.5	90	65	40	1089	19.6	18	18
50	2596	19.3	92	69	50	0893	19.6	20	22
42 50 00	2402	19.4	94	74	43 00 00	0698	19.5	22	26

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
43 00 00	1.8710698	19.5	2.0053622	2.34726	43 10 00	1.8698926	19.6	2.0053750	2.34979
10	0502	19.6	24	30	10	8729	19.7	52	83
20	0307	19.5	26	35	20	8533	19.6	54	87
30	1.8710111	19.6	28	39	30	8335	19.8	56	91
40	1.8709915	19.6	31	43	40	8139	19.6	59	2.34996
50	9720	19.5	33	48	50	7942	19.7	61	2.35000
43 01 00	9524	19.6	35	52	43 11 00	7745	19.7	63	04
10	9329	19.5	37	56	10	7549	19.6	65	08
20	9132	19.7	39	60	20	7351	19.8	67	12
30	8937	19.5	41	64	30	7154	19.7	69	16
40	8741	19.6	43	69	40	6958	19.6	72	21
50	8545	19.6	45	73	50	6760	19.8	74	25
43 02 00	8349	19.6	47	77	43 12 00	6563	19.7	76	29
10	8154	19.5	49	81	10	6367	19.6	78	33
20	7957	19.7	51	85	20	6169	19.8	80	37
30	7761	19.6	53	89	30	5972	19.7	82	41
40	7566	19.5	56	94	40	5775	19.7	85	46
50	7369	19.7	58	2.34798	50	5578	19.7	87	50
43 03 00	7173	19.6	60	2.34802	43 13 00	5381	19.7	89	54
10	6978	19.5	62	06	10	5184	19.7	91	58
20	6782	19.6	64	10	20	4986	19.8	93	63
30	6585	19.7	66	14	30	4789	19.7	95	68
40	6389	19.6	69	19	40	4592	19.7	2.0053798	72
50	6194	19.5	71	23	50	4394	19.8	2.0053800	77
43 04 00	5998	19.6	73	27	43 14 00	4197	19.7	02	81
10	5802	19.6	75	31	10	4000	19.7	04	85
20	5605	19.7	77	35	20	3803	19.7	06	89
30	5409	19.6	79	39	30	3605	19.8	08	93
40	5214	19.5	82	44	40	3408	19.7	10	2.35098
50	5017	19.7	84	48	50	3211	19.7	12	2.35102
43 05 00	4821	19.6	86	52	43 15 00	3014	19.7	14	06
10	4625	19.6	88	56	10	2817	19.7	16	10
20	4428	19.7	90	60	20	2619	19.8	18	14
30	4232	19.6	92	65	30	2422	19.7	20	18
40	4036	19.6	95	70	40	2225	19.7	23	23
50	3839	19.7	97	74	50	2027	19.8	25	27
43 06 00	3643	19.7	2.0053699	78	43 16 00	1830	19.7	27	31
10	3447	19.6	2.0053701	82	10	1632	19.8	29	35
20	3250	19.7	03	87	20	1434	19.8	31	39
30	3054	19.6	05	91	30	1237	19.7	33	43
40	2858	19.6	08	2.34895	40	1040	19.7	36	48
50	2661	19.7	10	2.34900	50	0841	19.9	38	52
43 07 00	2464	19.7	12	04	43 17 00	0644	19.7	40	56
10	2268	19.6	14	08	10	0447	19.7	42	60
20	2072	19.6	16	12	20	0249	19.8	44	64
30	1875	19.7	18	16	30	1.8690051	19.8	46	68
40	1679	19.6	21	21	40	1.8689854	19.7	49	73
50	1482	19.7	23	25	50	9657	19.7	51	77
43 08 00	1286	19.6	25	29	43 18 00	9459	19.8	53	81
10	1090	19.6	27	33	10	9262	19.7	55	85
20	0893	19.7	29	37	20	9063	19.9	57	89
30	0696	19.7	31	41	30	8866	19.7	59	93
40	0500	19.6	33	46	40	8668	19.8	62	2.35198
50	0303	19.7	35	50	50	8470	19.8	64	2.35202
43 09 00	1.8700106	19.7	37	54	43 19 00	8272	19.8	66	06
10	1.8699910	19.6	39	58	10	8075	19.7	68	10
20	9712	19.8	41	62	20	7876	19.9	70	14
30	9516	19.6	43	66	30	7678	19.8	72	18
40	9320	19.6	46	71	40	7481	19.7	75	23
50	9122	19.8	48	75	50	7282	19.9	77	27
43 10 00	8926	19.6	50	79	43 20 00	7085	19.7	79	31

Table for transformation of coordinates—Continued.

Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*	Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*
° ′ ″					° ′ ″				
43 20 00	1.8687085	19.7	2.0053879	2.35231	43 30 00	1.8675174	19.9	2.0054007	2.35485
10	6887	19.8	81	35	10	4975	19.9	09	89
20	6688	19.9	83	40	20	4775	20.0	11	93
30	6491	19.7	85	44	30	4577	19.8	13	2.35497
40	6293	19.8	88	48	40	4378	19.9	16	2.35502
50	6094	19.9	90	53	50	4178	20.0	18	06
43 21 00	5896	19.8	92	58	43 31 00	3979	19.9	20	10
10	5698	19.8	94	62	10	3780	19.9	22	14
20	5501	19.7	96	66	20	3580	20.0	24	18
30	5302	19.9	2.0053898	70	30	3381	19.9	26	22
40	5104	19.8	2.0053900	75	40	3182	19.9	29	27
50	4906	19.8	02	79	50	2982	20.0	31	31
43 22 00	4708	19.8	04	83	43 32 00	2783	19.9	33	35
10	4511	19.7	06	87	10	2584	19.9	35	39
20	4312	19.9	08	91	20	2385	19.9	37	43
30	4114	19.8	10	2.35295	30	2185	20.0	39	47
40	3916	19.8	13	2.35300	40	1986	19.9	42	52
50	3717	19.9	15	04	50	1787	19.9	44	56
43 23 00	3519	19.8	17	08	43 33 00	1588	19.9	46	60
10	3321	19.8	19	12	10	1388	20.0	48	64
20	3122	19.9	21	16	20	1188	20.0	50	68
30	2924	19.8	23	20	30	0989	19.9	52	72
40	2726	19.8	26	25	40	0790	19.9	55	77
50	2527	19.9	28	29	50	0589	20.1	57	81
43 24 00	2329	19.8	30	33	43 34 00	0390	19.9	59	85
10	2130	19.9	32	37	10	1.8670191	19.9	61	89
20	1931	19.9	34	41	20	1.8669991	20.0	63	93
30	1733	19.8	36	45	30	9791	20.0	65	2.35597
40	1535	19.8	39	50	40	9592	19.9	67	2.35602
50	1336	19.9	41	54	50	9392	20.0	69	06
43 25 00	1138	19.8	43	58	43 35 00	9192	20.0	71	10
10	0939	19.9	45	62	10	8993	19.9	73	14
20	0741	19.8	47	66	20	8793	20.0	75	19
30	0542	19.9	49	70	30	8593	20.0	77	23
40	0343	19.9	52	75	40	8393	20.0	80	27
50	1.8680145	19.8	54	79	50	8194	19.9	82	32
43 26 00	1.8679947	19.8	56	83	43 36 00	7994	20.0	84	36
10	9748	19.9	58	87	10	7795	19.9	86	40
20	9549	19.9	60	91	20	7594	20.1	88	44
30	9351	19.8	62	2.35395	30	7395	19.9	90	48
40	9152	19.9	65	2.35400	40	7195	20.0	93	53
50	8953	19.9	67	04	50	6995	20.0	95	58
43 27 00	8754	19.9	69	08	43 37 00	6795	20.0	97	62
10	8556	19.8	71	12	10	6595	20.0	2.0054099	66
20	8356	20.0	73	17	20	6395	20.0	2.0054101	70
30	8158	19.8	75	21	30	6195	20.0	03	74
40	7959	19.9	78	25	40	5995	20.0	06	79
50	7760	19.9	80	30	50	5795	20.0	08	83
43 28 00	7561	19.9	82	34	43 38 00	5595	20.0	10	87
10	7363	19.8	84	38	10	5395	20.0	12	91
20	7164	19.9	86	42	20	5194	20.1	14	95
30	6965	19.9	88	46	30	4995	19.9	16	2.35699
40	6766	19.9	90	51	40	4795	20.0	19	2.35704
50	6567	19.9	92	55	50	4594	20.1	21	08
43 29 00	6369	19.8	94	60	43 39 00	4394	20.0	23	12
10	6170	19.9	96	64	10	4195	19.9	25	16
20	5970	20.0	2.0053998	68	20	3994	20.1	27	20
30	5771	19.9	2.0054000	72	30	3794	20.0	29	24
40	5573	19.8	03	77	40	3594	20.0	32	29
50	5373	20.0	05	81	50	3394	20.0	34	33
43 30 00	5174	19.9	07	85	43 40 00	3194	20.0	36	37

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
43 40 00	1.8663194	20.0	2.0054136	2.35737	43 50 00	1.8651143	20.1	2.0054264	2.35989
10	2994	20.0	38	41	10	0942	20.1	66	93
20	2793	20.1	40	45	20	0740	20.2	68	2.35997
30	2593	20.0	42	49	30	0539	20.1	70	2.36001
40	2393	20.0	45	54	40	0337	20.2	73	06
50	2192	20.1	47	58	50	1.8650135	20.2	75	10
43 41 00	1992	20.0	49	62	43 51 00	1.8649934	20.1	77	14
10	1791	20.1	51	66	10	9733	20.1	79	18
20	1590	20.1	53	70	20	9531	20.2	81	22
30	1390	20.0	55	74	30	9329	20.2	83	26
40	1190	20.0	57	79	40	9128	20.1	86	31
50	0989	20.1	59	83	50	8925	20.3	88	35
43 42 00	0789	20.0	61	87	43 52 00	8724	20.1	90	39
10	0588	20.1	63	91	10	8523	20.1	92	43
20	0388	20.0	65	95	20	8320	20.3	94	48
30	1.8660187	20.1	67	2.35799	30	8119	20.1	96	52
40	1.8659987	20.0	70	2.35804	40	7917	20.2	2.0054299	56
50	9786	20.1	72	08	50	7715	20.2	2.0054301	61
43 43 00	9586	20.0	74	12	43 53 00	7513	20.2	03	65
10	9386	20.0	76	16	10	7312	20.1	05	69
20	9184	20.2	78	20	20	7110	20.2	07	73
30	8984	20.0	80	24	30	6908	20.2	09	77
40	8784	20.0	83	29	40	6706	20.2	12	82
50	8582	20.2	85	33	50	6505	20.1	14	86
43 44 00	8382	20.0	87	37	43 54 00	6303	20.2	16	90
10	8181	20.1	89	41	10	6101	20.2	18	94
20	7980	20.1	91	46	20	5899	20.2	20	2.36098
30	7779	20.1	93	51	30	5697	20.2	22	2.36102
40	7579	20.0	96	55	40	5495	20.2	25	07
50	7377	20.2	2.0054198	60	50	5293	20.2	27	11
43 45 00	7177	20.0	2.0054200	64	43 55 00	5091	20.2	29	15
10	6976	20.1	02	68	10	4889	20.2	31	19
20	6775	20.1	04	72	20	4687	20.2	33	23
30	6574	20.1	06	76	30	4485	20.2	35	27
40	6373	20.1	09	81	40	4283	20.2	37	32
50	6172	20.1	11	85	50	4080	20.3	39	36
43 46 00	5971	20.1	13	89	43 56 00	3878	20.2	41	41
10	5770	20.1	15	93	10	3676	20.2	43	45
20	5570	20.0	17	2.35897	20	3474	20.2	45	49
30	5368	20.2	19	2.35901	30	3271	20.3	47	53
40	5167	20.1	22	06	40	3070	20.1	50	58
50	4966	20.1	24	10	50	2868	20.2	52	62
43 47 00	4766	20.0	26	14	43 57 00	2666	20.2	54	66
10	4565	20.1	28	18	10	2464	20.2	56	70
20	4364	20.1	30	22	20	2261	20.3	58	74
30	4162	20.2	32	26	30	2059	20.2	60	78
40	3961	20.1	35	31	40	1857	20.2	63	83
50	3759	20.2	37	35	50	1653	20.4	65	87
43 48 00	3558	20.1	39	39	43 58 00	1451	20.2	67	91
10	3356	20.2	41	43	10	1249	20.2	69	95
20	3156	20.0	43	47	20	1046	20.3	71	2.36199
30	2955	20.1	45	51	30	0844	20.2	73	2.36203
40	2753	20.2	47	56	40	0642	20.2	76	08
50	2552	20.1	49	60	50	0439	20.3	78	12
43 49 00	2351	20.1	51	64	43 59 00	0237	20.2	80	16
10	2150	20.1	53	68	10	1.8640034	20.3	82	20
20	1949	20.1	55	72	20	1.8639831	20.3	84	24
30	1746	20.3	57	76	30	9629	20.2	86	28
40	1545	20.1	60	81	40	9427	20.2	89	33
50	1341	20.1	62	85	50	9223	20.4	91	37
43 50 00	1143	20.1	64	89	44 00 00	9021	20.2	93	42

