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GRAVITY DATA OBTAINED DURING CHAIN CRUISE 73

by

Carl Bowin and Thomas C. Aldrich

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WOODS HOLE, MASSACHUSETTS

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Woods Hole, Massachusetts

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GRAVITY DATA OBTAINED DURING CHAIN CRUISE 73

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Carl Bowin and Thomas C. Aldrich

March 1969

TECHNICAL REPORT

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Approved for Distribution

Earl E. Hays
Earl E. Hays, Chairman
Department of Geology & Geophysics

ABSTRACT

Profiles, tabulations, and charts are presented of principal gravity facts, free-air gravity anomalies, and simple Bouguer gravity anomalies obtained in the western North Atlantic Ocean during R/V CHAIN Cruise 73.

This report presents the results of gravity measurements obtained aboard the Research Vessel CHAIN of the Woods Hole Oceanographic Institution during cruise 73, 6 to 26 September 1967. Information on bathymetry and other studies conducted during CHAIN cruise 73 may be found in W.H.O.I. Reference No. 68-50 (Knott, et al., 1968).

Gravity measurements were made simultaneously with the Massachusetts Institute of Technology (MIT) vibrating string gravity meter and with LaCoste and Romberg sea gravity meter number S-13. The data presented is a selective composite of information from both meters. The base reference station used for the measurements is at the W.H.O.I. dock in Woods Hole, Massachusetts. Its gravity value was taken to be 980327.0 mgal, however, recent ties of this station to national gravity network stations (Anonymous, 1965) in the Boston, Massachusetts area indicate that this reading is high by about 1.4 mgal. Thermal and electrical difficulties with the MIT meter made port-to-port drift prediction uncertain (Bowin, Wing and Aldrich, in press). Drift rate for this meter was determined on the basis of its continuous averaged differences with the LaCoste and Romberg meter. This method showed the MIT meter drifting with respect to the LaCoste and Romberg meter by +1.611 mgal per day for the cruise period. Drift of the LaCoste and Romberg gravity meter during CHAIN 73 was -0.026 mgal/day from in-port measurements at beginning and end of cruise. This last drift value is anomalous in sign and magnitude with respect to the meter's over-all drift rate, and was not applied. The accuracy of the sea measurements is estimated to be about ± 10 mgal (Bowin, Wing, and Aldrich, in press). Free-air anomaly values were calculated using the 1930 Inter-

national Gravity Formula. Water depths are in meters corrected according to the tables of Matthews (1939). Bouguer anomaly values were calculated using an infinite slab correction and an assumed crustal density of 2.67 gm/cm^3 . A density of 1.03 gm/cm^3 was assumed for sea water.

The data presented in this report consists of profiles, listings, and charts. Comments on each follow.

PROFILES - Profile graphs of free-air and Bouguer gravity anomalies and bathymetry along the ship's track are reproduced. The profiles permit a ready examination of the magnitude and character of the gravity anomalies in relation to the topography of the seafloor. The horizontal scale is 60.0 nautical miles to the inch (111.2 km to the inch). Tick mark divisions along the bottom of the plots are one inch apart. The small circles along the profiles indicate the data points, and the date and time is annotated beneath the plot for every twentieth data point.

LISTINGS - Principal facts, and free-air and Bouguer gravity anomalies are tabulated for all the gravity measurements. These listings provide the basic data for detailed use. A zero water depth indicates that no depth information is available, and values of 999.0 for the gravity anomalies indicates that no data is available. Date and time is in local ship's time which was 4 hours earlier than GMT. Time and date are indicated without leading zeros.

CHARTS - Three Mercator charts are included: 1) time and date, 2) free-air anomaly values, and 3) Bouguer anomaly values. The charts provide location information in a form helpful for examining the distribution of the gravity anomalies. Annotation besides the ship's track is centered opposite the corresponding data point, and for some data points it is suppressed because those points are located too close to preceding points for clear readability. The day, month, and year (in that order) are identified on the chart for the first data point of each new day. The time-annotated chart provides easy cross reference of the chart information to the data listings and profile plots.

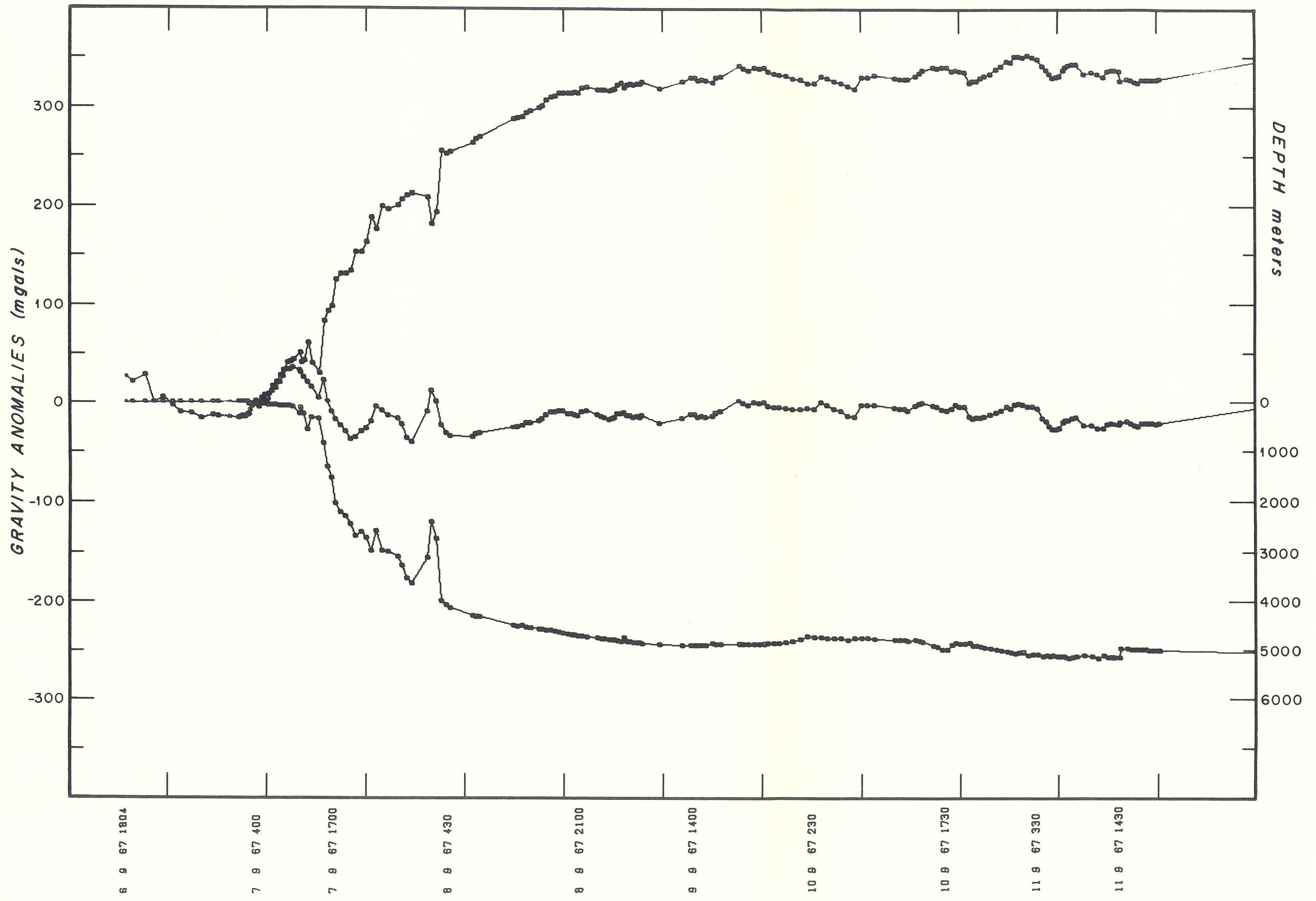
A magnetic tape reel containing the gravity data for CHAIN cruise 73 is available, on loan, for duplication purposes, to interested parties who have need of the information in a computer compatible format. The

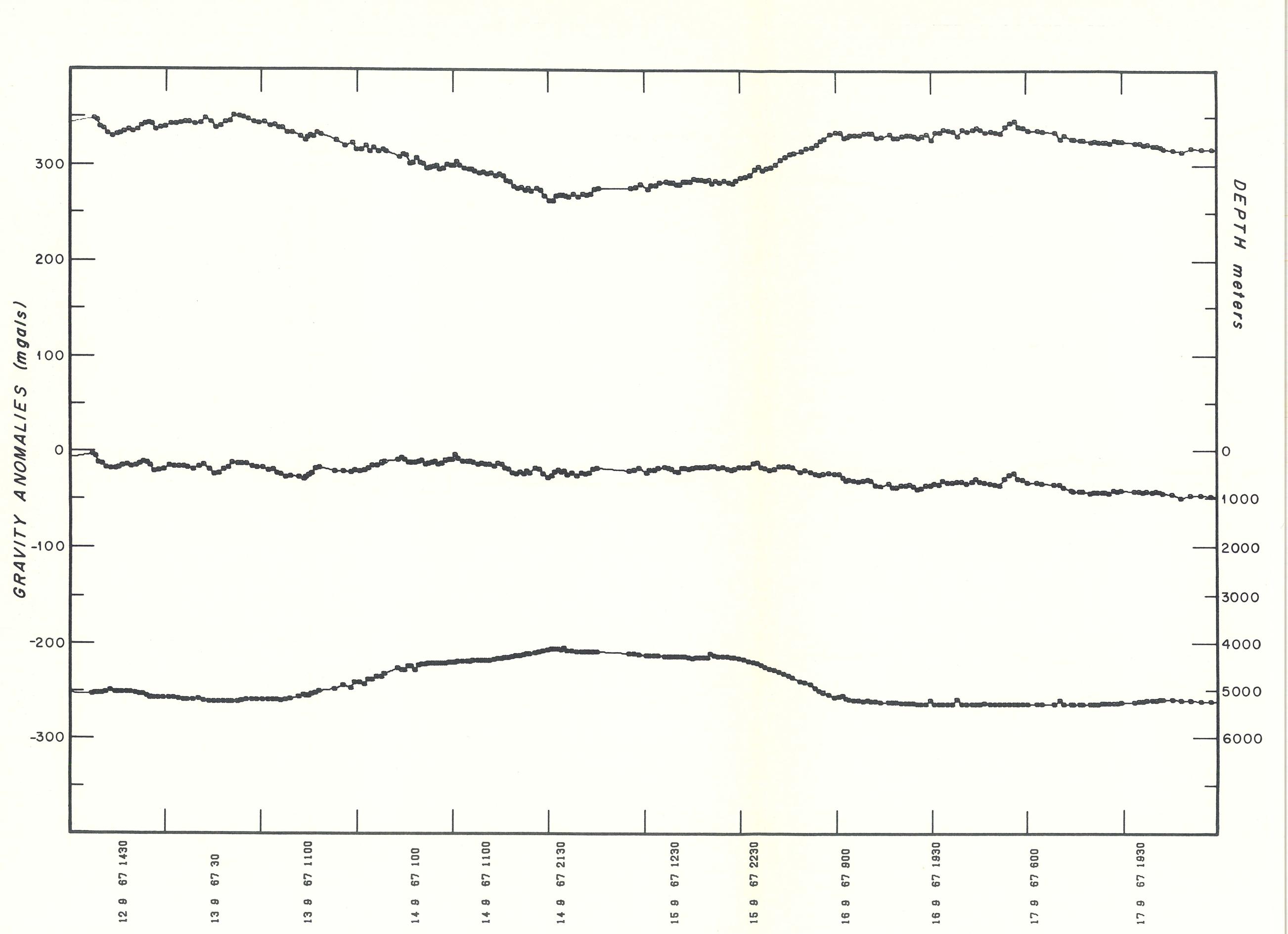
data is recorded on 1/2 inch IBM compatible (NRZI) 7 track magnetic tape at 200 bpi.

