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REVISED ESTIMATION OF 550-KM × 550-KM MEAN GRAVITY ANOMALIES

M. R. WILLIAMSON

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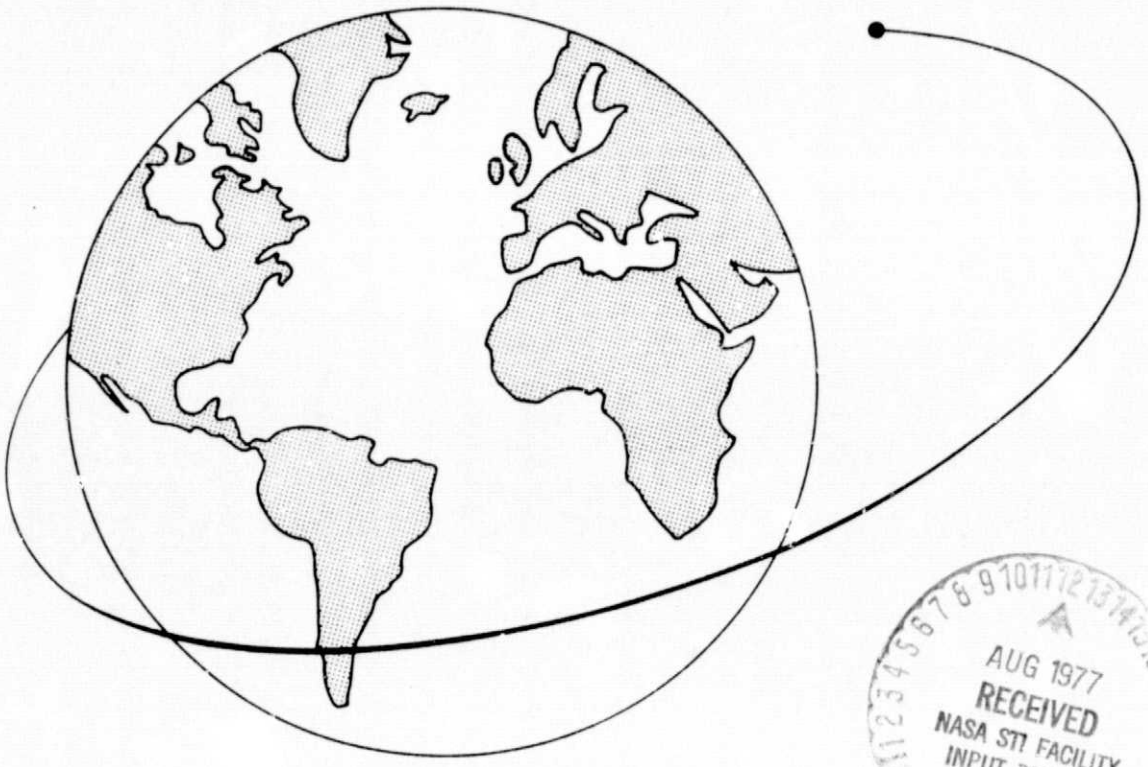

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April 7, 1977

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ABSTRACT

The calculation of 550-km $\times$ 550-km mean gravity anomalies from $1^\circ \times 1^\circ$ mean free-air gravimetry data is discussed. The block estimate procedure developed by Kaula is used to obtain 1504 of the 1654 possible mean block anomalies. The estimated block anomalies calculated from $1^\circ \times 1^\circ$ mean anomalies referred to the 1967 reference ellipsoid and from $1^\circ \times 1^\circ$ mean anomalies referred to a 24th-degree-and-order field are compared.

REVISED ESTIMATION OF 550-KM × 550-KM MEAN GRAVITY ANOMALIES

M. R. Williamson*

1. THE BLOCK COVARIANCE METHOD

To obtain estimates of mean gravity anomalies for 550-km × 550-km regions from an incomplete set of 1° × 1° mean free-air gravity anomalies, we have employed an estimation procedure based on the covariance analysis developed by Wiener (1966), Kolmogoroff, and Kaula (1967). A description and evaluation of the procedure are given in Williamson and Gaposchkin (1973).

For this analysis, the earth is divided into blocks of approximately equal area, with their boundaries adjusted to lie on integral degrees of latitude and longitude. Each block is subdivided into 25 units, the boundaries of which are also adjusted to lie on integral degrees of latitude and longitude. There are 1654 blocks of approximately 550 km × 550 km. At the equator, a block is 5° × 5° and a unit is 1° × 1°.

In order to derive the mean gravity anomaly for a 550-km × 550-km block, estimates of all unit mean gravity anomalies in that block are needed. For units where measurements of 1° × 1° mean gravity anomalies are available, the unit mean anomalies are taken to be the average of the 1° × 1° mean anomalies within the unit. The other unit mean anomalies $\hat{g}$ are estimated from the measured unit anomalies g in the same block. The linear estimate that minimizes the mean square error is

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$$\hat{g}_i = \sum_{j=1}^{N} \left(\sum_k K_{ik} K_{jk}^{-1} \right) g_j \quad , \tag{1}$$

where K_{jk} are elements of the block covariance matrix, given by

$$K_{jk} = K(g, \tau_{jk}) \quad ;$$

K is the intrablock covariance function of the unit anomalies g, and τ_{jk} is the distance between the jth and the kth units. Approximate values of the covariance function are calculated from

$$K(g, \tau) = \frac{1}{N_{jk}} \sum_{jk} g_j g_k \quad , \tag{2}$$

where the sum includes N_{jk} pairs of measurements with

$$\tau - \frac{\Delta\tau}{2} < \tau_{jk} < \tau + \frac{\Delta\tau}{2} \quad .$$

The block anomalies are then obtained by averaging the unit anomalies. Of course, the mean anomalies for blocks that include no measured $1° \times 1°$ mean anomalies cannot be estimated by this procedure.

The $1° \times 1°$ mean free-air anomalies are defined with respect to a reference ellipsoid. However, another, more detailed reference field may be used. In that case, residual anomalies g^R are defined by

$$g^R = g - \gamma \sum_{\ell=2}^{\ell_{max}} \sum_{m=0}^{\ell} (\ell - 1) \left(\frac{a}{r}\right)^{\ell} (\overline{C}_{\ell m} \cos m\lambda + \overline{S}_{\ell m} \sin m\lambda) \overline{P}_{\ell m} (\sin \phi) \quad , \tag{3}$$

where $\overline{C}_{\ell m}$ and $\overline{S}_{\ell m}$ are normalized harmonics coefficients of the earth's potential, $\overline{P}_{\ell m}$ are normalized associated Legendre functions, a is the equatorial radius of the earth, γ is the value of gravity at the equator, and ϕ, λ, and r are geocentric coordinates. Estimates of residual unit anomalies $\hat{g}^R$ are obtained from equation (1) by using the block covariance function for residual anomalies $K(g^R, \tau_{jk})$. By reversing equation (3), we can then calculate the estimated anomalies $\hat{g}$.

2. THE 1° × 1° DATA

We obtained the five sets of 1° × 1° mean free-air gravity anomalies described in Table 1. The worldwide compilation of data from the Defense Mapping Agency Aerospace Center (DMAAC) was augmented by further data sent by DMAAC to us in 1974. DMAAC compiled the data using the Geodetic Reference System 1967 (International Union of Geodesy and Geophysics, 1967) and the 1971 international gravity standardization network (Morelli and Gantar, 1974). All the other data, however, are referred to the 1930 international gravity system and the Potsdam network; we converted them to the 1967 system by adding the correction Δ, which, to an accuracy of 0.1 mgal, is

$$\Delta = 3.14 - 13.58 \sin^2 \phi + 0.02 \sin^2 2\phi \text{ mgal} \quad .$$

Table 1. Summary of available 1° × 1° data.

Coverage	Source	Number of points
Australia	Mather (1970)	1454
North America and the North Atlantic	Talwani, Poppe, and Rabinowitz (1972)	4250
Indian Ocean	Kahle and Talwani (1973)	3944
Central Pacific	Watts (1976)	685
Worldwide	DMAAC, March 1976; augmented	36867

In combining the data, we used the first four sets from Table 1 wherever possible. The combined set has measured values for 37,415 out the possible 64,800 1° × 1° areas and gives 28,046 out of 41,350 unit anomalies. The map in Figure 1 shows the distribution of the data. The DMAAC data are compared in Table 2 with the other sets of data and with the previous compilation sent to us in 1974 at common points. When the

combined set was also compared to a previous combined set (Williamson and Gaposchkin, 1975), which had 31,654 1° × 1° mean anomalies, the mean difference was 0.04 mgal and the root-mean-square (rms) difference, 16.54 mgal.

Table 2. Comparison of 1° × 1° gravity anomalies with DMAAC data (March 1976).

Data	Number of points compared	Mean difference (mgal)	rms (mgal)
Australia (Mather, 1970)	1398	-0.25	20.41
North America and the North Atlantic (Talwani et al., 1972)	3275	-0.14	13.41
Indian Ocean (Kahle and Talwani, 1973)	3905	1.23	16.52
Central Pacific (Watts, 1976)	534	0.61	31.66
Worldwide DMAAC, December 1974 (DMAAC, 1973)	30296	-0.12	8.05

A complete data set of 1° × 1° mean topographic heights, obtained from Kaula and Lee (1967), was used to define oceanic and continental areas, where a 1-km depth was taken as the ocean–continent boundary. The combined data set of gravity anomalies has 17,602 of 36,199 1° × 1° measurements in oceanic areas and 19,813 of 28,601 1° × 1° measurements in continental areas.

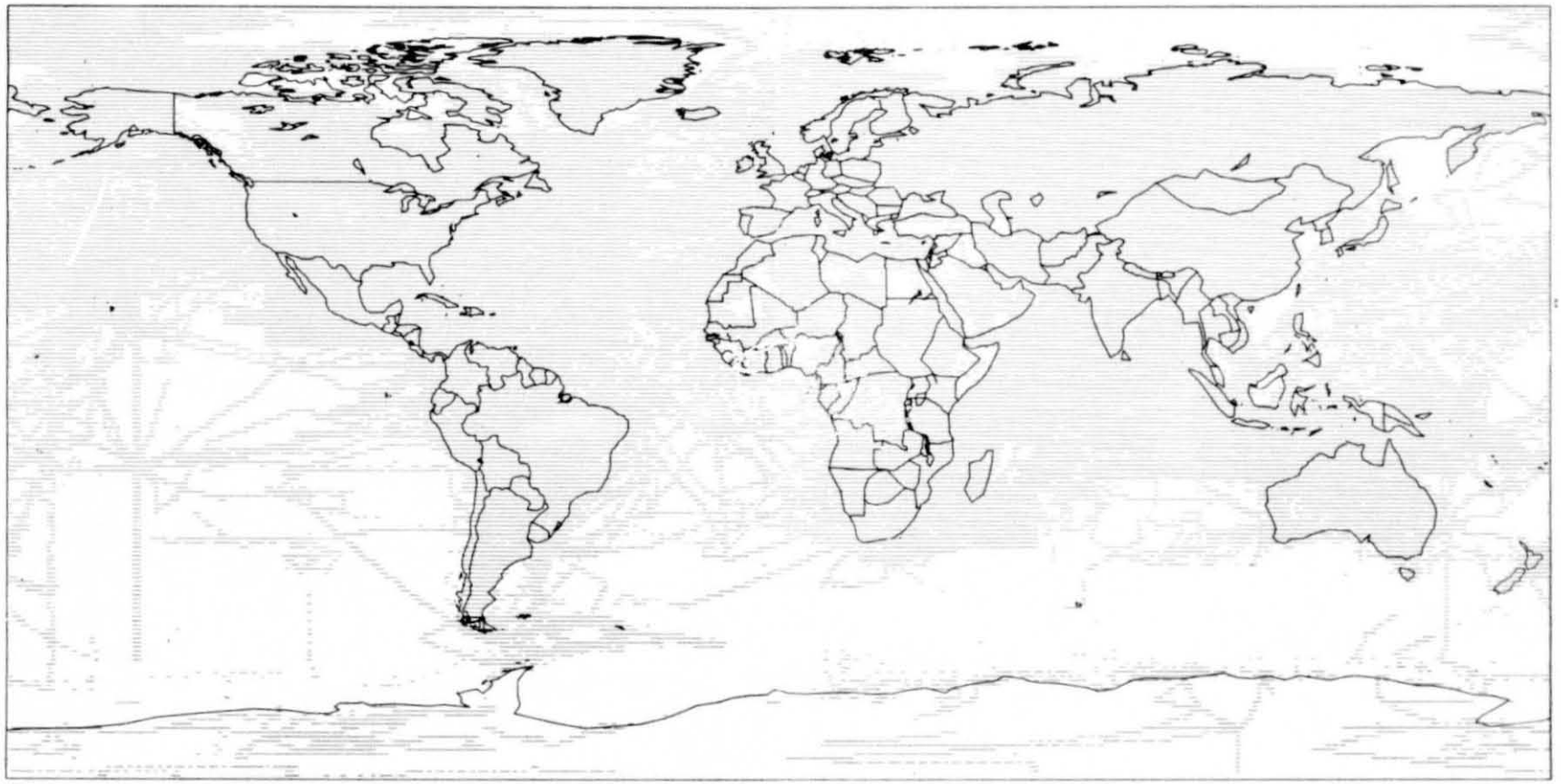

Figure 1. Distribution of $1^\circ \times 1^\circ$ mean surface-gravity data.