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
44 00 00	1.8639021	20.3	2.0054393	2.36242	44 10 00	1.8626829	20.3	2.0054522	2.36494
10	8819	20.2	95	46	10	6625	20.4	24	2.36498
20	8618	20.1	97	50	20	6422	20.3	26	2.36503
30	8415	20.3	2.0054399	54	30	6217	20.5	28	07
40	8211	20.4	2.0054402	59	40	6013	20.4	31	11
50	8008	20.3	04	64	50	5810	20.3	33	16
44 01 00	7806	20.2	06	67	44 11 00	5606	20.4	35	20
10	7603	20.3	08	71	10	5403	20.3	37	24
20	7400	20.3	10	76	20	5198	20.5	39	28
30	7197	20.3	12	80	30	4994	20.4	41	32
40	6995	20.2	15	84	40	4791	20.3	43	37
50	6791	20.4	17	89	50	4586	20.5	45	41
44 02 00	6589	20.2	19	93	44 12 00	4382	20.4	47	45
10	6386	20.3	21	2.36297	10	4178	20.6	49	49
20	6182	20.4	23	2.36301	20	3975	20.3	51	53
30	5980	20.2	25	05	30	3770	20.5	53	57
40	5777	20.3	27	10	40	3566	20.4	56	62
50	5573	20.4	29	14	50	3361	20.4	58	66
44 03 00	5371	20.2	31	18	44 13 00	3157	20.4	60	70
10	5168	20.3	33	22	10	2953	20.4	62	74
20	4965	20.3	35	26	20	2748	20.5	64	78
30	4762	20.3	37	30	30	2544	20.4	66	82
40	4559	20.3	40	35	40	2341	20.3	69	87
50	4356	20.3	42	39	50	2136	20.5	71	91
44 04 00	4153	20.3	44	43	44 14 00	1932	20.4	73	95
10	3951	20.2	46	47	10	1728	20.4	75	2.36599
20	3747	20.4	48	51	20	1524	20.4	77	2.36603
30	3544	20.3	50	55	30	1319	20.5	79	07
40	3341	20.3	53	60	40	1114	20.5	82	12
50	3137	20.4	55	64	50	0910	20.4	84	16
44 05 00	2934	20.3	57	68	44 15 00	0706	20.4	86	20
10	2731	20.3	59	72	10	0502	20.4	88	24
20	2527	20.4	61	76	20	0298	20.4	90	28
30	2324	20.3	63	80	30	1.8620093	20.5	92	33
40	2121	20.3	66	85	40	1.8619889	20.4	95	38
50	1917	20.4	68	89	50	9683	20.6	97	42
44 06 00	1714	20.3	70	93	44 16 00	9479	20.4	2.0054599	46
10	1511	20.3	72	2.36397	10	9275	20.4	2.0054601	50
20	1308	20.3	74	2.36401	20	9070	20.5	03	54
30	1104	20.4	76	05	30	8865	20.5	05	58
40	0901	20.3	79	10	40	8661	20.4	08	63
50	0697	20.4	81	14	50	8456	20.5	10	67
44 07 00	0495	20.2	83	18	44 17 00	8252	20.4	12	71
10	0292	20.3	85	22	10	8047	20.5	14	75
20	1.8630087	20.5	87	26	20	7843	20.4	16	79
30	1.8629884	20.3	89	30	30	7637	20.6	18	83
40	9681	20.3	92	35	40	7433	20.4	20	87
50	9477	20.4	94	40	50	7229	20.4	22	91
44 08 00	9273	20.4	96	44	44 18 00	7024	20.5	24	2.36696
10	9070	20.3	2.0054498	48	10	6820	20.4	26	2.36700
20	8866	20.4	2.0054500	52	20	6614	20.6	28	04
30	8662	20.4	02	56	30	6410	20.4	30	08
40	8459	20.3	05	61	40	6205	20.5	33	13
50	8255	20.4	07	65	50	5999	20.6	35	17
44 09 00	8051	20.4	09	69	44 19 00	5795	20.4	37	21
10	7848	20.3	11	73	10	5590	20.5	39	25
20	7644	20.4	13	77	20	5385	20.5	41	29
30	7440	20.4	15	81	30	5180	20.5	43	33
40	7237	20.3	18	86	40	4975	20.5	46	38
50	7032	20.5	20	90	50	4770	20.5	48	42
44 10 00	6829	20.3	22	94	44 20 00	4565	20.5	50	46

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
44 20 00	1.8614565	20.5	2.0054650	2.36746	44 30 00	1.8602230	20.5	2.0054779	2.36999
10	4360	20.5	52	50	10	2024	20.6	81	2.37003
20	4155	20.5	54	55	20	1817	20.7	83	07
30	3950	20.5	56	59	30	1611	20.6	85	11
40	3745	20.5	59	63	40	1405	20.6	88	16
50	3539	20.6	61	68	50	1198	20.7	90	20
44 21 00	3334	20.5	63	72	44 31 00	0992	20.6	92	24
10	3130	20.4	65	76	10	0786	20.6	94	29
20	2925	20.5	67	80	20	0580	20.6	96	33
30	2719	20.6	69	84	30	0373	20.7	2.0054798	37
40	2514	20.5	72	89	40	1.8600166	20.7	2.0054801	42
50	2309	20.5	74	93	50	1.8599960	20.6	03	46
44 22 00	2104	20.5	76	2.36797	44 32 00	9754	20.6	05	50
10	1899	20.5	78	2.36801	10	9548	20.6	07	54
20	1693	20.6	80	05	20	9341	20.7	09	58
30	1488	20.5	82	09	30	9135	20.6	11	62
40	1283	20.5	85	14	40	8928	20.7	13	67
50	1077	20.6	87	18	50	8721	20.7	15	71
44 23 00	0872	20.5	89	22	44 33 00	8515	20.6	17	75
10	0667	20.5	91	26	10	8309	20.6	19	79
20	0461	20.6	93	31	20	8101	20.8	21	83
30	0256	20.5	95	35	30	7895	20.6	23	87
40	1.8610051	20.5	2.0054698	40	40	7689	20.6	26	92
50	1.8609844	20.7	2.0054700	44	50	7481	20.8	28	2.37096
44 24 00	9639	20.5	02	48	44 34 00	7275	20.6	30	2.37100
10	9434	20.5	04	52	10	7069	20.6	32	04
20	9229	20.5	06	56	20	6862	20.7	34	08
30	9023	20.6	08	60	30	6655	20.7	36	12
40	8817	20.6	10	64	40	6448	20.7	39	17
50	8612	20.5	12	69	50	6242	20.6	41	21
44 25 00	8407	20.5	14	73	44 35 00	6035	20.7	43	25
10	8201	20.6	16	77	10	5829	20.6	45	29
20	7995	20.6	18	81	20	5621	20.8	47	33
30	7790	20.5	20	85	30	5415	20.6	49	37
40	7583	20.7	23	90	40	5208	20.7	52	42
50	7378	20.5	25	94	50	5000	20.8	54	46
44 26 00	7173	20.5	27	2.36898	44 36 00	4794	20.6	56	50
10	6967	20.6	29	2.36902	10	4587	20.7	58	54
20	6761	20.6	31	06	20	4379	20.8	60	58
30	6555	20.6	33	10	30	4173	20.6	62	62
40	6350	20.5	36	15	40	3966	20.7	65	67
50	6143	20.7	38	19	50	3758	20.8	67	71
44 27 00	5938	20.5	40	23	44 37 00	3552	20.6	69	75
10	5732	20.6	42	27	10	3345	20.7	71	79
20	5526	20.6	44	31	20	3137	20.8	73	83
30	5320	20.6	46	35	30	2930	20.7	75	87
40	5114	20.6	49	40	40	2723	20.7	78	92
50	4908	20.6	51	44	50	2516	20.7	80	2.37196
44 28 00	4702	20.6	53	48	44 38 00	2309	20.7	82	2.37200
10	4496	20.6	55	52	10	2102	20.7	84	04
20	4291	20.5	57	57	20	1895	20.7	86	08
30	4084	20.7	59	61	30	1687	20.8	88	12
40	3878	20.6	62	65	40	1481	20.6	91	17
50	3672	20.6	64	70	50	1273	20.8	93	22
44 29 00	3467	20.5	66	74	44 39 00	1066	20.7	95	26
10	3261	20.6	68	78	10	0859	20.7	97	30
20	3056	20.5	70	82	20	0651	20.8	2.0054899	34
30	2848	20.6	72	86	30	0444	20.7	2.0054901	38
40	2642	20.6	75	91	40	0236	20.8	03	43
50	2435	20.7	77	95	50	1.8590029	20.7	05	47
44 30 00	2230	20.5	79	99	44 40 00	1.8589822	20.7	07	51

Table for transformation of coordinates—Continued.

Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.			Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
°	′	″					°	′	″				
44	40	00	1.8589822	20.7	2.0054907	2.37251	44	50	00	1.8577341	20.9	2.0055033	2.37503
		10	9615	20.7	09	55			10	7133	20.8	38	07
		20	9407	20.8	11	60			20	6924	20.9	40	11
		30	9199	20.8	13	64			30	6715	20.9	42	15
		40	8992	20.7	16	68			40	6507	20.8	45	20
		50	8784	20.8	18	73			50	6298	20.9	47	24
44	41	00	8577	20.7	20	77	44	51	00	6089	20.9	49	28
		10	8370	20.7	22	81			10	5881	20.8	51	32
		20	8162	20.8	24	85			20	5671	21.0	53	37
		30	7954	20.8	26	89			30	5463	20.8	55	41
		40	7747	20.7	29	94			40	5254	20.9	58	45
		50	7539	20.8	31	2.37298			50	5044	21.0	60	50
44	42	00	7332	20.7	33	2.37302	44	52	00	4836	20.8	62	54
		10	7125	20.7	35	06			10	4627	20.9	64	58
		20	6916	20.9	37	10			20	4419	20.8	66	62
		30	6709	20.7	39	14			30	4209	21.0	68	66
		40	6501	20.8	42	19			40	4001	20.8	71	71
		50	6293	20.8	44	23			50	3792	20.9	73	75
44	43	00	6085	20.8	46	27	44	53	00	3583	20.9	75	79
		10	5878	20.7	48	31			10	3375	20.8	77	83
		20	5669	20.8	50	35			20	3165	21.0	79	87
		30	5462	20.7	52	39			30	2956	20.9	81	91
		40	5254	20.8	55	44			40	2747	21.0	83	2.37596
		50	5046	20.8	57	48			50	2537	21.0	86	2.37600
44	44	00	4838	20.8	59	52	44	54	00	2329	20.8	88	04
		10	4631	20.7	61	56			10	2120	20.9	90	08
		20	4422	20.9	64	60			20	1910	21.0	92	12
		30	4214	20.8	66	64			30	1701	20.9	94	17
		40	4007	20.7	68	69			40	1492	20.9	97	22
		50	3798	20.9	70	73			50	1282	21.0	2.0055099	26
44	45	00	3590	20.8	72	77	44	55	00	1073	20.9	2.0055101	30
		10	3383	20.7	74	81			10	0864	20.9	03	34
		20	3175	20.8	76	85			20	0655	20.9	05	38
		30	2966	20.9	78	89			30	0445	21.0	07	42
		40	2758	20.8	81	94			40	0236	20.9	09	47
		50	2550	20.8	83	2.37398			50	1.8570027	20.9	11	51
44	46	00	2343	20.7	85	2.37402	44	56	00	1.8569818	20.9	13	55
		10	2135	20.8	87	06			10	9609	20.9	15	59
		20	1926	20.9	89	10			20	9399	21.0	17	63
		30	1718	20.8	91	14			30	9190	20.9	19	67
		40	1510	20.8	94	20			40	8981	20.9	22	72
		50	1301	20.9	96	24			50	8771	21.0	24	76
44	47	00	1093	20.8	2.0054998	28	44	57	00	8562	20.9	26	80
		10	0885	20.8	2.0055000	32			10	8352	21.0	28	84
		20	0676	20.9	02	36			20	8142	21.0	30	88
		30	0468	20.8	04	40			30	7933	20.9	32	92
		40	0260	20.8	06	45			40	7724	20.9	35	2.37697
		50	1.8580051	20.9	08	49			50	7513	21.1	37	2.37701
44	48	00	1.8579843	20.8	10	53	44	58	00	7304	20.9	39	05
		10	9635	20.8	12	57			10	7095	20.9	41	09
		20	9427	20.8	14	61			20	6885	21.0	43	13
		30	9218	20.9	16	65			30	6675	21.0	45	17
		40	9009	20.9	19	70			40	6466	20.9	48	22
		50	8801	20.8	21	74			50	6255	21.1	50	26
44	49	00	8593	20.8	23	78	44	59	00	6046	20.9	52	30
		10	8385	20.8	25	82			10	5837	20.9	54	34
		20	8176	20.9	27	86			20	5627	21.0	56	38
		30	7967	20.9	29	90			30	5417	21.0	58	42
		40	7759	20.8	32	95			40	5207	21.0	61	47
		50	7550	20.9	34	2.37499			50	4998	20.9	63	51
44	50	00	7341	20.9	36	2.37503	45	00	00	4788	21.0	65	55

Table for transformation of coordinates—Continued.

Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*	Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*
° ′ ″					° ′ ″				
45 00 00	1.8564788	21.0	2.0055165	2.37755	45 10 00	1.8552161	21.1	2.0055294	2.38008
10	4578	21.0	67	59	10	1950	21.1	96	12
20	4368	21.0	69	63	20	1738	21.2	2.0055298	16
30	4158	21.0	71	67	30	1528	21.0	2.0055300	20
40	3949	20.9	74	72	40	1317	21.1	02	25
50	3738	21.1	76	76	50	1105	21.2	04	29
45 01 00	3528	21.0	78	80	45 11 00	0894	21.1	06	33
10	3319	20.9	80	84	10	0683	21.1	08	37
20	3108	21.1	82	88	20	0471	21.2	10	41
30	2898	21.0	84	92	30	0260	21.1	12	45
40	2688	21.0	87	2.37797	40	1.8550049	21.1	15	50
50	2478	21.0	89	2.37801	50	1.8549837	21.2	17	54
45 02 00	2268	21.0	91	05	45 12 00	9626	21.1	19	58
10	2058	21.0	93	10	10	9415	21.1	21	62
20	1848	21.0	95	14	20	9204	21.1	23	67
30	1637	21.1	97	18	30	8992	21.2	25	71
40	1428	20.9	2.0055199	23	40	8781	21.1	28	75
50	1218	21.0	2.0055201	27	50	8570	21.1	30	80
45 03 00	1008	21.0	03	31	45 13 00	8359	21.1	32	84
10	0798	21.0	05	35	10	8148	21.1	34	88
20	0587	21.1	07	39	20	7935	21.3	36	92
30	0377	21.0	09	44	30	7724	21.1	38	2.38096
40	1.8560167	21.0	11	48	40	7513	21.1	41	2.38101
50	1.8559956	21.1	13	53	50	7301	21.2	43	05
45 04 00	9746	21.0	16	57	45 14 00	7089	21.2	45	09
10	9536	21.0	18	61	10	6878	21.1	47	13
20	9325	21.1	20	65	20	6666	21.2	49	17
30	9115	21.0	22	69	30	6455	21.1	51	21
40	8905	21.0	25	74	40	6243	21.2	54	26
50	8693	21.2	27	78	50	6031	21.2	56	30
45 05 00	8483	21.0	29	82	45 15 00	5819	21.2	58	34
10	8273	21.0	31	86	10	5608	21.1	60	38
20	8063	21.0	33	90	20	5396	21.2	62	42
30	7852	21.1	35	94	30	5184	21.2	64	46
40	7641	21.1	38	2.37899	40	4973	21.1	67	51
50	7431	21.0	40	2.37903	50	4760	21.3	69	55
45 06 00	7221	21.0	42	07	45 16 00	4549	21.1	71	59
10	7011	21.0	44	11	10	4337	21.2	73	63
20	6799	21.2	46	15	20	4126	21.1	75	67
30	6589	21.0	48	19	30	3913	21.3	77	71
40	6379	21.0	51	24	40	3701	21.2	79	76
50	6167	21.2	53	28	50	3490	21.1	81	80
45 07 00	5957	21.0	55	32	45 17 00	3278	21.2	83	84
10	5746	21.1	57	36	10	3067	21.1	85	88
20	5535	21.1	59	40	20	2854	21.3	87	92
30	5324	21.1	61	44	30	2642	21.2	89	2.38196
40	5114	21.0	64	49	40	2430	21.2	92	2.38201
50	4902	21.2	66	53	50	2218	21.2	94	06
45 08 00	4692	21.0	68	57	45 18 00	2006	21.2	96	10
10	4481	21.1	70	61	10	1794	21.2	2.0055398	14
20	4270	21.1	72	65	20	1581	21.3	2.0055400	18
30	4059	21.1	74	69	30	1369	21.2	02	22
40	3849	21.0	77	74	40	1158	21.1	05	27
50	3637	21.2	79	78	50	0945	21.3	07	31
45 09 00	3426	21.1	81	82	45 19 00	0733	21.2	09	35
10	3216	21.0	83	86	10	0521	21.2	11	39
20	3005	21.1	85	90	20	0309	21.2	13	43
30	2793	21.2	87	94	30	1.8540096	21.3	15	47
40	2583	21.0	90	2.37999	40	1.8539884	21.2	18	52
50	2372	21.1	92	2.38004	50	9672	21.2	20	56
45 10 00	2161	21.1	94	08	45 20 00	9460	21.2	22	60

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
45 20 00	1.8539460	21.2	2.0055422	2.38260	45 30 00	1.8526684	21.3	2.0055551	2.38512
10	9248	21.2	24	64	10	6471	21.3	53	16
20	9035	21.3	26	68	20	6257	21.4	55	20
30	8823	21.2	28	72	30	6043	21.4	57	24
40	8611	21.2	31	77	40	5830	21.3	60	29
50	8398	21.3	33	81	50	5616	21.4	62	33
45 21 00	8186	21.2	35	85	45 31 00	5403	21.3	64	37
10	7974	21.2	37	89	10	5190	21.3	66	41
20	7760	21.4	39	93	20	4975	21.5	68	45
30	7548	21.2	41	2.38297	30	4762	21.3	70	49
40	7336	21.2	44	2.38302	40	4548	21.4	73	54
50	7123	21.3	46	06	50	4334	21.4	75	58
45 22 00	6911	21.2	48	10	45 32 00	4120	21.4	77	62
10	6698	21.3	50	14	10	3907	21.3	79	66
20	6485	21.3	52	19	20	3692	21.5	81	71
30	6273	21.2	54	23	30	3479	21.3	83	75
40	6060	21.3	57	27	40	3265	21.4	86	79
50	5847	21.3	59	32	50	3051	21.4	88	84
45 23 00	5635	21.2	61	36	45 33 00	2837	21.4	90	88
10	5422	21.3	63	40	10	2623	21.4	92	93
20	5210	21.2	65	44	20	2410	21.3	94	2.38598
30	4996	21.4	67	48	30	2195	21.5	96	2.38602
40	4784	21.2	70	53	40	1981	21.4	2.0055598	06
50	4571	21.3	72	57	50	1768	21.3	2.0055600	10
45 24 00	4359	21.2	74	61	45 34 00	1554	21.4	02	14
10	4146	21.3	76	65	10	1340	21.4	04	18
20	3933	21.3	78	69	20	1125	21.5	06	22
30	3720	21.3	80	73	30	0911	21.4	08	26
40	3508	21.2	82	78	40	0698	21.3	11	31
50	3294	21.4	84	82	50	0483	21.5	13	35
45 25 00	3081	21.3	86	86	45 35 00	0269	21.4	15	39
10	2869	21.2	88	90	10	1.8520055	21.4	17	43
20	2655	21.4	90	94	20	1.8519840	21.5	19	47
30	2442	21.3	92	2.38399	30	9626	21.4	21	51
40	2230	21.2	95	2.38404	40	9412	21.4	24	56
50	2016	21.4	97	08	50	9197	21.5	26	60
45 26 00	1803	21.3	2.0055499	12	45 36 00	8983	21.4	28	64
10	1590	21.3	2.0055501	16	10	8769	21.4	30	68
20	1378	21.2	03	20	20	8554	21.5	32	72
30	1164	21.4	05	24	30	8340	21.4	34	76
40	0951	21.3	08	29	40	8126	21.4	37	81
50	0738	21.3	10	33	50	7911	21.5	39	85
45 27 00	0525	21.3	12	37	45 37 00	7697	21.4	41	89
10	0312	21.3	14	41	10	7483	21.4	43	93
20	1.8530098	21.4	16	45	20	7268	21.5	45	2.38697
30	1.8529886	21.2	18	49	30	7053	21.5	47	2.38701
40	9673	21.3	21	54	40	6839	21.4	50	06
50	9459	21.4	23	58	50	6625	21.4	52	10
45 28 00	9246	21.3	25	62	45 38 00	6411	21.4	54	14
10	9033	21.3	27	66	10	6196	21.5	56	18
20	8819	21.4	29	70	20	5981	21.5	58	22
30	8605	21.4	31	74	30	5767	21.4	60	26
40	8392	21.3	34	79	40	5552	21.5	63	31
50	8178	21.4	36	83	50	5337	21.5	65	35
45 29 00	7965	21.3	38	87	45 39 00	5123	21.4	67	39
10	7752	21.3	40	91	10	4908	21.5	69	43
20	7538	21.4	42	95	20	4693	21.5	71	47
30	7325	21.3	44	2.38499	30	4478	21.5	73	51
40	7111	21.4	47	2.38504	40	4264	21.4	76	56
50	6897	21.4	49	08	50	4049	21.5	78	60
45 30 00	6684	21.3	51	12	45 40 00	3835	21.4	80	64