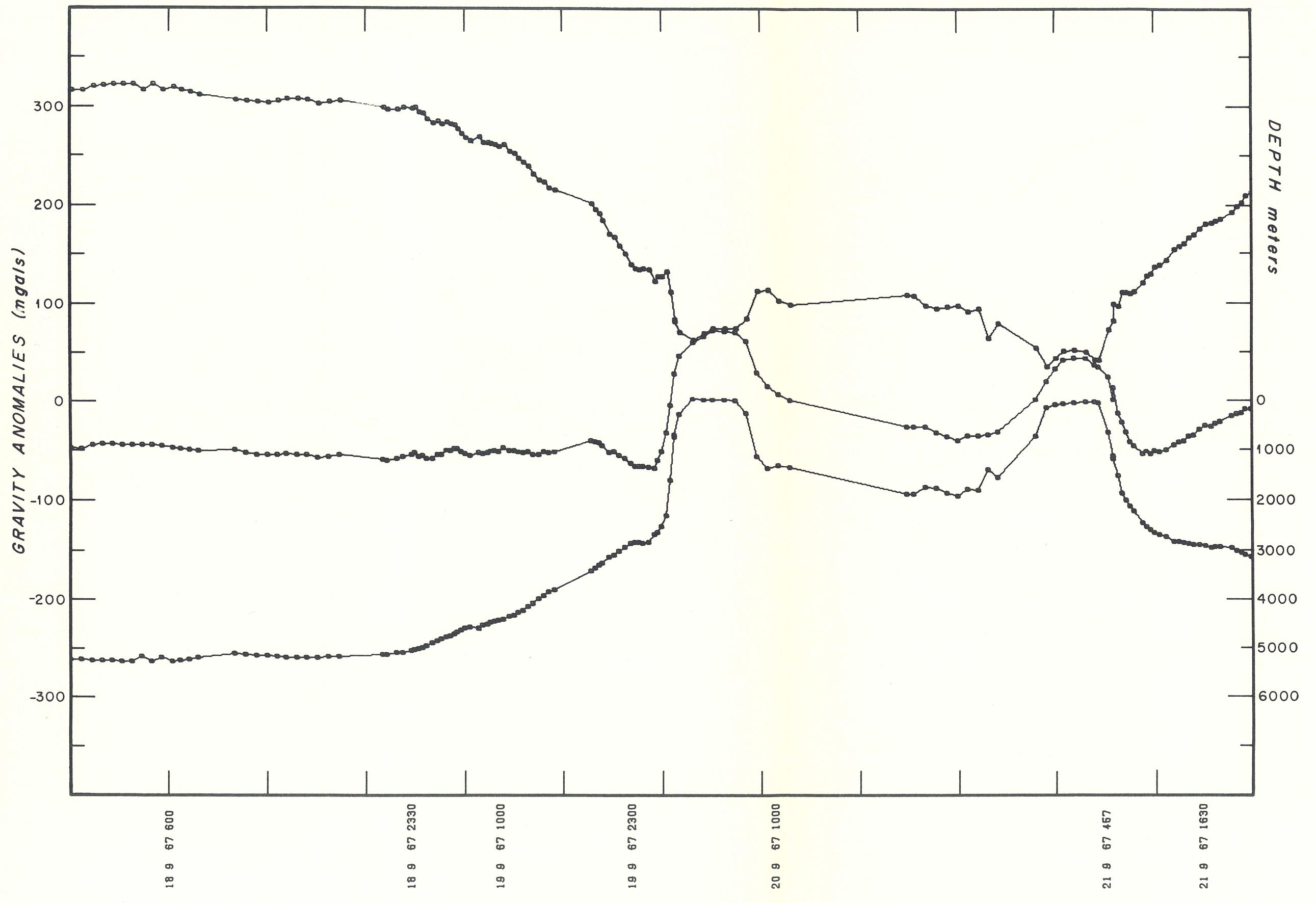
ACKNOWLEDGEMENTS - C. N. Hilliard, R. L. Guild and A. E. Seidel assisted in the operation of the gravity meters. The efforts of these gentlemen, and others of the ship's officers, crew, and scientists in acquiring the data is appreciated. Alice Wertheimer and Channing Hilliard assisted in the data reduction, and Harriet Tollios did a large part of the keypunching required. The assistance of members of the Graphic Arts Department was helpful in preparing this report. The cruise was supported by Grant GA-976 from the National Science Foundation, and part of the reduction and report preparation was supported under Contract Nonr-4029(00) with the Office of Naval Research.

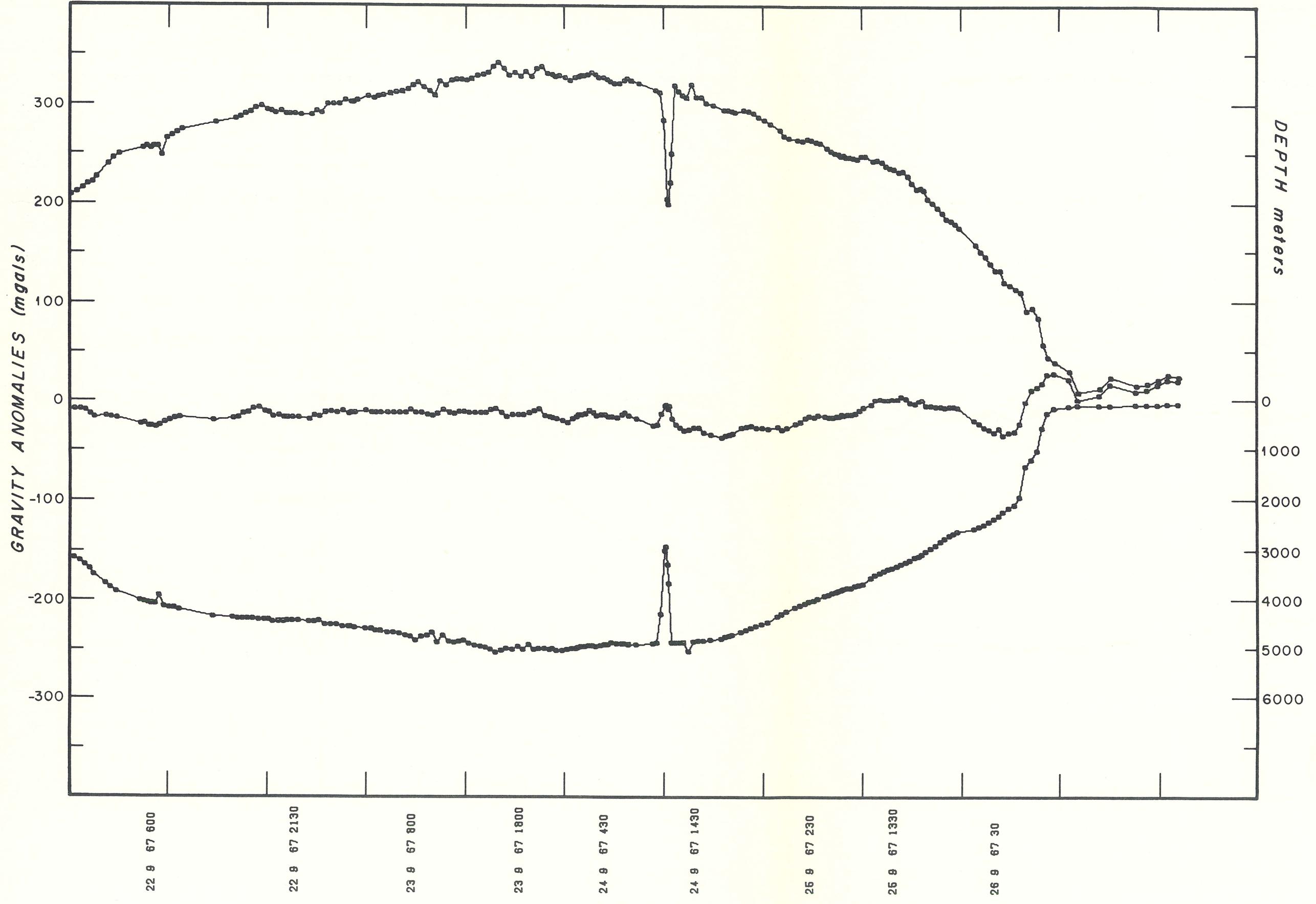
REFERENCES

- ANONYMOUS, 1965. Gravity Meter Connections - Vicinity Washington, D. C., Report of the Geodesy Division, U. S. Coast and Geodetic Surv., ESSA.
- BOWIN, C., C. Wing and T. Aldrich, in press. A Test of the MIT Vibrating String Gravimeter, 1967. J. Geophys. Res.
- KNOTT, S. T., J. C. Carter, and J. A. Brown, 1968. R/V CHAIN Cruise No. 70. July 12, 1967 - August 2, 1967. R/V CHAIN Cruise No. 73. September 6, 1967 - September 26, 1967. Summary Cruise Report prepared by Chief Scientist. Track Charts, Bathymetry, Magnetics, and Location of Observations. North Atlantic Ocean from Laurentian Channel to Cape Hatteras. July, 1968.
- MATTHEWS, D. J., 1939. Tables of the Velocity of Sound in Pure Water and Sea Water for Use in Echo-Sounding and Sound-Ranging, 2nd ed., 52 pp., His Majesty's Stationary Office, London.