3. THE REFERENCE FIELD

A reference field complete to degree and order 24 was used to obtain the residual gravity anomalies. This field is defined by the zonal-harmonics coefficients from the 1973 Smithsonian Standard Earth (III) (Gaposchkin, Williamson, Kozai, and Mendes, 1973) and the tesseral-harmonics coefficients from the second iteration of the Smithsonian Standard Earth IV (unpublished).

4. THE BLOCK COVARIANCE ESTIMATES

The covariance functions of the $1° \times 1°$ gravity anomalies and the $1° \times 1°$ residual gravity anomalies were calculated by using all the data, only the data in oceanic areas, and only the data in continental areas. In each case, the mean, given in Table 3, was first subtracted from the data. These functions were evaluated from equation (2) for $\tau_i = 0.°75, 0.°125, \ldots, 5.°75$ and $\Delta\tau = 0.5$, and the results are given in Tables 4 and 5 and Figures 2 and 3. Figure 2 indicates that the data are not stationary. However, the nonstationarity differs in character and degree from previous results (Williamson and Gaposchkin, 1973); here, we have used both a better fitting reference ellipsoid and new data.

Block estimates calculated for 1504 of 1654 block anomalies, both from estimated $1° \times 1°$ anomalies and from estimated $1° \times 1°$ residual anomalies, are given in Table 6.* The rms of the block anomalies is 17 mgal, while the mean and the rms differences between the two sets are 0.02 and 4.6 mgal, respectively.

Table 3. Average values of $1° \times 1°$ mean gravity anomalies (in mgal).

Type of anomaly	Oceanic data	Continental data	Total
Gravity anomalies	-4	3	0
Residual gravity anomalies	-3	2	0
Number of $1° \times 1°$ anomalies	17602	19813	37415

*Punched cards of the block anomalies are available from the Analytical Satellite Geophysics Department, Smithsonian Astrophysical Observatory, 60 Garden Street, Cambridge, Massachusetts 02138.

Table 4. Block covariance functions of unit gravity anomalies.

Average angular distance	Covariance function		
	Oceanic	Continental	Total
0°	802	904	870
0.9	465	556	534
1.2	363	470	417
1.8	327	405	358
2.2	268	337	284
2.8	271	294	262
3.2	252	270	233
3.7	252	260	235
4.2	254	248	222
4.8	228	218	193
5.2	211	238	191
5.7	209	190	172

Table 5. Block covariance functions of residual unit gravity anomalies.

Average angular distance	Covariance function		
	Oceanic	Continental	Total
0°	613	613	620
0.9	255	274	273
1.2	155	189	161
1.8	108	122	95
2.2	46	66	31
2.8	43	42	16
3.2	26	15	-10
3.7	25	13	-2
4.2	8	2	-19
4.8	-1	-25	-24
5.2	-2	5	-17
5.7	-21	-28	-29

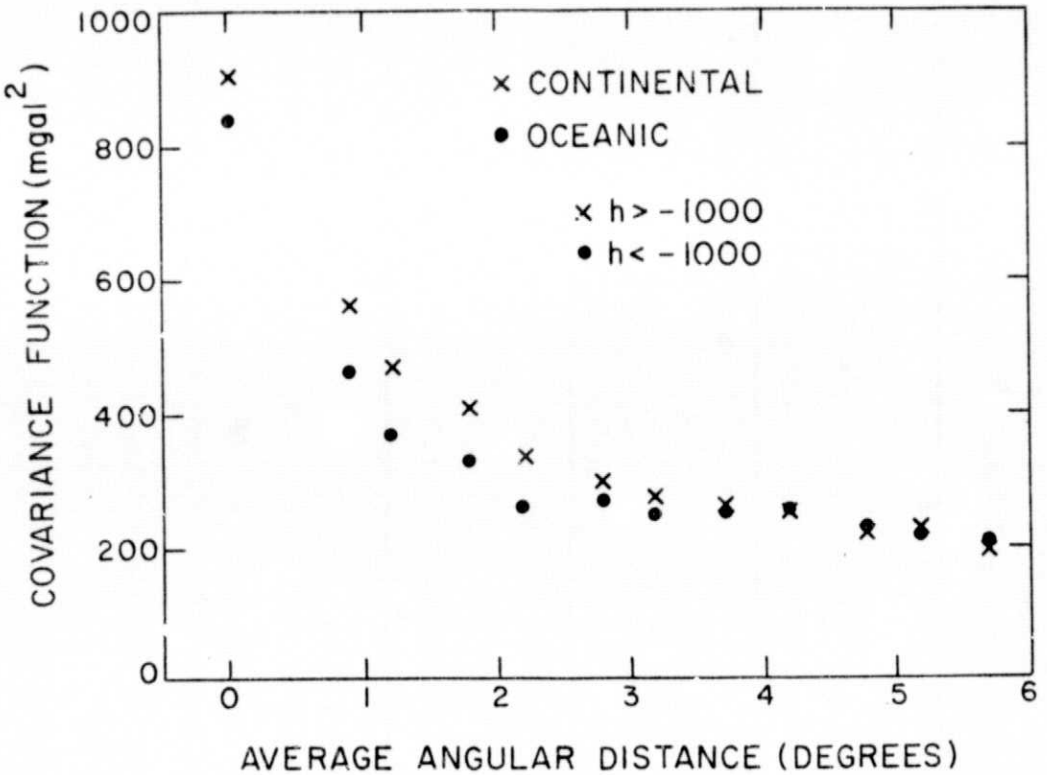

Figure 2. The block covariance functions of unit gravity anomalies.

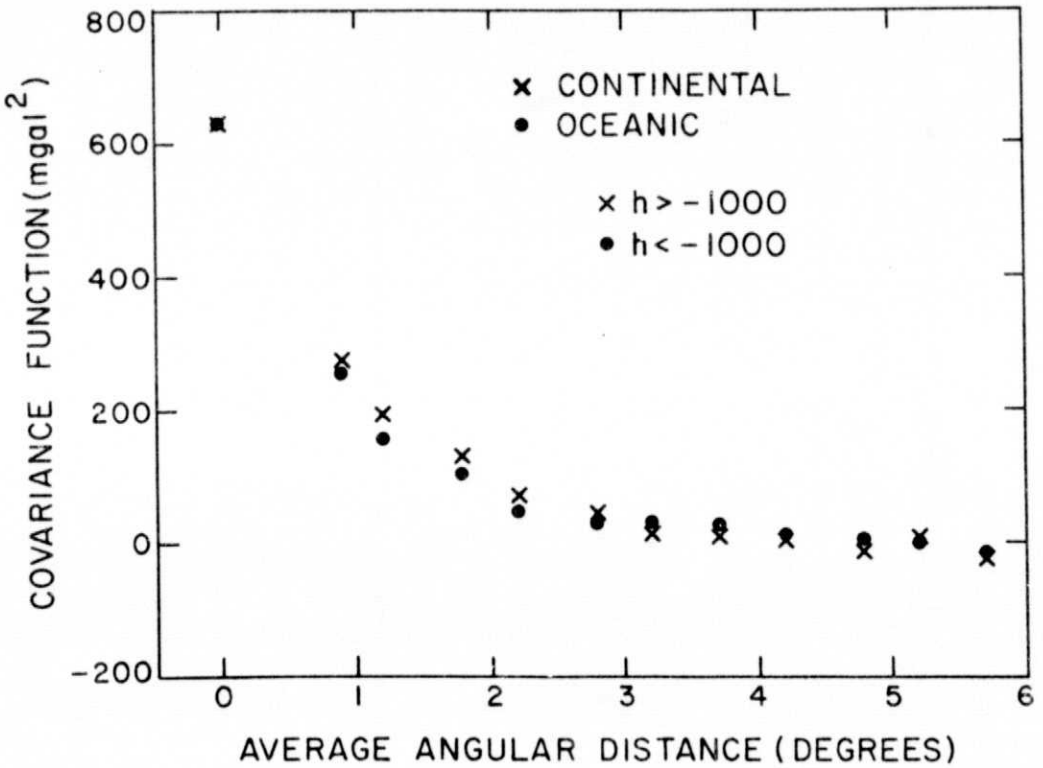

Figure 3. The block covariance functions of residual unit gravity anomalies.

Table 6. Estimated block gravity anomalies.