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
45 40 00	1.8513835	21.4	2.0055680	2.38764	45 50 00	1.8500909	21.6	2.0055808	2.39017
10	3619	21.6	82	68	10	0692	21.7	10	21
20	3404	21.5	84	72	20	0477	21.5	12	25
30	3189	21.5	86	76	30	0261	21.6	14	29
40	2975	21.4	89	81	40	1.8500045	21.6	17	34
50	2760	21.5	91	86	50	1.8499829	21.6	19	38
45 41 00	2546	21.4	93	90	45 51 00	9613	21.6	21	42
10	2331	21.5	95	94	10	9397	21.6	23	46
20	2115	21.6	97	2.38798	20	9180	21.7	25	50
30	1901	21.4	2.0055699	2.38802	30	8964	21.6	27	54
40	1685	21.6	2.0055701	07	40	8748	21.6	30	59
50	1469	21.6	03	11	50	8531	21.7	32	63
45 42 00	1255	21.4	05	15	45 52 00	8315	21.6	34	67
10	1041	21.4	07	19	10	8099	21.6	36	71
20	0825	21.6	09	23	20	7882	21.7	38	76
30	0610	21.5	11	27	30	7666	21.6	40	80
40	0395	21.5	14	32	40	7450	21.6	43	84
50	1.8510179	21.6	16	36	50	7233	21.7	45	89
45 43 00	1.8509964	21.5	18	40	45 53 00	7016	21.7	47	93
10	9750	21.4	20	45	10	6800	21.6	49	2.39097
20	9534	21.6	22	50	20	6584	21.6	51	2.39101
30	9319	21.5	24	54	30	6367	21.7	53	05
40	9104	21.5	27	58	40	6151	21.6	56	10
50	8888	21.6	29	62	50	5934	21.7	58	14
45 44 00	8673	21.5	31	66	45 54 00	5718	21.6	60	18
10	8458	21.5	33	70	10	5502	21.6	62	22
20	8243	21.5	35	74	20	5285	21.7	64	26
30	8027	21.6	37	78	30	5068	21.7	66	30
40	7812	21.5	40	83	40	4852	21.6	69	35
50	7596	21.6	42	87	50	4635	21.7	71	39
45 45 00	7381	21.5	44	91	45 55 00	4418	21.7	73	43
10	7166	21.5	46	95	10	4202	21.6	75	47
20	6950	21.6	48	2.38899	20	3984	21.8	77	51
30	6735	21.5	50	2.38903	30	3768	21.6	79	55
40	6520	21.5	53	08	40	3551	21.7	81	60
50	6303	21.7	55	12	50	3334	21.7	83	64
45 46 00	6088	21.5	57	16	45 56 00	3117	21.7	85	68
10	5873	21.5	59	20	10	2901	21.6	87	72
20	5657	21.6	61	24	20	2683	21.8	89	76
30	5441	21.6	63	28	30	2467	21.6	91	80
40	5226	21.5	66	33	40	2250	21.7	94	86
50	5009	21.7	68	37	50	2033	21.7	96	90
45 47 00	4794	21.5	70	41	45 57 00	1816	21.7	2.0055898	94
10	4579	21.5	72	45	10	1599	21.7	2.0055900	2.39198
20	4363	21.6	74	49	20	1383	21.6	02	2.39202
30	4147	21.6	76	53	30	1165	21.8	04	06
40	3931	21.6	78	58	40	0948	21.7	07	11
50	3716	21.5	80	62	50	0731	21.7	09	15
45 48 00	3500	21.6	82	66	45 58 00	0515	21.6	11	19
10	3285	21.5	84	70	10	0298	21.7	13	23
20	3068	21.7	86	74	20	1.8490080	21.8	15	27
30	2853	21.5	88	78	30	1.8489863	21.7	17	31
40	2637	21.6	91	83	40	9646	21.7	20	36
50	2421	21.6	93	88	50	9428	21.8	22	40
45 49 00	2205	21.6	95	92	45 59 00	9212	21.6	24	44
10	1989	21.6	97	2.38996	10	8995	21.7	26	48
20	1774	21.5	2.0055799	2.39000	20	8777	21.8	28	52
30	1557	21.7	2.0055801	04	30	8560	21.7	30	56
40	1341	21.6	04	09	40	8343	21.7	33	61
50	1125	21.6	06	13	50	8125	21.8	35	65
45 50 00	0909	21.6	08	17	46 00 00	7908	21.7	37	69

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
46 00 00	1.8487908	21.7	2.0055937	2.39269	46 10 00	1.8474831	21.8	2.0056066	2.39521
10	7691	21.7	39	73	10	4612	21.9	68	25
20	7473	21.8	41	77	20	4393	21.9	70	30
30	7256	21.7	43	81	30	4175	21.8	72	34
40	7048	21.8	46	86	40	3956	21.9	74	38
50	6820	21.8	48	90	50	3737	21.9	76	43
46 01 00	6603	21.7	50	94	46 11 00	3518	21.9	78	47
10	6386	21.7	52	2.39298	10	3300	21.8	80	51
20	6169	21.7	54	2.39303	20	3081	21.9	82	55
30	5951	21.8	56	08	30	2862	21.9	84	59
40	5733	21.8	59	12	40	2643	21.9	87	64
50	5516	21.7	61	16	50	2425	21.8	89	68
46 02 00	5299	21.7	63	20	46 12 00	2206	21.9	91	72
10	5082	21.7	65	24	10	1988	21.8	93	77
20	4863	21.9	67	28	20	1768	22.0	95	81
30	4646	21.7	69	33	30	1550	21.8	2.0056097	85
40	4428	21.8	71	37	40	1331	21.9	2.0056100	90
50	4210	21.8	73	41	50	1111	22.0	02	94
46 03 00	3993	21.7	75	45	46 13 00	0893	21.8	04	2.39598
10	3775	21.8	77	49	10	0674	21.9	06	2.39602
20	3557	21.8	79	53	20	0454	22.0	08	06
30	3339	21.8	81	57	30	0235	21.9	10	10
40	3122	21.7	84	62	40	1.8470017	21.8	13	15
50	2903	21.9	86	66	50	1.8469797	22.0	15	19
46 04 00	2686	21.7	88	70	46 14 00	9578	21.9	17	23
10	2468	21.8	90	74	10	9359	21.9	19	27
20	2251	21.7	92	78	20	9139	22.0	21	31
30	2032	21.9	94	83	30	8921	21.8	23	35
40	1815	21.7	97	88	40	8702	21.9	26	40
50	1597	21.8	2.0055990	92	50	8482	22.0	28	44
46 05 00	1379	21.8	2.0056001	2.39396	46 15 00	8263	21.9	30	48
10	1162	21.7	03	2.39400	10	8045	21.8	32	52
20	0943	21.9	05	04	20	7825	22.0	34	56
30	0725	21.8	07	08	30	7605	22.0	36	60
40	0507	21.8	10	13	40	7386	21.9	39	65
50	0289	21.8	12	17	50	7167	21.9	41	69
46 06 00	1.8480071	21.8	14	21	46 16 00	6948	21.9	43	73
10	1.8479853	21.8	16	25	10	6729	21.9	45	77
20	9634	21.9	18	29	20	6509	22.0	47	81
30	9416	21.8	20	33	30	6289	22.0	49	85
40	9198	21.8	23	38	40	6070	21.9	52	90
50	8980	21.8	25	42	50	5850	22.0	54	94
46 07 00	8762	21.8	27	46	46 17 00	5631	21.9	56	2.39698
10	8544	21.8	29	50	10	5412	21.9	58	2.39702
20	8325	21.9	31	54	20	5192	22.0	60	06
30	8107	21.8	33	58	30	4972	22.0	62	11
40	7889	21.8	36	63	40	4753	21.9	64	15
50	7670	21.9	38	67	50	4533	22.0	66	19
46 08 00	7452	21.8	40	71	46 18 00	4313	22.0	68	23
10	7234	21.8	42	75	10	4094	21.9	70	27
20	7016	21.8	44	79	20	3875	21.9	72	32
30	6796	22.0	46	83	30	3654	22.1	74	36
40	6578	21.8	49	88	40	3435	21.9	77	40
50	6360	21.8	51	92	50	3215	22.0	79	45
46 09 00	6142	21.8	53	2.39496	46 19 00	2996	21.9	81	49
10	5924	21.8	55	2.39500	10	2777	21.9	83	53
20	5705	21.9	57	04	20	2556	22.1	85	57
30	5486	21.9	59	08	30	2337	21.9	87	61
40	5268	21.8	62	13	40	2117	22.0	90	66
50	5049	21.9	64	17	50	1896	22.1	92	70
46 10 00	4831	21.8	66	21	46 20 00	1677	21.9	94	75

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
46 20 00	1.8461677	21.9	2.0056194	2.39775	46 30 00	1.8448446	22.1	2.0056323	2.40027
10	1457	22.0	96	79	10	8225	22.1	25	31
20	1237	22.0	2.0056198	83	20	8003	22.2	27	35
30	1017	22.0	2.0056200	87	30	7782	22.1	30	40
40	0797	22.0	03	92	40	7561	22.1	32	44
50	0577	22.0	05	2.39796	50	7339	22.2	34	48
46 21 00	0357	22.0	07	2.39800	46 31 00	7118	22.1	36	52
10	1.8460137	22.0	09	04	10	6897	22.1	38	56
20	1.8459916	22.1	11	08	20	6675	22.2	40	60
30	9697	21.9	13	12	30	6454	22.1	42	65
40	9477	22.0	16	17	40	6233	22.1	44	69
50	9256	22.1	18	21	50	6011	22.2	46	73
46 22 00	9036	22.0	20	25	46 32 00	5790	22.1	48	77
10	8816	22.0	22	29	10	5569	22.1	50	81
20	8597	21.9	24	33	20	5348	22.1	52	85
30	8376	22.1	26	37	30	5126	22.2	55	90
40	8156	22.0	29	42	40	4904	22.2	57	94
50	7936	22.0	31	46	50	4683	22.1	59	2.40098
46 23 00	7716	22.0	33	50	46 33 00	4462	22.1	61	2.40102
10	7496	22.0	35	55	10	4241	22.1	63	06
20	7275	22.1	37	59	20	4018	22.3	65	10
30	7055	22.0	39	63	30	3797	22.1	68	15
40	6835	22.0	42	67	40	3576	22.1	70	19
50	6614	22.1	44	71	50	3353	22.3	72	23
46 24 00	6394	22.0	46	75	46 34 00	3132	22.1	74	27
10	6173	22.1	48	79	10	2910	22.2	76	31
20	5952	22.1	50	83	20	2688	22.2	78	36
30	5732	22.0	52	87	30	2467	22.1	81	40
40	5512	22.0	54	92	40	2245	22.2	83	44
50	5291	22.1	56	2.39896	50	2023	22.2	85	49
46 25 00	5071	22.0	58	2.39900	46 35 00	1801	22.2	87	53
10	4850	22.1	60	04	10	1580	22.1	89	57
20	4630	22.0	62	08	20	1357	22.3	91	61
30	4409	22.1	64	12	30	1135	22.2	94	66
40	4189	22.0	67	17	40	0914	22.1	96	71
50	3968	22.1	69	21	50	0691	22.3	2.0056398	75
46 26 00	3748	22.0	71	25	46 36 00	0470	22.1	2.0056400	79
10	3527	22.1	73	29	10	0248	22.2	02	83
20	3306	22.1	75	33	20	1.8440026	22.2	04	87
30	3086	22.0	77	37	30	1.8439804	22.2	07	92
40	2865	22.1	80	42	40	9582	22.2	09	2.40196
50	2644	22.1	82	46	50	9360	22.2	11	2.40200
46 27 00	2423	22.1	84	50	46 37 00	9138	22.2	13	04
10	2203	22.0	86	54	10	8916	22.2	15	08
20	1981	22.2	88	59	20	8694	22.2	17	12
30	1761	22.0	90	63	30	8472	22.2	19	17
40	1540	22.1	93	68	40	8250	22.2	21	21
50	1319	22.1	95	73	50	8027	22.3	23	25
46 28 00	1098	22.1	97	77	46 38 00	7805	22.2	25	29
10	0877	22.1	2.0056299	81	10	7583	22.2	27	33
20	0656	22.1	2.0056301	85	20	7360	22.3	29	37
30	0435	22.1	03	89	30	7138	22.2	32	42
40	1.8450214	22.1	06	94	40	6916	22.2	34	46
50	1.8449993	22.1	08	2.39998	50	6693	22.3	36	50
46 29 00	9772	22.1	10	2.40002	46 39 00	6471	22.2	38	54
10	9551	22.1	12	06	10	6249	22.2	40	58
20	9330	22.1	14	10	20	6027	22.2	42	62
30	9109	22.1	16	14	30	5805	22.2	45	67
40	8888	22.1	19	19	40	5582	22.3	47	71
50	8667	22.1	21	23	50	5360	22.2	49	75
46 30 00	8446	22.1	23	27	46 40 00	5138	22.2	51	79