DATE & TIME				LATITUDE		LONGITUDE		DEPTH	OBSERVED IN METERS	FREE-AIR BOUGUER ANOMALY	
DAY	MO.	YR.	HOUR	°	'	°	'	mgal	mgal	mgal	
7	9	67	2200	39	45.05N	67	26.57W	3063	980142.5	-15.1	195.2
7	9	67	2300	39	39.61N	67	23.26W	3152	980131.7	-17.7	198.7
7	9	67	2330	39	37.58N	67	20.99W	3334	980122.9	-23.5	205.4
8	9	67	0	39	35.05N	67	19.18W	3606	980104.5	-38.2	209.3
8	9	67	30	39	32.00N	67	17.82W	3699	980 95.8	-42.4	211.5
8	9	67	200	39	23.81N	67	12.23W	3184	980114.9	-11.2	207.4
8	9	67	230	39	21.40N	67	10.41W	2459	980133.7	11.1	179.9
8	9	67	300	39	18.92N	67	8.60W	2797	980118.4	-0.5	191.5
8	9	67	330	39	16.22N	67	6.85W	4065	980 90.0	-24.9	254.2
8	9	67	400	39	13.58N	67	5.14W	4138	980 78.2	-33.0	251.0
8	9	67	430	39	11.35N	67	3.68W	4201	980 71.9	-35.7	252.7
8	9	67	700	38	59.82N	66	54.73W	4354	980 54.4	-36.5	262.4
8	9	67	730	38	58.19N	66	52.70W	4370	980 54.4	-33.9	266.0
8	9	67	800	38	56.52N	66	50.59W	4381	980 53.6	-32.5	268.2
8	9	67	1200	38	43.20N	66	30.81W	4566	980 38.9	-27.5	285.9
8	9	67	1230	38	41.50N	66	28.48W	4582	980 36.3	-27.1	287.4
8	9	67	1300	38	39.76N	66	26.20W	4563	980 35.8	-25.5	287.7
8	9	67	1330	38	38.02N	66	23.77W	4599	980 35.5	-23.3	292.4
8	9	67	1400	38	36.28N	66	21.32W	4610	980 33.6	-22.5	293.9
8	9	67	1500	38	32.46N	66	17.10W	4631	980 29.5	-21.0	296.9
8	9	67	1530	38	30.80N	66	15.17W	4642	980 29.2	-19.3	299.3
8	9	67	1600	38	29.01N	66	13.13W	4652	980 31.4	-14.5	304.8
8	9	67	1630	38	26.91N	66	10.79W	4663	980 30.5	-12.1	308.0
8	9	67	1700	38	24.89N	66	8.77W	4678	980 28.0	-11.8	309.3
8	9	67	1730	38	23.03N	66	7.39W	4698	980 26.6	-10.5	312.0
8	9	67	1800	38	21.19N	66	5.82W	4713	980 23.2	-11.1	312.4
8	9	67	1900	38	18.82N	66	3.15W	4743	980 17.0	-14.0	311.6
8	9	67	1930	38	17.16N	66	0.94W	4750	980 14.4	-14.1	311.9
8	9	67	2000	38	15.69N	65	58.86W	4767	980 11.7	-14.6	312.6
8	9	67	2030	38	14.69N	65	57.10W	4777	980 8.3	-16.0	311.9
8	9	67	2100	38	13.48N	65	54.94W	4786	980 11.2	-11.8	316.7
8	9	67	2130	38	11.85N	65	51.96W	4794	980 9.4	-11.3	317.8
8	9	67	2200	38	7.82N	65	44.53W	4815	979999.5	-15.3	315.2
8	9	67	2230	38	7.18N	65	42.27W	4834	979996.6	-17.3	314.5
9	9	67	0	38	6.54N	65	39.95W	4842	979995.0	-17.8	314.6
9	9	67	100	38	4.42N	65	36.70W	4863	979990.2	-19.6	314.2
9	9	67	130	38	3.35N	65	35.55W	4363	979989.2	-19.2	314.6
9	9	67	200	38	2.39N	65	34.43W	4865	979988.6	-18.1	315.9
9	9	67	230	38	0.54N	65	33.19W	4371	979989.8	-14.4	320.0
9	9	67	300	37	58.71N	65	31.93W	4890	979987.7	-13.6	322.1
9	9	67	330	37	56.96N	65	30.62W	4811	979985.7	-13.4	316.8
9	9	67	400	37	55.26N	65	29.46W	4892	979980.2	-16.3	319.5
9	9	67	430	37	53.66N	65	28.64W	4904	979978.5	-15.7	320.9
9	9	67	500	37	51.88N	65	27.88W	4914	979974.0	-17.5	319.8
9	9	67	530	37	49.84N	65	27.18W	4917	979971.6	-16.9	320.6
9	9	67	600	37	48.03N	65	26.52W	4929	979968.2	-17.7	320.6
9	9	67	630	37	46.79N	65	25.93W	4937	979967.8	-16.3	322.6
9	9	67	900	37	37.90N	65	18.06W	4954	979947.0	-24.1	316.0
9	9	67	1210	37	26.05N	65	9.79W	4979	979935.3	-18.7	323.0
9	9	67	1330	37	21.72N	65	5.40W	4985	979932.6	-15.2	327.0

DATE & TIME	LATITUDE	LONGITUDE	DEPTH	OBSERVED GRAVITY	FREE-AIR BOUGUER ANOMALY ANOMALY						
					DAY	MO.	YR.	HOUR	METERS	mgal	mgal
9 9 67 1400	37 20.04N	65 3.80W	4987	979930.3	-14.9				327.4		
9 9 67 1430	37 18.29N	65 5.19W	4987	979924.6	-18.0				324.3		
9 9 67 1500	37 16.52N	65 7.19W	4987	979922.7	-17.4				324.9		
9 9 67 1530	37 15.19N	65 9.19W	4985	979920.0	-18.2				324.0		
9 9 67 1630	37 12.14N	65 12.78W	4938	979916.4	-17.3				321.6		
9 9 67 1700	37 10.35N	65 14.33W	4964	979917.6	-13.5				327.2		
9 9 67 1730	37 7.85N	65 15.32W	4958	979915.2	-12.3				328.0		
9 9 67 2000	36 57.55N	65 22.22W	4950	979911.2	-1.3				338.5		
9 9 67 2030	36 55.18N	65 23.65W	4954	979904.9	-4.4				335.7		
9 9 67 2100	36 52.88N	65 25.46W	4952	979899.6	-6.2				333.7		
9 9 67 2130	36 50.89N	65 29.15W	4952	979800.4	-2.6				337.3		
9 9 67 2200	36 48.85N	65 32.42W	4952	979895.8	-4.4				335.5		
9 9 67 2230	36 46.37N	65 33.70W	4950	979893.6	-2.9				336.9		
9 9 67 2300	36 44.04N	65 35.43W	4948	979886.4	-6.7				333.0		
9 9 67 2330	36 42.56N	65 39.40W	4939	979882.8	-8.3				330.7		
10 9 67 0	36 40.52N	65 42.42W	4931	979879.9	-8.1				330.4		
10 9 67 30	36 36.46N	65 43.19W	4914	979873.6	-8.6				328.7		
10 9 67 100	36 33.16N	65 46.52W	4890	979867.5	-9.8				325.8		
10 9 67 130	36 29.44N	65 49.08W	4867	979862.6	-9.6				324.5		
10 9 67 200	36 25.79N	65 51.89W	4806	979857.5	-9.3				320.6		
10 9 67 230	36 22.38N	65 55.40W	4824	979851.9	-10.0				321.1		
10 9 67 300	36 18.98N	65 58.72W	4823	979854.4	-2.7				328.4		
10 9 67 330	36 15.73N	66 0.76W	4833	979846.2	-6.2				325.5		
10 9 67 400	36 12.27N	66 2.81W	4844	979838.1	-9.5				323.0		
10 9 67 430	36 8.37N	66 4.87W	4842	979830.4	-11.8				320.6		
10 9 67 500	36 4.48N	66 7.02W	4874	979819.8	-16.8				317.8		
10 9 67 530	36 0.62N	66 9.36W	4836	979813.5	-17.5				314.5		
10 9 67 600	35 56.79N	65 11.40W	4846	979820.1	-5.5				327.1		
10 9 67 630	35 53.04N	66 12.46W	4847	979814.1	-6.1				326.6		
10 9 67 700	35 49.45N	66 13.53W	4869	979809.6	-5.5				328.7		
10 9 67 900	35 37.84N	65 20.33W	4878	979789.6	-8.8				326.0		
10 9 67 930	35 35.17N	66 22.35W	4875	979784.7	-9.9				324.7		
10 9 67 1000	35 32.81N	66 24.20W	4880	979781.2	-10.1				324.9		
10 9 67 1030	35 31.09N	66 25.68W	4905	979776.6	-12.1				324.6		
10 9 67 1200	35 32.21N	66 31.24W	4885	979782.9	-7.4				327.9		
10 9 67 1230	35 33.57N	66 33.03W	4900	979787.1	-5.4				330.9		
10 9 67 1300	35 35.03N	66 34.94W	4921	979790.3	-4.3				333.5		
10 9 67 1430	35 39.83N	66 40.33W	5004	979794.5	-6.7				336.8		
10 9 67 1500	35 41.56N	66 42.19W	5018	979795.5	-8.1				336.3		
10 9 67 1700	35 42.14N	66 46.28W	5072	979793.2	-11.3				336.8		
10 9 67 1730	35 39.27N	66 46.04W	5074	979788.9	-11.5				336.8		
10 9 67 1800	35 36.18N	66 45.78W	4986	979786.6	-9.5				332.7		
10 9 67 1830	35 34.16N	66 45.24W	4945	979787.2	-5.9				333.5		
10 9 67 1900	35 31.81N	66 44.71W	4965	979782.0	-7.9				332.9		
10 9 67 1930	35 28.54N	66 44.24W	4961	979776.7	-8.4				332.1		
10 9 67 2000	35 25.60N	66 43.94W	4945	979763.0	-18.0				321.4		
10 9 67 2030	35 23.71N	66 44.22W	4993	979758.2	-20.0				322.7		
10 9 67 2100	35 21.71N	66 44.49W	4992	979756.0	-19.3				323.4		
10 9 67 2130	35 19.21N	66 44.74W	5023	979753.5	-18.5				326.3		
10 9 67 2200	35 16.55N	66 45.01W	5037	979750.2	-17.9				327.8		

