

GRAVITY SURVEY IN THE MIZUHO PLATEAU

Toshiyasu NAGAO

Earthquake Research Institute, University of Tokyo,

1-1, Yayoi 1-chome, Bunkyo-ku, Tokyo 113

and

Katsutada KAMINUMA

National Institute of Polar Research,

9-10, Kaga 1-chome, Itabashi-ku, Tokyo 173

1. Introduction

The gravity survey in the Mizuho Plateau, East Antarctica has been carried out by the field parties of the Japanese Antarctic Research Expedition (JARE) since 1970 (Yoshida and Yoshimura, 1972; Abe, 1975; Kaminuma and Nagao, 1984). About 500 gravity stations have been established in the area from 1970 to 1981. More than 600 other new gravity stations were established in the Mizuho Plateau by the traverse parties of JARE-23, -24 and -26. The measurements were carried out using the LaCoste-Romberg gravity meters (G-477 and/or G-515). The results of the gravity measurements are described in this report.

2. Measurements

The traverse routes of the three expeditions are shown in Figs. 1-3. The outline of each measurement is given in this

section.

2.1. JARE-23

The details of the measurements are summarized in Table 1. The traverse was conducted in the southern area of the Yamato Mountains at 70-74°S and 35-45°E. The measurements were carried out basically at every 2 km along the route. The reference point of the measurements along this route was No. 214 point of the Yamato Mountain geodetic station on an outcrop set by the Geographical Survey Institute. This gravity point was established by the JARE-22 party in December 1981 (Kaminuma and Nagao, 1984; 982146.443 mgal).

The drift of the gravity meter throughout the measurement period was $0.319 \mu\text{gal/h}$ and the standard deviation of the solution was $102.07 \mu\text{gal}$.

2.2. JARE-24

Table 2 shows the details of the measurements. The traverse was in the area between the Yamato and Sør Rondane Mountains, through the Belsica Mountains. The gravity stations were established basically at every 2 km along the route. The reference point of the measurements along this route was the Syowa standard gravity station (982525.6 mgal), because no measurements were made on the outcrops in the inland area.

The drift of the gravity meter throughout the measurement period was $4.89 \mu\text{gal/h}$ and the standard deviation of the solution was $1253.4 \mu\text{gal}$.

2.3. JARE-26

Table 3 shows the details of the measurements. The gravity stations were distributed in the area from 70 to 78°S in latitude and from 30 to 45°E in longitude. For the reference point of the measurements along this route the Syowa gravity standard station was also used. The drift of the gravity meter was $-0.367 \mu\text{gal/h}$ and the standard deviation of the solution was $658.66 \mu\text{gal}$.

3. Determination of Location

The latitude, longitude and elevation of the gravity stations in this report are used the same values as those reported in the JARE Data Reports (Nakawo et al., 1984; Nishio et al., 1986; Fujii et al., 1986; Ageta et al., 1987). The positions of some stations were determined by operating a doppler satellite positioning system (JMR 4A) and the elevation was the height not from the geoid but from the surface of the WGS-72 earth ellipsoid. Navigational data, the azimuth and the distance from one station to the next neighboring station were obtained with a magnetic hand compass and an odometer of a snow vehicle. The longitude and latitude of the non-satellite positioning stations were estimated from the values of both satellite positioning stations and navigational data.

According to the JMR observation at Syowa Station, the elevation of the Tensokuten was determined to be 56.1 m (Shibuya, 1985). The Tensokuten (69°00'S, 39°35'E, 29.18 m, Geographical Survey Institute, 1981) is the first astronomical

control point at Syowa Station. The electric center of the satellite tracking antenna of the JMR observation was installed 46 cm above the Tensokuten. The elevation of the Tensokuten of 56.1 m measured by the JMR was the antenna height from the surface of the WGS-72 ellipsoid. The elevation of the Tensokuten of 29.18 m above mean sea level was the altitude measured by the levelling survey, and seemed to be the altitude from the geoid. This means about 27 m discrepancy between the elevations from the geoid and from the surface of the WGS-72 ellipsoid. This fact suggests that the surface of the WGS-72 ellipsoid is about 27 m above the geoid around Syowa Station. Unfortunately we have no data of the geoid height in the Mizuho Plateau. There are also some difference between the elevation by the JMR observation and the geoid height. If we estimate the difference to be about 27 m in the Mizuho Plateau, this gives about 9 mgal difference of gravity anomalies.

The previous gravity surveys (e.g. Yoshida and Yoshimura, 1972; Abe, 1975; Kaminuma and Nagao, 1984) used conventional altitude, determined by the levelling survey of the inland triangle traverse for calculating the gravity value of elevation correction. Therefore, careful treatment is needed in the data processing using the gravity in this report and the previous reports.

4. Data Reduction

The normal gravity γ was calculated from the following equation of Gravity Formula 1967:

$$\gamma = (A \cdot GE \cdot \cos^2 \phi + B \cdot GP \cdot \sin^2 \phi) / \sqrt{(A^2 \cos^2 \phi + B^2 \sin^2 \phi)}$$

where

A = 6378.14 (km) (equatorial radius of the earth)

B = A (1 - 1/298.257) (polar radius of the earth)

GE = 978031.846 (mgal) (gravity value at the equator)

GP = 983217.728 (mgal) (gravity value at the poles)

ϕ : geographic latitude.

Free-air anomaly Δg_0 and simple Bouguer anomaly $\Delta g_0''$ were calculated by the following equations:

$$\Delta g_0 = g - \gamma + 0.3086 \cdot H + 0.87 - 0.0000965 \cdot H$$

$$\Delta g_0'' = \Delta g_0 - 0.0419 \cdot \rho_1 \cdot (H - IC) - 0.0419 \cdot \rho_2 \cdot IC$$

where g is the gravity value corrected after the instrumental drift and the earth tide at a gravity station in mgal, H the altitude of a gravity station in meters, ρ_1 the density of bedrock (2.67 g/cm³), IC the thickness of the ice sheet at a gravity station in meters, ρ_2 the density of ice (0.90 g/cm³). $-0.87 - 0.0000965 \cdot H$ is a term of atmospheric correction. No terrain correction was applied to data reduction. The results are given in Table 4.

The gravity values and elevations along the traverse route of JARE-23 and -24 (SS, YM, RY and KR) are shown in Figs. 4-7. The abscissa are stations and the ordinate are the elevations, and the free-air and Bouguer gravity anomalies.

Free-air and Bouguer anomaly distributions measured by JARE-26 are shown in plain views in Figs. 8 and 9.

5. Accuracy

Usually, before and after the gravity surveys, the gravity measurements were made at the Syowa standard gravity station for the reference. The survey in JARE-23 started with measurement at Syowa Station on 28 August 1982. The second measurement, however, was made at Mizuho Station on 15 September 1982. The third measurement was at the point of YM28 on 12 October 1982. This third measurement was the first one along the traverse route. The survey ended at YM179 on 15 January 1983 and no measurements were made at Syowa Station after the YM179 measurement. The instrumental drift of the survey was estimated from the three different measurements at the YM102 point on 18 October, 17 November and 24 December. The calculated gravity value of Syowa Station by using the No. 214 value to extrapolate the drift ratio was 11.5 mgal larger than the value determined by the IGSN71 measurement.

This large discrepancy suggested that some tears happened during the period between the first and third measurements in the survey. In other words, considering the small drift ratio and the consistent results of the three different measurements at the YM179 point, no tears happened during the period from 18 October 1982 to 24 December, and the accuracy was estimated to be the same order of the standard deviation of the solution. The total accuracy throughout the measurements, therefore, depended on the accuracy of the referenced No. 214 point. The gravity value at No. 214 was measured by JARE-22 in 1981 and the accuracy of the gravity values of the measurements in the

Mizuho Plateau was considered to be 1-2 mgal (Kaminuma and Nagao, 1984). Therefore, the total accuracy of the measurements by JARE-23 was also estimated to be 1-2 mgal.

The survey in JARE-24 started with measurement at Syowa Station on 27 September 1983 and the second measurement was made at the YM102 point on 22 October 1983. The second measurement, about one month after the first one, was actually the first measurement along the route. The last measurement along the route was made at the YM179 point on 31 December 1983. The survey ended with the measurement at Syowa Station on 16 January 1984. The difference of gravity values between two measurements at Syowa Station was 14.42 mgal. Considering the instrumental drift during the traverse survey, this difference was very large. For example, the gravity at the YM102 point measured by JARE-23 was about 3 mgal smaller than that by JARE-24, and the gravity at the YM179 point by JARE-23 was about 0.5 mgal larger than that by JARE-24. The difference may be explained by that the instrumental drift during JARE-24 linearly increased with time. Some tears might have happened in the measurement during the survey. However, we have no way to estimate the place, the time and the value of the tears occurring. Therefore, we have to accept that the 14.42 mgal difference was caused only by the instrumental drift. The accuracy of absolute gravity values in the measurements was estimated to be about 10 mgal.

The measurements at Syowa Station in JARE-26 were made on 17 September 1985 and on 22 January 1986. The difference of

the gravity values between the two measurements was only 0.975 mgal. In this case, we considered that the instrumental drift rate increased negatively at a rate of -0.367 mgal/h during the observation.

In conclusion, the total accuracy of the gravity measurements by JARE-23, -24 and -26 is estimated to be 10 mgal.

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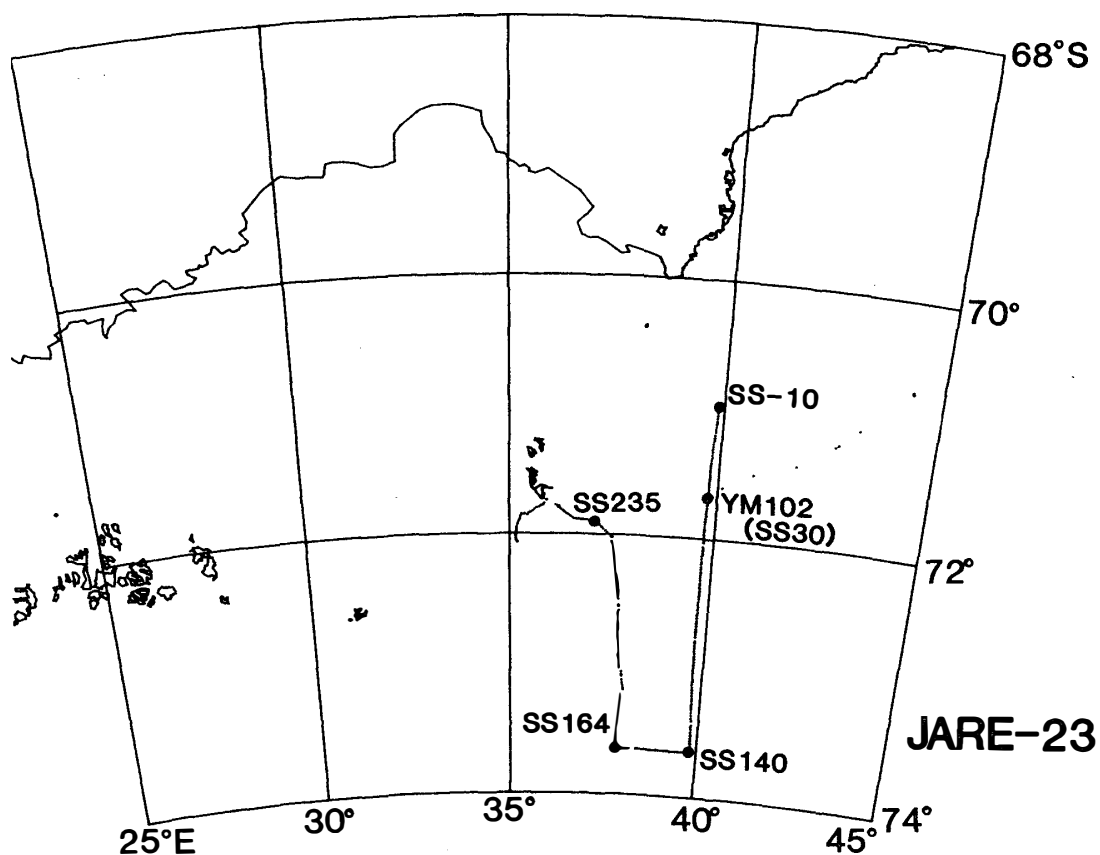


Fig. 1. The location of gravity stations on the Mizuho Plateau measured by JARE-23.