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
46 40 00	1.8435138	22.2	2.0056451	2.40279	46 50 00	1.8421750	22.4	2.0056580	2.40532
10	4915	22.3	53	83	10	1527	22.3	82	36
20	4692	22.3	55	87	20	1303	22.4	84	40
30	4470	22.2	58	92	30	1080	22.3	87	45
40	4248	22.2	60	2.40296	40	0855	22.5	89	49
50	4025	22.3	62	2.40300	50	0632	22.3	91	53
46 41 00	3802	22.3	64	04	46 51 00	0408	22.4	93	58
10	3580	22.2	66	08	10	1.8420184	22.4	95	62
20	3357	22.3	68	12	20	1.8419960	22.4	97	66
30	3134	22.3	71	17	30	9736	22.4	2.0056599	71
40	2912	22.2	73	21	40	9512	22.4	2.0056601	75
50	2688	22.4	75	25	50	9288	22.4	03	79
46 42 00	2466	22.2	77	29	46 52 00	9064	22.4	05	83
10	2244	22.2	79	33	10	8840	22.4	07	87
20	2020	22.4	81	38	20	8615	22.5	09	91
30	1798	22.2	84	42	30	8392	22.3	12	2.40596
40	1575	22.3	86	46	40	8168	22.4	14	2.40600
50	1352	22.3	88	51	50	7943	22.5	16	04
46 43 00	1129	22.3	90	55	46 53 00	7719	22.4	18	08
10	0906	22.3	92	59	10	7495	22.4	20	12
20	0684	22.2	94	64	20	7270	22.5	22	16
30	0461	22.3	97	69	30	7046	22.4	25	21
40	0238	22.3	2.0056499	73	40	6822	22.4	27	25
50	1.8430015	22.3	2.0056501	77	50	6598	22.4	29	29
46 44 00	1.8429792	22.3	03	81	46 54 00	6374	22.4	31	33
10	9570	22.2	05	85	10	6150	22.4	33	37
20	9346	22.4	07	89	20	5925	22.5	35	41
30	9123	22.3	09	94	30	5701	22.4	38	46
40	8900	22.3	11	2.40398	40	5476	22.5	40	50
50	8677	22.3	13	2.40402	50	5252	22.4	42	54
46 45 00	8454	22.3	15	06	46 55 00	5028	22.4	44	58
10	8231	22.3	17	10	10	4804	22.4	46	62
20	8007	22.4	19	14	20	4579	22.5	48	67
30	7784	22.3	22	19	30	4355	22.4	51	71
40	7561	22.3	24	23	40	4130	22.5	53	75
50	7337	22.4	26	27	50	3905	22.5	55	80
46 46 00	7114	22.3	28	31	46 56 00	3681	22.4	57	84
10	6891	22.3	30	35	10	3457	22.4	59	88
20	6668	22.3	32	39	20	3231	22.6	61	92
30	6445	22.3	35	44	30	3007	22.4	64	2.40697
40	6221	22.4	37	48	40	2783	22.4	66	2.40701
50	5998	22.3	39	52	50	2557	22.6	68	05
46 47 00	5775	22.3	41	56	46 57 00	2333	22.4	70	09
10	5552	22.3	43	60	10	2109	22.4	72	13
20	5328	22.4	45	64	20	1884	22.5	74	17
30	5105	22.3	48	69	30	1660	22.4	76	22
40	4882	22.3	50	73	40	1434	22.6	78	26
50	4658	22.4	52	77	50	1210	22.4	80	30
46 48 00	4434	22.4	54	81	46 58 00	0985	22.5	82	34
10	4211	22.3	56	85	10	0761	22.4	84	38
20	3987	22.4	58	89	20	0535	22.6	86	42
30	3764	22.3	61	94	30	0311	22.4	89	47
40	3540	22.4	63	2.40498	40	1.8410086	22.5	91	51
50	3316	22.4	65	2.40502	50	1.8409860	22.6	93	56
46 49 00	3093	22.3	67	06	46 59 00	9636	22.4	95	60
10	2869	22.4	69	10	10	9411	22.5	97	64
20	2645	22.4	71	15	20	9185	22.6	2.0056699	68
30	2422	22.3	74	19	30	8961	22.4	2.0056702	73
40	2198	22.4	76	23	40	8736	22.5	04	77
50	1974	22.4	78	28	50	8510	22.6	06	81
46 50 00	1750	22.4	80	32	47 00 00	8285	22.5	08	85

Table for transformation of coordinates—Continued.

Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*	Latitude.	Log *H.*	Diff. 1″.	Log *K.*	Log *L.*
° ′ ″					° ′ ″				
47 00 00	1.8408285	22.5	2.0056708	2.40785	47 10 00	1.8394741	22.6	2.0056837	2.41038
10	8061	22.4	10	89	10	4515	22.6	39	42
20	7835	22.6	12	93	20	4288	22.7	41	46
30	7610	22.5	15	2.40798	30	4062	22.6	43	51
40	7385	22.5	17	2.40802	40	3836	22.6	45	55
50	7159	22.6	19	06	50	3609	22.7	47	59
47 01 00	6934	22.5	21	10	47 11 00	3382	22.7	49	63
10	6709	22.5	23	14	10	3156	22.6	51	67
20	6484	22.5	25	19	20	2930	22.6	53	71
30	6259	22.5	28	23	30	2703	22.7	56	76
40	6033	22.6	30	27	40	2476	22.7	58	80
50	5808	22.5	32	32	50	2250	22.6	60	84
47 02 00	5583	22.5	34	36	47 12 00	2023	22.7	62	88
10	5358	22.5	36	40	10	1797	22.6	64	92
20	5132	22.6	38	44	20	1570	22.7	66	2.41096
30	4907	22.5	41	49	30	1343	22.7	69	2.41101
40	4682	22.5	43	53	40	1117	22.6	71	05
50	4456	22.6	45	57	50	0889	22.8	73	09
47 03 00	4231	22.5	47	61	47 13 00	0663	22.6	75	13
10	4005	22.6	49	65	10	0436	22.7	77	17
20	3779	22.6	51	69	20	1.8390209	22.7	79	21
30	3554	22.5	54	74	30	1.8389982	22.7	82	26
40	3329	22.5	56	78	40	9756	22.6	84	30
50	3102	22.7	58	82	50	9528	22.8	86	34
47 04 00	2877	22.5	60	86	47 14 00	9301	22.7	88	38
10	2652	22.5	62	90	10	9075	22.6	90	42
20	2426	22.6	64	94	20	8847	22.8	92	47
30	2201	22.5	66	2.40899	30	8620	22.7	95	52
40	1975	22.6	68	2.40903	40	8393	22.7	97	56
50	1749	22.6	70	07	50	8166	22.7	2.0056899	61
47 05 00	1524	22.5	72	11	47 15 00	7939	22.7	2.0056901	65
10	1298	22.6	74	15	10	7712	22.7	03	69
20	1072	22.6	76	19	20	7486	22.6	05	73
30	0846	22.6	79	24	30	7259	22.7	08	78
40	0621	22.5	81	28	40	7031	22.8	10	82
50	0394	22.7	83	32	50	6804	22.7	12	86
47 06 00	1.8400169	22.5	85	36	47 16 00	6577	22.7	14	90
10	1.8399943	22.6	87	40	10	6350	22.7	16	94
20	9716	22.7	89	44	20	6122	22.8	18	2.41198
30	9491	22.5	92	49	30	5895	22.7	20	2.41203
40	9265	22.6	94	54	40	5668	22.7	22	07
50	9038	22.7	96	58	50	5440	22.8	24	11
47 07 00	8813	22.5	2.0056798	62	47 17 00	5213	22.7	26	15
10	8587	22.6	2.0056800	66	10	4986	22.7	28	19
20	8360	22.7	02	70	20	4758	22.8	30	23
30	8135	22.5	05	75	30	4531	22.7	33	28
40	7909	22.6	07	79	40	4304	22.7	35	32
50	7682	22.7	09	83	50	4076	22.8	37	36
47 08 00	7456	22.6	11	87	47 18 00	3849	22.7	39	40
10	7230	22.6	13	91	10	3621	22.8	41	44
20	7004	22.6	15	2.40996	20	3393	22.8	43	48
30	6778	22.6	18	2.41000	30	3166	22.7	46	53
40	6552	22.6	20	04	40	2939	22.7	48	57
50	6326	22.6	22	09	50	2710	22.9	50	61
47 09 00	6100	22.6	24	13	47 19 00	2482	22.7	52	65
10	5874	22.6	26	17	10	2256	22.7	54	69
20	5647	22.7	28	21	20	2028	22.8	56	73
30	5421	22.6	31	26	30	1801	22.7	59	78
40	5195	22.6	33	30	40	1573	22.8	61	82
50	4967	22.8	35	34	50	1345	22.8	63	86
47 10 00	4741	22.6	37	38	47 20 00	1118	22.7	65	90

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
47 20 00	1.8381118	22.7	2.0056965	2.41290	47 30 00	1.8367414	22.9	2.0057093	2.41544
10	0890	22.8	67	94	10	7186	22.8	95	48
20	0662	22.8	69	2.41299	20	6956	23.0	2.0057097	53
30	0434	22.8	72	2.41303	30	6727	22.9	2.0057100	57
40	1.8380207	22.7	74	07	40	6498	22.9	02	61
50	1.8379978	22.9	76	12	50	6268	23.0	04	66
47 21 00	9751	22.7	78	16	47 31 00	6039	22.9	06	70
10	9523	22.8	80	20	10	5810	22.9	08	74
20	9295	22.8	82	24	20	5581	22.9	10	78
30	9067	22.8	85	29	30	5352	22.9	13	83
40	8839	22.8	87	33	40	5123	22.9	15	87
50	8611	22.8	89	37	50	4893	23.0	17	91
47 22 00	8383	22.8	91	41	47 32 00	4664	22.9	19	95
10	8155	22.8	93	46	10	4434	23.0	21	2.41599
20	7928	22.7	95	50	20	4204	23.0	23	2.41603
30	7700	22.8	97	55	30	3975	22.9	26	08
40	7471	22.9	2.0056999	59	40	3746	22.9	28	12
50	7243	22.8	2.0057001	63	50	3516	23.0	30	16
47 23 00	7015	22.8	03	67	47 33 00	3287	22.9	32	20
10	6788	22.7	05	71	10	3058	22.9	34	24
20	6559	22.9	07	75	20	2828	23.0	36	28
30	6331	22.8	10	80	30	2599	22.9	38	33
40	6103	22.8	12	84	40	2369	23.0	40	37
50	5874	22.9	14	88	50	2140	22.9	42	41
47 24 00	5646	22.8	16	92	47 34 00	1910	23.0	44	45
10	5418	22.8	18	2.41396	10	1681	22.9	46	49
20	5189	22.9	20	2.41400	20	1451	23.0	48	53
30	4961	22.8	23	05	30	1221	23.0	51	58
40	4733	22.8	25	09	40	0992	22.9	53	62
50	4504	22.9	27	13	50	0762	23.0	55	66
47 25 00	4276	22.8	29	17	47 35 00	0532	23.0	57	70
10	4048	22.8	31	21	10	0303	22.9	59	74
20	3818	23.0	33	26	20	1.8360072	23.1	61	79
30	3590	22.8	36	30	30	1.8359842	23.0	64	83
40	3362	22.8	38	34	40	9613	22.9	66	87
50	3133	22.9	40	39	50	9383	23.0	68	92
47 26 00	2905	22.8	42	43	47 36 00	9153	23.0	70	2.41696
10	2676	22.7	44	47	10	8923	23.0	72	2.41700
20	2448	22.8	46	51	20	8693	23.0	74	04
30	2220	22.8	49	56	30	8463	23.0	77	09
40	1991	22.9	51	60	40	8233	23.0	79	13
50	1762	22.9	53	64	50	8003	23.0	81	17
47 27 00	1534	22.8	55	68	47 37 00	7773	23.0	83	21
10	1305	22.9	57	72	10	7543	23.0	85	25
20	1076	22.9	59	76	20	7314	22.9	87	29
30	0848	22.8	62	81	30	7084	23.0	90	34
40	0619	22.9	64	85	40	6853	23.1	92	38
50	0390	22.9	66	89	50	6623	23.0	94	43
47 28 00	1.8370161	22.9	68	93	47 38 00	6393	23.0	96	47
10	1.8369933	22.8	70	2.41497	10	6163	23.0	2.0057198	51
20	9703	23.0	72	2.41501	20	5933	23.0	2.0057200	55
30	9475	22.8	74	06	30	5703	23.0	03	60
40	9246	22.9	76	10	40	5473	23.0	05	64
50	9016	23.0	78	14	50	5242	23.1	07	68
47 29 00	8788	22.8	80	18	47 39 00	5012	23.0	09	72
10	8559	22.9	82	22	10	4782	23.0	11	76
20	8330	22.9	84	26	20	4551	23.1	13	80
30	8102	22.8	87	31	30	4321	23.0	15	85
40	7872	23.0	89	35	40	4091	23.0	17	89
50	7643	22.9	91	39	50	3860	23.1	19	93
47 30 00	7414	22.9	93	44	47 40 00	3629	23.1	21	97