DATE & TIME				LATITUDE		LONGITUDE		DEPTH	OBSERVED IN	FREE-AIR ANOMALY	BOUGUER ANOMALY
DAY	MO.	YR.	HOUR	°	'	°	'	METERS	mgal	mgal	mgal
10	9	67	2230	35	13•05N	66	45•35W	5052	979746•9	-16•4	330•4
10	9	67	2300	35	9•56N	66	45•63W	5078	979744•3	-13•9	334•6
10	9	67	2330	35	6•32N	66	45•99W	5101	979742•0	-11•8	338•3
11	9	67	0	35	3•13N	66	46•27W	5120	979740•7	-8•3	343•2
11	9	67	30	35	0•79N	66	46•51W	5139	979735•4	-10•4	342•4
11	9	67	100	34	58•41N	66	46•70W	5156	979736•6	-6•0	347•9
11	9	67	130	34	55•75N	66	46•59W	5143	979733•6	-3•2	347•8
11	9	67	200	34	53•09N	66	46•48W	5130	979729•2	-5•6	346•5
11	9	67	230	34	50•36N	66	46•36W	5197	979723•6	-7•5	349•3
11	9	67	300	34	47•23N	66	46•21W	5174	979718•4	-8•3	346•9
11	9	67	330	34	44•09N	66	46•06W	5180	979712•1	-10•2	345•4
11	9	67	400	34	41•36N	66	46•19W	5219	979698•7	-19•8	338•4
11	9	67	430	34	39•33N	66	46•81W	5207	979692•0	-23•4	334•0
11	9	67	500	34	37•30N	65	47•42W	5219	979684•6	-28•1	330•1
11	9	67	530	34	35•26N	66	48•04W	5199	979678•8	-31•1	325•8
11	9	67	600	34	33•23N	66	48•65W	5211	979676•5	-30•7	327•0
11	9	67	630	34	31•20N	66	49•27W	5215	979674•5	-29•6	328•4
11	9	67	700	34	29•19N	65	49•87W	5215	979677•6	-23•7	334•3
11	9	67	730	34	27•95N	65	50•10W	5235	979677•7	-21•9	337•4
11	9	67	800	34	26•31N	66	50•36W	5255	979675•7	-21•6	339•1
11	9	67	830	34	23•87N	66	50•69W	5247	979673•8	-20•1	340•0
11	9	67	900	34	21•43N	66	51•01W	5228	979672•2	-18•5	340•3
11	9	67	1000	34	24•41N	66	56•00W	5201	979667•7	-26•8	330•2
11	9	67	1030	34	27•78N	66	53•49W	5224	979672•2	-27•1	331•5
11	9	67	1100	34	30•47N	67	2•82W	5250	979672•9	-30•2	330•1
11	9	67	1130	34	32•50N	67	5•98W	5197	979676•3	-29•7	327•1
11	9	67	1200	34	34•22N	67	8•45W	5235	979682•3	-26•2	333•1
11	9	67	1230	34	35•63N	67	10•22W	5230	979685•1	-25•2	333•8
11	9	67	1300	34	37•04N	67	12•29W	5236	979686•7	-25•5	333•9
11	9	67	1400	34	37•55N	67	15•91W	5234	979687•2	-25•9	333•4
11	9	67	1430	34	37•24N	67	16•45W	5058	979688•5	-24•1	323•1
11	9	67	1600	34	33•25N	67	16•78W	5069	979683•9	-23•3	324•6
11	9	67	1630	34	30•93N	67	16•89W	5073	979679•1	-24•7	323•5
11	9	67	1700	34	28•62N	67	17•00W	5076	979673•6	-27•0	321•5
11	9	67	1730	34	26•30N	67	17•11W	5080	979669•5	-27•8	320•9
11	9	67	1800	34	24•10N	67	17•59W	5084	979669•5	-24•7	324•3
11	9	67	1830	34	22•19N	67	18•91W	5088	979666•6	-25•1	324•1
11	9	67	1900	34	20•28N	67	20•24W	5091	979663•9	-25•2	324•3
11	9	67	1930	34	18•38N	67	21•56W	5095	979660•9	-25•4	324•3
11	9	67	2000	34	16•46N	67	22•89W	5099	979658•0	-25•7	324•3
11	9	67	2030	34	14•56N	67	24•21W	5102	979655•3	-25•2	325•0
12	9	67	1000	33	6•88N	67	37•33W	5151	979579•6	-7•4	346•2
12	9	67	1030	33	8•54N	67	37•93W	5145	979580•2	-9•2	343•9
12	9	67	1100	33	10•34N	67	38•66W	5142	979575•6	-16•3	336•7
12	9	67	1130	33	12•41N	67	39•84W	5138	979577•6	-17•2	335•4
12	9	67	1200	33	14•62N	67	41•11W	5116	979576•9	-20•8	330•3
12	9	67	1230	33	17•48N	67	42•79W	5076	979580•1	-21•6	326•8
12	9	67	1300	33	20•16N	67	44•31W	5118	979583•5	-21•9	329•4
12	9	67	1330	33	22•07N	67	45•21W	5121	979586•8	-21•2	330•3
12	9	67	1400	33	24•06N	67	46•13W	5112	979591•7	-19•1	331•8

DATE & TIME				LATITUDE		LONGITUDE		DEPTH	OBSERVED IN	FREE-AIR BOUGUER ANOMALY
DAY	MO.	YR	HOUR	°	'	°	'	METERS	GRAVITY	mgal
12	9	67	1430	33	26.60N	67	47.53W	5128	979596.6	-17.7
12	9	67	1500	33	29.14N	67	49.00W	5129	979597.6	-20.2
12	9	67	1530	33	31.42N	67	50.73W	5149	979602.0	-19.1
12	9	67	1600	33	33.55N	67	52.44W	5161	979607.3	-16.6
12	9	67	1630	33	35.34N	67	54.09W	5168	979611.3	-14.7
12	9	67	1700	33	37.12N	67	55.76W	5202	979613.0	-15.8
12	9	67	1730	33	38.93N	67	57.44W	5230	979612.3	-19.1
12	9	67	1800	33	40.76N	67	59.19W	5232	979609.1	-24.8
12	9	67	1830	33	42.57N	68	1.65W	5234	979613.6	-23.5
12	9	67	1900	33	45.04N	68	4.18W	5246	979617.0	-22.9
12	9	67	1930	33	47.32N	68	6.82W	5239	979623.6	-19.3
12	9	67	2000	33	49.73N	68	9.27W	5242	979626.7	-19.8
12	9	67	2030	33	52.55N	68	11.21W	5267	979630.1	-20.1
12	9	67	2100	33	54.69N	68	13.15W	5284	979632.3	-20.4
12	9	67	2130	33	56.68N	68	15.12W	5288	979634.7	-21.3
12	9	67	2200	33	59.31N	68	17.64W	5288	979637.2	-22.6
12	9	67	2230	34	2.26N	68	20.46W	5263	979643.3	-20.4
12	9	67	2300	34	5.10N	68	22.66W	5304	979649.5	-18.4
12	9	67	2330	34	7.90N	68	24.56W	5310	979648.6	-23.0
13	9	67	0	34	10.57N	68	26.52W	5310	979647.0	-28.4
13	9	67	30	34	12.98N	68	28.58W	5310	979651.9	-26.9
13	9	67	100	34	15.39N	68	30.62W	5312	979659.5	-22.6
13	9	67	130	34	17.82N	68	32.44W	5314	979664.4	-21.3
13	9	67	200	34	20.35N	68	34.15W	5319	979673.0	-16.1
13	9	67	230	34	23.18N	68	35.54W	5223	979675.9	-17.0
13	9	67	300	34	25.96N	68	36.89W	5306	979672.4	-17.4
13	9	67	330	34	28.67N	68	38.18W	5277	979683.3	-17.3
13	9	67	400	34	31.56N	68	39.55W	5275	979684.6	-19.8
13	9	67	430	34	34.76N	68	41.09W	5275	979687.9	-21.3
13	9	67	500	34	37.99N	68	42.70W	5286	979692.5	-21.1
13	9	67	530	34	41.27N	68	44.43W	5277	979694.0	-24.3
13	9	67	600	34	44.24N	68	45.80W	5273	979699.5	-23.1
13	9	67	630	34	46.32N	68	45.86W	5280	979698.7	-26.7
13	9	67	700	34	48.66N	68	46.32W	5306	979700.5	-28.3
13	9	67	730	34	51.60N	68	47.70W	5273	979702.6	-30.5
13	9	67	800	34	54.41N	68	48.79W	5256	979707.1	-29.5
13	9	67	900	34	59.66N	68	51.60W	5226	979712.3	-31.3
13	9	67	930	35	2.10N	68	53.31W	5183	979714.6	-33.0
13	9	67	1000	35	3.26N	68	54.06W	5203	979718.0	-31.2
13	9	67	1030	35	4.45N	68	55.02W	5190	979722.1	-28.8
13	9	67	1100	35	5.84N	68	57.04W	5163	979725.8	-27.3
13	9	67	1130	35	7.32N	68	59.00W	5143	979733.3	-21.8
13	9	67	1200	35	9.28N	69	0.56W	5103	979737.0	-20.9
13	9	67	1430	35	15.17N	69	9.83W	5062	979741.1	-25.0
13	9	67	1530	35	17.97N	69	15.85W	4988	979744.9	-25.3
13	9	67	1630	35	21.34N	69	19.39W	5038	979748.7	-26.2
13	9	67	1700	35	23.26N	69	21.06W	4915	979753.3	-24.4
13	9	67	1730	35	25.60N	69	23.48W	4927	979756.2	-24.8
13	9	67	1800	35	27.90N	69	25.72W	4962	979760.7	-23.6
13	9	67	1830	35	30.02N	69	27.21W	4852	979765.5	-21.9

DAY	MO.	YR.	DATE & TIME HOUR	LATITUDE ° I	LONGITUDE ° I	DEPTH IN METERS	OBSERVED GRAVITY mgal	FREE-AIR BOUGUER ANOMALY	
								mgal	mgal
13	9	67	1900	35 32.32N	69 28.79W	4368	979771.1	-19.4	314.7
13	9	67	1930	35 34.97N	69 30.55W	4800	979775.3	-19.0	310.5
13	9	67	2000	35 37.49N	69 32.14W	4794	979781.6	-16.5	312.6
13	9	67	2030	35 39.53N	69 33.11W	4738	979786.1	-14.6	310.7
13	9	67	2200	35 47.16N	69 37.53W	4628	979799.2	-12.6	305.1
13	9	67	2230	35 48.69N	69 38.98W	4659	979802.5	-11.4	308.4
13	9	67	2300	35 50.22N	69 40.44W	4656	979803.4	-12.6	307.0
13	9	67	2330	35 52.08N	69 41.99W	4574	979803.2	-15.6	298.4
14	9	67	0	35 53.98N	69 43.52W	4588	979805.7	-15.7	299.2
14	9	67	30	35 56.08N	69 44.91W	4663	979808.6	-15.8	304.3
14	9	67	100	35 58.06N	69 46.25W	4565	979812.9	-14.5	298.8
14	9	67	130	35 59.72N	69 47.44W	4542	979815.7	-14.0	297.8
14	9	67	200	36 1.37N	69 48.74W	4532	979814.3	-17.7	293.4
14	9	67	230	36 2.98N	69 50.37W	4528	979817.5	-16.9	293.9
14	9	67	300	36 4.56N	69 52.01W	4525	979820.3	-15.6	295.0
14	9	67	330	36 6.06N	69 53.67W	4525	979824.3	-14.6	296.0
14	9	67	400	36 7.61N	69 55.46W	4521	979822.9	-18.0	292.3
14	9	67	430	36 9.27N	69 57.64W	4519	979826.1	-17.2	293.0
14	9	67	500	36 10.86N	69 59.74W	4517	979832.0	-13.5	296.5
14	9	67	530	36 12.24N	70 1.66W	4509	979834.6	-13.1	296.4
14	9	67	600	36 13.63N	70 3.58W	4501	979837.0	-12.6	296.4
14	9	67	630	36 14.73N	70 5.20W	4494	979842.5	-8.4	300.1
14	9	67	700	36 15.91N	70 6.92W	4488	979840.3	-11.8	296.3
14	9	67	730	36 17.92N	70 9.71W	4482	979841.0	-14.6	293.1
14	9	67	800	36 19.79N	70 12.28W	4475	979842.9	-15.2	291.9
14	9	67	830	36 21.07N	70 13.82W	4471	979845.5	-14.6	292.3
14	9	67	900	36 22.46N	70 15.50W	4467	979845.8	-16.4	290.2
14	9	67	930	36 24.46N	70 17.91W	4463	979847.0	-18.0	288.4
14	9	67	1000	36 26.33N	70 20.28W	4453	979850.4	-17.1	288.6
14	9	67	1030	36 27.85N	70 22.52W	4452	979851.6	-18.2	287.4
14	9	67	1100	36 29.47N	70 24.75W	4455	979854.2	-18.0	287.8
14	9	67	1130	36 31.67N	70 26.91W	4432	979855.7	-19.5	284.7
14	9	67	1200	36 33.75N	70 29.00W	4423	979861.2	-17.1	286.5
14	9	67	1230	36 35.19N	70 30.77W	4411	979862.7	-17.7	285.1
14	9	67	1300	36 36.68N	70 32.65W	4405	979860.1	-22.4	280.0
14	9	67	1330	36 38.32N	70 34.80W	4396	979861.7	-23.0	278.7
14	9	67	1400	36 39.96N	70 36.99W	4379	979860.5	-26.6	274.0
14	9	67	1430	36 41.62N	70 39.40W	4365	979862.0	-27.6	272.0
14	9	67	1500	36 43.24N	70 41.75W	4354	979866.2	-25.8	273.0
14	9	67	1530	36 44.54N	70 43.67W	4340	979865.7	-28.2	269.7
14	9	67	1600	36 45.77N	70 45.46W	4325	979870.4	-25.1	271.8
14	9	67	1630	36 47.12N	70 47.30W	4310	979870.7	-26.9	268.9
14	9	67	1700	36 49.74N	70 49.68W	4292	979879.1	-22.2	272.4
14	9	67	1730	36 52.01N	70 50.76W	4271	979881.7	-22.9	270.3
14	9	67	1800	36 54.44N	70 51.89W	4258	979880.0	-28.1	264.2
14	9	67	1830	36 57.49N	70 53.28W	4232	979880.7	-31.7	258.8
14	9	67	1900	36 59.71N	70 54.39W	4211	979886.0	-29.7	259.3
14	9	67	2000	36 57.93N	70 54.76W	4219	979887.4	-25.8	263.8
14	9	67	2030	36 55.54N	70 54.49W	4212	979886.0	-23.7	265.4
14	9	67	2100	36 53.92N	70 54.49W	4240	979881.6	-25.8	265.2