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	II	No. of obs.
87.5	60.0	3.459	11.993	3
87.5	180.0	1.011	3.868	14
87.5	300.0	10.947	10.967	20
82.5	20.0	10.839	10.759	9
82.5	60.0	32.092	22.966	2
82.5	180.0	-.135	-.128	23
82.5	220.0	7.214	6.751	20
82.5	260.0	6.527	4.311	7
82.5	300.0	4.165	4.596	18
82.5	340.0	17.243	16.304	18
77.5	11.5	29.140	29.120	25
77.5	34.0	4.513	4.398	5
77.5	56.5	-7.198	-6.614	13
77.5	79.0	-12.092	-11.870	6
77.5	101.5	-7.807	-6.950	11
77.5	124.0	-6.838	-.562	2
77.5	146.5	-30.593	-7.608	1
77.5	169.0	-6.095	-6.304	7
77.5	191.5	5.437	5.115	24
77.5	214.0	-11.764	-11.764	25
77.5	236.5	-2.012	-2.020	25
77.5	259.0	-10.418	-10.463	25
77.5	281.5	6.189	6.967	18
77.5	304.0	36.336	36.342	25
77.5	326.5	26.964	26.964	25
77.5	349.0	18.337	17.726	18
72.5	8.0	30.557	30.520	25
72.5	24.5	.889	.926	24
72.5	41.0	4.566	.387	6
72.5	57.0	-4.357	-4.283	25
72.5	73.5	-17.214	-17.956	17
72.5	90.0	-11.673	-11.810	24
72.5	106.5	-11.220	-11.220	25
72.5	123.0	7.420	7.480	25
72.5	172.0	-2.006	-.720	1
72.5	188.0	-5.432	-6.010	20
72.5	204.5	-14.370	-14.370	25
72.5	221.0	-6.700	-6.700	25
72.5	237.0	-16.787	-18.034	17
72.5	253.5	-18.662	-19.914	13
72.5	270.0	-7.575	-7.871	23
72.5	286.5	6.437	6.443	25
72.5	303.0	18.089	18.070	23
72.5	319.0	22.373	22.373	25
72.5	335.5	31.306	31.204	24
72.5	352.0	32.786	32.408	22
67.5	6.5	12.627	12.627	25
67.5	19.5	1.540	1.540	25
67.5	32.5	2.873	2.873	25
67.5	45.0	2.727	2.727	25
67.5	57.5	.400	.400	25
67.5	70.5	-19.293	-19.293	25
67.5	83.5	-12.167	-12.167	25
67.5	96.5	-14.007	-14.007	25
67.5	109.5	-21.520	-21.520	25
67.5	122.5	-19.247	-19.247	25
67.5	135.0	5.567	5.567	25
67.5	147.5	9.987	9.987	25
67.5	160.5	15.113	15.113	25
67.5	173.5	20.420	20.380	25
67.5	186.5	3.600	3.600	25
67.5	199.5	.380	.380	25
67.5	212.5	20.820	20.820	25
67.5	225.0	5.350	6.216	21
67.5	237.5	-2.327	-2.327	25
67.5	250.5	-22.867	-22.867	25
67.5	263.5	-30.608	-29.565	12
67.5	276.5	-39.483	-35.508	9
67.5	289.5	-23.113	-23.133	25
67.5	302.5	19.100	19.077	22
67.5	315.0	27.127	27.127	25
67.5	327.5	38.485	38.531	23
67.5	340.5	38.389	38.336	24
67.5	353.5	18.110	18.088	24
62.5	5.5	14.420	14.420	25
62.5	16.5	-9.660	-9.660	25
62.5	27.5	-7.240	-7.240	25
62.5	38.5	5.273	5.273	25
62.5	49.5	2.300	2.300	25
62.5	60.0	6.020	6.020	25
62.5	70.5	-22.467	-22.467	25
62.5	81.5	-18.873	-18.873	25
62.5	92.5	-29.293	-29.293	25
62.5	103.5	-37.000	-37.000	25
62.5	114.5	-25.607	-25.607	25
62.5	125.5	-23.353	-23.353	25
62.5	136.5	.960	.960	25
62.5	147.5	21.020	21.020	25
62.5	158.5	18.297	18.352	24
62.5	169.5	26.181	24.942	22
62.5	180.0	11.020	8.160	11
62.5	190.5	-.450	-.354	24
62.5	201.5	13.633	13.633	25
62.5	212.5	27.153	27.153	25
62.5	223.5	30.039	29.845	14
62.5	234.5	11.788	13.909	18
62.5	245.5	-17.900	-17.900	25
62.5	256.5	-31.593	-31.593	25
62.5	267.5	-42.063	-42.403	21
62.5	278.5	-32.966	-33.933	16
62.5	289.5	-20.216	-19.954	22
62.5	300.0	-7.184	-5.725	14
62.5	310.5	10.815	10.666	23
62.5	321.5	24.995	25.486	19
62.5	332.5	36.953	36.953	25
62.5	343.5	31.193	31.166	24
62.5	354.5	16.060	16.060	25
57.5	4.5	1.920	1.920	25
57.5	13.5	-.220	-.220	25
57.5	23.0	-18.420	-18.420	25
57.5	32.5	3.220	3.220	25
57.5	41.5	3.800	3.800	25
57.5	50.5	1.820	1.820	25
57.5	60.0	8.320	8.320	25
57.5	69.5	-16.360	-16.360	25
57.5	78.5	-16.280	-16.280	25
57.5	87.5	-15.360	-15.360	25
57.5	97.0	-28.680	-28.680	25
57.5	106.5	-15.820	-15.820	25
57.5	115.5	-36.160	-36.160	25
57.5	124.5	-32.340	-32.340	25
57.5	133.5	-9.360	-9.360	25
57.5	143.0	4.487	19.593	5
57.5	152.5	18.773	28.275	3
57.5	161.5	31.129	30.712	20
57.5	170.5	12.276	11.755	8
57.5	180.0	-12.225	-11.893	18
57.5	189.5	19.520	19.520	25
57.5	198.5	25.340	25.340	25
57.5	207.5	19.540	19.540	25
57.5	217.0	8.240	8.240	25
57.5	226.5	15.245	15.737	20
57.5	235.5	11.029	11.829	19
57.5	246.5	-4.380	-4.380	25
57.5	253.5	-12.840	-12.840	25
57.5	263.0	-26.860	-26.760	25
57.5	272.5	-39.980	-39.740	25
57.5	281.5	-35.440	-35.280	25
57.5	290.5	-29.180	-29.020	25
57.5	300.0	-13.100	-13.120	25
57.5	309.5	12.600	12.840	25
57.5	318.5	23.100	23.200	25
57.5	327.5	32.807	32.881	23
57.5	337.0	16.498	18.491	17
57.5	346.5	11.008	11.045	21
57.5	355.5	18.400	18.400	25
52.5	4.0	-6.180	-6.180	25
52.5	12.0	9.320	9.320	25
52.5	20.5	1.560	1.560	25
52.5	29.0	4.360	4.360	25
52.5	37.0	2.960	2.960	25
52.5	45.0	.840	.840	25
52.5	53.0	-4.260	-4.260	25
52.5	61.0	6.200	6.200	25
52.5	69.5	-5.780	-5.780	25
52.5	78.0	-20.700	-20.700	25
52.5	86.0	-10.020	-10.020	25
52.5	94.0	-21.420	-21.420	25
52.5	102.0	-32.640	-32.640	25
52.5	110.5	-8.520	-8.520	25
52.5	119.0	-4.520	-4.520	25
52.5	127.0	5.900	5.900	25
52.5	135.0	26.520	26.520	25
52.5	143.0	24.833	26.166	15
52.5	159.5	29.678	28.253	15
52.5	168.0	13.683	16.545	4
52.5	176.0	12.906	11.397	16
52.5	184.0	-19.936	-19.733	24
52.5	192.0	4.900	4.900	25
52.5	200.5	18.180	18.180	25
52.5	209.0	21.804	21.841	23
52.5	217.0	14.484	14.437	24
52.5	225.0	-1.520	-1.520	25

* I: From estimated 1° × 1° anomalies.
II: From estimated 1° × 1° residual anomalies.

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Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
52.5	233.0	.433	.437	24
52.5	241.0	-.888	-.825	23
52.5	249.5	0.000	.080	25
52.5	258.0	-.240	-.240	25
52.5	266.0	-9.940	-9.840	25
52.5	274.0	-23.860	-23.980	25
52.5	282.0	-31.040	-30.940	25
52.5	290.5	-16.460	-16.520	25
52.5	299.0	-15.420	-15.380	25
52.5	307.0	13.500	13.500	25
52.5	315.0	22.100	22.040	25
52.5	323.0	31.460	31.063	23
52.5	331.0	27.757	27.827	18
52.5	339.5	14.759	15.318	21
52.5	348.0	20.320	20.300	25
52.5	356.0	14.200	14.200	25
47.5	3.5	6.340	6.340	25
47.5	11.0	13.080	13.080	25
47.5	18.5	21.040	21.040	25
47.5	25.5	17.660	17.660	25
47.5	33.0	9.820	9.820	25
47.5	40.5	-2.220	-2.220	25
47.5	47.5	-18.180	-18.180	25
47.5	55.0	-21.480	-21.480	25
47.5	62.5	-9.640	-9.640	25
47.5	69.5	-13.680	-13.680	25
47.5	77.0	-25.400	-25.400	25
47.5	84.5	-35.100	-35.100	25
47.5	92.0	-15.680	-15.680	25
47.5	99.5	-18.860	-18.860	25
47.5	106.5	-.980	-.980	25
47.5	114.0	-2.520	-2.520	25
47.5	121.5	6.420	6.420	25
47.5	128.5	19.120	19.120	25
47.5	136.0	32.324	32.361	24
47.5	143.5	28.613	22.943	12
47.5	150.5	-65.629	-44.813	2
47.5	158.0	25.927	14.672	8
47.5	165.5	7.845	7.149	9
47.5	172.5	13.672	8.107	5
47.5	180.0	12.410	9.677	12
47.5	187.5	19.686	19.753	21
47.5	194.5	14.235	14.327	23
47.5	202.0	7.736	7.815	24
47.5	209.5	-18.544	-17.429	20
47.5	216.5	-18.302	-17.530	22
47.5	224.0	-20.940	-20.940	25
47.5	231.5	-9.880	-9.880	25
47.5	238.5	-6.980	-6.980	25
47.5	246.0	9.700	9.620	25
47.5	253.5	17.620	17.460	25
47.5	260.5	10.040	10.140	25
47.5	268.0	1.980	2.020	25
47.5	275.5	-7.880	-7.960	25
47.5	283.0	-16.300	-16.260	25
47.5	290.5	-10.400	-10.340	25
47.5	297.5	-9.940	-10.020	25
47.5	305.0	4.100	4.000	25
47.5	312.5	20.060	19.960	25
47.5	319.5	11.800	11.700	25
47.5	327.0	24.934	25.028	24
47.5	334.5	35.199	35.005	19
47.5	341.5	19.823	19.916	24
47.5	349.0	2.400	2.400	25
47.5	356.5	.080	.080	25
42.5	3.5	11.200	11.200	25
42.5	10.5	7.520	7.520	25
42.5	17.0	24.092	24.152	23
42.5	23.5	24.873	24.691	21
42.5	30.5	5.160	5.160	25
42.5	37.5	-5.380	-5.380	25
42.5	44.5	18.640	18.640	25
42.5	51.0	-17.600	-17.600	25
42.5	57.5	-7.060	-7.060	25
42.5	64.5	-18.940	-18.940	25
42.5	71.5	-31.440	-31.440	25
42.5	78.5	-6.680	-6.680	25
42.5	85.0	-18.500	-18.500	25
42.5	91.5	-30.900	-30.900	25
42.5	98.5	-3.420	-3.420	25
42.5	105.5	1.460	1.460	25
42.5	112.0	.540	.540	25
42.5	118.5	9.780	9.780	25
42.5	125.5	23.660	23.660	25
42.5	132.5	20.200	20.180	25
42.5	139.5	19.559	22.105	19
42.5	146.0	-22.561	-23.629	17
42.5	152.5	-12.992	-25.563	4
42.5	159.5	.385	-4.774	10
42.5	166.5	-1.757	-6.155	3
42.5	173.5	5.913	-1.725	7
42.5	180.0	-7.266	-7.067	15
42.5	186.5	-3.030	-2.970	24
42.5	193.5	-7.863	-7.799	24
42.5	200.5	-2.840	-2.820	25
42.5	207.5	-5.500	-5.400	25
42.5	214.0	-6.780	-6.780	25
42.5	220.5	-8.655	-8.843	24
42.5	227.5	-9.780	-9.780	25
42.5	234.5	-10.500	-10.500	25
42.5	241.5	10.900	11.060	25
42.5	248.0	19.040	19.160	25
42.5	254.5	14.960	15.180	25
42.5	261.5	-.500	-.220	25
42.5	268.5	-9.320	-9.020	25
42.5	275.0	-4.260	-4.020	25
42.5	281.5	-7.580	-7.360	25
42.5	288.5	2.040	2.180	25
42.5	295.5	-5.160	-4.960	25
42.5	302.5	-18.480	-18.340	25
42.5	309.0	7.860	8.020	25
42.5	315.5	-.520	-.460	25
42.5	322.5	12.680	12.720	25
42.5	329.5	29.520	29.520	25
42.5	336.5	24.420	24.420	25
42.5	343.0	1.060	1.060	25
42.5	349.5	1.520	1.480	25
42.5	356.5	6.560	6.560	25
37.5	3.0	9.280	9.280	25
37.5	9.5	17.120	17.120	25
37.5	16.0	9.026	9.113	24
37.5	22.0	-11.919	-11.658	18
37.5	28.5	16.883	16.056	19
37.5	35.0	35.314	33.142	14
37.5	41.0	28.119	30.673	15
37.5	47.5	47.209	46.499	22
37.5	54.0	6.377	8.437	18
37.5	60.0	-11.560	-11.560	25
37.5	66.0	-24.500	-24.500	25
37.5	72.5	2.260	2.260	25
37.5	79.0	-8.480	-8.480	25
37.5	85.0	-4.980	-4.980	25
37.5	91.5	10.960	10.960	25
37.5	98.0	13.360	13.360	25
37.5	104.0	-14.620	-14.620	25
37.5	110.5	-34.680	-34.680	25
37.5	117.0	-18.380	-18.380	25
37.5	123.0	11.856	12.352	18
37.5	129.5	16.534	16.851	21
37.5	136.0	24.463	24.585	23
37.5	142.0	9.660	9.660	25
37.5	148.5	-5.332	-6.810	21
37.5	155.0	-6.754	-9.198	11
37.5	161.0	-6.987	-7.145	16
37.5	167.5	-1.834	-5.669	8
37.5	174.0	6.591	-6.152	7
37.5	180.0	-8.667	-10.160	18
37.5	186.0	-6.560	-6.640	25
37.5	192.5	-16.155	-16.327	24
37.3	199.0	-13.440	-13.520	25
37.5	205.0	-6.120	-6.160	25
37.5	211.5	-9.100	-9.100	25
37.5	218.0	-17.200	-17.240	25
37.5	224.0	-21.460	-21.460	25
37.5	230.5	-23.540	-23.540	25
37.5	237.0	-15.220	-15.220	25
37.5	243.0	3.060	2.760	25
37.5	249.5	5.380	5.260	25
37.5	256.0	10.600	10.400	25
37.5	262.0	-10.640	-10.640	25
37.5	268.5	-3.720	-3.760	25
37.5	275.0	-3.800	-3.960	25
37.5	281.0	1.540	1.360	25
37.5	287.5	-19.680	-19.780	25
37.5	294.0	-22.960	-22.980	25
37.5	300.0	-17.800	-18.000	25
37.5	306.0	-11.340	-11.340	25
37.5	312.5	-6.460	-6.540	25
37.5	319.0	7.140	7.040	25
37.5	325.0	33.160	33.120	25
37.5	331.5	50.200	50.200	25
37.5	338.0	4.925	5.239	23
37.5	344.0	7.453	7.502	24
37.5	350.5	6.380	6.360	25
37.5	357.0	10.320	10.320	25
32.5	3.0	4.760	4.760	25