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″				
47 40 00	1.8353629	23.1	2.0057221	2.41797
10	3399	23.0	23	2.41801
20	3169	23.0	25	06
30	2939	23.0	28	10
40	2708	23.1	30	14
50	2478	23.0	32	19
47 41 00	2247	23.1	34	23
10	2017	23.0	36	27
20	1786	23.1	38	31
30	1555	23.1	41	36
40	1325	23.0	43	40
50	1094	23.1	45	44
47 42 00	0863	23.1	47	48
10	0633	23.0	49	52
20	0402	23.1	51	56
30	1.8350171	23.1	54	61
40	1.8349941	23.0	56	65
50	9709	23.2	58	69
47 43 00	9479	23.0	60	73
10	9248	23.1	62	77
20	9017	23.1	64	81
30	8786	23.1	67	86
40	8555	23.1	69	90
50	8324	23.1	71	94
47 44 00	8093	23.1	73	2.41898
10	7862	23.1	75	2.41902
20	7632	23.0	77	06
30	7401	23.1	79	11
40	7169	23.2	81	15
50	6938	23.1	83	19
47 45 00	6708	23.0	85	23
10	6477	23.1	87	27
20	6245	23.2	89	32
30	6014	23.1	92	36
40	5783	23.1	94	41
50	5551	23.2	96	46
47 46 00	5320	23.1	2.0057298	50
10	5090	23.0	2.0057300	54
20	4858	23.2	02	58
30	4627	23.1	05	63
40	4396	23.1	07	67
50	4163	23.3	09	71
47 47 00	3932	23.1	11	75
10	3701	23.1	13	79
20	3470	23.1	15	83
30	3239	23.1	18	88
40	3007	23.2	20	92
50	2776	23.1	22	2.41996
47 48 00	2545	23.1	24	2.42000
10	2313	23.2	26	04
20	2081	23.2	28	08
30	1850	23.1	31	13
40	1619	23.1	33	17
50	1386	23.3	35	21
47 49 00	1155	23.1	37	25
10	0924	23.1	39	29
20	0691	23.3	41	33
30	0460	23.1	43	38
40	1.8340228	23.2	45	42
50	1.8339996	23.2	47	46
47 50 00	9764	23.2	49	50
47 50 00	1.8339764	23.2	2.0057349	2.42050
10	9533	23.1	51	54
20	9300	23.3	53	59
30	9069	23.1	56	63
40	8837	23.2	58	67
50	8605	23.2	60	72
47 51 00	8373	23.2	62	76
10	8142	23.1	64	80
20	7910	23.2	66	84
30	7678	23.2	69	89
40	7446	23.2	71	93
50	7214	23.2	73	2.42097
47 52 00	6982	23.2	75	2.42101
10	6750	23.2	77	05
20	6518	23.2	79	09
30	6286	23.2	82	14
40	6054	23.2	84	18
50	5821	23.3	86	22
47 53 00	5589	23.2	88	26
10	5357	23.2	90	30
20	5124	23.3	92	34
30	4892	23.2	95	39
40	4660	23.2	97	44
50	4428	23.2	2.0057399	48
47 54 00	4195	23.3	2.0057401	52
10	3963	23.2	03	56
20	3730	23.3	05	61
30	3498	23.2	08	65
40	3266	23.2	10	69
50	3033	23.3	12	74
47 55 00	2801	23.2	14	78
10	2569	23.2	16	82
20	2337	28.2	18	86
30	2104	23.3	20	91
40	1871	23.3	22	95
50	1639	23.2	24	2.42199
47 56 00	1407	23.2	26	2.42203
10	1174	23.3	28	07
20	0941	23.3	30	11
30	0709	23.2	33	16
40	0476	23.2	35	20
50	0243	23.3	37	24
47 57 00	1.8330010	23.3	39	28
10	1.8329778	23.2	41	32
20	9545	23.3	43	36
30	9312	23.3	46	41
40	9080	23.2	48	45
50	8846	23.4	50	49
47 58 00	8613	23.3	52	53
10	8381	23.2	54	57
20	8147	23.4	56	61
30	7915	23.2	59	66
40	7682	23.3	61	70
50	7448	23.4	63	74
47 59 00	7216	23.2	65	78
10	6983	23.3	67	82
20	6750	23.3	69	87
30	6517	23.3	72	91
40	6284	23.3	74	2.42295
50	6051	23.3	76	2.42300
48 00 00	5818	23.3	78	04

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
48 00 00	1.8325818	23.3	2.0057478	2.42304	48 10 00	1.8311788	23.5	2.0057606	2.42558
10	5585	23.3	80	08	10	1554	23.4	08	62
20	5351	23.4	82	12	20	1320	23.4	10	66
30	5117	23.4	84	17	30	1086	23.4	12	71
40	4885	23.2	86	21	40	0850	23.6	14	75
50	4651	23.4	88	25	50	0616	23.4	16	79
48 01 00	4418	23.3	90	29	48 11 00	0382	23.4	18	83
10	4185	23.3	92	33	10	1.8310147	23.5	20	87
20	3951	23.4	94	38	20	1.8309912	23.5	22	92
30	3718	23.3	97	43	30	9677	23.5	25	2.42596
40	3485	23.3	2.0057499	47	40	9443	23.4	27	2.42600
50	3251	23.4	2.0057501	51	50	9208	23.5	29	05
48 02 00	3018	23.3	03	55	48 12 00	8973	23.5	31	09
10	2785	23.3	05	59	10	8739	23.4	33	13
20	2552	23.3	07	63	20	8503	23.6	35	17
30	2319	23.3	10	68	30	8269	23.4	38	22
40	2085	23.4	12	72	40	8034	23.5	40	26
50	1851	23.4	14	76	50	7798	23.6	42	30
48 03 00	1618	23.3	16	80	48 13 00	7564	23.6	44	34
10	1385	23.3	18	84	10	7329	23.5	46	38
20	1151	23.4	20	89	20	7093	23.6	48	42
30	0917	23.4	23	93	30	6859	23.4	51	47
40	0684	23.3	25	2.42397	40	6624	23.5	53	51
50	0450	23.4	27	2.42402	50	6388	23.6	55	55
48 04 00	1.8320216	23.4	29	06	48 14 00	6154	23.4	57	59
10	1.8319983	23.3	31	10	10	5919	23.5	59	63
20	9748	23.5	33	14	20	5684	23.5	61	67
30	9515	23.3	36	19	30	5449	23.5	64	72
40	9281	23.4	38	23	40	5213	23.6	66	76
50	9047	23.4	40	27	50	4978	23.5	68	80
48 05 00	8813	23.4	42	31	48 15 00	4744	23.4	70	84
10	8580	23.3	44	35	10	4509	23.5	72	88
20	8345	23.5	46	39	20	4273	23.6	74	93
30	8112	23.3	48	44	30	4038	23.5	76	2.42697
40	7878	23.4	50	48	40	3803	23.5	78	2.42701
50	7644	23.4	52	52	50	3567	23.6	80	06
48 06 00	7410	23.4	54	56	48 16 00	3332	23.5	82	10
10	7176	23.4	56	60	10	3097	23.5	84	14
20	6942	23.4	58	64	20	2861	23.6	86	18
30	6709	23.3	61	69	30	2626	23.5	89	23
40	6474	23.5	63	73	40	2390	23.6	91	27
50	6240	23.5	65	77	50	2154	23.6	93	32
48 07 00	6006	23.4	67	81	48 17 00	1919	23.5	95	36
10	5773	23.3	69	85	10	1684	23.5	97	40
40	5538	23.5	71	90	20	1448	23.6	2.0057699	44
30	5304	23.4	74	94	30	1212	23.6	2.0057702	49
40	5070	23.4	76	2.42498	40	0977	23.5	04	53
50	4835	23.5	78	2.42503	50	0741	23.6	06	57
48 08 00	4601	23.4	80	07	48 18 00	0506	23.5	08	61
10	4367	23.4	82	11	10	0270	23.6	10	65
20	4132	23.5	84	15	20	1.8300035	23.5	12	70
30	3898	23.4	87	20	30	1.8299800	23.5	15	74
40	3664	23.4	89	24	40	9563	23.7	17	78
50	3429	23.5	91	28	50	9328	23.5	19	83
48 09 00	3195	23.4	93	33	48 19 00	9092	23.6	21	87
10	2961	23.4	95	37	10	8857	23.5	23	91
20	2726	23.5	2.0057597	41	20	8620	23.7	25	2.42795
30	2492	23.4	2.0057600	46	30	8385	23.5	28	2.42800
40	2258	23.4	02	50	40	8149	23.6	30	04
50	2023	23.5	04	54	50	7913	23.6	32	08
48 10 00	1788	23.5	06	58	48 20 00	7677	23.6	34	12