DATE & TIME				LATITUDE		LONGITUDE		DEPTH IN METERS	OBSERVED GRAVITY	FREE-AIR BOUGUER ANOMALY ANOMALY	
DAY	MO	YR	HOUR	°	'	°	'	mgal	.mgal	mgal	
14	9	67	2130	36	52.46N	70	54.54W	4203	979880.4	-24.9	264.0
14	9	67	2200	36	50.33N	70	54.91W	4259	979872.9	-23.3	263.0
14	9	67	2230	36	47.52N	70	55.59W	4265	979871.5	-26.6	266.1
14	9	67	2300	36	44.57N	70	55.80W	4270	979864.2	-29.7	263.4
14	9	67	2330	36	41.59N	70	55.53W	4270	979862.4	-27.3	265.8
15	9	67	0	36	39.06N	70	56.21W	4270	979858.2	-27.8	265.3
15	9	67	30	36	36.94N	70	57.82W	4270	979856.0	-26.9	266.2
15	9	67	100	36	34.88N	70	59.33W	4276	979857.1	-22.8	270.7
15	9	67	130	36	33.07N	71	0.75W	4279	979855.7	-21.7	272.0
15	9	67	530	36	12.45N	71	3.93W	4325	979823.0	-24.9	272.0
15	9	67	600	36	9.67N	71	3.94W	4329	979820.3	-23.7	273.4
15	9	67	630	36	6.88N	71	3.91W	4344	979817.9	-22.0	276.2
15	9	67	730	36	2.22N	71	4.83W	4352	979805.8	-27.4	271.3
15	9	67	800	36	0.06N	71	5.51W	4359	979806.4	-23.8	275.4
15	9	67	830	35	57.29N	71	5.75W	4359	979801.9	-24.4	274.8
15	9	67	900	35	54.61N	71	5.99W	4364	979800.2	-22.0	277.5
15	9	67	1030	35	50.43N	71	5.67W	4371	979795.1	-21.3	278.7
15	9	67	1100	35	48.33N	71	5.82W	4374	979791.2	-22.3	277.9
15	9	67	1130	35	46.21N	71	5.99W	4377	979787.9	-22.5	277.9
15	9	67	1200	35	44.11N	71	6.26W	4388	979781.3	-25.5	275.7
15	9	67	1230	35	42.06N	71	6.71W	4386	979778.7	-25.6	275.5
15	9	67	1300	35	40.00N	71	7.02W	4386	979779.5	-22.0	279.1
15	9	67	1330	35	37.96N	71	7.06W	4388	979776.3	-22.1	279.1
15	9	67	1400	35	35.80N	71	7.11W	4398	979772.8	-22.6	279.3
15	9	67	1430	35	33.43N	71	7.16W	4421	979770.5	-21.7	281.8
15	9	67	1500	35	31.03N	71	7.21W	4403	979767.7	-20.9	281.4
15	9	67	1530	35	28.60N	71	7.25W	4336	979764.6	-20.5	281.2
15	9	67	1600	35	26.23N	71	7.31W	4391	979760.9	-21.0	280.4
15	9	67	1630	35	24.01N	71	7.41W	4394	979758.0	-20.6	281.0
15	9	67	1700	35	21.88N	71	7.49W	4327	979756.0	-19.7	277.3
15	9	67	1730	35	19.77N	71	7.52W	4363	979752.5	-20.0	279.5
15	9	67	1800	35	17.42N	71	7.59W	4373	979747.4	-22.0	278.1
15	9	67	1830	35	15.92N	71	7.81W	4382	979743.6	-20.8	280.0
15	9	67	1900	35	11.03N	71	8.12W	4386	979737.2	-23.0	278.1
15	9	67	1930	35	9.04N	71	8.56W	4396	979733.1	-24.3	277.4
15	9	67	2000	35	6.84N	71	8.85W	4407	979731.9	-22.5	280.0
15	9	67	2030	35	3.84N	71	8.55W	4428	979728.9	-21.4	282.6
15	9	67	2100	35	0.86N	71	8.36W	4446	979724.7	-21.4	283.7
15	9	67	2130	34	57.95N	71	8.72W	4471	979721.3	-20.5	286.4
15	9	67	2200	34	55.13N	71	9.03W	4499	979720.9	-17.0	291.8
15	9	67	2230	34	52.79N	71	9.09W	4526	979719.0	-15.6	295.1
15	9	67	2300	34	50.39N	71	9.24W	4550	979709.6	-21.4	290.9
15	9	67	2330	34	47.65N	71	9.81W	4597	979705.1	-22.3	293.2
16	9	67	0	34	44.86N	71	10.40W	4642	979699.1	-24.2	294.4
16	9	67	30	34	41.82N	71	11.10W	4663	979695.8	-23.2	296.9
16	9	67	100	34	38.86N	71	11.75W	4701	979694.4	-20.4	302.3
16	9	67	130	34	36.05N	71	12.27W	4732	979690.8	-20.3	304.5
16	9	67	200	34	33.24N	71	12.78W	4780	979687.4	-19.7	308.4
16	9	67	230	34	31.02N	71	13.63W	4811	979682.5	-21.4	308.8
16	9	67	330	34	26.03N	71	15.33W	4901	979671.0	-25.7	310.7

DATE & TIME	LATITUDE	LONGITUDE	DEPTH IN METERS	OBSERVED GRAVITY mgal	FREE-AIR BOUGUER ANOMALY ANOMALY								
					DAY	MO.	YR.	HOUR	°	'	°	'	mgal
16 9 67 400	34 23.00N	71 15.83W	4925	979668.4	-24.2	313.8							
16 9 67 430	34 19.87N	71 15.96W	4965	979662.9	-25.6	315.2							
16 9 67 500	34 16.88N	71 16.14W	5034	979656.5	-27.7	317.9							
16 9 67 530	34 14.57N	71 16.84W	5103	979652.5	-28.5	321.8							
16 9 67 600	34 12.18N	71 17.51W	5130	979649.9	-27.8	324.4							
16 9 67 630	34 8.56N	71 17.64W	5176	979646.0	-26.6	328.7							
16 9 67 700	34 5.00N	71 17.82W	5232	979639.9	-27.8	331.4							
16 9 67 730	34 1.67N	71 18.18W	5217	979635.3	-27.6	330.5							
16 9 67 800	33 59.16N	71 18.68W	5205	979627.3	-32.3	325.0							
16 9 67 830	33 57.68N	71 19.41W	5255	979622.5	-34.9	325.8							
16 9 67 900	33 55.75N	71 20.06W	5275	979620.8	-34.1	328.0							
16 9 67 930	33 53.24N	71 20.60W	5290	979616.5	-34.9	328.2							
16 9 67 1000	33 50.41N	71 21.23W	5300	979612.0	-35.5	328.3							
16 9 67 1030	33 47.34N	71 21.90W	5317	979607.9	-35.0	329.9							
16 9 67 1100	33 44.46N	71 22.53W	5306	979604.9	-34.1	330.1							
16 9 67 1130	33 42.21N	71 23.06W	5319	979600.9	-35.1	330.0							
16 9 67 1200	33 39.64N	71 23.74W	5327	979591.9	-40.3	325.3							
16 9 67 1230	33 36.42N	71 24.71W	5333	979587.3	-40.5	325.5							
16 9 67 1330	33 31.24N	71 25.75W	5342	979583.1	-37.5	329.2							
16 9 67 1400	33 28.99N	71 26.04W	5345	979575.7	-41.8	325.1							
16 9 67 1430	33 26.39N	71 26.59W	5348	979571.7	-42.3	324.8							
16 9 67 1500	33 23.70N	71 27.04W	5352	979570.4	-40.0	327.4							
16 9 67 1530	33 20.81N	71 27.33W	5354	979566.3	-40.0	327.5							
16 9 67 1600	33 18.14N	71 27.58W	5356	979563.3	-39.4	328.2							
16 9 67 1630	33 15.96N	71 27.76W	5362	979558.2	-41.4	326.6							
16 9 67 1700	33 13.59N	71 28.00W	5371	979552.4	-43.9	324.8							
16 9 67 1730	33 10.85N	71 28.32W	5383	979549.6	-43.0	326.5							
16 9 67 1800	33 8.07N	71 28.65W	5385	979548.3	-40.3	329.3							
16 9 67 1830	33 5.21N	71 28.96W	5291	979544.9	-39.8	323.4							
16 9 67 1900	33 2.36N	71 29.28W	5387	979542.6	-38.4	331.4							
16 9 67 1930	32 59.83N	71 29.69W	5387	979538.3	-38.6	331.2							
16 9 67 2000	32 57.20N	71 30.05W	5385	979538.5	-35.2	334.4							
16 9 67 2030	32 54.21N	71 30.25W	5383	979533.1	-36.6	332.9							
16 9 67 2100	32 51.22N	71 30.45W	5383	979528.2	-37.3	332.2							
16 9 67 2130	32 48.39N	71 30.44W	5288	979526.0	-35.6	327.4							
16 9 67 2200	32 45.56N	71 30.44W	5383	979522.3	-35.8	333.7							
16 9 67 2230	32 42.12N	71 30.82W	5383	979515.5	-37.7	331.8							
16 9 67 2300	32 38.68N	71 31.21W	5383	979512.9	-35.7	333.8							
16 9 67 2330	32 36.25N	71 31.40W	5386	979511.9	-33.4	336.3							
17 9 67 0	32 33.71N	71 31.60W	5387	979505.5	-36.2	333.6							
17 9 67 30	32 30.67N	71 31.93W	5362	979500.5	-37.1	330.9							
17 9 67 100	32 27.63N	71 32.27W	5389	979495.3	-38.3	331.6							
17 9 67 130	32 24.62N	71 32.62W	5389	979490.2	-39.2	330.7							
17 9 67 200	32 21.61N	71 32.97W	5389	979485.6	-39.6	330.3							
17 9 67 230	32 19.07N	71 34.89W	5389	979489.1	-32.9	337.0							
17 9 67 300	32 16.58N	71 36.98W	5389	979490.0	-28.5	341.4							
17 9 67 330	32 14.21N	71 38.85W	5389	979487.9	-27.2	342.7							
17 9 67 400	32 11.90N	71 40.82W	5389	979478.3	-33.4	336.5							
17 9 67 430	32 9.91N	71 43.37W	5389	979475.4	-34.0	335.9							
17 9 67 500	32 7.92N	71 45.97W	5389	979469.7	-37.1	332.8							