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
32.5	9.0	-10.390	-10.352	22
32.5	15.0	.349	.237	23
32.5	21.0	-2.252	-2.079	23
32.5	27.0	-36.800	-36.800	25
32.5	32.5	-12.397	-12.187	24
32.5	38.0	27.433	28.738	17
32.5	44.0	-11.726	-5.694	13
32.5	50.0	7.920	7.920	25
32.5	56.0	19.780	19.780	25
32.5	62.0	24.580	24.580	25
32.5	68.0	9.160	9.160	25
32.5	74.0	-36.160	-36.160	25
32.5	80.0	30.080	30.080	25
32.5	86.0	25.280	25.280	25
32.5	91.5	10.640	10.640	25
32.5	97.0	12.280	12.280	25
32.5	103.0	-16.300	-16.300	25
32.5	109.0	-38.260	-38.260	25
32.5	115.0	-18.520	-18.520	25
32.5	121.0	-.059	2.601	18
32.5	127.0	18.172	18.273	21
32.5	133.0	11.220	11.220	25
32.5	139.0	10.320	10.320	25
32.5	145.0	-16.220	-16.065	24
32.5	150.5	-6.888	-7.772	17
32.5	156.0	-5.882	-6.477	18
32.5	162.0	-14.715	-14.207	17
32.5	168.0	-23.611	-22.336	14
32.5	174.0	-23.505	-23.551	15
32.5	180.0	-8.439	-8.825	21
32.5	186.0	-14.260	-14.300	25
32.5	192.0	-7.977	-7.927	24
32.5	198.0	-10.740	-10.680	25
32.5	204.0	-8.720	-8.700	25
32.5	209.5	-6.680	-6.760	25
32.5	215.0	-12.700	-12.740	25
32.5	221.0	-5.200	-5.200	25
32.5	227.0	-8.400	-8.400	25
32.5	233.0	-16.425	-16.485	24
32.5	239.0	-20.577	-20.599	24
32.5	245.0	-11.600	-11.460	25
32.5	251.0	2.160	2.280	25
32.5	257.0	.360	.400	25
32.5	263.0	-9.280	-9.360	25
32.5	268.5	.120	.240	25
32.5	274.0	.700	.780	25
32.5	280.0	-6.000	-6.060	25
32.5	286.0	-37.060	-36.920	25
32.5	292.0	-25.560	-25.560	25
32.5	298.0	-10.500	-10.480	25
32.5	304.0	-9.160	-9.200	25
32.5	310.0	-.080	0.000	25
32.5	316.0	13.240	13.480	25
32.5	322.0	24.200	24.260	25
32.5	327.5	14.942	15.961	18
32.5	333.0	19.657	19.748	19
32.5	339.0	2.614	2.823	22
32.5	345.0	16.000	15.940	25
32.5	351.0	20.280	20.280	25
32.5	357.0	38.980	38.980	25
27.5	3.0	-10.460	-10.460	25
27.5	8.5	3.602	3.631	23
27.5	14.0	4.031	4.029	12
27.5	20.0	5.433	4.481	18
27.5	25.5	1.460	-2.630	13
27.5	31.0	.243	-2.564	13
27.5	36.5	-5.610	-2.706	15
27.5	42.0	19.535	20.017	18
27.5	48.0	-16.600	-16.560	25
27.5	53.5	-26.840	-26.760	25
27.5	59.0	27.540	27.500	25
27.5	65.0	16.020	16.020	25
27.5	70.5	-8.960	-9.000	25
27.5	76.0	-15.480	-15.480	25
27.5	81.5	-60.480	-60.520	25
27.5	87.0	1.580	1.640	25
27.5	93.0	-9.140	-9.140	25
27.5	98.5	-8.720	-8.720	25
27.5	104.0	-26.460	-26.460	25
27.5	110.0	-25.520	-25.520	25
27.5	115.5	-9.720	-9.720	25
27.5	121.0	6.582	7.303	21
27.5	126.5	24.546	24.592	21
27.5	132.0	-5.910	-4.856	22
27.5	138.0	25.819	25.825	22
27.5	143.5	14.240	14.240	25
27.5	149.0	-.412	-.520	24
27.5	155.0	-13.853	-13.970	20
27.5	160.5	-20.957	-20.283	21
27.5	166.0	-13.616	-13.589	21
27.5	171.5	-18.720	-18.720	25
27.5	177.0	-15.800	-15.820	25
27.5	183.0	-6.940	-6.940	25
27.5	188.5	2.640	2.760	25
27.5	194.0	16.200	16.120	25
27.5	200.0	7.800	7.780	25
27.5	205.5	.280	.480	25
27.5	211.0	-3.280	-3.180	25
27.5	216.5	4.834	4.686	23
27.5	222.0	-3.235	-3.286	20
27.5	228.0	-18.282	-18.181	22
27.5	233.5	-22.560	-22.560	25
27.5	239.0	-18.760	-18.720	25
27.5	245.0	-20.440	-20.440	25
27.5	250.5	-5.960	-6.000	25
27.5	256.0	16.340	16.380	25
27.5	261.5	-3.760	-3.600	25
27.5	267.0	-15.020	-15.000	25
27.5	273.0	-5.640	-5.620	25
27.5	278.5	2.240	2.400	25
27.5	284.0	-16.780	-16.640	25
27.5	290.0	-31.960	-31.920	25
27.5	295.5	-21.280	-21.280	25
27.5	301.0	-29.900	-29.860	25
27.5	306.5	-21.160	-21.160	25
27.5	312.0	-2.760	-2.740	25
27.5	318.0	19.400	19.380	25
27.5	323.5	.800	.920	25
27.5	329.0	6.120	6.120	25
27.5	335.0	-3.000	-3.000	25
27.5	340.5	12.120	12.120	25
27.5	346.0	9.977	10.051	23
27.5	351.5	4.113	4.013	24
27.5	357.0	-3.062	-3.633	17
22.5	2.5	20.720	20.720	25
22.5	8.0	30.880	30.880	25
22.5	13.5	7.120	7.120	25
22.5	18.5	8.560	8.560	25
22.5	24.0	-18.313	-16.300	15
22.5	29.5	1.831	-1.291	5
22.5	35.0	4.537	4.136	22
22.5	40.5	24.036	24.619	22
22.5	45.5	1.000	1.000	25
22.5	51.0	-30.298	-30.309	22
22.5	56.5	-5.843	-6.683	18
22.5	61.5	-23.163	-22.582	22
22.5	67.0	-7.280	-7.080	25
22.5	72.5	5.000	5.000	25
22.5	78.0	7.260	7.360	25
22.5	83.5	4.560	4.720	25
22.5	88.5	-14.635	-14.629	23
22.5	94.0	-20.005	-20.053	24
22.5	99.5	-23.760	-23.760	25
22.5	104.5	-19.600	-19.600	25
22.5	110.0	-7.738	-7.827	24
22.5	115.5	-6.927	-7.239	14
22.5	121.0	-7.090	-7.507	16
22.5	126.5	4.536	4.303	23
22.5	131.5	7.090	6.597	23
22.5	137.0	8.848	9.495	20
22.5	142.5	18.842	20.284	20
22.5	147.5	8.104	12.560	15
22.5	153.0	2.203	2.804	16
22.5	158.5	-16.845	-16.625	19
22.5	164.0	-26.273	-26.032	22
22.5	169.5	-12.165	-12.172	24
22.5	174.5	-6.462	-6.513	24
22.5	180.0	-6.637	-6.777	22
22.5	185.5	-1.640	-1.560	25
22.5	190.5	15.680	15.760	25
22.5	196.0	11.180	11.160	25
22.5	201.5	14.560	14.680	25
22.5	207.0	13.900	14.020	25
22.5	212.5	-2.911	-2.804	17
22.5	217.5	-4.931	-5.012	21
22.5	223.0	-12.038	-12.154	15
22.5	228.5	-12.570	-12.704	14
22.5	233.5	-15.697	-15.213	11
22.5	239.0	-20.161	-18.256	13
22.5	244.5	-13.400	-13.280	25
22.5	250.0	-7.280	-7.160	25
22.5	255.5	4.600	4.680	25
22.5	260.5	19.760	19.880	25
22.5	266.0	-24.720	-24.640	25
22.5	271.5	13.280	13.440	25
22.5	276.5	-17.560	-17.480	25
22.5	282.0	-7.720	-7.540	25
22.5	287.5	-55.440	-55.320	25