Table 1. The JARE-23 gravity survey.

Observers	Takayoshi Katsushima Hirokazu Ohmae
Gravity meter	LaCoste-Romberg G-515
Number of measurements	311 times
Number of stations	293 points
Date	Aug. 28, '82 - Jan. 15, '83
Drift of gravity meter	0.319 μ gal/h
Standard deviation of the solution	102.07 μ gal

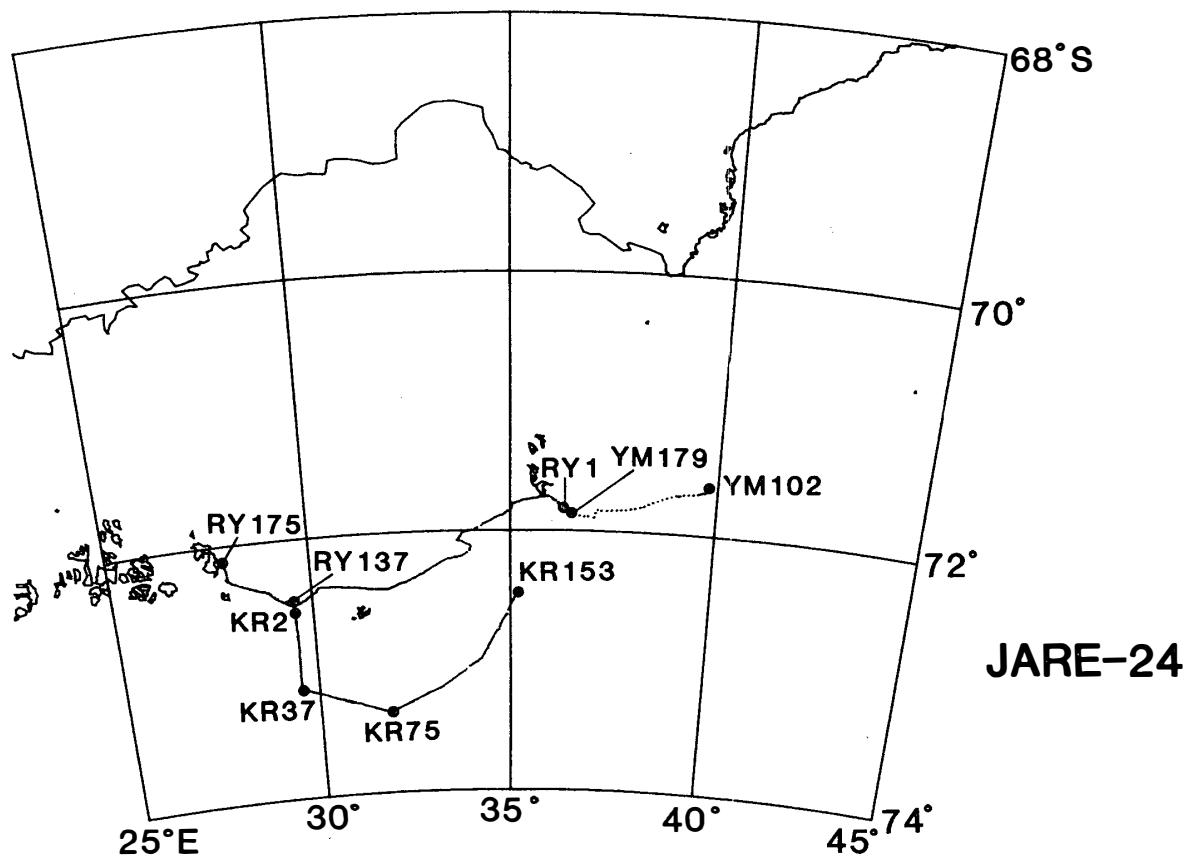


Fig. 2. The location of gravity stations on the Mizuho Plateau measured by JARE-24.

Table 2. The JARE-24 gravity survey.

Observer	Kenji Ishizawa
Gravity meter	LaCoste-Romberg G-477
Number of measurements	389 times
Number of stations	374 points
Date	Sep. 27, '83 - Jan. 16, '84
Drift of gravity meter	4.89 μ gal/h
Standard deviation of the solution	1253.4 μ gal

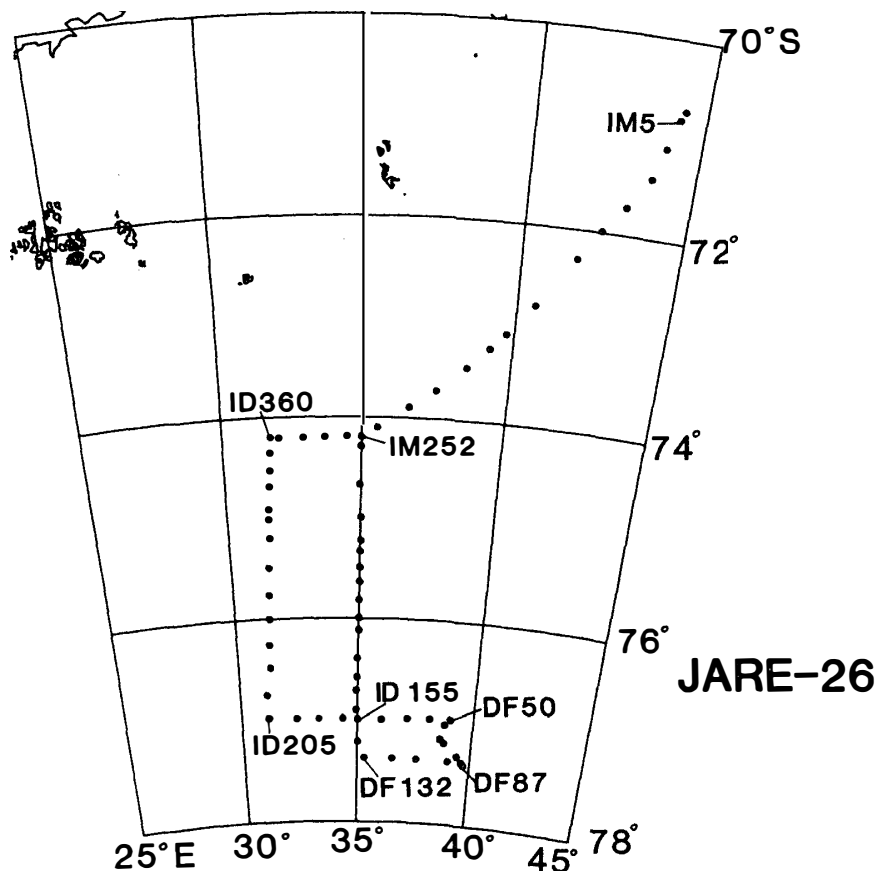


Fig. 3. The location of gravity stations on the Mizuho Plateau measured by JARE-26.

Table 3. The JARE-26 gravity survey.

Observer	Koukichi Kamiyama
Gravity meter	LaCoste-Romberg G-515
Number of measurements	71 times
Number of stations	65 points
Date	Sep. 17, '85 - Jan. 22, '86
Drift of gravity meter	-0.367 μ gal/h
Standard deviation of the solution	658.66 μ gal

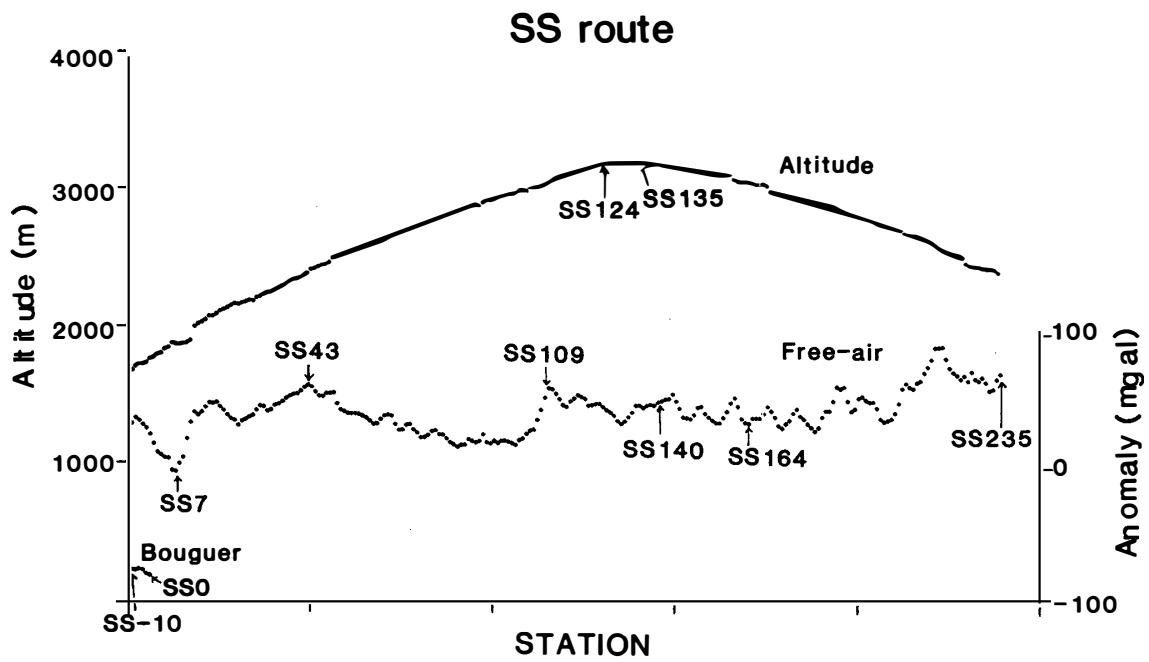


Fig. 4. Altitude, free-air and Bouguer anomalies along the SS route observed by JARE-23. The abscissa shows stations names.