DATE & TIME				LATITUDE		LONGITUDE		DEPTH IN METERS	OBSERVED GRAVITY	FREE-AIR ANOMALY	BOUGUER ANOMALY
DAY	MO.	YR.	HOUR	°	'	°	'		mgal	mgal	mgal
17	9	67	600	32	3•88N	71	51•13W	5389	979464•4	-36•8	333•1
17	9	67	630	32	1•30N	71	53•25W	5389	979459•9	-37•8	332•1
17	9	67	800	31	55•64N	71	59•56W	5389	979451•3	-38•9	331•0
17	9	67	830	31	52•89N	72	1•40W	5294	979447•5	-39•0	324•4
17	9	67	900	31	50•47N	72	3•30W	5389	979441•7	-41•5	328•4
17	9	67	1005	31	50•85N	72	8•36W	5386	979438•4	-45•4	324•3
17	9	67	1025	31	51•89N	72	10•02W	5385	979439•1	-46•0	323•6
17	9	67	1108	31	54•67N	72	12•99W	5382	979442•9	-46•0	323•4
17	9	67	1139	31	56•28N	72	14•41W	5380	979444•5	-46•4	322•9
17	9	67	1233	31	59•18N	72	18•41W	5377	979446•9	-48•0	321•1
17	9	67	1305	32	1•19N	72	20•72W	5373	979450•4	-47•2	321•6
17	9	67	1333	32	3•19N	72	22•60W	5370	979453•1	-47•2	321•4
17	9	67	1403	32	5•13N	72	24•44W	5368	979455•6	-47•4	321•0
17	9	67	1433	32	6•80N	72	26•02W	5363	979458•3	-46•9	321•3
17	9	67	1502	32	8•41N	72	27•94W	5360	979459•9	-47•6	320•3
17	9	67	1530	32	9•99N	72	30•77W	5356	979465•1	-44•6	323•0
17	9	67	1600	32	11•69N	72	33•34W	5354	979466•0	-46•0	321•5
17	9	67	1630	32	13•43N	72	35•02W	5349	979468•9	-45•4	321•8
17	9	67	1830	32	21•33N	72	38•92W	5333	979478•6	-46•4	319•6
17	9	67	1900	32	23•11N	72	41•08W	5325	979481•9	-45•5	320•0
17	9	67	1930	32	25•20N	72	42•64W	5317	979482•9	-47•3	317•7
17	9	67	2000	32	27•35N	72	44•65W	5308	979487•5	-45•5	318•9
17	9	67	2030	32	29•60N	72	47•30W	5302	979489•5	-46•6	317•3
17	9	67	2100	32	31•54N	72	49•67W	5290	979492•4	-46•3	316•8
17	9	67	2130	32	32•87N	72	51•49W	5236	979494•2	-46•5	316•3
17	9	67	2200	32	34•55N	72	53•33W	5271	979494•9	-48•1	313•7
17	9	67	2300	32	29•33N	72	56•50W	5282	979486•5	-49•4	313•2
17	9	67	2330	32	23•78N	72	56•85W	5300	979475•2	-53•0	310•8
18	9	67	0	32	17•78N	72	56•93W	5306	979470•6	-49•5	314•7
18	9	67	30	32	11•19N	72	56•83W	5311	979460•8	-50•4	314•2
18	9	67	100	32	4•60N	72	56•68W	5317	979451•4	-50•6	314•4
18	9	67	130	31	58•01N	72	56•53W	5327	979441•3	-52•0	313•6
18	9	67	200	31	51•62N	72	56•27W	5331	979436•3	-48•3	317•6
18	9	67	230	31	45•68N	72	55•78W	5337	979429•3	-47•4	318•9
18	9	67	300	31	39•75N	72	55•29W	5348	979421•3	-47•4	319•7
18	9	67	330	31	33•82N	72	54•80W	5356	979413•2	-47•6	320•0
18	9	67	400	31	27•83N	72	54•34W	5364	979404•8	-47•9	320•3
18	9	67	430	31	21•78N	72	53•92W	5269	979396•6	-48•0	313•7
18	9	67	500	31	15•72N	72	53•50W	5364	979388•7	-48•2	320•0
18	9	67	530	31	9•66N	72	53•08W	5288	979380•0	-48•7	314•3
18	9	67	600	31	3•28N	72	52•77W	5362	979369•5	-50•3	317•2
18	9	67	630	31	1•75N	72	57•96W	5338	979366•2	-52•0	314•4
18	9	67	700	31	1•59N	73	4•45W	5315	979364•7	-53•2	311•6
18	9	67	730	31	1•44N	73	10•94W	5284	979363•7	-54•0	308•7
18	9	67	1030	31	15•59N	73	30•76W	5193	979383•9	-52•7	303•8
18	9	67	1100	31	21•98N	73	28•44W	5224	979388•8	-56•1	302•5
18	9	67	1130	31	28•38N	73	26•12W	5240	979395•3	-57•6	302•1
18	9	67	1200	31	34•59N	73	23•79W	5238	979403•5	-58•3	301•2
18	9	67	1230	31	39•91N	73	21•39W	5256	979411•3	-57•7	303•1
18	9	67	1300	31	45•38N	73	18•99W	5273	979419•3	-56•8	305•1

DATE & TIME				LATITUDE		LONGITUDE		DEPTH	OBSERVED GRAVITY	FREE-AIR ANOMALY	BOUGUER ANOMALY
DAY	MO.	YR.	HOUR	°	'	°	'	METERS	mgal	mgal	mgal
18	9	67	1330	31	51.28N	73	16.57W	5278	979426.3	-57.8	304.5
18	9	67	1400	31	57.18N	73	14.15W	5282	979433.9	-58.2	304.4
18	9	67	1430	32	3.17N	73	11.77W	5271	979438.9	-61.4	300.4
18	9	67	1500	32	9.44N	73	9.55W	5267	979449.0	-59.9	301.6
18	9	67	1530	32	15.72N	73	7.34W	5263	979459.2	-58.1	303.2
18	9	67	2000	32	41.89N	73	3.59W	5226	979490.5	-62.5	296.2
18	9	67	2030	32	43.94N	73	5.77W	5215	979491.4	-64.3	293.6
18	9	67	2130	32	48.40N	73	10.84W	5184	979499.9	-61.7	294.1
18	9	67	2200	32	50.69N	73	13.42W	5174	979505.2	-59.6	295.5
18	9	67	2310	32	55.34N	73	17.28W	5135	979513.3	-57.9	294.5
18	9	67	2330	32	56.67N	73	18.33W	5118	979517.4	-55.6	295.7
19	9	67	0	32	58.56N	73	20.21W	5108	979515.9	-59.7	290.9
19	9	67	30	33	0.25N	73	22.40W	5075	979519.1	-58.7	289.6
19	9	67	100	33	2.06N	73	24.73W	5043	979518.0	-62.4	283.7
19	9	67	130	33	4.18N	73	27.47W	4982	979521.7	-61.6	280.4
19	9	67	200	33	6.26N	73	30.11W	4946	979528.2	-58.0	281.5
19	9	67	230	33	8.24N	73	32.50W	4900	979531.2	-57.7	278.6
19	9	67	300	33	10.17N	73	34.82W	4869	979538.2	-53.5	280.7
19	9	67	330	33	11.85N	73	36.81W	4846	979540.3	-53.7	278.9
19	9	67	400	33	13.48N	73	38.67W	4802	979544.3	-51.8	277.8
19	9	67	430	33	14.97N	73	40.19W	4761	979545.7	-52.4	274.4
19	9	67	500	33	16.68N	73	41.94W	4726	979545.3	-55.3	269.1
19	9	67	530	33	18.78N	73	44.07W	4686	979547.0	-56.5	265.1
19	9	67	600	33	20.81N	73	46.27W	4665	979547.6	-58.7	261.5
19	9	67	700	33	24.66N	73	50.89W	4690	979555.2	-56.3	265.6
19	9	67	730	33	26.59N	73	53.20W	4613	979557.6	-56.6	260.0
19	9	67	800	33	28.35N	73	55.27W	4592	979560.9	-55.7	259.5
19	9	67	830	33	29.89N	73	56.99W	4567	979564.3	-54.5	259.0
19	9	67	900	33	31.50N	73	58.79W	4541	979567.2	-53.8	257.9
19	9	67	930	33	33.50N	74	1.02W	4524	979569.3	-54.6	256.0
19	9	67	1000	33	35.41N	74	3.64W	4498	979575.8	-50.7	258.1
19	9	67	1030	33	37.33N	74	6.83W	4446	979575.3	-54.0	251.1
19	9	67	1100	33	39.58N	74	9.46W	4413	979577.8	-54.4	248.5
19	9	67	1130	33	41.54N	74	11.47W	4367	979579.5	-55.5	244.3
19	9	67	1200	33	43.82N	74	13.46W	4311	979581.8	-56.3	239.6
19	9	67	1230	33	46.53N	74	15.42W	4244	979586.7	-55.4	235.9
19	9	67	1300	33	49.20N	74	17.45W	4170	979587.3	-58.2	228.0
19	9	67	1330	33	51.74N	74	19.70W	4076	979591.2	-58.1	221.7
19	9	67	1400	33	54.35N	74	21.91W	4017	979597.3	-55.4	220.3
19	9	67	1430	33	57.12N	74	24.01W	3934	979600.3	-55.8	214.3
19	9	67	1500	33	59.90N	74	26.11W	3896	979604.9	-55.5	211.9
19	9	67	1830	34	19.89N	74	38.14W	3524	979644.1	-44.4	197.5
19	9	67	1900	34	21.72N	74	40.36W	3459	979645.7	-45.3	192.2
19	9	67	1930	34	23.05N	74	42.51W	3408	979646.7	-45.9	188.0
19	9	67	1950	34	23.97N	74	43.95W	3350	979644.7	-43.4	180.6
19	9	67	2030	34	27.24N	74	47.17W	3247	979642.8	-55.7	167.2
19	9	67	2100	34	29.75N	74	49.51W	3190	979646.7	-55.4	163.6
19	9	67	2130	34	32.54N	74	51.52W	3114	979646.6	-59.3	154.5
19	9	67	2201	34	35.52N	74	53.53W	3040	979648.2	-61.9	146.8
19	9	67	2233	34	38.85N	74	55.02W	2964	979647.7	-67.1	136.3