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
22.5	293.0	-30.280	-30.120	25
22.5	298.5	-23.560	-23.480	25
22.5	303.5	-25.240	-25.200	25
22.5	309.0	-23.220	-23.220	25
22.5	314.5	-2.280	-2.240	25
22.5	319.5	-3.200	-3.[illegible]	25
22.5	325.0	-.600	-.[illegible]	25
22.5	330.5	4.760	4.[illegible]	25
22.5	336.0	-2.380	-2.380	25
22.5	341.5	-2.800	-2.800	25
22.5	346.5	2.151	2.030	22
22.5	352.0	-13.744	-14.815	17
22.5	357.5	-5.360	-7.125	[illegible]
17.5	2.5	9.480	9.480	25
17.5	7.5	6.600	6.600	25
17.5	13.0	-2.560	-2.560	25
17.5	18.5	-7.400	-7.400	25
17.5	23.5	6.000	6.000	25
17.5	28.5	10.640	10.640	25
17.5	34.0	18.198	18.177	24
17.5	39.5	5.689	6.952	20
17.5	44.5	11.138	12.105	19
17.5	49.5	-7.117	-7.192	19
17.5	54.5	-2.354	-2.463	23
17.5	60.0	-21.940	-21.980	25
17.5	65.5	-14.800	-14.840	25
17.5	70.5	-30.800	-30.920	25
17.5	75.5	-13.769	-13.779	24
17.5	80.5	-2.490	-3.135	24
17.5	86.0	-23.766	-24.043	23
17.5	91.5	-9.200	-9.280	25
17.5	96.5	-7.560	-7.520	25
17.5	101.5	-12.760	-12.760	25
17.5	107.0	-5.430	-5.378	21
17.5	112.5	.380	-.389	3
17.5	117.5	10.955	8.929	14
17.5	122.5	33.830	31.017	15
17.5	127.5	-23.368	-15.282	9
17.5	133.0	1.126	1.264	21
17.5	138.5	12.970	13.281	22
17.5	143.5	29.281	27.448	12
17.5	148.5	18.007	16.643	15
17.5	154.0	7.852	6.801	17
17.5	159.5	-11.298	-11.256	22
17.5	164.5	4.600	4.600	25
17.5	169.5	2.278	2.341	24
17.5	174.5	-4.226	-4.220	23
17.5	180.0	-6.267	-6.550	20
17.5	185.5	2.687	-1.128	15
17.5	190.5	1.605	.445	17
17.5	195.5	-.370	-.413	24
17.5	200.5	2.280	2.240	25
17.5	206.0	-3.600	-3.780	25
17.5	211.5	-3.202	-3.429	17
17.5	216.5	-9.780	-9.492	14
17.5	221.5	-10.779	-10.123	15
17.5	227.0	-12.925	-11.182	3
17.5	232.5	-18.350	-18.336	24
17.5	237.5	-22.550	-22.137	22
17.5	242.5	-18.080	-18.120	25
17.5	247.5	-12.160	-12.320	25
17.5	253.0	-10.300	-10.460	25
17.5	258.5	-7.160	-7.400	25
17.5	263.5	14.320	14.280	25
17.5	268.5	15.720	15.760	25
17.5	274.0	9.040	8.900	25
17.5	279.5	10.000	9.880	25
17.5	284.5	-6.920	-7.040	25
17.5	289.5	-3.800	-3.920	25
17.5	294.5	-44.480	-44.560	25
17.5	300.0	-27.500	-27.580	25
17.5	305.5	-18.480	-18.560	25
17.5	310.5	-21.320	-21.320	25
17.5	315.5	-10.400	-10.440	25
17.5	320.5	-14.800	-15.000	25
17.5	326.0	.080	-.149	21
17.5	331.5	13.741	13.701	24
17.5	336.5	22.520	22.520	25
17.5	341.5	2.304	2.289	24
17.5	347.0	13.697	11.960	22
17.5	352.5	2.863	-3.628	11
17.5	357.5	8.394	6.985	21
12.5	2.5	2.194	2.139	22
12.5	7.5	9.644	8.865	15
12.5	12.5	10.341	10.271	22
12.5	18.0	-1.160	-1.160	25
12.5	23.5	8.861	8.797	24
12.5	28.5	13.200	13.200	25
12.5	33.5	17.000	17.000	25
12.5	38.5	26.360	26.360	25
12.5	43.5	-1.856	-.246	21
12.5	48.5	8.080	8.000	25
12.5	54.0	-7.040	-6.980	25
12.5	59.5	-18.960	-18.960	25
12.5	64.5	-22.200	-22.400	25
12.5	69.5	-37.240	-37.240	25
12.5	74.5	-24.257	-24.567	24
12.5	79.5	-33.605	-33.763	24
12.5	84.5	-35.127	-35.347	24
12.5	90.0	-15.780	-15.900	25
12.5	95.5	-6.240	-6.400	25
12.5	100.5	-5.727	-4.801	19
12.5	105.5	-7.520	-7.520	25
12.5	110.5	-.136	.487	14
12.5	115.5	9.815	12.127	15
12.5	120.5	31.601	31.911	23
12.5	126.0	35.974	35.343	20
12.5	131.5	7.040	7.313	20
12.5	136.5	4.694	4.937	18
12.5	141.5	-21.771	-20.091	20
12.5	146.5	-25.387	-24.840	22
12.5	151.5	-2.984	-2.991	19
12.5	156.5	3.310	3.147	17
12.5	162.0	-.656	.026	23
12.5	167.5	-6.119	-5.288	21
12.5	172.5	5.434	4.665	15
12.5	177.5	13.007	7.783	10
12.5	182.5	6.869	3.430	13
12.5	187.5	-5.046	-5.469	17
12.5	192.5	4.680	4.560	25
12.5	198.0	2.567	2.392	22
12.5	203.5	-1.959	-2.322	12
12.5	208.5	-5.035	-5.281	23
12.5	213.5	.549	-.868	15
12.5	218.5	-.239	-.040	20
12.5	223.5	-8.403	-7.556	12
12.5	228.5	-8.569	-12.164	6
12.5	234.0	-8.765	-19.059	3
12.5	239.5	-17.903	-21.607	10
12.5	244.5	-20.800	-20.720	25
12.5	249.5	-11.400	-11.480	25
12.5	254.5	-.680	-.560	25
12.5	259.5	12.840	12.680	25
12.5	264.5	3.360	3.360	25
12.5	270.0	1.200	1.140	25
12.5	275.5	31.280	31.320	25
12.5	280.5	3.800	3.680	25
12.5	285.5	-21.440	-21.480	25
12.5	290.5	-17.760	-17.880	25
12.5	295.5	-6.760	-6.880	25
12.5	300.5	-32.000	-32.160	25
12.5	306.0	-35.000	-35.060	25
12.5	311.5	-27.240	-27.400	25
12.5	316.5	-25.600	-25.760	25
12.5	321.5	-25.000	-25.160	25
12.5	326.5	-10.834	-9.451	17
12.5	331.5	5.162	5.166	16
12.5	336.5	-3.109	-2.949	22
12.5	342.0	3.083	3.140	20
12.5	347.5	12.432	14.629	15
12.5	352.5	12.332	12.529	23
12.5	357.5	4.440	4.440	25
7.5	2.5	11.464	11.736	19
7.5	7.5	31.595	29.218	17
7.5	12.5	20.360	20.360	25
7.5	17.5	4.240	4.240	25
7.5	22.5	7.640	7.640	25
7.5	27.5	13.560	13.560	25
7.5	32.5	14.120	14.120	25
7.5	38.0	31.669	31.525	24
7.5	43.5	10.908	10.743	10
7.5	48.5	-15.457	-16.593	10
7.5	53.5	-39.000	-39.080	25
7.5	58.5	-6.160	-6.160	25
7.5	63.5	-25.920	-25.960	25
7.5	68.5	-40.040	-40.080	25
7.5	73.5	-39.800	-39.840	25
7.5	78.5	-33.400	-33.440	25
7.5	83.5	-45.080	-45.120	25
7.5	88.5	-.400	-.520	25
7.5	93.5	-17.280	-17.360	25
7.5	98.5	10.320	10.280	25
7.5	103.5	9.253	10.615	16
7.5	109.0	8.881	8.924	24
7.5	114.5	12.254	13.298	19
7.5	119.5	38.473	38.845	20
7.5	124.5	51.613	53.503	17

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
7.5	129.5	.835	15.481	13
7.5	134.5	15.737	16.589	18
7.5	139.5	6.496	7.279	21
7.5	144.5	12.208	10.210	14
7.5	149.5	-5.793	-6.092	17
7.5	154.5	14.215	11.153	10
7.5	159.5	15.779	15.618	17
7.5	164.5	-11.131	-7.909	15
7.5	169.5	24.263	16.849	9
7.5	180.0	7.517	2.684	5
7.5	185.5	-15.575	-13.051	15
7.5	190.5	-.178	-.440	24
7.5	195.5	6.307	5.864	19
7.5	200.5	17.734	16.697	14
7.5	205.5	4.952	5.432	13
7.5	210.5	1.027	.595	13
7.5	215.5	-2.415	-.465	11
7.5	220.5	-1.114	-1.988	4
7.5	225.5	-5.910	-12.403	5
7.5	230.5	-14.677	-14.970	5
7.5	235.5	-10.374	-8.703	13
7.5	240.5	-10.581	-11.077	15
7.5	245.5	-9.544	-11.563	13
7.5	251.0	-.600	-.944	15
7.5	256.5	2.753	4.751	14
7.5	261.5	4.575	5.665	15
7.5	266.5	9.192	9.231	18
7.5	271.5	15.254	14.887	18
7.5	276.5	25.000	25.000	25
7.5	281.5	23.520	23.520	25
7.5	286.5	22.480	22.480	25
7.5	291.5	13.080	13.080	25
7.5	296.5	1.000	1.000	25
7.5	301.5	-5.320	-5.320	25
7.5	306.5	-17.000	-17.000	25
7.5	311.5	-34.706	-34.738	23
7.5	316.5	-21.108	-21.253	24
7.5	322.0	-9.977	-10.046	22
7.5	327.5	12.826	12.778	15
7.5	332.5	7.226	7.591	21
7.5	337.5	6.318	4.825	15
7.5	342.5	1.170	1.082	24
7.5	347.5	22.424	22.299	18
7.5	352.5	30.040	30.040	25
7.5	357.5	16.760	16.760	25
2.5	2.5	-12.962	-11.353	19
2.5	7.5	1.808	2.296	22
2.5	12.5	14.120	14.120	25
2.5	17.5	-9.718	-9.760	24
2.5	22.5	-16.320	-16.320	25
2.5	27.5	6.124	5.932	23
2.5	32.5	7.160	7.160	25
2.5	37.5	8.417	8.363	23
2.5	42.5	-7.695	-4.509	8
2.5	47.5	-19.310	-19.547	21
2.5	52.5	-24.680	-24.600	25
2.5	57.5	-14.200	-14.080	25
2.5	62.5	-21.200	-21.080	25
2.5	67.5	-25.560	-25.400	25
2.5	72.5	-37.320	-37.240	25
2.5	77.5	-47.440	-47.240	25
2.5	82.5	-57.880	-57.760	25
2.5	87.5	-19.640	-19.560	23
2.5	92.5	.480	.600	25
2.5	97.5	11.877	11.884	23
2.5	102.5	24.558	25.113	18
2.5	107.5	26.971	27.182	24
2.5	112.5	27.858	35.651	9
2.5	117.5	32.209	35.888	15
2.5	122.5	25.667	26.483	20
2.5	127.5	17.960	18.010	24
2.5	132.5	51.944	47.580	14
2.5	137.5	15.032	17.018	17
2.5	142.5	9.550	10.156	23
2.5	147.5	10.440	10.440	25
2.5	152.5	2.886	2.877	24
2.5	157.5	11.600	10.337	15
2.5	162.5	7.574	7.494	22
2.5	167.5	-2.771	-4.196	13
2.5	172.5	1.672	-6.881	1
2.5	177.5	6.356	.067	5
2.5	182.5	7.356	4.614	12
2.5	187.5	-.295	-.820	16
2.5	192.5	7.434	7.139	20
2.5	197.5	12.216	13.557	20
2.5	202.5	26.475	27.692	13
2.5	207.5	2.623	11.869	5
2.5	212.5	2.623	7.860	5
2.5	217.5	3.954	7.786	4
2.5	237.5	.789	3.643	3
2.5	242.5	-4.393	-3.492	8
2.5	247.5	-7.252	-6.797	4
2.5	252.5	-5.664	-3.942	7
2.5	257.5	-6.727	1.261	7
2.5	262.5	-2.376	6.588	7
2.5	267.5	4.239	5.127	12
2.5	272.5	5.051	4.512	19
2.5	277.5	5.675	5.682	23
2.5	282.5	34.440	34.440	25
2.5	287.5	14.080	14.080	25
2.5	292.5	3.240	3.240	25
2.5	297.5	8.160	8.160	25
2.5	302.5	1.179	1.351	24
2.5	307.5	-5.600	-5.660	25
2.5	312.5	-8.490	-8.582	23
2.5	317.5	-16.375	-16.386	24
2.5	322.5	-7.599	-7.475	23
2.5	327.5	12.988	13.185	22
2.5	332.5	9.777	9.867	21
2.5	337.5	5.310	5.121	21
2.5	342.5	.223	.153	22
2.5	347.5	-5.089	-5.003	23
2.5	352.5	-1.942	-1.949	22
2.5	357.5	-1.561	-1.435	18
-2.5	2.5	2.702	.270	11
-2.5	7.5	-1.496	-1.529	21
-2.5	12.5	-14.960	-14.960	25
-2.5	17.5	-22.240	-22.240	25
-2.5	22.5	-36.760	-36.760	25
-2.5	27.5	-3.880	-3.880	25
-2.5	32.5	-.880	-.880	25
-2.5	37.5	7.560	7.560	25
-2.5	42.5	-28.637	-28.167	23
-2.5	47.5	-26.480	-26.440	25
-2.5	52.5	-11.480	-11.360	25
-2.5	57.5	-7.360	-7.160	25
-2.5	62.5	-19.680	-19.640	25
-2.5	67.5	-23.280	-23.120	25
-2.5	72.5	-41.440	-41.360	25
-2.5	77.5	-46.000	-45.800	25
-2.5	82.5	-46.200	-46.080	25
-2.5	87.5	-24.840	-24.600	25
-2.5	92.5	-12.440	-12.280	25
-2.5	97.5	6.920	7.040	25
-2.5	102.5	28.000	28.000	25
-2.5	107.5	33.402	33.598	24
-2.5	112.5	31.085	34.795	15
-2.5	117.5	31.436	31.631	22
-2.5	122.5	20.674	20.622	24
-2.5	127.5	-6.920	-6.920	25
-2.5	132.5	19.960	19.920	25
-2.5	137.5	3.683	6.338	18
-2.5	142.5	29.120	29.160	25
-2.5	147.5	32.600	32.600	25
-2.5	152.5	19.352	19.416	24
-2.5	157.5	25.680	25.680	25
-2.5	162.5	-2.813	-3.280	21
-2.5	167.5	-5.439	-16.387	2
-2.5	172.5	-10.959	-12.446	7
-2.5	177.5	-6.116	-5.493	14
-2.5	182.5	-.612	-.997	18
-2.5	187.5	1.869	1.470	19
-2.5	192.5	10.746	10.637	16
-2.5	197.5	7.845	9.467	14
-2.5	202.5	10.675	10.520	13
-2.5	207.5	5.537	3.673	5
-2.5	212.5	6.202	3.713	6
-2.5	217.5	-.762	7.363	6
-2.5	232.5	3.753	3.619	7
-2.5	237.5	.048	.553	6
-2.5	247.5	4.974	5.898	5
-2.5	252.5	6.740	1.530	2
-2.5	257.5	-7.399	-3.478	8
-2.5	262.5	-2.980	-1.141	19
-2.5	267.5	-7.010	-7.150	24
-2.5	272.5	-11.075	-11.516	20
-2.5	277.5	-4.046	-4.220	24
-2.5	282.5	25.440	25.440	25
-2.5	287.5	18.600	18.600	25
-2.5	292.5	10.320	10.320	25
-2.5	297.5	-7.520	-7.520	25
-2.5	302.5	-8.280	-8.280	25
-2.5	307.5	.040	.040	25
-2.5	312.5	-11.485	-11.608	24
-2.5	317.5	-13.520	-13.520	25
-2.5	322.5	-7.941	-7.740	24
-2.5	327.5	-1.947	-1.286	23
-2.5	332.5	-5.922	-6.650	22