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
48 20 00	1.8297677	23.6	2.0057734	2.42812	48 30 00	1.8283483	23.7	2.0057861	2.43065
10	7441	23.6	36	16	10	3246	23.7	63	69
20	7205	23.6	38	20	20	3008	23.8	65	74
30	6969	23.6	40	25	30	2771	23.7	68	78
40	6734	23.5	42	29	40	2534	23.7	70	82
50	6497	23.7	44	33	50	2295	23.9	72	87
48 21 00	6261	23.6	46	37	48 31 00	2058	23.7	74	91
10	6025	23.6	48	41	10	1821	23.7	76	95
20	5790	23.5	50	45	20	1583	23.8	78	2.43099
30	5554	23.6	53	50	30	1346	23.7	81	2.43104
40	5317	23.7	55	54	40	1109	23.7	83	08
50	5081	23.6	57	58	50	0870	23.9	85	12
48 22 00	4845	23.6	59	62	48 32 00	0633	23.7	87	16
10	4609	23.6	61	66	10	0396	23.7	89	20
20	4373	23.6	63	71	20	1.8280158	23.8	91	24
30	4137	23.6	66	75	30	1.8279920	23.8	94	29
40	3901	23.6	68	79	40	9683	23.7	96	34
50	3664	23.7	70	84	50	9445	23.8	2.0057898	38
48 23 00	3428	23.6	72	88	48 33 00	9207	23.8	2.0057900	42
10	3192	23.6	74	92	10	8970	23.7	02	46
20	2955	23.7	76	2.42896	20	8732	23.8	04	51
30	2719	23.6	79	2.42901	30	8495	23.7	06	55
40	2482	23.7	81	05	40	8256	23.9	08	59
50	2245	23.7	83	09	50	8019	23.7	10	64
48 24 00	2008	23.7	85	13	48 34 00	7781	23.8	12	68
10	1773	23.5	87	17	10	7544	23.7	14	72
20	1536	23.7	89	21	20	7305	23.9	16	76
30	1300	23.6	91	26	30	7068	23.7	19	81
40	1063	23.7	93	31	40	6830	23.8	21	85
50	0826	23.7	95	35	50	6591	23.9	23	89
48 25 00	0590	23.6	97	39	48 35 00	6354	23.7	25	93
10	0354	23.6	2.0057799	43	10	6116	23.8	27	2.43197
20	1.8290117	23.7	2.0057801	47	20	5877	23.9	29	2.43201
30	1.8289881	23.6	04	52	30	5640	23.7	32	06
40	9643	23.8	06	56	40	5402	23.8	34	10
50	9407	23.6	08	60	50	5163	23.9	36	14
48 26 00	9171	23.6	10	64	48 36 00	4925	23.8	38	18
10	8934	23.7	12	68	10	4687	23.8	40	22
20	8697	23.7	14	73	20	4448	23.9	42	27
30	8460	23.7	17	77	30	4211	23.7	45	31
40	8224	23.6	19	81	40	3973	23.8	47	35
50	7986	23.8	21	86	50	3734	23.9	49	40
48 27 00	7750	23.6	23	90	48 37 00	3496	23.8	51	44
10	7513	23.7	25	94	10	3258	23.8	53	48
20	7276	23.7	27	2.42998	20	3010	23.8	55	52
30	7039	23.7	30	2.43003	30	2782	23.8	58	57
40	6802	23.7	32	07	40	2543	23.9	60	61
50	6565	23.7	34	11	50	2305	23.8	62	65
48 28 00	6328	23.7	36	15	48 38 00	2067	23.8	64	69
10	6091	23.7	38	19	10	1828	23.9	66	73
20	5853	23.8	40	23	20	1589	23.9	68	86
30	5617	23.6	43	28	30	1351	23.8	70	90
40	5380	23.7	45	32	40	1113	23.8	72	77
50	5142	23.8	47	36	50	0874	23.9	74	82
48 29 00	4905	23.7	49	40	48 39 00	0636	23.8	76	94
10	4668	23.7	51	44	10	0397	23.9	78	2.43298
20	4431	23.7	53	48	20	1.8270158	23.9	80	2.43303
30	4195	23.6	55	53	30	1.8269920	23.8	83	07
40	3957	23.8	57	57	40	9681	23.9	85	11
50	3720	23.7	59	61	50	9442	23.9	87	16
48 30 00	3483	23.7	61	65	48 40 00	9204	23.8	89	20

Table for transformation of coordinates—Continued.

Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.	Latitude.	Log *H*.	Diff. 1″.	Log *K*.	Log *L*.
° ′ ″					° ′ ″				
48 40 00	1.8269204	23.8	2.0057989	2.43320	48 50 00	1.8254841	24.0	2.0058117	2.43575
10	8965	23.9	91	24	10	4602	23.9	19	79
20	8726	23.9	93	29	20	4361	24.1	21	83
30	8487	23.9	96	34	30	4121	24.0	23	88
40	8249	23.8	2.0057998	38	40	3881	24.0	25	92
50	8009	24.0	2.0058000	42	50	3640	24.1	27	2.43596
48 41 00	7771	23.8	02	46	48 51 00	3400	24.0	29	2.43600
10	7532	23.9	04	50	10	3160	24.0	31	04
20	7294	23.8	06	54	20	2919	24.1	33	08
30	7055	23.9	09	59	30	2679	24.0	36	13
40	6816	23.9	11	63	40	2439	24.0	38	17
50	6577	23.9	13	67	50	2198	24.1	40	21
48 42 00	6338	23.9	15	71	48 52 00	1958	24.0	42	25
10	6100	23.8	17	75	10	1718	24.0	44	29
20	5860	24.0	19	79	20	1477	24.1	46	34
30	5621	23.9	21	84	30	1237	24.0	49	38
40	5382	23.9	23	88	40	0997	24.0	51	42
50	5143	23.9	25	92	50	0755	24.2	53	47
48 43 00	4904	23.9	27	2.43396	48 53 00	0515	24.2	55	51
10	4665	23.9	29	2.43400	10	0275	24.0	57	55
20	4425	24.0	31	05	20	1.8250035	24.0	59	59
30	4186	23.9	34	09	30	1.8249794	24.1	62	64
40	3947	23.9	36	13	40	9553	24.1	64	68
50	3708	23.9	38	18	50	9313	24.0	66	72
48 44 00	3469	23.9	40	22	48 54 00	9072	24.1	68	76
10	3230	23.9	42	26	10	8832	24.0	70	80
20	2991	23.9	44	30	20	8591	24.1	72	84
30	2752	23.9	47	35	30	8350	24.1	74	89
40	2512	24.0	49	39	40	8110	24.0	76	93
50	2273	23.9	51	43	50	7868	24.2	78	2.43697
48 45 00	2034	23.9	53	47	48 55 00	7628	24.0	80	2.43701
10	1794	24.0	55	51	10	7387	24.1	82	05
20	1554	24.0	57	55	20	7146	24.1	84	10
30	1315	23.9	60	60	30	6905	24.1	87	14
40	1076	23.9	62	64	40	6665	24.0	89	18
50	0836	24.0	64	68	50	6423	24.2	91	23
48 46 00	0597	23.9	66	72	48 56 00	6182	24.1	93	28
10	0357	24.0	68	76	10	5942	24.0	95	32
20	1.8260117	24.0	70	81	20	5701	24.1	2.0058197	36
30	1.8259878	23.9	72	85	30	5460	24.1	2.0058200	41
40	9638	24.0	74	89	40	5219	24.1	02	45
50	9398	24.0	76	94	50	4978	24.1	04	49
48 47 00	9159	23.9	78	2.43498	48 57 00	4737	24.1	06	53
10	8919	24.0	80	2.43502	10	4496	24.1	08	57
20	8679	24.0	82	06	20	4255	24.1	10	61
30	8440	23.9	85	11	30	4014	24.1	13	66
40	8200	24.0	87	15	40	3773	24.1	15	70
50	7960	24.0	89	19	50	3531	24.2	17	74
48 48 00	7720	24.0	91	23	48 58 00	3290	24.1	19	78
10	7481	23.9	93	28	10	3049	24.1	21	82
20	7241	24.0	95	32	20	2807	24.2	23	87
30	7002	23.9	2.0058098	37	30	2566	24.1	26	91
40	6761	24.1	2.0058100	41	40	2325	24.1	28	2.43795
50	6521	24.0	02	45	50	2083	24.2	30	2.43800
48 49 00	6282	23.9	04	49	48 59 00	1842	24.1	32	04
10	6042	24.0	06	53	10	1601	24.1	34	08
20	5801	24.1	08	58	20	1359	24.2	36	12
30	5562	23.9	11	62	30	1118	24.1	38	17
40	5322	24.0	13	66	40	0877	24.1	40	21
50	5081	24.1	15	71	50	0634	24.3	42	25
48 50 00	4841	24.0	17	75	49 00 00	0393	24.1	44	29

APPENDIX.

DEVELOPMENT OF FORMULAS FOR CONSTRUCTION OF TABLES.

The formulas on page 6 are obtained as given below. In figure 1 let P be a triangulation point whose latitude and longitude are known. It is desired to obtain the plane coordinates, x and y with reference to the origin, O.

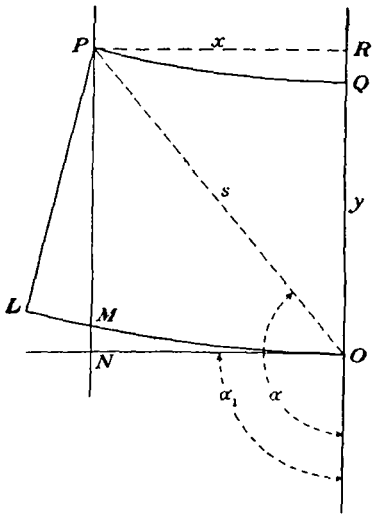

FIG. 1.

For all distances used in a plane system, we may assume $PR=PQ$, that is, x equals the length of the arc of the parallel PQ. The y-coordinate equals PN, which equals PL, the difference in latitude, plus MN, the offset from the great circle to the parallel.

The formulas [1] used in the computation of geographic positions are as follows:

$$-\Delta\varphi''=s\cos\alpha\cdot B+s^2\sin^2\alpha\cdot C+(\delta\varphi'')^2 D-\cdots, \tag{1}$$

$$\Delta\lambda''=s\sin\alpha\sec\varphi'\cdot A' \tag{2}$$

in which $\Delta\varphi''$ is the difference in latitude in seconds between the known and new stations, $\Delta\lambda''$ is the corresponding difference in longitude in seconds, s is the distance between the stations in meters, α is the azimuth of the line from the known station to the new station, φ' is the latitude of the new station, and $\delta\varphi''$ is the approximate difference of latitude in seconds which for short lines may be assumed equal to $s\cos\alpha\cdot B$. A', B, C, and D are given in tables in Special Publication No. 8.

Now, in the figure above, if we call the origin O the known station and P the new station then

$$x=s\sin\alpha, \tag{3}$$

$$y=s\cos\alpha. \tag{4}$$

[1] See pp. 8 and 92-97 of U. S. Const and Geodetic Survey Special Publication No. 8 (seventh edition).

Substituting in equations (1) and (2)

$$x \text{ (in meters)} = \frac{\Delta\lambda'' \cos \varphi'}{A'}, \tag{5}$$

$$y \text{ (in meters)} = -\frac{1}{B}[\Delta\varphi'' + Cx^2 + D(\delta\varphi'')^2 - \cdots] \tag{6}$$

A more convenient formula for y (see equation 12) may be derived as follows:

$$y = PN = PL + MN \text{ (see fig. 1).}$$

But $$PL = \Delta\varphi'',$$

or $$PL \text{ (in meters)} = \frac{\Delta\varphi''}{B}. \tag{7}$$

Let us designate by $\delta\varphi''$ the distance MN in seconds (which is the difference in latitude of points O and N), and by α_1 the azimuth from O to N which is equal to 90°. The difference of latitude of points O and N is given with sufficient accuracy by the approximate formula on page 95 of Special Publication No. 8; namely,

$$-\delta\varphi'' = \frac{s}{R \text{ arc } 1''} \cos \alpha_1 + \frac{1}{2}\frac{s^2}{RN \text{ arc } 1''} \sin^2 \alpha_1 \tan \varphi$$
$$-\frac{1}{6}\frac{s^3}{RN^2 \text{ arc } 1''} \sin^2 \alpha_1 \cos \alpha_1 (1 + 3 \tan^2 \varphi) + \ldots, \tag{8}$$

where R is the radius of curvature along the meridian and N is the length of the normal produced to the minor axis. The other symbols have the same meaning as in equation (1).

Since α_1 is equal to 90°, equation (8) becomes

$$\delta\varphi'' = \frac{s^2 \tan \varphi}{2RN \text{ arc } 1''}. \tag{9}$$

But $$C = \frac{\tan \varphi}{2RN \text{ arc } 1''} \text{ and } s = x, \text{ for this case.}$$

Therefore $$\delta\varphi'' = x^2 C. \tag{10}$$

In order to reduce $\delta\varphi''$ from seconds to meters we must multiply by R arc 1″ which is equal to $1/B$.