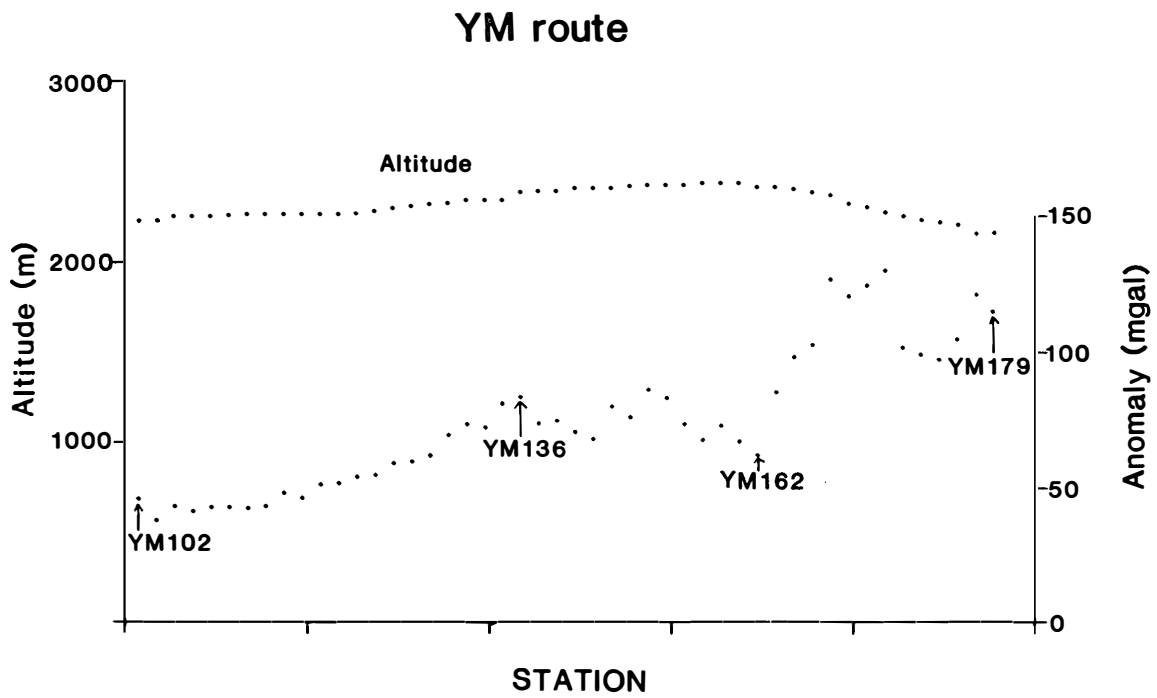


Fig. 5. Altitude and free-air anomaly along the YM route observed by JARE-24. The abscissa shows stations names.

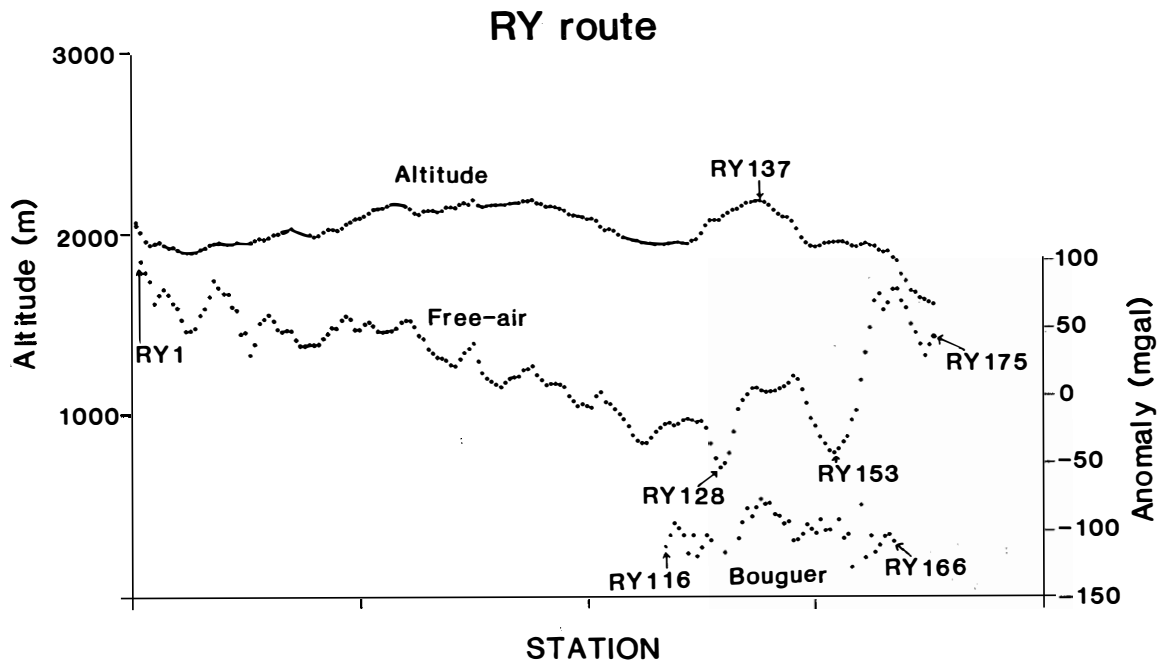


Fig. 6. Altitude, free-air and Bouguer anomalies along the RY route observed by JARE-24. The abscissa shows stations names.

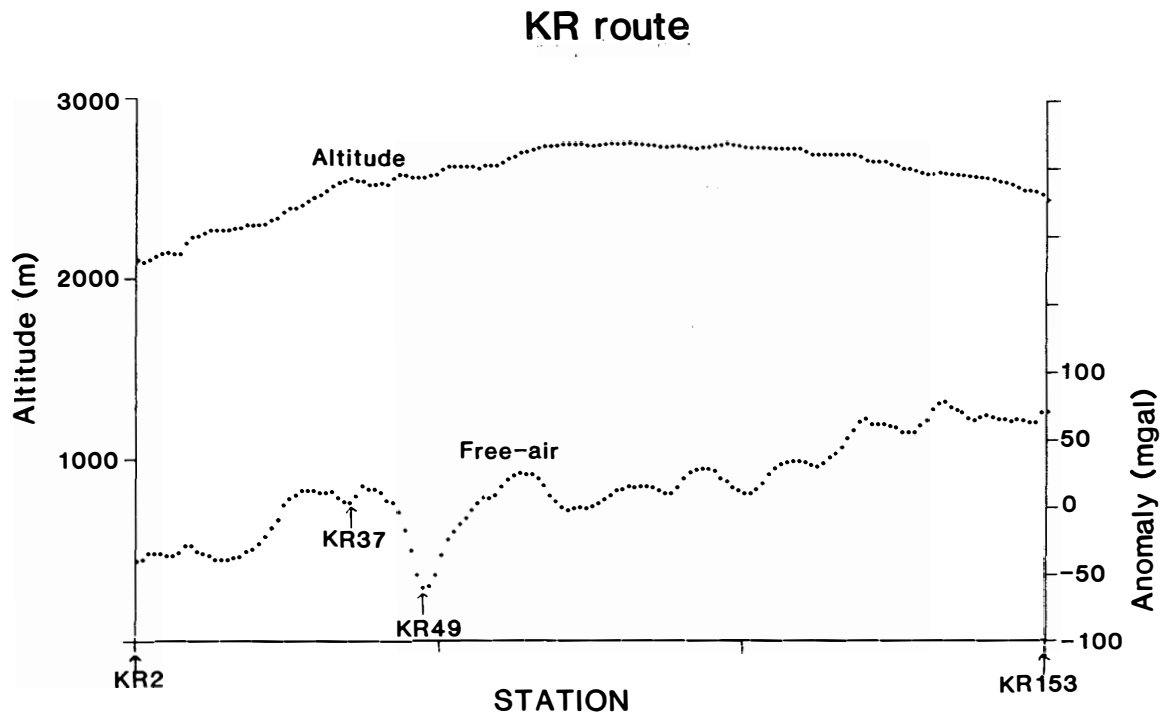


Fig. 7. Altitude and free-air anomaly along the KR route observed by JARE-24. The abscissa shows stations names.

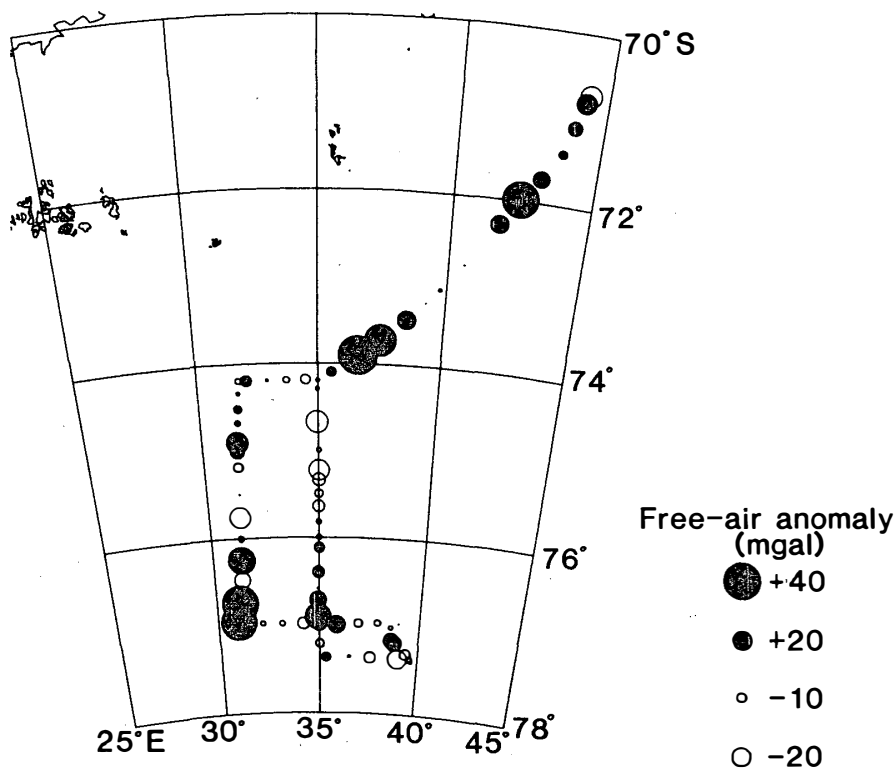


Fig. 8. Free-air anomaly on the Mizuho Plateau measured by JARE-26. The diameter of the circle is proportional to the free-air anomaly. Solid and open circles show negative and positive anomalies, respectively.

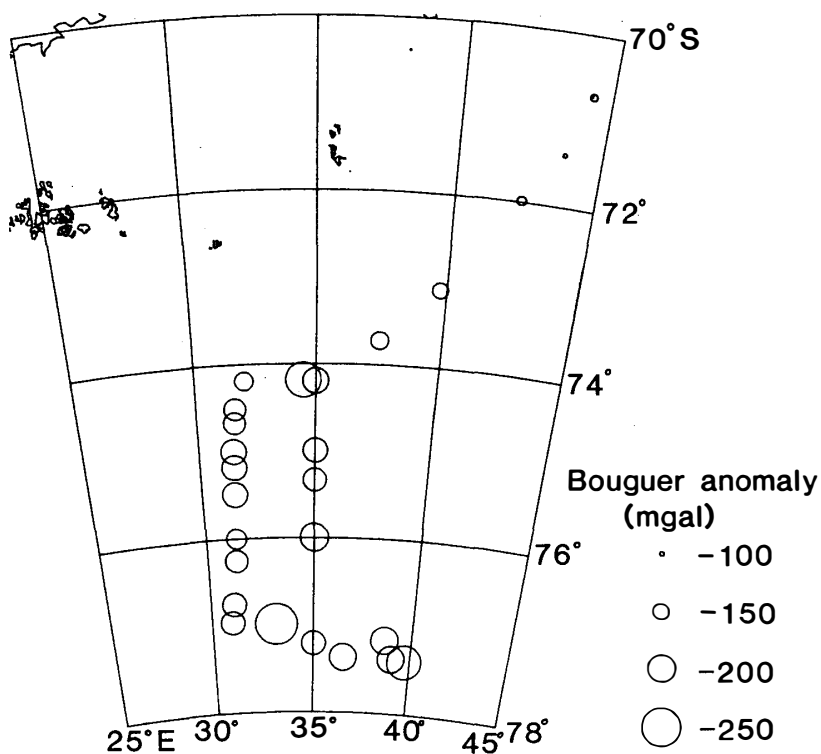


Fig. 9. Bouguer anomaly on the Mizuho Plateau measured by JARE-26. The diameter of the circle is proportional to the Bouguer anomaly.

Table 4a. The results of the measurements of JARE-23.