DATE & TIME				LATITUDE	LONGITUDE	DEPTH IN METERS	OBSERVED GRAVITY	FREE-AIR ANOMALY	BOUGUER ANOMALY		
DAY	MO.	YR.	HOUR	°	'	°	'	mgal	mgal	mgal	
19	9	67	2300	34	41.05N	74	55.80W	2937	979647.9	-70.1	131.5
19	9	67	2332	34	43.43N	74	57.47W	2930	979650.9	-70.4	130.7
19	9	67	2358	34	45.78N	74	58.42W	2950	979654.4	-70.2	132.3
20	9	67	30	34	49.16N	74	59.08W	2933	979658.8	-70.7	130.6
20	9	67	103	34	52.42N	74	59.77W	2786	979661.5	-72.4	118.9
20	9	67	125	34	54.32N	75	0.25W	2739	979672.7	-64.0	124.0
20	9	67	155	34	56.91N	75	0.91W	2615	979685.1	-55.4	124.1
20	9	67	230	34	59.81N	75	1.91W	2398	979708.3	-36.0	128.7
20	9	67	300	35	2.03N	75	3.34W	1689	979739.7	-8.0	107.9
20	9	67	330	35	3.35N	75	5.53W	801	979774.6	25.1	80.1
20	9	67	331	35	3.39N	75	5.60W	766	979774.5	25.0	77.6
20	9	67	409	35	5.22N	75	7.71W	344	979795.3	43.2	66.8
20	9	67	603	35	13.83N	75	5.96W	28	979821.2	56.9	58.9
20	9	67	636	35	19.25N	75	1.35W	38	979835.2	63.3	66.0
20	9	67	700	35	24.45N	74	58.97W	35	979847.9	68.5	70.9
20	9	67	730	35	30.94N	74	56.01W	41	979857.1	68.4	71.2
20	9	67	800	35	37.34N	74	53.00W	56	979864.8	66.9	70.8
20	9	67	830	35	43.25N	74	49.78W	322	979864.5	58.4	80.5
20	9	67	900	35	49.16N	74	46.55W	1201	979840.7	26.1	108.6
20	9	67	930	35	55.07N	74	43.32W	1436	979834.6	11.6	110.2
20	9	67	1000	36	1.09N	74	40.01W	1378	979835.8	4.1	98.7
20	9	67	1030	36	7.69N	74	36.30W	1423	979838.5	-2.7	95.0
20	9	67	1710	37	12.94N	73	59.59W	1961	979905.4	-29.5	105.1
20	9	67	1730	37	17.11N	73	57.41W	1958	979910.9	-30.0	104.4
20	9	67	1800	37	23.38N	73	54.14W	1815	979919.9	-30.2	94.4
20	9	67	1830	37	29.64N	73	50.86W	1849	979923.5	-35.7	91.2
20	9	67	1900	37	35.75N	73	47.61W	1941	979928.1	-39.9	93.4
20	9	67	1930	37	41.58N	73	44.40W	2003	979932.8	-43.7	93.8
20	9	67	2000	37	47.42N	73	41.19W	1857	979946.0	-39.1	88.4
20	9	67	2030	37	53.25N	73	37.98W	1869	979954.4	-39.0	90.7
20	9	67	2058	37	58.69N	73	34.98W	1451	979962.9	-38.4	61.3
20	9	67	2127	38	4.66N	73	32.12W	1611	979975.5	-34.7	75.9
20	9	67	2332	38	25.45N	73	19.63W	774	980.38.2	-2.3	50.8
21	9	67	6	38	31.80N	73	16.35W	209	980.67.0	17.4	31.8
21	9	67	31	38	36.63N	73	14.32W	146	980.87.1	30.4	40.5
21	9	67	56	38	41.35N	73	11.75W	126	980.102.6	39.0	47.7
21	9	67	128	38	47.04N	73	7.01W	108	980.113.1	41.1	48.6
21	9	67	201	38	52.91N	73	2.12W	88	980.121.2	40.5	46.6
21	9	67	331	38	57.32N	72	58.59W	79	980.121.0	33.8	39.3
21	9	67	358	38	54.99N	72	56.78W	96	980.116.0	32.3	39.0
21	9	67	457	38	50.44N	72	52.50W	697	980.98.8	21.9	69.7
21	9	67	527	38	47.73N	72	50.48W	1189	980.70.8	-2.2	79.4
21	9	67	530	38	47.46N	72	50.28W	1236	980.84.1	11.3	96.2
21	9	67	600	38	45.00N	72	48.42W	1589	980.63.4	-15.6	93.5
21	9	67	630	38	42.97N	72	46.83W	1937	980.40.8	-25.1	107.9
21	9	67	700	38	40.95N	72	45.05W	2071	980.28.6	-34.5	107.7
21	9	67	730	38	38.95N	72	42.96W	2204	980.15.6	-44.5	106.8
21	9	67	800	38	37.26N	72	40.81W	2302	980.8.5	-49.2	108.8
21	9	67	930	38	34.13N	72	35.29W	2546	979996.4	-56.7	118.1
21	9	67	1000	38	32.77N	72	33.35W	2619	979996.5	-54.5	125.3

DAY	MO.	YR.	DATE & TIME HOUR	LATITUDE		LONGITUDE		DEPTH IN METERS	OBSERVED GRAVITY mgal	FREE-AIR BOUGUER ANOMALY ANOMALY mgal	
				°	'	°	'			mgal	mgal
21	9	67	1030	38	30.90N	72	31.08W	2677	979391.3	-57.1	126.7
21	9	67	1100	38	29.04N	72	28.70W	2735	979391.7	-54.2	133.5
21	9	67	1130	38	27.22N	72	25.99W	2772	979988.4	-54.7	135.6
21	9	67	1230	38	24.23N	72	22.22W	2821	979985.5	-53.2	140.5
21	9	67	1330	38	20.69N	72	18.26W	2910	979385.4	-48.1	151.7
21	9	67	1400	38	18.59N	72	15.87W	2910	979385.5	-45.1	154.7
21	9	67	1430	38	16.04N	72	13.75W	2940	979982.5	-44.2	157.6
21	9	67	1500	38	13.47N	72	11.60W	2966	979983.8	-39.3	164.3
21	9	67	1530	38	10.67N	72	9.13W	2976	979981.2	-37.8	166.5
21	9	67	1600	38	7.86N	72	6.67W	2989	979982.9	-32.0	173.2
21	9	67	1630	38	5.03N	72	3.86W	2997	979982.8	-27.9	177.8
21	9	67	1700	38	2.41N	72	1.29W	3033	979977.9	-29.0	179.2
21	9	67	1730	38	0.34N	71	59.41W	3020	979977.9	-26.0	181.3
21	9	67	1800	37	58.07N	71	57.43W	3014	979976.7	-23.8	183.1
21	9	67	1930	37	51.97N	71	51.57W	3042	979973.1	-18.4	190.4
21	9	67	2000	37	49.78N	71	49.12W	3090	979972.8	-15.8	196.3
21	9	67	2030	37	47.74N	71	46.95W	3133	979970.1	-15.3	199.8
21	9	67	2100	37	45.60N	71	44.45W	3175	979971.0	-11.3	206.6
21	9	67	2130	37	43.26N	71	41.28W	3224	979967.9	-11.1	210.2
21	9	67	2200	37	41.05N	71	38.16W	3285	979964.5	-11.2	214.3
21	9	67	2230	37	39.26N	71	35.17W	3357	979960.7	-12.4	218.0
21	9	67	2300	37	37.45N	71	32.21W	3439	979954.2	-16.4	219.6
21	9	67	2330	37	35.62N	71	29.33W	3551	979949.1	-18.6	225.1
22	9	67	30	37	31.34N	71	22.83W	3731	979943.4	-18.1	238.0
22	9	67	100	37	29.12N	71	19.33W	3328	979939.7	-18.7	244.1
22	9	67	130	37	27.18N	71	15.82W	3905	979935.9	-19.7	248.3
22	9	67	400	37	18.52N	71	1.68W	4081	979917.2	-25.9	254.2
22	9	67	430	37	16.86N	70	59.36W	4100	979915.1	-25.4	256.0
22	9	67	500	37	15.22N	70	57.38W	4111	979909.3	-28.4	253.8
22	9	67	530	37	13.64N	70	55.96W	4130	979908.1	-27.6	255.9
22	9	67	600	37	11.76N	70	54.39W	4148	979904.5	-28.8	255.9
22	9	67	630	37	9.53N	70	52.66W	3981	979903.3	-26.8	246.5
22	9	67	700	37	7.10N	70	51.08W	4192	979902.4	-24.1	263.6
22	9	67	730	37	4.20N	70	49.86W	4211	979900.6	-21.8	267.2
22	9	67	800	37	1.36N	70	48.49W	4230	979897.6	-20.4	270.0
22	9	67	830	36	58.67N	70	46.73W	4251	979895.0	-19.2	272.6
22	9	67	1300	36	42.14N	70	32.38W	4397	979868.3	-22.1	279.7
22	9	67	1500	36	38.52N	70	17.92W	4415	979865.7	-19.6	283.5
22	9	67	1530	36	37.67N	70	14.45W	4432	979865.2	-18.6	285.6
22	9	67	1600	36	36.72N	70	10.89W	4430	979867.7	-15.0	289.1
22	9	67	1630	36	35.60N	70	7.14W	4440	979867.1	-14.0	290.8
22	9	67	1700	36	34.44N	70	3.31W	4448	979868.9	-10.3	295.0
22	9	67	1730	36	33.17N	69	59.21W	4463	979868.6	-8.9	297.4
22	9	67	1800	36	32.01N	69	55.42W	4457	979863.1	-12.6	293.4
22	9	67	1830	36	31.21N	69	52.58W	4469	979860.1	-14.4	292.3
22	9	67	1900	36	30.15N	69	49.46W	4494	979854.9	-13.3	290.2
22	9	67	1930	36	28.45N	69	45.72W	4490	979854.0	-16.6	291.6
22	9	67	2000	36	26.95N	69	42.35W	4490	979849.3	-19.1	289.1
22	9	67	2030	36	25.86N	69	39.71W	4480	979848.3	-18.5	289.0
22	9	67	2100	36	24.75N	69	36.58W	4478	979846.5	-18.9	288.5