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
-2.5	337.5	-10.186	-8.385	15
-2.5	342.5	4.069	4.745	22
-2.5	347.5	11.009	10.379	17
-2.5	352.5	4.376	1.911	10
-2.5	357.5	-5.608	-6.678	9
-7.5	2.5	-8.948	-8.060	12
-7.5	7.5	-7.356	-6.098	16
-7.5	12.5	-.760	-.760	25
-7.5	17.5	-32.560	-32.560	25
-7.5	22.5	-32.880	-32.880	25
-7.5	27.5	-9.320	-9.320	25
-7.5	32.5	2.680	2.680	25
-7.5	38.0	-11.820	-11.820	25
-7.5	43.5	-32.800	-32.880	25
-7.5	48.5	-27.440	-27.440	25
-7.5	53.5	-13.360	-13.400	25
-7.5	58.5	-1.960	-2.000	25
-7.5	63.5	-13.840	-13.920	25
-7.5	68.5	-14.400	-14.520	25
-7.5	73.5	-16.720	-16.880	25
-7.5	78.5	-37.360	-37.440	25
-7.5	83.5	-27.800	-27.840	25
-7.5	88.5	-27.000	-27.120	25
-7.5	93.5	-13.480	-13.520	25
-7.5	98.5	2.640	2.600	25
-7.5	103.5	-2.800	-2.800	25
-7.5	109.0	15.640	15.580	25
-7.5	114.5	22.920	22.920	25
-7.5	119.5	-.080	0.000	25
-7.5	124.5	-11.960	-12.040	25
-7.5	129.5	-26.320	-26.480	25
-7.5	134.5	16.720	16.680	25
-7.5	139.5	22.920	22.920	25
-7.5	144.5	29.080	29.160	25
-7.5	149.5	29.360	29.280	25
-7.5	154.5	37.160	37.200	25
-7.5	159.5	19.160	19.120	25
-7.5	164.5	4.921	3.381	19
-7.5	169.5	-.416	-3.218	14
-7.5	174.5	1.459	.799	17
-7.5	180.0	.635	.280	18
-7.5	185.5	7.449	4.835	11
-7.5	190.5	-.799	-.951	22
-7.5	195.5	3.665	5.234	10
-7.5	200.5	6.162	5.545	15
-7.5	205.5	.041	-4.720	9
-7.5	210.5	2.318	-5.121	10
-7.5	215.5	-12.330	-11.152	6
-7.5	220.5	17.281	14.112	2
-7.5	225.5	-.196	6.411	8
-7.5	230.5	2.277	-2.714	5
-7.5	235.5	.453	-5.069	7
-7.5	240.5	-2.770	2.430	6
-7.5	245.5	4.546	16.854	5
-7.5	251.0	1.568	7.411	10
-7.5	256.5	-4.257	-4.164	17
-7.5	261.5	-7.017	-7.003	20
-7.5	266.5	-12.602	-12.265	18
-7.5	271.5	-11.576	-12.069	19
-7.5	276.5	-18.208	-18.431	20
-7.5	281.5	30.080	30.080	25
-7.5	286.5	16.160	16.160	25
-7.5	291.5	27.920	27.920	25
-7.5	296.5	2.840	2.840	25
-7.5	301.5	-3.680	-3.680	25
-7.5	306.5	3.200	3.200	25
-7.5	311.5	-18.800	-18.800	25
-7.5	316.5	-21.440	-21.440	25
-7.5	322.0	11.780	11.780	25
-7.5	327.5	-15.177	-15.243	24
-7.5	332.5	-20.879	-23.005	12
-7.5	337.5	-13.670	-13.226	15
-7.5	342.5	5.091	5.191	22
-7.5	347.5	9.231	9.041	23
-7.5	352.5	-8.561	-8.296	18
-7.5	357.5	-7.831	-7.139	16
-12.5	2.5	-1.272	-1.815	13
-12.5	7.5	-13.118	-11.721	17
-12.5	12.5	.680	.680	25
-12.5	18.0	-7.880	-7.880	25
-12.5	23.5	-12.400	-12.400	25
-12.5	28.5	-2.280	-2.280	25
-12.5	33.5	-3.600	-3.600	25
-12.5	38.5	-11.239	-11.349	23
-12.5	43.5	-23.760	-23.920	25
-12.5	48.5	-12.591	-12.729	24
-12.5	54.0	-6.041	-4.981	17
-12.5	59.5	-2.910	-2.961	22
-12.5	64.5	-5.000	-5.200	25
-12.5	69.5	-5.871	-6.200	22
-12.5	74.5	-21.400	-21.560	25
-12.5	79.5	-23.021	-23.877	24
-12.5	84.5	-24.480	-24.640	25
-12.5	90.0	-25.880	-25.960	25
-12.5	95.5	-25.040	-25.120	25
-12.5	100.5	-6.440	-6.400	25
-12.5	105.5	6.480	6.480	25
-12.5	110.5	-6.120	-6.120	25
-12.5	115.5	-17.480	-17.520	25
-12.5	120.5	-.600	-.680	25
-12.5	126.0	23.680	23.560	25
-12.5	131.5	27.000	27.080	25
-12.5	136.5	20.880	20.880	25
-12.5	141.5	20.760	20.800	25
-12.5	146.5	19.880	19.920	25
-12.5	151.5	18.280	18.400	25
-12.5	156.5	29.145	29.181	24
-12.5	162.0	17.600	17.600	25
-12.5	167.5	15.400	15.400	25
-12.5	172.5	17.204	17.076	19
-12.5	177.5	10.917	13.013	11
-12.5	182.5	18.007	17.523	17
-12.5	187.5	7.091	7.069	22
-12.5	192.5	12.040	11.057	16
-12.5	198.0	8.000	8.286	12
-12.5	203.5	-8.087	-7.280	15
-12.5	208.5	1.538	.273	19
-12.5	213.5	-10.096	-13.642	7
-12.5	218.5	-7.367	-9.699	11
-12.5	223.5	-3.444	-2.556	9
-12.5	228.5	1.567	.955	16
-12.5	234.0	3.754	-.361	11
-12.5	239.5	5.504	4.209	12
-12.5	244.5	8.283	10.871	15
-12.5	249.5	10.610	10.592	21
-12.5	254.5	5.217	4.975	14
-12.5	259.5	-6.321	-6.108	13
-12.5	264.5	-14.469	-12.192	11
-12.5	270.0	-17.257	-11.936	11
-12.5	275.5	-18.063	-18.017	10
-12.5	280.5	-30.932	-30.779	19
-12.5	285.5	43.120	43.120	25
-12.5	290.5	23.840	23.840	25
-12.5	295.5	22.400	22.400	25
-12.5	300.5	-3.520	-3.520	25
-12.5	306.0	-10.540	-10.540	25
-12.5	311.5	-2.600	-2.600	25
-12.5	316.5	-10.880	-10.880	25
-12.5	321.5	-5.574	-5.569	24
-12.5	326.5	-17.563	-17.373	21
-12.5	331.5	-19.417	-19.476	16
-12.5	336.5	-23.533	-17.831	6
-12.5	342.0	-11.369	-7.250	11
-12.5	347.5	.485	.637	17
-12.5	352.5	-1.005	1.287	11
-12.5	357.5	-4.744	-3.412	16
-17.5	2.5	-8.525	-8.610	13
-17.5	7.5	-4.903	-4.739	19
-17.5	13.0	7.600	7.600	25
-17.5	18.5	-3.680	-3.680	25
-17.5	23.5	-9.200	-9.200	25
-17.5	28.5	9.800	9.800	25
-17.5	34.0	-1.180	-1.180	25
-17.5	39.5	-20.560	-20.560	25
-17.5	44.5	-14.162	-14.156	24
-17.5	49.5	19.664	20.384	17
-17.5	54.5	-5.174	-3.043	15
-17.5	60.0	8.828	8.689	24
-17.5	65.5	7.160	7.240	25
-17.5	70.5	-.614	-.595	22
-17.5	75.5	-12.804	-12.875	24
-17.5	80.5	-21.666	-21.837	24
-17.5	86.0	-18.500	-18.580	25
-17.5	91.5	-30.960	-31.040	25
-17.5	96.5	-26.200	-26.200	25
-17.5	101.5	-26.280	-26.440	25
-17.5	107.0	-22.120	-22.240	25
-17.5	112.5	-21.000	-20.920	25
-17.5	117.5	-8.960	-9.000	25
-17.5	122.5	14.400	14.280	25
-17.5	127.5	14.720	14.760	25
-17.5	133.0	6.740	6.660	25
-17.5	138.5	11.240	11.240	25
-17.5	143.5	21.600	21.720	25
-17.5	148.5	17.560	17.520	25
-17.5	154.0	12.320	12.280	25
-17.5	159.5	2.237	2.653	22