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
YM28	982019.356	38.1		71 2.5	43 11.4	2224.00	****
YM39	982017.775	13.5		71 10.4	42 44.8	2173.00	****
YM40	982018.842	13.0		71 11.4	42 40.8	2171.00	****
YM60	982039.267	26.0		71 22.5	41 48.9	2180.00	****
YM80	982052.502	28.2		71 28.8	40 49.5	2163.00	****
YM96	982041.760	26.8		71 35.9	40 6.6	2214.00	****
YM102	982055.637	42.2		71 37.9	39 47.2	2225.00	****
SS29	982055.153	39.0		71 36.9	39 47.7	2213.00	****
SS28	982057.756	35.2		71 35.7	39 47.6	2189.00	****
SS27	982054.184	33.8		71 34.7	39 47.3	2193.00	****
SS26	982054.355	32.2		71 33.6	39 47.3	2184.00	****
SS25	982054.840	30.9		71 32.5	39 47.4	2175.00	****
SS24	982054.059	27.6		71 31.6	39 48.0	2164.00	****
SS23	982055.065	31.3		71 30.6	39 47.9	2170.00	****
SS22	982059.538	32.7		71 29.6	39 47.9	2157.00	****
SS21	982066.433	35.3		71 28.5	39 47.8	2140.00	****
SS20	982072.162	38.6		71 27.5	39 47.4	2129.00	****
SS19	982078.006	41.3		71 26.5	39 47.6	2116.00	****
SS18	982086.686	44.5		71 25.5	39 47.8	2095.00	****
SS17	982089.993	43.5		71 24.4	39 48.1	2078.00	****
SS16	982089.499	44.2		71 23.1	39 48.2	2078.00	****
SS15	982093.399	40.8		71 22.0	39 48.8	2051.00	****
SS14	982093.495	37.2		71 20.6	39 49.0	2035.00	****
SS13	982093.428	35.0		71 19.3	39 49.3	2024.00	****
SS12	982101.176	37.1		71 18.0	39 48.9	2002.00	****
SS11	982116.798	29.5		71 16.8	39 49.2	1923.00	****
SS10*	982108.982	17.3		71 15.5	39 49.2	1905.00	****
SS9	982095.965	3.6		71 14.2	39 49.9	1899.00	****
SS8	982091.731	-0.9		71 12.9	39 50.0	1894.00	****
SS7	982084.257	-6.3		71 11.6	39 50.3	1897.00	****
SS6	982081.600	-5.6		71 10.3	39 50.7	1904.00	****
SS5	982099.256	3.4		71 9.0	39 50.7	1872.00	****
SS4	982102.258	3.9		71 7.7	39 50.9	1860.00	****
SS3	982111.546	5.9		71 6.3	39 51.5	1832.00	****
SS2	982116.125	7.9		71 5.1	39 51.4	1820.00	****
SS1	982126.777	13.9		71 3.8	39 51.7	1801.00	****
SS0	982135.855	20.5	-81.9	71 2.4	39 51.8	1789.00	1318
SS-02	982147.327	25.1	-80.6	71 .9	39 51.9	1762.00	1233
SS-04	982152.258	27.9	-77.9	70 59.8	39 52.2	1752.00	1216
SS-06	982154.616	30.9	-77.2	70 58.8	39 52.2	1751.00	1183
SS-08	982161.245	33.0	-78.0	70 57.7	39 52.3	1733.00	1117
SS-10	982172.929	28.6	-77.6	70 56.5	39 52.3	1677.00	1098
SS31	982044.100	41.6		71 39.1	39 47.2	2264.00	****
SS32	982037.093	38.2		71 40.3	39 46.8	2279.00	****
SS33	982038.887	39.4		71 41.6	39 46.5	2281.00	****
SS34	982038.838	42.6		71 42.8	39 46.6	2295.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
SS35	982036.249	43.5		71 44.1	39 46.5	2310.00	****
SS36	982035.193	45.3		71 45.4	39 46.5	2323.00	****
SS37	982034.165	47.8		71 46.6	39 46.3	2338.00	****
SS38	982031.490	49.5		71 47.9	39 46.1	2356.00	****
SS39	982029.137	50.7		71 49.1	39 46.3	2371.00	****
SS40	982028.483	51.4		71 50.3	39 45.7	2379.00	****
SS41	982028.755	53.6		71 51.6	39 45.5	2389.00	****
SS42	982027.420	56.1		71 52.8	39 45.1	2405.00	****
SS43	982025.843	58.0		71 54.1	39 45.2	2420.00	****
SS44	982016.887	56.5		71 55.4	39 45.3	2448.00	****
SS45	982012.059	52.8		71 56.6	39 45.1	2455.00	****
SS46	982006.310	49.9		71 57.9	39 45.0	2468.00	****
SS47	982003.981	49.5		71 59.2	39 45.1	2478.00	****
SS48	982005.851	51.8		72 .4	39 45.1	2483.00	****
SS49	982002.088	51.9		72 1.7	39 45.1	2499.00	****
SS50	981994.433	52.4		72 3.6	39 45.0	2531.00	****
SS51	981984.651	44.2		72 4.2	39 45.0	2538.00	****
SS52	981978.589	39.6		72 5.4	39 45.0	2546.00	****
SS53	981976.895	38.3		72 6.7	39 45.2	2551.00	****
SS54	981974.514	37.0		72 7.9	39 45.3	2558.00	****
SS55	981972.361	36.8		72 9.2	39 45.3	2568.00	****
SS56	981971.424	36.9		72 10.5	39 45.1	2575.00	****
SS57	981968.640	36.4		72 11.7	39 45.2	2586.00	****
SS58	981963.766	35.0		72 13.0	39 45.1	2601.00	****
SS59	981960.598	33.6		72 14.2	39 45.1	2610.00	****
SS60	981954.920	31.4		72 15.5	39 44.9	2625.00	****
SS61	981949.514	28.8		72 16.8	39 44.8	2638.00	****
SS62	981949.848	29.7		72 18.0	39 44.8	2643.00	****
SS63	981953.420	33.0		72 19.3	39 45.0	2646.00	****
SS64	981953.087	35.6		72 20.6	39 45.1	2659.00	****
SS65	981951.265	36.4		72 21.8	39 44.9	2671.00	****
SS66	981945.698	35.5		72 23.1	39 44.9	2690.00	****
SS67	981935.534	29.2		72 24.4	39 45.4	2706.00	****
SS68	981931.653	24.9		72 25.6	39 45.2	2708.00	****
SS69	981931.869	25.2		72 26.9	39 44.8	2712.00	****
SS70	981933.266	28.6		72 28.1	39 45.1	2722.00	****
SS71	981931.338	29.3		72 29.4	39 44.8	2734.00	****
SS72	981922.611	25.3		72 30.7	39 44.7	2753.00	****
SS73	981918.002	23.0		72 31.9	39 44.8	2764.00	****
SS74	981914.619	19.4		72 33.2	39 44.6	2767.00	****
SS75	981915.098	19.7		72 34.5	39 44.7	2770.00	****
SS76	981913.134	21.3		72 35.8	39 44.6	2785.00	****
SS77	981914.755	24.2		72 37.1	39 44.5	2793.00	****
SS78	981912.761	24.8		72 38.4	39 44.4	2805.00	****
SS79	981906.564	21.6		72 39.6	39 44.3	2818.00	****
SS80	981904.164	21.5		72 40.9	39 44.2	2829.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
SS81	981896.305	18.7		72 42.2	39 44.1	2849.00	****
SS82	981893.607	15.8		72 43.5	39 44.0	2852.00	****
SS83	981891.098	14.1		72 44.7	39 43.9	2858.00	****
SS84	981889.849	12.9		72 46.0	39 43.8	2862.00	****
SS85	981890.337	14.3		72 47.9	39 43.8	2870.00	****
SS86	981890.528	14.5		72 48.6	39 43.8	2872.00	****
SS87	981889.523	18.5		72 49.9	39 43.9	2892.00	****
SS88	981885.761	17.1		72 51.2	39 43.9	2903.00	****
SS89	981883.025	16.0		72 52.5	39 44.1	2912.00	****
SS90	981889.143	17.4		72 53.7	39 44.3	2900.00	****
SS91	981883.584	22.1		72 55.0	39 44.3	2937.00	****
SS92	981874.597	16.4		72 56.3	39 44.5	2951.00	****
SS93	981873.621	15.4		72 57.7	39 44.6	2955.00	****
SS94	981874.251	17.5		72 58.9	39 44.7	2963.00	****
SS95	981870.116	15.7		73 0.2	39 44.8	2974.00	****
SS96	981872.032	17.4		73 1.5	39 44.9	2977.00	****
SS97	981870.913	17.7		73 2.8	39 45.1	2985.00	****
SS98	981868.458	16.9		73 4.1	39 45.3	2994.00	****
SS99	981866.858	15.7		73 5.4	39 45.6	2999.00	****
SS100	981864.645	14.3		73 6.7	39 45.5	3005.00	****
SS101	981863.639	18.0		73 8.0	39 45.3	3024.00	****
SS102	981866.078	19.1		73 9.3	39 45.8	3023.00	****
SS103	981870.863	22.5		73 10.6	39 46.5	3022.00	****
SS104	981866.321	24.9		73 11.9	39 46.5	3048.00	****
SS105	981867.091	25.8		73 13.2	39 46.4	3052.00	****
SS106	981874.673	33.3		73 14.4	39 46.7	3055.00	****
SS107	981881.165	40.8		73 15.7	39 46.8	3062.00	****
SS108	981889.718	49.8		73 17.0	39 46.8	3067.00	****
SS109	981892.181	56.8		73 18.3	39 46.8	3085.00	****
SS110	981886.394	56.1		73 19.6	39 46.8	3105.00	****
SS111	981878.540	52.7		73 20.9	39 47.1	3123.00	****
SS112	981874.081	48.7		73 22.2	39 47.3	3128.00	****
SS113	981866.411	44.3		73 23.5	39 47.6	3142.00	****
SS114	981867.117	43.0		73 24.8	39 47.9	3139.00	****
SS115	981871.448	47.0		73 26.7	39 48.2	3143.00	****
SS116	981873.362	49.2		73 27.4	39 48.4	3146.00	****
SS117	981874.536	51.8		73 28.7	39 48.7	3154.00	****
SS118	981870.855	50.4		73 30.0	39 48.7	3165.00	****
SS119	981865.777	48.9		73 31.3	39 48.8	3180.00	****
SS120	981858.664	43.8		73 32.6	39 48.9	3190.00	****
SS121	981860.346	44.4		73 33.9	39 49.2	3190.00	****
SS122	981859.452	45.2		73 35.2	39 49.4	3199.00	****
SS123	981856.685	45.4		73 36.5	39 49.7	3212.00	****
SS124	981852.780	42.9		73 37.8	39 49.7	3220.00	****
SS125	981849.377	40.5		73 39.2	39 49.8	3227.00	****
SS126	981847.763	39.0		73 39.1	39 45.2	3227.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
SS127	981845.974	36.6		73 39.1	39 40.5	3225.00	****
SS128	981843.900	32.9		73 39.2	39 35.8	3220.00	****
SS129	981840.725	30.6		73 39.2	39 31.2	3223.00	****
SS130	981843.298	32.7		73 39.1	39 26.6	3221.00	****
SS131	981847.534	35.9		73 39.2	39 22.0	3218.00	****
SS132	981851.079	39.4		73 39.3	39 17.3	3218.00	****
SS133	981856.136	44.3		73 39.1	39 12.8	3217.00	****
SS134	981856.583	44.5		73 39.0	39 8.3	3216.00	****
SS135	981851.606	42.6		73 39.0	39 3.6	3226.00	****