Therefore $$\delta\varphi \text{ (in meters)} = \frac{x^2 C}{B}. \tag{11}$$

Combining equations (7) and (11),

$$y \text{ (in meters)} = \frac{\Delta\varphi''}{B} + \frac{x^2 C}{B}. \tag{12}$$

Equations (5) and (12) give x and y in meters. It is usually more convenient to have these coordinates expressed in feet, and since the factors A' and B represent the reciprocal of a linear distance expressed in meters and C the reciprocal of the product of two linear distances expressed in meters, the formulas for x and y become,

$$x \text{ (in feet)} = \frac{\Delta\lambda'' \cos\varphi'}{A'} \times 3.2808\tfrac{1}{3}, \tag{13}$$

$$y \text{ (in feet)} = \frac{\Delta\varphi''}{B} \times 3.2808\tfrac{1}{3} + \frac{x^2 C}{B \times 3.2808\tfrac{1}{3}}. \tag{14}$$

To aid in making the computations the following factors are used:

$$H=\frac{\cos\varphi'}{A'}\times 3.2808\tfrac{1}{3}. \tag{15}$$

$$K=\frac{3.2808\tfrac{1}{3}}{B}, \tag{16}$$

$$L=\frac{C}{B\times 3.2808\tfrac{1}{3}} \tag{17}$$

The logarithms of these factors are given in the tables in this publication for every 10″ of latitude from latitude 24° to 49°. The final working forms of the plane coordinate formulas become, therefore,

$$x \text{ (in feet)}=\Delta\lambda'' H,$$
$$y \text{ (in feet)}=\Delta\varphi'' K+Lx^2.$$

SAMPLE CONVERSION OF GEOGRAPHIC POSITIONS OF FIVE TRIANGULATION POINTS TO PLANE COORDINATES.

Below is given a table of geographic positions of five triangulation stations as they would appear in the U. S. Coast and Geodetic Survey triangulation publications. There are given also the computations necessary to obtain the plane coordinates of four of these stations, using the tables as given in this publication. In this scheme, Bogart is considered the origin, that is, its coordinates are 0, 0. The plane coordinates of the other four stations are referred to Bogart as origin.

Geographic positions.

Station.	Latitude and longitude.			Azimuth.			Back azimuth.			To station.	Distance.	Logarithm of distance.
	°	′	″	°	′	″	°	′	″		*Meters.*	
Bogart	40	36	07.650									
	74	06	58.013									
Fort Tompkins 2	40	36	15.867	87	08	35.36	267	06	15.71	Bogart	5051.38	3.7034100
	74	03	23.433									
Great Kills	40	32	09.312	190	07	10.21	10	07	46.50	Bogart	7467.93	3.8732000
	74	07	53.821	219	52	54.41	39	55	50.26	Fort Tompkins 2.	9914.16	3.9962558
Jessup	40	32	53.353	226	04	32.91	46	07	25.13	Bogart	8643.11	3.9366699
	74	11	22.789	285	25	25.81	105	27	41.64	Great Kills	5101.72	3.7077169
Rossville	40	32	39.605	233	32	33.50	53	36	33.97	Bogart	10807.88	4.0337403
	74	13	07.737	260	14	49.16	80	15	57.38	Jessup	2505.70	3.3989282

Computation of plane coordinates.

Formulas used in conversion; $x=\Delta\lambda''\ H$ $\quad y=\Delta\phi''\ K+Lx^2$:

	Latitude.	Longitude.
Fort Tompkins 2	40° 36′ 15″.867	74° 03′ 23″.433
Bogart (origin)	40 36 07 .650	74 06 58 .013
	$\Delta\phi''=+8\ .217$	$\Delta\lambda''=-3'\ 34''.580=-214''.580$

$\log\Delta\lambda''=2.3315892n$	$\log x^2=8.43768$	$\log\Delta\phi''=0.9147133$
$\log H\ =1.8872494$	$\log L\ =2.31073-10$	$\log K\ =2.0051783$
$\log x\ =4.2188386n$	$\log Lx^2=0.74841$	$\log\Delta\phi'' K=2.9198916$
$x=-16551.55$ feet (east).	$Lx^2=5.603$ feet.	$\Delta\phi'' K=+831.556$ feet.

$$y=5.603+831.556=+837.16 \text{ feet (north).}$$

	Latitude.	Longitude.
Great Kills.....	40° 32′ 09″.312	74° 07′ 53″.821
Bogart (origin).....	40 36 07 .650	74 06 58 .013
	$\Delta\phi''=-$ 3′ 58″.338$=-238''.338$	$\Delta\lambda''=+55''.808$

$\log \Delta\lambda''=1.7466965$	$\log x^2=7.26878$	$\log \Delta\phi''=2.3771933n$
$\log H \quad =1.8876922$	$\log L=2.31073-10$	$\log K \quad =2.0051758$
$\log x=3.6343887$	$\log Lx^2=9.57951$	$\log \Delta\phi''K=4.3823691n$
$x=+4309.12$ feet (west).	$Lx^2=0.380$ foot	$\Delta\phi''K=-24\ 119.544$ feet

$y=0.380-24\ 119.544=-24\ 119.16$ feet (south).

	Latitude.	Longitude.
Jessup.....	40° 32′ 53″.353	74° 11′ 22″.789
Bogart (origin)..	40 36 07 .650	74 06 58 .013
	$\Delta\phi''=-$ 3′ 14″.297$=-194''.297$	$\Delta\lambda''=+4'$ 24″.776$=+264''.776$

$\log \Delta\lambda''=2.4228786$	$\log x^2=8.62098$	$\log \Delta\phi''=2.2884661n$
$\log H \quad =1.8876132$	$\log L=2.31073-10$	$\log K \quad =2.0051763$
$\log x=4.3104918$	$\log Lx^2=0.93171$	$\log \Delta\phi''K=4.2936424n$
$x=+20\ 440.51$ feet (west).	$Lx^2=8.545$ feet	$\Delta\phi''K=-19662.665$ feet

$y=8.545-19\ 662.665=-19\ 654.12$ feet (south).

	Latitude.	Longitude.
Rossville.....	40° 32′ 39″.605	74° 13′ 07″.737
Bogart (origin).	40 36 07 .650	74 06 58 .013
	$\Delta\phi''=-3'$ 28″.045$=-208''.045$	$\Delta\lambda''=+6'$ 09″.724$=+369''.724$

$\log \Delta\lambda''=2.5678776$	$\log x^2=\ 8.91103$	$\log \Delta\phi''=2.3181572n$
$\log H \quad =1.8876379$	$\log L=\ 1.31073-10$	$\log K \quad =2.0051761$
$\log x=4.4555155$	$\log Lx^2=\ 1.22176$	$\log \Delta\phi''K=4.3233333n$
$x=+28\ 544.05$ feet (west).	$Lx^2=16.663$ feet	$\Delta\phi''K=-21\ 053.937$ feet

$y=16.663-21\ 053.937=-21\ 037.27$ feet (south).

The five stations whose geographic positions and plane coordinates are given above are in a closed circuit, that is, starting with Bogart, the origin, and going through Rossville, Jessup, Great Kills, and Fort Tompkins 2, the figure closes on itself at Bogart.

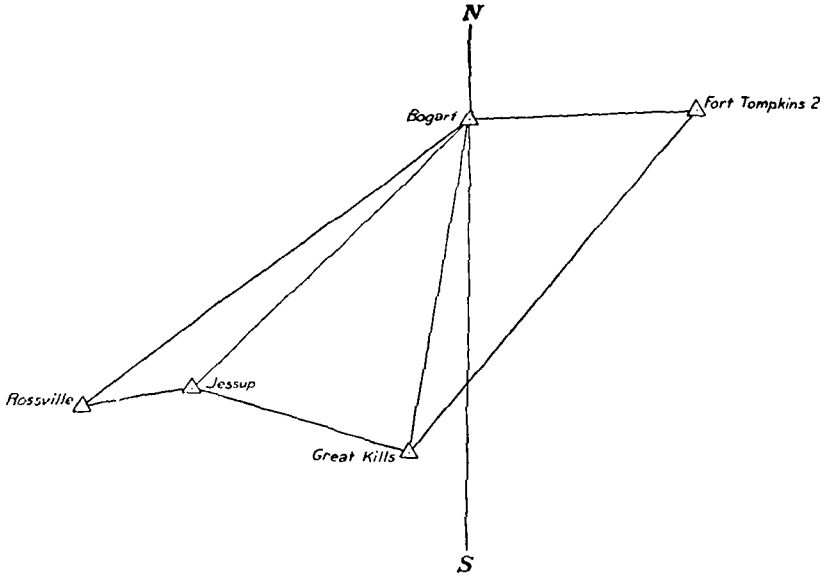

FIG. 2.

Computation of circuit.

INTERIOR ANGLES.

Station.	Plane angles.			Spherical excess.	Spherical angles.
	°	′	″	″	″
Bogart	146	30	18.21	0.05	18.26
Fort Tompkins 2	47	12	45.05	0.05	45.10
Great Kills	114	25	12.73	0.04	12.77
Jessup	205	09	28.39	0.04	28.43
Rossville	26	42	15.62	0.04	15.66
	540	00	00.00	0.22	00.22

COMPUTATION OF BEARINGS REFERRED TO THE Y AXIS (α_y).

		°	′	″
Bogart to Fort Tompkins 2 (from azimuth)	N.	87	06	15.71 E.
Angle at Bogart		146	30	18.21
Bogart to Rossville	N.	233	36	33.92 E.
Bogart to Rossville	S.	53	36	33.92 W.
Rossville to Bogart	N.	53	36	33.92 E.
Angle at Rossville		26	42	15.62
Rossville to Jessup	N.	80	18	49.54 E.
Jessup to Rossville	S.	80	18	49.54 W.
Angle at Jessup		205	09	28.39
Jessup to Great Kills	S.	285	28	17.93 W.
Jessup to Great Kills	S.	74	31	42.07 E.
Great Kills to Jessup	N.	74	31	42.07 W.
Angle at Great Kills		114	25	12.73
Great Kills to Fort Tompkins 2	N.	39	53	30.66 E.

Fort Tompkins 2 to Great Kills	S.	39	53	30.66 W.
Angle at Fort Tompkins 2		47	12	45.05
Fort Tompkins 2 to Bogart	S.	87	06	15.71 W.
Bogart to Fort Tompkins 2	N.	87	06	15.71 E.

COMPUTATION OF LATITUDES AND DEPARTURES.

[Distances are all given in meters.]

Bogart to Rossville.

	Logarithms.	Latitudes and departures.
		Meters.
Distance	4.0337403	
Cos 53° 36′ 33″.92	9.7732644	
Sin 53° 36′ 33″.92	9.9057912	
Latitude	3.8070047	S. 6412.17
Departure	3.9395315	W. 8700.25

Rossville to Jessup.

Distance	3.3989282	
Cos 80° 18′ 49″.54	9.2259618	
Sin 80° 18′ 49″.54	9.9937641	
Latitude	2.6248900	N. 421.59
Departure	3.3926923	E. 2469.97

Jessup to Great Kills.

Distance	3.7077169	
Cos 74° 31′ 42″.07	9.4261232	
Sin 74° 31′ 42″.07	9.9839700	
Latitude	3.1338401	S. 1360.94
Departure	3.6916869	E. 4916.85

Great Kills to Fort Tompkins 2.

Distance	3.9962558	
Cos 39° 53′ 30″.66	9.8849405	
Sin 39° 53′ 30″.66	9.8070886	
Latitude	3.8811963	N. 7606.70
Departure	3.8033444	E. 6358.35

Fort Tompkins 2 to Bogart.

Distance	3.7034100	
Cos 87° 06′ 15″.71	8.7034365	
Sin 87° 06′ 15″.71	9.9994452	
Latitude	2.4068465	S. 255.18
Departure	3.7028552	W. 5044.93

CLOSURE OF THE COMPUTED LATITUDES AND DEPARTURES.

Station.	North latitude.	South latitude.	East departure.	West departure
	Meters.	*Meters.*	*Meters.*	*Meters.*
Rossville		6412.17		8700.25
Jessup	421.59		2469.97	
Great Kills		1360.94	4916.85	
Fort Tompkins 2	7606.70		6358.35	
Bogart		255.18		5044.93
Total	8028.29	8028.29	13745.17	13745.18