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
-17.5	164.5	5.284	8.807	14
-17.5	169.5	43.280	43.280	25
-17.5	174.5	30.146	31.034	22
-17.5	180.0	18.488	18.691	22
-17.5	185.5	-1.040	2.128	13
-17.5	190.5	4.203	4.225	20
-17.5	195.5	-4.627	-2.679	13
-17.5	200.5	8.974	7.279	9
-17.5	206.0	1.789	.801	15
-17.5	211.5	-2.213	-2.286	24
-17.5	216.5	-5.348	-5.675	13
-17.5	221.5	-6.581	-6.716	18
-17.5	227.0	-4.144	-5.907	16
-17.5	232.5	-2.712	-3.998	11
-17.5	237.5	-4.584	-1.822	7
-17.5	242.5	4.337	2.304	7
-17.5	247.5	6.487	5.558	15
-17.5	253.0	-4.178	-2.399	13
-17.5	258.5	-5.305	-4.674	14
-17.5	263.5	1.211	2.036	6
-17.5	268.5	.100	7.483	7
-17.5	274.0	-1.955	.252	7
-17.5	279.5	-4.456	-15.615	7
-17.5	284.5	-2.906	-4.953	17
-17.5	289.5	52.760	52.760	25
-17.5	294.5	50.200	50.200	25
-17.5	300.0	14.560	14.560	25
-17.5	305.5	-8.080	-8.080	25
-17.5	310.5	-19.920	-19.920	25
-17.5	315.5	-18.760	-18.760	25
-17.5	320.5	-4.320	-4.320	25
-17.5	326.0	-15.050	-15.121	20
-17.5	331.5	-14.582	-14.021	19
-17.5	336.5	-25.393	-20.706	14
-17.5	341.5	-15.966	.321	2
-17.5	347.0	4.872	5.088	11
-17.5	352.5	.325	2.631	5
-17.5	357.5	-2.768	-1.170	14
-22.5	2.5	2.721	1.920	18
-22.5	8.0	9.257	9.005	22
-22.5	13.5	20.264	20.276	24
-22.5	18.5	31.080	31.080	25
-22.5	24.0	-2.220	-2.220	25
-22.5	29.5	9.040	9.040	25
-22.5	35.0	-10.280	-10.200	25
-22.5	40.5	-12.640	-12.520	25
-22.5	45.5	19.520	19.840	25
-22.5	51.0	-.652	-.208	22
-22.5	56.5	-.280	-.120	25
-22.5	61.5	8.100	8.254	20
-22.5	67.0	23.310	23.246	23
-22.5	72.5	10.460	10.651	21
-22.5	78.0	-5.729	-5.066	14
-22.5	83.5	-9.541	-2.785	5
-22.5	88.5	-3.983	-7.777	9
-22.5	94.0	-17.014	-24.724	5
-22.5	99.5	-28.120	-28.393	14
-22.5	104.5	-.531	-2.881	13
-22.5	110.0	-5.447	-6.858	17
-22.5	115.5	8.080	8.080	25
-22.5	121.0	1.800	1.780	25
-22.5	126.5	-7.800	-7.680	25
-22.5	131.5	-7.800	-7.720	25
-22.5	137.0	10.200	10.180	25
-22.5	142.5	7.480	7.360	25
-22.5	147.5	24.320	24.400	25
-22.5	153.0	8.429	12.362	14
-22.5	158.5	5.941	13.310	9
-22.5	164.0	22.295	21.544	17
-22.5	169.5	28.937	30.064	19
-22.5	174.5	37.755	43.577	11
-22.5	180.0	11.990	27.752	3
-22.5	185.5	-1.794	-2.159	22
-22.5	190.5	-18.015	-13.095	8
-22.5	207.0	-10.056	-8.650	5
-22.5	212.5	-16.041	-14.831	13
-22.5	217.5	-8.532	-7.966	10
-22.5	223.0	-11.111	-14.245	11
-22.5	228.5	1.366	-14.822	5
-22.5	233.5	7.839	-3.990	5
-22.5	239.0	6.747	5.110	8
-22.5	244.5	9.218	8.057	17
-22.5	250.0	3.466	2.213	12
-22.5	255.5	3.356	.770	7
-22.5	260.5	1.636	-2.409	4
-22.5	282.0	-2.587	-12.632	6
-22.5	287.5	-7.035	-3.990	17
-22.5	293.0	73.380	73.380	25
-22.5	298.5	5.627	5.761	24
-22.5	303.5	-.240	-.240	25
-22.5	309.0	-18.880	-18.880	25
-22.5	314.5	-1.151	-1.165	24
-22.5	319.5	-14.844	-14.991	23
-22.5	325.0	-24.830	-25.158	18
-22.5	330.5	-17.475	-17.036	15
-22.5	336.0	-21.483	-13.413	10
-22.5	341.5	-20.105	-12.786	10
-22.5	346.5	-4.667	-3.830	11
-22.5	352.0	-6.271	-5.693	7
-22.5	357.5	-7.728	-7.241	19
-27.5	3.0	-4.160	-2.809	20
-27.5	8.5	4.754	4.921	23
-27.5	14.0	14.260	14.260	25
-27.5	20.0	15.220	15.220	25
-27.5	25.5	19.720	19.720	25
-27.5	31.0	30.260	30.260	25
-27.5	36.5	-7.680	-7.560	25
-27.5	42.0	3.240	3.180	25
-27.5	48.0	15.840	15.800	25
-27.5	53.5	-2.040	-1.920	25
-27.5	59.0	-3.277	-3.452	21
-27.5	65.0	18.710	17.312	17
-27.5	70.5	27.663	26.119	8
-27.5	76.0	12.756	15.361	11
-27.5	81.5	-6.976	10.082	4
-27.5	87.0	-2.532	3.080	7
-27.5	93.0	-6.679	-8.259	9
-27.5	98.5	-13.029	-18.861	10
-27.5	104.0	-10.197	-19.858	10
-27.5	110.0	-25.524	-22.858	12
-27.5	115.5	-1.763	-1.741	24
-27.5	121.0	-4.491	-4.832	20
-27.5	126.5	-14.851	-14.987	24
-27.5	132.0	-13.740	-13.620	25
-27.5	138.0	-8.580	-8.440	25
-27.5	143.5	-3.120	-3.120	25
-27.5	149.0	13.380	13.440	25
-27.5	155.0	9.771	10.612	21
-27.5	160.5	9.743	9.469	10
-27.5	166.0	10.676	12.658	9
-27.5	171.5	8.674	24.196	2
-27.5	177.0	.062	22.275	3
-27.5	183.0	-29.729	-26.343	14
-27.5	188.5	-11.683	-5.919	10
-27.5	211.0	-1.155	-1.081	10
-27.5	216.5	3.705	3.415	10
-27.5	222.0	-13.638	-15.169	4
-27.5	228.0	6.369	-20.204	2
-27.5	245.0	1.321	8.852	3
-27.5	250.5	6.710	4.901	11
-27.5	256.0	5.068	.491	11
-27.5	261.5	7.942	-3.537	3
-27.5	267.0	18.554	11.345	1
-27.5	284.0	15.544	11.108	12
-27.5	290.0	42.506	42.691	22
-27.5	295.5	12.760	12.760	25
-27.5	301.0	11.240	11.240	25
-27.5	306.5	-9.520	-9.520	25
-27.5	312.0	1.055	1.039	24
-27.5	318.0	-29.875	-28.715	15
-27.5	323.5	-15.289	-17.762	12
-27.5	329.0	-14.305	-14.570	20
-27.5	335.0	-3.324	-.646	5
-27.5	340.5	-4.913	-.364	10
-27.5	346.0	-2.615	-1.696	14
-27.5	351.5	-10.445	-10.546	14
-27.5	357.0	-6.835	-5.422	15
-32.5	3.0	-3.139	-2.405	21
-32.5	9.0	-7.781	-7.081	22
-32.5	15.0	2.025	2.014	24
-32.5	21.0	24.080	24.060	25
-32.5	27.0	14.920	14.960	25
-32.5	32.5	4.680	4.760	25
-32.5	38.0	-4.160	-4.060	25
-32.5	44.0	25.120	25.080	25
-32.5	50.0	15.540	15.580	25
-32.5	56.0	21.540	21.500	25
-32.5	62.0	.621	5.443	12
-32.5	68.0	8.685	12.838	10
-32.5	74.0	22.400	20.080	8
-32.5	86.0	8.593	7.025	11
-32.5	91.5	-5.042	-5.848	11
-32.5	97.0	-17.097	-10.305	15
-32.5	103.0	-24.666	-28.883	15
-32.5	109.0	-25.655	-26.070	20
-32.5	115.0	-6.400	-6.460	25
-32.5	121.0	-14.960	-14.960	25