SS136	981855.832	44.4		73 39.0	38 59.0	3218.00	****
SS137	981857.120	45.0		73 39.0	38 54.3	3216.00	****
SS138	981856.915	44.4		73 39.1	38 49.7	3215.00	****
SS139	981859.303	46.6		73 39.0	38 45.1	3214.00	****
SS140	981861.952	47.7		73 39.0	38 40.5	3209.00	****
SS141	981865.999	49.0		73 39.0	38 35.7	3200.00	****
SS142	981867.591	49.3		73 39.0	38 31.2	3196.00	****
SS143	981871.971	52.9		73 38.9	38 26.6	3193.00	****
SS144	981866.600	47.5		73 38.9	38 22.0	3193.00	****
SS145	981863.819	42.1		73 38.7	38 15.0	3184.00	****
SS146	981857.288	35.7		73 38.9	38 12.8	3185.00	****
SS147	981857.725	35.2		73 38.9	38 8.2	3182.00	****
SS148	981856.467	34.4		73 38.8	38 3.6	3183.00	****
SS149	981859.833	37.9		73 38.6	37 59.0	3183.00	****
SS150	981868.209	43.5		73 38.6	37 52.1	3174.00	****
SS151	981872.234	44.1		73 37.9	37 52.0	3161.00	****
SS152	981871.152	38.8		73 36.6	37 52.5	3144.00	****
SS153	981866.998	36.0		73 35.3	37 53.2	3145.00	****
SS154	981865.518	33.6		73 33.9	37 53.3	3138.00	****
SS155	981865.598	31.9		73 32.6	37 53.4	3129.00	****
SS156	981863.257	31.9		73 31.3	37 53.7	3133.00	****
SS157	981864.587	35.8		73 30.0	37 53.9	3138.00	****
SS158	981870.725	40.3		73 28.7	37 54.2	3129.00	****
SS159	981875.313	46.6		73 27.3	37 54.4	3131.00	****
SS160	981887.004	50.5		73 26.0	37 54.5	3102.00	****
SS161	981884.112	44.0		73 24.7	37 55.2	3087.00	****
SS162	981875.388	34.8		73 23.4	37 55.2	3082.00	****
SS163	981870.554	32.0		73 22.1	37 55.2	3085.00	****
SS164	981870.322	31.3		73 20.8	37 56.0	3080.00	****
SS165	981875.949	35.3		73 19.4	37 56.4	3071.00	****
SS166	981877.765	35.4		73 18.1	37 56.8	3062.00	****
SS167	981876.063	35.4		73 16.8	37 56.9	3064.00	****
SS168	981878.944	39.1		73 15.5	37 57.0	3063.00	****
SS169	981886.887	44.5		73 14.1	37 57.4	3051.00	****
SS170	981892.011	41.1		73 12.1	37 57.6	3018.00	****
SS171	981889.153	36.6		73 11.5	37 57.2	3011.00	****
SS172	981882.494	30.1		73 10.2	37 56.4	3008.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
SS173	981879.490	28.4		73 9.0	37 55.5	3009.00	****
SS174	981883.746	31.6		73 7.7	37 54.8	3002.00	****
SS175	981886.138	34.1		73 5.7	37 54.2	2997.00	****
SS176	981892.839	39.5		73 5.1	37 54.0	2991.00	****
SS177	981898.373	42.7		73 3.8	37 53.6	2980.00	****
SS178	981895.056	37.4		73 1.8	37 53.0	2968.00	****
SS179	981894.026	35.0		73 1.2	37 52.8	2962.00	****
SS180	981891.981	31.6		72 59.9	37 52.4	2954.00	****
SS181	981891.303	29.0		72 58.6	37 52.1	2944.00	****
SS182	981887.958	26.1		72 57.3	37 51.7	2942.00	****
SS183	981890.138	28.8		72 56.0	37 51.2	2940.00	****
SS184	981898.161	36.7		72 54.7	37 50.9	2936.00	****
SS185	981905.388	41.3		72 53.4	37 50.6	2924.00	****
SS186	981904.920	41.3		72 52.1	37 50.3	2922.00	****
SS187	981913.340	49.0		72 50.8	37 49.9	2916.00	****
SS188	981929.134	59.7		72 49.5	37 49.7	2896.00	****
SS189	981928.150	58.0		72 48.2	37 49.4	2890.00	****
SS190	981935.164	59.3		72 46.9	37 49.3	2868.00	****
SS191	981925.047	49.0		72 45.7	37 49.1	2864.00	****
SS192	981917.731	41.3		72 44.4	37 48.9	2859.00	****
SS193	981919.111	43.2		72 43.1	37 48.7	2857.00	****
SS194	981928.672	51.1		72 41.8	37 48.6	2848.00	****
SS195	981932.216	52.3		72 40.5	37 48.7	2837.00	****
SS196	981930.851	49.6		72 39.2	37 48.7	2829.00	****
SS197	981932.040	48.2		72 37.9	37 48.4	2817.00	****
SS198	981934.459	48.4		72 36.6	37 48.2	2806.00	****
SS199	981935.113	43.7		72 35.3	37 48.1	2785.00	****
SS200	981929.220	35.7		72 33.4	37 47.6	2773.00	****
SS201	981927.954	33.5		72 32.7	37 47.7	2768.00	****
SS203	981930.067	34.5		72 30.1	37 47.1	2757.00	****
SS204	981932.491	35.9		72 28.8	37 46.5	2750.00	****
SS205	981936.887	40.5		72 27.5	37 46.2	2747.00	****
SS206	981946.244	47.9		72 26.2	37 45.8	2737.00	****
SS207	981956.968	58.8		72 24.9	37 45.2	2734.00	****
SS208	981967.912	62.6		72 23.6	37 45.0	2707.00	****
SS209	981966.362	59.9		72 22.4	37 44.5	2700.00	****
SS210	981965.578	58.7		72 21.1	37 43.6	2695.00	****
SS211	981970.778	63.2		72 19.8	37 42.9	2689.00	****
SS212	981972.800	64.5		72 18.5	37 42.0	2683.00	****
SS213	981979.793	70.5		72 17.2	37 41.1	2676.00	****
SS214	981988.434	74.8		72 16.1	37 40.9	2659.00	****
SS215	981996.528	80.7		72 14.8	37 40.3	2648.00	****
SS216	982011.018	89.5		72 13.5	37 39.8	2626.00	****
SS217	982014.375	89.7		72 12.2	37 38.9	2612.00	****
SS218	982020.010	90.0		72 10.9	37 37.9	2591.00	****
SS219	982016.904	81.2		72 9.7	37 37.0	2569.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
SS220	982007.798	74.5		72 8.4	37 36.1	2573.00	****
SS221	982009.209	71.2		72 7.1	37 35.7	2554.00	****
SS222	982007.370	69.2		72 5.8	37 35.3	2550.00	****
SS223	982003.709	66.1		72 4.5	37 34.3	2548.00	****
SS224	982011.179	68.8		72 3.3	37 33.3	2529.00	****
SS225	982016.726	64.9		72 1.4	37 31.0	2493.00	****
SS226	982027.541	71.8		72 1.0	37 29.5	2479.00	****
SS227	982022.494	66.3		72 .1	37 26.4	2475.00	****
SS228	982020.545	64.8		71 59.2	37 23.3	2474.00	****
SS229	982024.528	67.5		71 58.3	37 20.3	2467.00	****
SS230	982022.604	63.6		71 57.3	37 17.3	2458.00	****
SS231	982017.062	57.7		71 56.4	37 14.4	2454.00	****
SS232	982016.992	58.7		71 55.5	37 11.5	2455.00	****
SS233	982024.986	66.1		71 54.5	37 8.6	2450.00	****
SS234	982034.864	70.0		71 53.5	37 5.7	2428.00	****
SS235	982030.031	63.6		71 52.6	37 2.6	2420.00	****
YM155	982032.246	66.1		71 52.9	37 3.7	2422.00	****
YM156	982027.349	63.7		71 53.9	37 2.7	2433.00	****
YM157	982024.841	59.2		71 53.7	36 59.2	2426.00	****
YM158	982030.385	65.9		71 53.5	36 55.7	2429.00	****
YM159	982030.121	68.2		71 53.4	36 52.2	2437.00	****
YM160	982026.997	62.6		71 53.4	36 48.5	2429.00	****
YM161	982026.307	60.1		71 53.3	36 45.0	2423.00	****
YM162	982028.091	57.8		71 53.1	36 41.4	2409.00	****
YM163	982033.342	64.7		71 53.0	36 38.0	2414.00	****
YM164	982052.153	81.7		71 52.9	36 34.3	2408.00	****
YM165	982066.168	95.8		71 52.5	36 32.0	2407.00	****
YM166	982067.368	95.3		71 51.9	36 29.0	2400.00	****
YM167	982068.373	95.4		71 51.2	36 26.0	2395.00	****
YM168	982076.876	99.4		71 50.7	36 23.6	2379.00	****
YM169	982088.488	111.0		71 50.1	36 20.7	2377.00	****
YM170	982105.849	124.8		71 49.6	36 18.3	2364.00	****
YM171	982113.967	118.7		71 48.9	36 15.5	2316.00	****
YM172	982123.334	123.3		71 48.1	36 12.9	2298.00	****
YM173	982137.684	129.1		71 47.3	36 10.4	2268.00	****
YM174	982131.682	115.9		71 46.7	36 7.5	2243.00	****
NO.214	982146.443	160.4		71 47.3	36 12.4	2341.23	****
YM179	982162.346	122.2		71 44.3	35 54.4	2157.00	****
SY4	982162.911	102.9		71 46.1	35 52.0	2098.00	****
SY6	982187.416	121.5		71 46.9	35 49.6	2081.00	****
SY8	982199.489	127.0		71 47.3	35 46.3	2061.00	****
SY10	982179.516	107.7		71 47.9	35 43.4	2065.00	****
SY12	982170.957	99.1		71 48.3	35 40.1	2066.00	****
SY14	982166.645	96.1		71 48.9	35 37.2	2072.00	****
SY16	982156.743	87.4		71 49.7	35 34.4	2078.00	****
SY18	982161.453	89.4		71 50.3	35 31.6	2071.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
SY20	982162.907	90.9		71 50.9	35 28.9	2073.00	****
SY22	982162.407	87.5		71 51.7	35 26.7	2066.00	****
SY26	982171.387	93.8		71 51.3	35 21.7	2056.00	****
SY28	982179.926	98.8		71 51.4	35 18.2	2045.00	****
SY30	982180.432	101.0		71 52.3	35 16.7	2053.00	****
SY32	982170.275	90.6		71 53.3	35 15.8	2055.00	****
SY34	982170.379	92.2		71 54.3	35 14.4	2063.00	****
SY36	982164.011	86.5		71 55.3	35 13.0	2068.00	****
SY38	982167.038	89.3		71 56.3	35 11.7	2070.00	****
SY40	982186.170	112.7		71 57.4	35 10.9	2087.00	****
SY42	982172.648	105.0		71 58.4	35 10.0	2109.00	****
SY44	982162.793	97.7		71 59.4	35 10.2	2120.00	****
SY46	982152.303	88.1		72 .5	35 10.3	2126.00	****
SY48	982139.506	78.7		72 1.5	35 9.5	2140.00	****
SY50	982139.055	79.1		72 2.6	35 9.2	2146.00	****
SY52	982145.034	89.5		72 3.6	35 10.0	2163.00	****
SY54	982134.495	87.4		72 4.5	35 11.9	2193.00	****