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	Block estimates* (mgal) II	No. of obs.
-32.5	127.0	-23.650	-23.724	21
-32.5	133.0	-21.327	-21.465	22
-32.5	139.0	1.940	2.040	25
-32.5	145.0	4.422	4.218	23
-32.5	150.5	25.720	25.680	25
-32.5	156.0	-19.233	-19.507	20
-32.5	162.0	-21.780	-22.702	9
-32.5	168.0	-37.843	-20.859	6
-32.5	174.0	36.769	25.549	2
-32.5	180.0	.236	10.791	12
-32.5	186.0	-20.670	-.830	5
-32.5	192.0	-17.620	-9.608	7
-32.5	209.5	-.581	1.869	10
-32.5	215.0	2.591	8.104	3
-32.5	221.0	10.173	8.786	4
-32.5	227.0	-1.891	-1.750	10
-32.5	233.0	8.502	6.447	6
-32.5	239.0	5.886	10.328	5
-32.5	245.0	-.305	5.830	5
-32.5	251.0	-5.404	-3.067	7
-32.5	257.0	-2.455	-4.115	12
-32.5	263.0	-10.994	-10.412	6
-32.5	268.5	-2.192	-4.176	5
-32.5	274.0	7.066	.198	6
-32.5	280.0	11.782	4.681	6
-32.5	286.0	-18.577	-15.774	15
-32.5	292.0	39.680	39.680	25
-32.5	298.0	15.520	15.520	25
-32.5	304.0	19.700	19.700	25
-32.5	310.0	-3.128	-3.144	20
-32.5	316.0	-19.431	-19.638	12
-32.5	322.0	-18.185	-17.959	19
-32.5	327.5	-20.329	-13.277	2
-32.5	333.0	1.390	4.076	6
-32.5	339.0	5.791	9.345	8
-32.5	345.0	3.539	4.895	16
-32.5	351.0	-3.747	-3.186	13
-32.5	357.0	9.236	6.461	6
-37.5	3.0	-8.737	-.155	4
-37.5	9.5	-2.314	-2.532	12
-37.5	16.0	.589	.428	18
-37.5	22.0	3.520	3.380	25
-37.5	28.5	10.317	10.440	24
-37.5	35.0	8.582	9.751	20
-37.5	41.0	5.919	9.250	12
-37.5	47.5	18.386	17.314	10
-37.5	54.0	14.098	13.753	10
-37.5	60.0	3.174	11.372	6
-37.5	66.0	-.079	17.216	4
-37.5	72.5	-1.698	14.956	4
-37.5	79.0	6.656	8.077	15
-37.5	85.0	-.693	-1.549	12
-37.5	91.5	.717	.067	18
-37.5	98.0	-10.829	-10.855	18
-37.5	104.0	-24.715	-25.877	16
-37.5	110.5	-33.452	-36.998	12
-37.5	117.0	-37.291	-39.935	8
-37.5	123.0	-33.544	-41.282	4
-37.5	129.5	-20.591	-40.180	2
-37.5	136.0	-10.185	-14.537	13
-37.5	142.0	1.936	1.494	23
-37.5	148.5	1.194	1.186	24
-37.5	155.0	-1.514	-1.846	16
-37.5	161.0	-5.302	-8.395	13
-37.5	167.5	-.093	-1.592	11
-37.5	174.0	9.224	10.139	19
-37.5	180.0	-14.364	-13.447	21
-37.5	192.5	-26.870	-15.807	8
-37.5	211.5	-4.516	-2.467	5
-37.5	218.0	-3.932	-2.481	3
-37.5	224.0	-3.583	-4.511	4
-37.5	230.5	11.176	16.786	4
-37.5	237.0	-.314	4.842	5
-37.5	243.0	-3.470	-1.848	5
-37.5	249.5	-25.324	-24.081	19
-37.5	256.0	-28.374	-20.583	11
-37.5	262.0	-6.239	-8.274	9
-37.5	268.5	-.669	-18.421	1
-37.5	281.0	2.226	3.800	1
-37.5	287.5	20.329	19.968	19
-37.5	294.0	5.980	5.980	25
-37.5	300.0	13.700	13.650	24
-37.5	306.0	3.316	2.703	23
-37.5	312.5	-28.788	-28.679	20
-37.5	319.0	-15.134	-13.998	13
-37.5	325.0	7.043	7.740	6
-37.5	331.5	1.739	6.579	5
-37.5	338.0	11.988	8.716	2
-37.5	344.0	7.605	7.332	11
-37.5	350.5	3.721	4.524	13
-37.5	357.0	-9.536	-2.103	7
-42.5	3.5	4.505	-3.476	5
-42.5	10.5	1.399	-2.436	10
-42.5	17.0	9.617	1.005	3
-42.5	23.5	16.607	16.663	11
-42.5	30.5	72.564	66.445	9
-42.5	71.5	-2.807	19.823	4
-42.5	85.0	-1.286	14.551	3
-42.5	91.5	.961	9.925	5
-42.5	98.5	-2.781	8.261	2
-42.5	105.5	-4.717	-1.333	1
-42.5	112.0	-11.515	-11.403	2
-42.5	139.5	6.308	-18.617	1
-42.5	146.0	1.830	-.110	19
-42.5	152.5	-15.551	-13.571	10
-42.5	166.5	-16.512	.522	9
-42.5	173.5	8.443	9.685	22
-42.5	180.0	15.422	11.334	15
-42.5	186.5	-22.232	-19.389	7
-42.5	193.5	-24.550	-5.852	4
-42.5	207.5	-5.670	.174	10
-42.5	248.0	-16.454	-16.305	9
-42.5	254.5	-12.237	-8.511	7
-42.5	268.5	-3.581	-8.956	9
-42.5	281.5	.623	8.573	3
-42.5	288.5	38.278	37.194	20
-42.5	295.5	6.179	6.881	16
-42.5	302.5	1.107	2.296	19
-42.5	309.0	-10.683	-13.731	10
-42.5	315.5	-13.725	-12.095	9
-42.5	322.5	-7.021	5.002	1
-42.5	349.5	-.669	9.721	1
-42.5	356.5	12.052	11.097	9
-47.5	11.0	-2.436	-4.318	3
-47.5	18.5	4.475	9.379	3
-47.5	40.5	25.762	43.299	1
-47.5	69.5	10.814	26.360	5
-47.5	158.0	-9.026	-2.308	5
-47.5	165.5	28.956	33.051	6
-47.5	172.5	9.829	21.793	6
-47.5	180.0	-19.090	-15.212	7
-47.5	187.5	-19.534	-19.832	15
-47.5	194.5	.669	.480	1
-47.5	209.5	-6.476	-8.296	10
-47.5	253.5	6.861	-.163	2
-47.5	268.0	2.006	20.840	1
-47.5	275.5	12.953	13.014	9
-47.5	283.0	-11.420	-5.200	6
-47.5	290.5	6.389	6.344	24
-47.5	297.5	-.613	.446	13
-47.5	305.0	-16.310	-16.418	21
-47.5	312.5	-16.162	-13.514	2
-47.5	319.5	-18.156	-13.621	9
-47.5	327.0	-23.845	-22.498	9
-47.5	334.5	3.113	-18.041	4
-47.5	341.5	6.886	1.686	7
-47.5	349.0	14.528	22.034	7
-52.5	69.5	20.716	26.992	4
-52.5	143.0	28.749	15.969	4
-52.5	159.5	2.099	-2.912	6
-52.5	168.0	16.170	7.716	4
-52.5	176.0	-2.340	-4.420	1
-52.5	184.0	4.551	-8.992	7
-52.5	192.0	-6.650	-16.403	6
-52.5	209.0	-5.521	-6.800	10
-52.5	249.5	10.164	-3.874	2
-52.5	282.0	10.329	6.592	12
-52.5	290.5	-1.969	-1.586	23
-52.5	299.0	12.418	12.034	22
-52.5	307.0	-3.594	-5.565	18
-52.5	315.0	6.370	5.295	20
-52.5	323.0	-.909	-3.234	9
-52.5	301.0	25.399	-.273	1
-52.5	239.5	.544	11.449	1
-57.5	50.5	13.788	21.769	1
-57.5	133.5	-5.450	-19.605	4
-57.5	143.0	20.170	15.163	3
-57.5	152.5	4.474	4.529	10
-57.5	189.5	-24.809	-26.074	14
-57.5	198.5	-14.927	-24.269	2
-57.5	207.5	-3.412	-7.437	10
-57.5	217.0	18.868	19.186	1
-57.5	253.5	5.979	4.329	3
-57.5	272.5	-5.937	-10.160	1
-57.5	281.5	-8.784	-9.281	10

Table 6. (Cont.)

Lat. (deg.)	Long. (deg.)	Block estimates* (mgal) I	II	No. of obs.
-57.5	290.5	17.922	18.415	15
-57.5	300.0	29.562	29.933	23
-57.5	309.5	18.959	20.493	18
-57.5	318.5	19.228	20.995	18
-57.5	327.5	34.913	34.447	15
-57.5	337.0	12.298	12.141	14
-57.5	346.5	16.807	11.899	8
-62.5	5.5	7.124	-11.620	2
-62.5	16.5	23.813	19.557	8
-62.5	27.5	.363	2.057	1
-62.5	49.5	11.874	17.141	1
-62.5	70.5	32.914	29.652	4
-62.5	81.5	13.263	8.248	10
-62.5	92.5	-22.987	-19.001	7
-62.5	103.5	19.059	19.995	3
-62.5	114.5	-41.925	-7.134	2
-62.5	125.5	-24.370	-31.056	3
-62.5	136.5	-31.761	-30.628	9
-62.5	147.5	-7.919	-7.810	11
-62.5	158.5	1.242	-6.985	9
-62.5	169.5	-1.588	-22.611	1
-62.5	190.5	-11.780	-17.385	6
-62.5	201.5	-9.322	-15.484	4
-62.5	212.5	-6.171	-8.391	3
-62.5	245.5	9.972	2.046	3
-62.5	256.5	-2.675	-11.113	1
-62.5	278.5	-.669	-27.987	1
-62.5	289.5	6.331	6.785	15
-62.5	300.0	34.952	34.197	22
-62.5	310.5	30.575	23.667	10
-62.5	321.5	16.451	22.402	3
-67.5	6.5	13.675	6.888	6
-67.5	19.5	-7.153	-6.761	16
-67.5	32.5	17.882	17.187	15
-67.5	45.0	10.349	10.058	19
-67.5	57.5	42.700	38.464	13
-67.5	70.5	20.941	22.348	13
-67.5	83.5	10.849	14.429	16
-67.5	96.5	24.110	22.066	18
-67.5	109.5	17.429	16.746	15
-67.5	122.5	-20.404	-20.206	10
-67.5	135.0	-11.610	-22.629	6
-67.5	147.5	-15.327	-19.287	9
-67.5	160.5	-9.630	-10.258	16
-67.5	173.5	-7.736	-13.760	8
-67.5	186.5	-9.372	-12.006	16
-67.5	199.5	-19.936	-25.523	5
-67.5	212.5	-8.688	-22.266	2
-67.5	225.0	-22.816	-25.826	4
-67.5	237.5	-19.149	-17.681	6
-67.5	250.5	-5.145	-11.776	2
-67.5	263.5	25.689	-10.425	2
-67.5	276.5	-6.002	-10.888	5
-67.5	289.5	19.919	11.640	5
-67.5	302.5	16.383	-4.023	1
-72.5	8.0	-23.061	6.711	6
-72.5	24.5	8.463	3.859	7
-72.5	41.0	-1.000	-.667	12
-72.5	90.0	13.537	-14.383	12
-72.5	106.5	-30.573	-25.095	7
-72.5	139.0	-20.092	-29.489	8
-72.5	155.5	-30.579	-30.007	6
-72.5	172.0	-26.592	-28.462	2
-72.5	204.5	-24.522	-30.896	3
-72.5	237.0	11.817	-11.702	2
-72.5	253.5	-4.681	-16.726	1
-72.5	270.0	11.697	2.176	5
-72.5	286.5	30.333	22.681	8
-72.5	352.0	11.751	42.609	1
-77.5	34.0	-7.487	-4.085	4
-77.5	79.0	18.992	-17.637	5
-77.5	101.5	-3.580	-5.550	18
-77.5	124.0	-3.356	-33.572	1
-77.5	146.5	-37.120	-39.375	13
-77.5	169.0	-15.599	-20.014	15
-77.5	191.5	-18.511	-23.228	11
-77.5	214.0	-17.874	-19.759	9
-77.5	236.5	-5.154	-5.444	20
-77.5	259.0	-13.161	-13.241	22
-77.5	281.5	8.196	6.275	9
-77.5	304.0	-2.090	-10.931	3
-77.5	326.5	-13.196	-11.772	8
-82.5	20.0	-1.559	-1.455	13
-82.5	60.0	22.829	18.915	13
-82.5	100.0	18.744	11.155	9
-82.5	140.0	-17.491	-19.812	14
-82.5	180.0	-21.012	-21.101	20
-82.5	220.0	-15.396	-14.633	9
-82.5	260.0	-5.805	-6.057	24
-82.5	300.0	-13.005	-16.171	14
-87.5	60.0	-16.579	-14.110	12
-87.5	180.0	-20.723	-18.577	15
-87.5	300.0	-14.037	-15.229	10

5. DISCUSSION

Block anomalies as obtained from estimated residual anomalies (column headed II in Table 6) are preferred for several reasons. First, surface-gravity data are augmented by the information contained in the reference field, the assumption, of course, being that the reference field is a good representation of the geoid. Second, the covariance function of the residual anomalies is nearly zero for $\tau > 3°$, so that estimates depend only on nearby measurements; thus, the effect of ignoring measurements outside the block is reduced. Third, the residual anomalies are more nearly stationary than are the original measurements. Figures 2 and 3 are typical of other partitionings of the data.

Nevertheless, there is a serious objection to using these estimates in combination with other kinds of data to solve for the coefficients of the earth's gravity field. The block anomalies obtained from estimated residual anomalies do not represent only information in the surface-gravity data. This fact blurs the meaning of the weights assigned to the anomalies and of the statistics comparing solutions with the anomalies. The problem would be magnified by iteration.

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