Table 4b. The results of the measurements of JARE-24.

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
YM102	982058.788	45.4		71 37.9	39 47.2	2225.00	****
YM103	982051.503	37.5		71 38.9	39 46.4	2226.00	****
YM104	982048.825	42.5		71 39.3	39 44.6	2252.00	****
YM105	982047.377	40.8		71 39.9	39 41.8	2253.00	****
YM106	982049.342	42.3		71 40.1	39 38.3	2252.00	****
YM107	982047.663	42.1		71 40.5	39 35.1	2258.00	****
YM108	982045.539	41.5		71 40.8	39 32.0	2264.00	****
YM110	982047.383	42.7		71 41.2	39 25.3	2263.00	****
YM112	982053.711	47.7		71 41.3	39 18.6	2259.00	****
YM114	982054.009	45.9		71 41.6	39 11.8	2253.00	****
YM116	982057.602	50.8		71 42.2	39 5.5	2259.00	****
YM116'	982058.769	51.3		71 42.3	39 3.9	2257.00	****
YM118	982059.663	53.6		71 42.1	39 .2	2261.00	****
YM120	982056.295	54.2		71 42.8	38 53.6	2276.00	****
YM122	982055.844	58.6		71 43.6	38 47.3	2294.00	****
YM124	982053.731	59.2		71 44.3	38 40.8	2305.00	****
YM126	982053.433	61.5		71 45.2	38 34.5	2316.00	****
YM128	982059.757	69.0		71 46.0	38 27.4	2322.00	****
YM130	982058.695	73.0		71 46.9	38 21.2	2341.00	****
YM132	982057.619	71.7		71 47.8	38 14.9	2343.00	****
YM134	982069.085	80.7		71 48.5	38 8.5	2337.00	****
YM136	982058.220	82.8		71 49.1	38 1.8	2381.00	****
YM138	982047.862	73.6		71 49.6	37 55.1	2386.00	****
YM140	982047.712	74.2		71 50.1	37 48.5	2390.00	****
YM142	982039.391	70.1		71 50.2	37 41.8	2404.00	****
YM144	982037.488	67.9		71 50.2	37 35.1	2403.00	****
YM146	982048.791	80.0		71 50.4	37 28.3	2406.00	****
YM148	982041.687	76.0		71 50.7	37 21.5	2417.00	****
YM150'	982050.003	86.2		71 50.7	37 12.8	2423.00	****
YM152	982046.630	83.1		71 50.3	37 7.6	2423.00	****
YM154	982038.535	73.4		71 51.8	37 4.4	2422.00	****
YM156	982031.092	67.5		71 53.9	37 2.8	2433.00	****
YM158'	982036.085	72.8		71 53.5	36 53.9	2433.00	****
YM160	982031.415	67.0		71 53.4	36 48.5	2429.00	****
YM162	982032.224	61.9		71 53.1	36 41.4	2409.00	****
YM164	982055.785	85.3		71 52.9	36 34.3	2408.00	****
YM166	982070.160	98.1		71 51.9	36 28.9	2400.00	****
YM168	982079.813	102.5		71 50.6	36 24.3	2379.00	****
YM170	982107.485	126.5		71 49.5	36 18.9	2364.00	****
YM171	982115.559	120.3		71 48.9	36 15.4	2316.00	****
YM172	982124.363	124.3		71 48.1	36 12.8	2298.00	****
YM173	982138.279	129.7		71 47.3	36 10.3	2268.00	****
YM174'	982115.718	101.4		71 46.4	36 5.8	2247.00	****
YM175'	982119.408	98.9		71 46.1	36 4.0	2226.00	****
YM176	982121.066	97.2		71 45.7	36 2.7	2214.00	****
YM177	982132.068	104.6		71 44.9	36 .4	2200.00	****
YM178'	982162.482	121.1		71 44.3	35 55.5	2153.00	****
YM179	982161.836	121.7		71 44.3	35 54.4	2157.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
RY1	982199.163	126.1		71 44.5	35 50.6	2051.00	****
RY2	982178.950	96.3		71 44.6	35 47.0	2020.00	****
RY3	982187.505	88.9		71 44.8	35 43.6	1969.00	****
RY4	982188.880	82.6		71 45.1	35 40.2	1945.00	****
RY5	982169.941	66.5		71 45.4	35 36.9	1955.00	****
RY6	982173.681	72.9		71 45.5	35 33.5	1964.00	****
RY7	982182.721	76.8		71 45.7	35 30.2	1948.00	****
RY8	982183.379	73.0		71 45.9	35 26.6	1934.00	****
RY9	982176.780	66.8		71 46.1	35 23.2	1936.00	****
RY10	982176.709	62.3		71 46.2	35 19.8	1922.00	****
RY11	982172.713	54.3		71 46.6	35 16.3	1910.00	****
RY12	982165.368	46.3		71 47.0	35 13.1	1909.00	****
RY13	982166.244	46.6		71 47.3	35 9.8	1908.00	****
RY14	982167.014	48.4		71 47.8	35 6.7	1913.00	****
RY15	982173.315	57.7		71 47.9	35 3.3	1923.00	****
RY16	982176.190	62.4		71 49.0	35 2.8	1932.00	****
RY17	982182.139	72.4		71 50.0	35 1.9	1948.00	****
RY19	982193.212	84.1		71 51.3	34 56.4	1954.00	****
RY20	982186.947	78.5		71 52.0	34 53.7	1958.00	****
RY21	982183.533	73.3		71 52.6	34 51.1	1954.00	****
RY22	982184.903	72.9		71 53.2	34 48.1	1950.00	****
RY23	982174.807	63.5		71 53.5	34 44.8	1953.00	****
RY24	982170.883	60.9		71 54.0	34 41.7	1959.00	****
RY25	982155.543	43.7		71 54.4	34 38.5	1954.00	****
RY26	982139.537	28.5		71 54.9	34 35.4	1958.00	****
RY27	982144.382	37.1		71 55.5	34 32.5	1972.00	****
RY28	982155.831	51.8		71 56.0	34 29.5	1984.00	****
RY29	982160.975	54.7		71 56.4	34 26.2	1978.00	****
RY30	982161.458	57.9		71 56.9	34 23.1	1988.00	****
RY31	982152.290	52.7		71 57.3	34 20.0	2002.00	****
RY32	982146.541	47.4		71 58.1	34 17.7	2006.00	****
RY34	982139.962	45.0		71 59.0	34 11.3	2022.00	****
RY35	982138.989	46.0		71 59.5	34 8.4	2030.00	****
RY36	982136.092	45.7		72 .1	34 5.4	2040.00	****
RY37	982134.326	40.1		72 .2	34 1.9	2028.00	****
RY38	982133.995	35.8		72 .5	33 58.5	2016.00	****
RY39	982136.358	35.5		72 .7	33 55.1	2008.00	****
RY40	982138.876	36.7		72 .9	33 51.7	2004.00	****
RY41	982143.105	36.2		72 1.3	33 48.5	1990.00	****
RY42	982141.976	36.7		72 2.2	33 46.3	1998.00	****
RY43	982142.087	41.1		72 3.0	33 44.4	2014.00	****
RY44	982139.285	44.0		72 3.9	33 42.5	2035.00	****
RY45	982145.719	48.8		72 4.7	33 40.3	2032.00	****
RY46	982146.749	48.2		72 5.1	33 43.5	2028.00	****
RY47	982148.891	53.9		72 5.3	33 46.9	2040.00	****
RY48	982145.018	57.0		72 5.7	33 50.1	2064.00	****
RY49	982139.661	54.6		72 6.2	33 53.2	2075.00	****
RY50	982128.446	47.0		72 6.7	33 56.3	2088.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Rouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
RY51	982127.534	47.0		72 7.0	33 59.7	2092.00	****
RY52	982128.806	51.3		72 7.8	34 1.8	2104.00	****
RY53	982126.428	52.9		72 8.6	33 59.6	2119.00	****
RY54	982117.003	49.7		72 9.5	33 59.5	2142.00	****
RY55	982112.614	45.8		72 10.4	33 55.7	2146.00	****
RY56	982111.183	45.1		72 10.9	33 52.8	2150.00	****
RY57	982109.300	45.8		72 11.5	33 49.9	2160.00	****
RY58	982105.948	46.0		72 12.0	33 46.8	2173.00	****
RY59	982108.601	48.4		72 12.3	33 43.5	2173.00	****
RY60	982113.985	52.6		72 12.6	33 40.1	2170.00	****
RY61	982118.073	54.2		72 12.7	33 36.4	2162.00	****
RY62	982122.861	53.8		72 12.9	33 33.0	2146.00	****
RY63	982125.499	49.1		72 13.2	33 29.7	2123.00	****
RY64	982120.995	42.2		72 13.1	33 26.2	2115.00	****
RY65	982113.085	39.7		72 13.6	33 23.0	2134.00	****
RY66	982105.528	32.4		72 14.0	33 19.8	2136.00	****
RY67	982101.923	29.0		72 14.5	33 16.6	2138.00	****
RY68	982102.451	26.5		72 15.1	33 13.6	2130.00	****
RY69	982100.695	25.9		72 15.6	33 10.4	2135.00	****
RY70	982093.157	23.7		72 16.2	33 7.6	2154.00	****
RY71	982090.157	20.6		72 16.7	33 4.3	2155.00	****
RY72	982091.047	19.5		72 17.2	33 1.2	2150.00	****
RY73	982091.838	25.0		72 17.8	32 58.1	2167.00	****
RY74	982093.666	29.7		72 18.4	32 55.1	2178.00	****
RY75	982100.183	32.6		72 19.0	32 52.2	2168.00	****
RY76	982097.247	36.5		72 19.6	32 49.2	2192.00	****
RY77	982092.063	23.0		72 20.0	32 45.9	2166.00	****
RY78	982086.371	14.5		72 20.3	32 42.5	2158.00	****
RY79	982081.086	10.6		72 20.9	32 39.3	2164.00	****
RY80	982079.120	8.8		72 21.4	32 36.2	2166.00	****
RY81	982076.244	6.2		72 21.8	32 32.9	2168.00	****
RY82	982075.595	4.8		72 22.3	32 29.7	2167.00	****
RY83	982078.540	7.6		72 22.8	32 26.6	2168.00	****
RY84	982079.785	10.6		72 23.3	32 23.4	2175.00	****
RY85	982080.835	12.2		72 23.7	32 20.0	2178.00	****
RY86	982082.497	16.9		72 23.8	32 16.2	2188.00	****
RY87	982083.443	17.5		72 24.2	32 13.0	2188.00	****
RY88	982084.276	19.8		72 24.6	32 9.8	2194.00	****
RY89	982083.497	13.4		72 25.0	32 6.6	2177.00	****
RY90	982080.593	9.2		72 25.4	32 3.4	2174.00	****
RY91	982082.393	5.8		72 25.8	32 .3	2158.00	****
RY92	982083.527	7.2		72 26.2	31 57.2	2160.00	****
RY93	982085.524	7.1		72 26.4	31 53.8	2154.00	****
RY93 ¹	982087.117	6.4		72 26.2	31 52.0	2146.00	****
RY94	982088.245	4.5		72 26.2	31 50.2	2136.00	****
RY95	982088.654	-1.9		72 26.2	31 46.7	2114.00	****
RY96	982086.463	-6.3		72 26.2	31 43.1	2107.00	****
RY97	982083.843	-10.4		72 26.2	31 39.6	2102.00	****

Station name	Gravity value (mgal.)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
RY98	982086.633	-8.5		72 26.1	31 36.0	2099.00	****
RY99	982088.149	-10.3		72 26.0	31 32.5	2088.00	****
RY100	982086.083	-11.5		72 25.8	31 29.0	2090.00	****
RY101	982098.875	-2.9		72 25.6	31 25.5	2076.00	****
RY102	982111.426	.0		72 25.4	31 21.8	2044.00	****
RY103	982109.799	-7.3		72 25.2	31 18.3	2025.00	****
RY104	982106.511	-8.7		72 25.1	31 14.8	2031.00	****
RY105	982106.498	-11.8		72 24.8	31 11.3	2020.00	****
RY106	982108.191	-15.8		72 24.6	31 7.6	2001.00	****
RY107	982108.609	-20.0		72 24.5	31 4.1	1986.00	****
RY108	982105.639	-24.8		72 24.5	31 .6	1980.00	****
RY109	982102.063	-31.4		72 24.5	30 57.0	1970.00	****
RY110	982098.595	-35.8		72 24.5	30 53.5	1967.00	****
RY111	982099.189	-37.8		72 24.2	30 50.0	1958.00	****
RY112	982099.640	-37.7		72 24.0	30 46.6	1956.00	****
RY113	982104.345	-33.5		72 23.8	30 43.1	1954.00	****
RY114	982110.108	-29.5		72 23.7	30 39.6	1948.00	****
RY115	982113.452	-26.2		72 23.8	30 36.0	1948.00	****
RY116	982116.083	-23.6		72 23.8	30 32.5	1948.00	****
RY117	982115.512	-22.6		72 23.8	30 29.0	1953.00	****
RY118	982112.948	-24.6		72 23.8	30 25.4	1955.00	****
RY119	982113.217	-23.4		72 23.8	30 21.9	1958.00	****
RY120	982118.150	-20.2		72 23.7	30 18.4	1952.00	****
RY121	982119.755	-19.2		72 23.7	30 14.8	1950.00	****
RY122	982113.808	-20.3		72 23.8	30 11.1	1966.00	****
RY123	982110.306	-21.7		72 24.5	30 8.4	1975.00	****
RY124	982101.675	-20.9		72 25.4	30 7.0	2008.00	****
RY125	982083.175	-27.0		72 26.0	30 4.0	2050.00	****
RY126	982065.158	-37.4		72 26.5	30 1.0	2076.00	****
RY127	982054.041	-49.0		72 27.1	29 58.2	2076.00	****
RY128	982047.885	-55.7		72 27.7	29 55.1	2076.00	****
RY129	982042.983	-52.5		72 28.3	29 52.3	2104.00	****
RY130	982046.602	-44.5		72 29.0	29 49.5	2120.00	****
RY131	982059.291	-28.8		72 29.4	29 46.2	2131.00	****
RY132	982072.339	-13.1		72 29.9	29 43.1	2141.00	****
RY133	982074.864	-6.3		72 30.3	29 40.0	2156.00	****
RY134	982073.491	-1.7		72 30.5	29 36.6	2176.00	****
RY135	982078.013	3.0		72 30.3	29 33.1	2176.00	****
RY136	982076.448	3.4		72 30.2	29 29.2	2182.00	****
RY137	982073.175	1.2		72 30.0	29 25.2	2185.00	****
RY138	982074.716	.3		72 29.6	29 21.4	2176.00	****
RY139	982079.841	.6		72 29.1	29 17.8	2159.00	****
RY140	982088.043	1.0		72 28.5	29 14.2	2132.00	****
RY141	982095.485	2.8		72 27.9	29 10.7	2112.00	****
RY142	982101.256	4.1		72 27.1	29 7.2	2095.00	****
RY143	982104.612	7.4		72 26.4	29 4.1	2093.00	****
RY144	982114.358	12.0		72 25.6	29 .9	2074.00	****
RY145	982124.924	9.8		72 24.7	28 58.3	2030.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
RY146	982130.702	2.2		72 23.7	28 55.6	1984.00	****
RY147	982129.959	-8.3		72 24.3	28 58.2	1954.00	****
RY148	982123.893	-18.9		72 23.8	28 54.5	1938.00	****
RY149	982119.067	-24.7		72 23.2	28 50.6	1933.00	****
RY150	982108.860	-32.8		72 22.9	28 46.9	1939.00	****
RY151	982098.472	-38.3		72 22.6	28 43.3	1954.00	****
RY152	982092.453	-42.7		72 22.2	28 39.7	1958.00	****
RY153	982089.876	-44.3		72 21.7	28 36.1	1960.00	****
RY154	982091.531	-41.7		72 21.4	28 32.5	1962.00	****
RY155	982096.140	-36.5		72 21.0	28 28.9	1963.00	****
RY156	982103.391	-31.5		72 20.5	28 25.3	1954.00	****
RY157	982120.358	-19.5		72 20.1	28 21.8	1937.00	****
RY158	982128.013	-12.3		72 19.6	28 18.2	1934.00	****
RY159	982146.315	10.0		72 19.2	28 14.7	1946.00	****
RY160	982163.756	30.4		72 18.7	28 11.2	1954.00	****
RY161	982184.983	48.9		72 18.3	28 7.6	1944.00	****
RY162	982205.658	67.8		72 17.9	28 4.1	1937.00	****
RY163	982218.073	73.2		72 17.1	28 1.2	1912.00	****
RY164	982207.885	60.9		72 16.3	27 58.1	1903.00	****
RY165	982211.010	66.1		72 15.7	27 54.9	1908.00	****
RY166	982233.495	76.8		72 16.5	27 56.7	1872.00	****
RY167	982236.831	77.1		72 15.4	27 56.6	1859.00	****
RY168	982248.386	67.9		72 14.4	27 56.4	1789.00	****
RY169	982253.436	62.6		72 13.2	27 56.5	1752.00	****
RY170	982259.825	51.5		72 12.0	27 56.2	1692.00	****
RY171	982254.497	44.2		72 10.8	27 55.1	1682.00	****
RY172	982254.011	35.5		72 9.6	27 54.0	1652.00	****
RY173	982248.153	27.6		72 8.4	27 52.5	1642.00	****
RY174	982259.421	35.6		72 7.2	27 51.4	1628.00	****
RY175	982269.263	41.0		72 7.7	27 52.0	1615.00	****
KR2	982058.060	-42.2		72 32.4	29 32.1	2100.00	****
KR3	982061.558	-41.2		72 33.5	29 32.2	2095.00	****
KR4	982063.107	-36.0		72 34.6	29 32.3	2110.00	****
KR5	982058.856	-35.3		72 35.7	29 32.4	2129.00	****
KR6	982054.792	-35.3		72 36.7	29 32.5	2145.00	****
KR7	982052.038	-36.9		72 37.8	29 32.5	2152.00	****
KR8	982054.667	-37.6		72 38.9	29 32.6	2144.00	****
KR9	982058.622	-34.9		72 40.0	29 32.6	2143.00	****
KR10	982047.074	-30.2		72 41.1	29 32.5	2199.00	****
KR11	982037.148	-30.2		72 42.2	29 32.6	2234.00	****
KR12	982032.896	-33.8		72 43.2	29 33.1	2239.00	****
KR13	982027.258	-35.4		72 44.3	29 33.1	2255.00	****
KR14	982021.512	-36.9		72 45.4	29 33.2	2272.00	****
KR15	982020.096	-40.1		72 46.4	29 33.3	2269.00	****
KR16	982021.045	-40.7		72 47.5	29 33.4	2267.00	****
KR17	982019.765	-40.1		72 48.6	29 33.5	2276.00	****
KR18	982019.249	-38.8		72 49.7	29 33.6	2285.00	****
KR19	982020.653	-38.0		72 50.7	29 33.7	2286.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
KR20	982021.914	-34.3		72 51.8	29 33.6	2297.00	****
KR21	982024.847	-32.6		72 52.9	29 33.7	2296.00	****
KR22	982029.024	-28.7		72 54.0	29 32.8	2298.00	****
KR23	982032.419	-23.2		72 55.1	29 33.1	2308.00	****
KR24	982033.422	-16.8		72 56.1	29 33.1	2328.00	****
KR25	982036.684	-11.1		72 57.2	29 33.1	2339.00	****
KR26	982038.044	.1		72 58.3	29 33.1	2374.00	****
KR27	982037.765	4.8		72 59.4	29 32.9	2393.00	****
KR28	982040.048	7.4		73 .4	29 32.8	2397.00	****
KR29	982039.797	10.6		73 1.5	29 32.8	2411.00	****
KR30	982034.813	11.1		73 2.6	29 32.7	2432.00	****
KR31	982029.890	10.8		73 3.7	29 32.6	2450.00	****
KR32	982024.627	9.3		73 4.8	29 32.5	2465.00	****
KR33	982018.494	9.0		73 5.9	29 32.6	2487.00	****
KR34	982011.660	10.2		73 7.0	29 32.5	2516.00	****
KR35	982002.418	5.9		73 8.1	29 32.5	2535.00	****
KR36	981997.557	3.0		73 9.1	29 32.4	2544.00	****
KR37	981993.871	2.4		73 10.2	29 32.3	2557.00	****
KR38	982003.459	7.3		73 10.6	29 35.8	2543.00	****
KR39	982010.923	14.7		73 11.0	29 39.3	2544.00	****
KR40	982016.022	12.5		73 11.3	29 42.9	2521.00	****
KR41	982015.797	12.6		73 11.6	29 46.5	2523.00	****
KR42	982011.609	9.9		73 12.0	29 50.0	2529.00	****
KR43	982008.450	3.8		73 12.3	29 53.6	2520.00	****
KR44	981996.557	2.3		73 12.7	29 57.1	2555.00	****
KR45	981981.935	-5.4		73 12.9	30 .8	2578.00	****
KR46	981969.814	-18.1		73 13.3	30 4.3	2577.00	****
KR47	981956.553	-33.5		73 13.6	30 7.9	2571.00	****
KR48	981940.444	-51.5		73 14.0	30 11.4	2566.00	****
KR49	981929.836	-61.0		73 14.5	30 14.8	2571.00	****
KR50	981929.603	-59.3		73 14.8	30 18.4	2578.00	****
KR51	981935.658	-51.4		73 15.2	30 21.9	2585.00	****
KR52	981943.160	-36.8		73 15.6	30 25.4	2609.00	****
KR53	981950.283	-25.0		73 15.9	30 29.1	2625.00	****
KR54	981955.421	-19.2		73 16.2	30 32.7	2628.00	****
KR55	981961.190	-13.7		73 16.5	30 36.3	2628.00	****
KR56	981965.438	-9.5		73 16.9	30 39.9	2629.00	****
KR57	981972.872	-3.5		73 17.2	30 43.4	2625.00	****
KR58	981981.191	2.4		73 17.5	30 47.1	2618.00	****
KR59	981980.382	6.6		73 17.8	30 50.7	2635.00	****
KR60	981980.191	5.3		73 18.0	30 54.4	2632.00	****
KR61	981982.015	7.8		73 18.3	30 58.1	2635.00	****
KR62	981983.155	14.2		73 18.6	31 1.7	2653.00	****
KR63	981981.708	19.6		73 18.9	31 5.4	2676.00	****
KR64	981982.439	22.4		73 19.4	31 8.7	2684.00	****
KR65	981977.294	24.3		73 19.8	31 12.2	2708.00	****
KR66	981975.359	23.1		73 20.1	31 15.8	2711.00	****
KR67	981972.731	23.6		73 20.4	31 19.4	2722.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
KR68	981967.193	20.0		73 20.7	31 23.1	2729.00	****
KR69	981958.973	14.8		73 21.1	31 26.7	2740.00	****
KR70	981952.273	7.9		73 21.4	31 30.3	2740.00	****
KR71	981946.986	3.2		73 21.7	31 33.9	2743.00	****
KR72	981941.474	-.7		73 22.1	31 37.5	2749.00	****
KR73	981939.449	-3.1		73 22.5	31 41.1	2749.00	****
KR74	981940.987	-2.1		73 22.8	31 44.7	2748.00	****
KR75	981941.742	-1.1		73 23.2	31 48.3	2750.00	****
KR76	981941.878	-2.1		73 22.7	31 51.7	2745.00	****
KR77	981943.547	-.7		73 22.3	31 55.2	2743.00	****
KR78	981944.296	1.7		73 21.8	31 58.6	2747.00	****
KR79	981945.434	4.4		73 21.4	32 2.1	2751.00	****
KR80	981947.538	8.0		73 21.1	32 5.6	2755.00	****
KR81	981950.202	11.4		73 20.6	32 9.1	2756.00	****
KR82	981951.201	12.8		73 20.1	32 12.5	2756.00	****
KR83	981951.321	14.5		73 19.7	32 16.1	2760.00	****
KR84	981951.896	13.5		73 19.3	32 19.5	2754.00	****
KR85	981953.357	14.7		73 18.9	32 23.1	2752.00	****
KR86	981954.206	14.4		73 18.5	32 26.5	2747.00	****
KR87	981953.187	13.1		73 18.1	32 30.0	2745.00	****
KR88	981953.288	11.1		73 17.6	32 33.5	2737.00	****
KR89	981950.949	8.8		73 17.2	32 36.9	2736.00	****
KR90	981950.257	9.4		73 16.7	32 40.2	2739.00	****
KR91	981953.356	13.5		73 16.3	32 43.7	2741.00	****
KR92	981961.365	20.4		73 15.8	32 47.1	2736.00	****
KR93	981966.910	25.1		73 15.3	32 50.4	2732.00	****
KR94	981969.486	26.9		73 14.8	32 53.8	2728.00	****
KR95	981968.111	27.9		73 14.5	32 57.3	2735.00	****
KR96	981966.946	27.4		73 14.1	33 .8	2736.00	****
KR97	981962.231	25.9		73 13.6	33 4.2	2745.00	****
KR98	981956.005	20.7		73 13.1	33 7.6	2747.00	****
KR99	981950.480	17.9		73 12.7	33 11.1	2755.00	****
KR100	981947.851	13.5		73 12.3	33 14.5	2748.00	****
KR101	981947.103	11.5		73 11.6	33 17.4	2742.00	****
KR102	981946.697	9.2		73 10.9	33 20.3	2734.00	****
KR103	981947.178	9.2		73 10.4	33 23.6	2731.00	****
KR104	981949.166	11.7		73 9.8	33 26.7	2731.00	****
KR105	981952.921	16.9		73 9.1	33 29.7	2734.00	****
KR106	981958.891	23.4		73 8.5	33 32.8	2734.00	****
KR107	981965.647	27.9		73 7.9	33 35.7	2725.00	****
KR108	981968.869	30.8		73 7.2	33 38.8	2722.00	****
KR109	981969.159	32.2		73 6.6	33 41.9	2724.00	****
KR110	981968.659	33.1		73 6.0	33 44.9	2727.00	****
KR111	981969.278	33.3		73 5.4	33 47.9	2724.00	****
KR112	981971.655	32.0		73 4.7	33 51.0	2710.00	****
KR114	981974.942	30.1		73 3.5	33 57.1	2690.00	****
KR115	981974.099	28.8		73 2.9	34 .1	2687.00	****
KR116	981974.992	31.2		73 2.2	34 3.1	2690.00	****

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
KR117	981978.595	36.0		73 1.6	34 6.2	2692.00	****
KR118	981981.303	38.8		73 1.1	34 9.3	2691.00	****
KR119	981984.892	43.9		73 .4	34 12.4	2694.00	****
KR120	981988.564	49.6		72 59.8	34 15.4	2699.00	****
KR121	981994.886	55.8		72 58.9	34 17.1	2696.00	****
KR122	982004.694	62.3		72 58.0	34 18.9	2683.00	****
KR123	982012.568	64.5		72 57.1	34 20.6	2662.00	****
KR124	982011.628	60.4		72 56.1	34 22.3	2649.00	****
KR125	982007.556	59.2		72 55.2	34 25.0	2656.00	****
KR126	982009.744	60.4		72 54.2	34 25.7	2650.00	****
KR127	982010.773	58.8		72 53.3	34 27.4	2639.00	****
KR128	982011.140	57.8		72 52.4	34 29.1	2632.00	****
KR129	982010.332	54.5		72 51.4	34 30.9	2621.00	****
KR130	982010.344	54.0		72 50.5	34 32.6	2617.00	****
KR131	982013.491	54.2		72 49.6	34 34.3	2605.00	****
KR132	982021.431	59.6		72 48.6	34 36.1	2594.00	****
KR133	982026.138	63.6		72 47.7	34 37.8	2589.00	****
KR134	982034.680	71.3		72 46.8	34 39.8	2584.00	****
KR135	982035.381	75.5		72 46.3	34 43.1	2594.00	****
KR136	982037.145	76.8		72 45.1	34 43.8	2589.00	****
KR137	982033.556	72.6		72 44.0	34 44.9	2584.00	****
KR138	982031.086	70.6		72 43.1	34 46.6	2583.00	****
KR139	982028.966	69.0		72 42.1	34 48.1	2582.00	****
KR140	982025.653	64.3		72 41.2	34 50.1	2575.00	****
KR141	982024.939	63.6		72 40.2	34 51.9	2572.00	****
KR142	982027.216	65.7		72 39.3	34 53.5	2569.00	****
KR143	982029.821	67.1		72 39.3	34 54.9	2565.00	****
KR144	982028.603	65.7		72 37.3	34 56.7	2559.00	****
KR145	982029.696	64.3		72 36.3	34 58.2	2548.00	****
KR146	982031.103	64.0		72 35.4	34 59.8	2540.00	****
KR147	982031.337	62.6		72 34.4	35 1.3	2532.00	****
KR148	982036.996	64.2		72 33.4	35 2.9	2516.00	****
KR149	982040.559	63.3		72 32.5	35 4.7	2499.00	****
KR150	982037.914	61.2		72 31.5	35 6.4	2498.00	****
KR151	982040.237	61.9		72 30.6	35 8.2	2490.00	****
KR152	982049.634	68.7		72 29.6	35 9.8	2479.00	****
KR153	982059.948	70.7		72 28.5	35 10.8	2449.00	****
K32	982057.263	75.1		72 28.6	35 13.1	2472.00	****

Table 4c. The results of the measurements of JARE-26.

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
IM5	981975.382	22.2		70 47.4	44 13.5	2269.00	****
IM22	981965.645	15.7		71 5.4	43 58.0	2334.00	****
IM40	981951.290	9.1	-98.3	71 24.4	43 40.9	2416.00	2197
IM62	981956.621	17.8		71 43.5	43 3.2	2483.00	****
IM80	981971.643	40.1	-119.0	71 59.1	42 24.1	2552.00	1704
IM100	981928.078	19.7		72 17.6	41 45.0	2680.00	****
IM134'	981865.027	-1.0		72 48.1	40 35.3	2903.00	****
IM157	981853.361	3.3	-149.1	73 6.7	39 45.5	3006.00	2479
IM169	981839.977	.0		73 16.4	39 14.5	3065.00	****
IM185	981846.613	20.1		73 28.8	38 31.5	3142.00	****
IM205	981859.377	34.7	-158.9	73 43.5	37 32.4	3187.00	2197
IM222	981873.025	42.7		73 54.3	36 39.1	3197.00	****
IM242	981848.825	9.8		74 6.2	35 32.8	3200.00	****
IM252	981849.792	4.0	-194.4	74 12.0	34 59.1	3193.00	2141
ID5	981838.562	-4.1		74 17.8	34 58.2	3218.00	****
ID25'	981794.328	-24.1		74 40.5	34 57.3	3354.00	****
ID43	981815.547	-4.8	-188.3	75 .0	35 1.0	3396.00	2648
ID56	981780.391	-22.3		75 13.8	35 1.3	3487.00	****
ID62	981784.517	-14.0	-182.3	75 20.3	35 .8	3516.00	3035
ID71	981786.101	-9.1		75 30.0	34 59.7	3550.00	****
ID79'	981769.330	-13.0		75 38.6	34 59.3	3612.00	****
ID89	981786.649	5.7		75 49.4	34 59.4	3642.00	****
ID99	981778.172	-5.7	-204.4	76 .0	34 59.9	3657.00	2838
ID107'	981794.352	11.2		76 7.3	34 59.7	3676.00	****
ID122	981795.682	12.7		76 24.2	34 57.3	3715.00	****
ID132	981782.579	1.8		76 35.4	34 56.6	3747.00	****
ID140	981798.091	17.8		76 43.3	34 56.0	3766.00	****
ID150	981809.643	28.1		76 54.7	34 55.9	3787.00	****
ID155	981807.121	14.1		77 .0	35 .0	3761.00	****
DF11	981810.301	18.8		77 .0	35 52.8	3766.00	****
DF25	981777.664	-9.1		76 59.3	37 .2	3780.00	****
DF37	981776.527	-6.8		76 58.3	37 57.6	3789.00	****
DF50	981784.151	1.0		76 58.1	39 .2	3789.00	****
DF53	981778.292	-4.5		77 1.3	38 37.4	3797.00	****
DF63	981802.413	15.3	-199.2	77 9.7	38 38.2	3801.00	2841
DF66	981804.312	16.1		77 11.9	38 48.9	3802.00	****
DF76	981780.243	-11.7		77 19.0	39 24.5	3805.00	****
DF80	981788.274	-5.3		77 22.4	39 36.8	3807.00	****
DF80-2	981792.049	-2.8	-230.4	77 24.0	39 43.3	3806.00	2673
DF87	981774.384	-20.4	-198.5	77 22.5	39 2.1	3803.00	3336
DF104	981787.024	-12.2		77 22.2	37 37.8	3788.00	****
DF117	981808.879	3.1	-199.1	77 22.2	36 33.3	3767.00	2955
DF132	981818.160	9.7		77 22.1	35 19.0	3758.00	****
DF142	981792.741	-9.1	-186.9	77 12.8	35 1.6	3760.00	3274
ID165	981784.238	-12.7		76 59.3	34 12.1	3747.00	****
ID178	981793.503	-5.8	-263.2	76 59.6	33 9.9	3740.00	2171
ID190	981795.167	-5.5		76 59.0	32 12.6	3734.00	****
ID205	981839.655	38.4	-184.2	76 57.9	31 1.0	3730.00	2624

Station name	Gravity value (mgal)	Free air (mgal)	Bouguer (mgal)	Latitude	Longitude	Altitude (m)	Ice thick. (m)
ID216	981823.914	39.5	-183.4	76 45.3	31 8.2	3757.00	2662
ID232	981762.344	-17.6		76 29.2	31 19.2	3736.00	****
ID243	981805.688	29.3	-178.0	76 15.6	31 20.5	3717.00	2812
ID259	981792.911	6.1	-167.3	76 .2	31 23.3	3648.00	3165
ID270	981760.871	-22.5		75 45.9	31 24.9	3626.00	****
ID283	981789.380	1.4	-189.8	75 29.8	31 26.7	3573.00	2811
ID303	981800.462	9.9	-190.2	75 11.2	31 29.2	3520.00	2611
ID315	981830.125	15.2	-191.7	75 .1	31 29.4	3414.00	2359
ID320	981845.331	23.6		74 54.1	31 30.7	3377.00	****
ID331	981837.045	5.8	-175.2	74 40.7	31 34.8	3313.00	2557
ID341	981847.192	8.4	-176.0	74 31.0	31 37.4	3264.00	2437
ID352	981868.882	4.1		74 20.4	31 40.6	3153.00	****
ID360	981870.132	-6.6		74 11.8	31 42.8	3092.00	****
ID365	981893.115	11.7	-162.3	74 11.8	32 2.5	3077.00	2295
ID378	981855.460	2.8		74 11.8	32 54.0	3170.00	****
ID390	981841.523	-7.2		74 11.8	33 41.5	3183.00	****
ID402	981832.753	-10.4	-235.8	74 11.4	34 28.8	3200.00	1788