DATE & TIME ¹				LATITUDE		LONGITUDE		DEPTH	OBSERVED IN METERS	FREE-AIR BOUGUER ANOMALY	BOUGUER ANOMALY
DAY	MO.	YR.	HOUR	°	'	°	'	mgal	mgal	mgal	
22	9	67	2130	36	23•57N	69	32•43W	4484	979844•1	-19•4	288•4
22	9	67	2230	36	21•20N	69	24•99W	4496	979839•4	-21•0	287•6
22	9	67	2300	36	20•07N	69	21•37W	4496	979841•7	-17•0	291•6
22	9	67	2330	36	19•24N	69	17•37W	4488	979839•7	-17•8	290•3
23	9	67	0	36	18•35N	69	13•30W	4559	979842•6	-13•5	299•4
23	9	67	30	36	17•14N	69	8•86W	4550	979841•1	-13•3	299•0
23	9	67	100	36	15•95N	69	4•49W	4557	979838•7	-14•0	298•8
23	9	67	130	36	14•78N	69	0•35W	4590	979838•3	-12•1	303•0
23	9	67	200	36	13•59N	68	56•29W	4596	979834•3	-14•8	300•7
23	9	67	210	36	13•18N	68	55•03W	4590	979834•6	-14•3	300•8
23	9	67	230	36	12•37N	68	52•51W	4611	979834•1	-13•6	302•9
23	9	67	330	36	10•45N	68	44•35W	4638	979833•2	-11•9	306•5
23	9	67	400	36	9•71N	68	40•35W	4650	979830•1	-14•0	305•2
23	9	67	430	36	8•93N	68	37•12W	4673	979829•1	-13•7	307•0
23	9	67	500	36	8•12N	68	33•39W	4690	979827•3	-13•8	308•1
23	9	67	530	36	7•23N	68	28•68W	4711	979826•5	-13•9	309•5
23	9	67	600	36	6•34N	68	24•00W	4729	979825•4	-13•7	310•9
23	9	67	630	36	5•37N	68	19•82W	4745	979823•5	-14•2	311•5
23	9	67	700	36	4•33N	68	15•97W	4775	979822•0	-14•3	313•5
23	9	67	730	36	3•21N	68	12•62W	4794	979823•2	-11•4	317•6
23	9	67	800	36	2•21N	68	8•93W	4872	979819•4	-13•9	320•5
23	9	67	830	36	1•42N	68	4•59W	4800	979818•3	-13•7	315•8
23	9	67	900	36	0•64N	68	0•38W	4771	979815•4	-15•5	312•0
23	9	67	930	35	59•94N	67	56•57W	4727	979813•0	-16•9	307•5
23	9	67	1000	35	59•16N	67	52•68W	4917	979813•3	-15•1	322•4
23	9	67	1030	35	58•19N	67	48•55W	4788	979816•4	-11•0	317•7
23	9	67	1100	35	57•11N	67	44•61W	4906	979812•6	-13•5	323•2
23	9	67	1130	35	55•83N	67	41•05W	4928	979809•5	-14•5	323•7
23	9	67	1200	35	54•64N	67	37•50W	4908	979809•2	-13•3	323•6
23	9	67	1230	35	53•61N	67	33•93W	4888	979808•0	-12•9	322•7
23	9	67	1300	35	52•58N	67	30•35W	4931	979805•4	-14•0	324•5
23	9	67	1330	35	51•23N	67	26•19W	4979	979803•8	-13•8	328•0
23	9	67	1400	35	49•94N	67	22•30W	4998	979801•4	-14•4	328•7
23	9	67	1430	35	48•84N	67	19•12W	5029	979800•0	-14•1	331•1
23	9	67	1500	35	47•71N	67	15•85W	5060	979801•8	-10•7	336•6
23	9	67	1530	35	46•30N	67	11•83W	5122	979800•1	-10•3	341•3
23	9	67	1600	35	45•06N	67	7•92W	5087	979794•7	-14•0	335•2
23	9	67	1630	35	44•32N	67	4•28W	5037	979789•7	-17•9	327•8
23	9	67	1700	35	43•35N	67	0•47W	5061	979789•9	-16•2	331•2
23	9	67	1730	35	42•02N	66	56•40W	5006	979788•1	-16•2	327•4
23	9	67	1800	35	41•09N	66	52•36W	5068	979786•9	-16•3	331•6
23	9	67	1830	35	41•07N	66	48•36W	4956	979782•3	-13•6	326•6
23	9	67	1930	35	44•09N	66	49•31W	5056	979795•1	-12•3	334•8
23	9	67	2000	35	46•21N	66	51•65W	5045	979800•9	-9•5	336•8
23	9	67	2030	35	48•86N	66	54•86W	5045	979797•4	-16•7	329•6
23	9	67	2100	35	51•17N	66	57•72W	5058	979799•1	-18•3	328•9
23	9	67	2130	35	52•38N	66	59•43W	5037	979800•1	-19•1	326•6
23	9	67	2200	35	53•93N	67	1•35W	5073	979801•3	-20•1	328•1
23	9	67	2230	35	56•59N	67	4•04W	5072	979803•0	-22•1	326•0
23	9	67	2300	35	59•25N	67	6•73W	5056	979805•2	-23•9	323•2

DATE & TIME				LATITUDE		LONGITUDE		DEPTH IN METERS	OBSERVED GRAVITY mgal	FREE-AIR BOUGUER ANOMALY mgal	ANOMALY mgal
DAY	MO.	YR.	HOUR	°	'	°	'				
23	9	67	2330	35	1•01N	67	9•01W	5031	979812•1	-19•5	325•8
24	9	67	0	35	2•59N	67	11•12W	5031	979815•4	-18•3	327•1
24	9	67	30	35	3•56N	67	12•69W	5013	979818•8	-16•3	327•8
24	9	67	100	35	4•64N	67	14•47W	5009	979820•3	-16•0	327•8
24	9	67	130	35	6•03N	67	16•81W	4999	979824•2	-14•5	328•6
24	9	67	200	35	7•44N	67	19•09W	4987	979829•2	-11•5	330•8
24	9	67	230	35	9•06N	67	20•87W	4988	979829•5	-13•5	328•9
24	9	67	300	35	10•75N	67	22•63W	4986	979828•3	-17•0	325•9
24	9	67	330	35	12•81N	67	24•59W	4973	979832•9	-15•5	325•9
24	9	67	400	35	14•77N	67	26•40W	4958	979834•8	-16•1	324•2
24	9	67	430	35	16•44N	67	27•89W	4952	979835•8	-17•5	322•4
24	9	67	500	35	18•28N	67	29•41W	4917	979838•3	-17•7	319•8
24	9	67	530	35	21•04N	67	31•14W	4941	979840•9	-19•2	310•9
24	9	67	600	35	23•41N	67	32•82W	4944	979846•9	-16•4	323•0
24	9	67	630	35	24•99N	67	34•42W	4946	979851•5	-14•1	325•4
24	9	67	700	35	26•85N	67	36•29W	4950	979851•1	-17•3	322•5
24	9	67	730	35	30•98N	67	39•79W	4952	979854•4	-19•8	320•1
24	9	67	900	35	37•54N	67	49•13W	4946	979856•9	-26•9	312•6
24	9	67	930	35	38•69N	67	51•95W	4915	979859•5	-26•0	311•4
24	9	67	1000	35	39•96N	67	54•58W	4940	979872•5	-14•9	283•0
24	9	67	1030	35	41•63N	67	56•59W	3062	979882•4	-7•3	202•9
24	9	67	1040	35	42•19N	67	57•27W	2970	979884•5	-5•8	198•1
24	9	67	1050	35	42•75N	67	57•93W	3347	979881•3	-9•5	220•3
24	9	67	1100	35	43•31N	67	58•50W	3727	979885•1	-6•9	248•9
24	9	67	1130	35	44•97N	68	0•06W	4926	979874•1	-20•2	317•9
24	9	67	1200	35	46•75N	68	1•73W	4925	979870•3	-26•3	311•8
24	9	67	1230	35	48•66N	68	3•51W	4917	979870•5	-29•1	308•4
24	9	67	1300	35	50•68N	68	5•46W	4910	979871•2	-31•5	305•5
24	9	67	1330	35	53•04N	68	7•92W	5093	979875•4	-30•6	319•0
24	9	67	1400	35	55•35N	68	10•46W	4892	979880•1	-29•4	306•4
24	9	67	1430	35	57•31N	68	13•05W	4887	979883•4	-29•0	306•4
24	9	67	1500	35	59•45N	68	15•76W	4875	979880•9	-34•4	300•2
24	9	67	1530	35	2•35N	68	18•98W	4863	979883•8	-35•8	298•0
24	9	67	1630	35	7•23N	68	24•84W	4831	979887•6	-39•1	292•5
24	9	67	1700	35	9•05N	68	27•22W	4806	979892•1	-37•2	292•7
24	9	67	1730	35	10•38N	68	29•11W	4779	979895•4	-35•8	292•2
24	9	67	1800	35	11•76N	68	31•03W	4752	979898•3	-34•9	291•3
24	9	67	1900	35	15•87N	68	34•96W	4695	979909•7	-29•4	292•9
24	9	67	1930	35	17•85N	68	37•73W	4561	979913•5	-28•3	291•6
24	9	67	2000	35	20•01N	68	40•49W	4619	979917•8	-27•4	289•6
24	9	67	2030	35	22•53N	68	43•23W	4584	979920•1	-28•7	286•0
24	9	67	2100	35	25•07N	68	45•72W	4544	979923•8	-28•6	283•3
24	9	67	2130	35	28•04N	68	48•19W	4496	979926•8	-30•0	278•6
24	9	67	2230	35	32•64N	68	52•97W	4384	979935•4	-28•2	272•7
24	9	67	2300	35	34•42N	68	55•53W	4330	979935•6	-30•5	266•7
24	9	67	2330	35	36•00N	68	58•28W	4286	979939•1	-29•4	264•8
25	9	67	30	35	41•12N	69	1•04W	4197	979950•9	-24•8	263•3
25	9	67	100	35	44•17N	69	1•59W	4155	979957•4	-22•9	262•3
25	9	67	130	35	46•59N	69	3•23W	4117	979964•9	-19•0	263•6
25	9	67	200	35	49•01N	69	4•85W	4084	979970•1	-17•3	263•1

DATE & TIME				LATITUDE		LONGITUDE		DEPTH	OBSERVED IN METERS	FREE-AIR BOUGUER ANOMALY	ANOMALY
DAY	MO.	YR	HOUR	°	'	°	'	mgal	mgal	mgal	
25	9	67	230	37	51.39N	69	6.23W	4054	979973.3	-17.5	260.8
25	9	67	300	37	53.76N	69	7.63W	4018	979977.9	-16.2	259.6
25	9	67	400	37	58.12N	69	9.10W	3958	979983.6	-17.2	254.5
25	9	67	430	38	0.34N	69	9.97W	3930	979986.0	-17.9	251.8
25	9	67	500	38	2.56N	69	10.83W	3901	979989.1	-18.1	249.7
25	9	67	530	38	4.60N	69	11.36W	3872	979992.8	-17.2	248.6
25	9	67	600	38	6.22N	69	12.02W	3853	979995.2	-17.2	247.3
25	9	67	630	38	7.26N	69	12.99W	3834	979998.6	-15.3	247.9
25	9	67	700	38	8.59N	69	14.31W	3819	979999.5	-16.4	245.7
25	9	67	730	38	10.31N	69	16.07W	3806	980.3.4	-15.1	246.1
25	9	67	800	38	12.03N	69	18.00W	3792	980.5.6	-15.4	244.9
25	9	67	830	38	13.74N	69	20.23W	3762	980.9.5	-14.0	244.2
25	9	67	900	38	15.44N	69	22.35W	3748	980.15.1	-10.8	246.5
25	9	67	930	38	17.12N	69	24.35W	3712	980.20.6	-7.8	247.0
25	9	67	1030	38	21.19N	69	28.11W	3592	980.29.8	-4.5	242.1
25	9	67	1100	38	23.42N	69	29.65W	3549	980.37.2	-0.3	243.3
25	9	67	1130	38	25.74N	69	30.69W	3497	980.41.9	0.9	241.0
25	9	67	1200	38	28.09N	69	31.83W	3456	980.44.1	-0.4	236.8
25	9	67	1230	38	30.47N	69	33.07W	3418	980.48.0	0.0	234.6
25	9	67	1300	38	32.88N	69	34.32W	3393	980.52.4	1.1	234.0
25	9	67	1330	38	35.46N	69	35.57W	3353	980.56.0	0.9	231.1
25	9	67	1400	38	38.04N	69	36.75W	3319	980.62.4	3.7	231.5
25	9	67	1430	38	40.65N	69	37.60W	3283	980.64.7	1.9	227.3
25	9	67	1500	38	43.22N	69	38.53W	3243	980.63.6	-2.8	219.8
25	9	67	1530	38	45.65N	69	39.74W	3182	980.65.5	-4.4	214.1
25	9	67	1600	38	47.97N	69	40.80W	3150	980.72.5	-1.0	215.2
25	9	67	1630	38	49.99N	69	41.52W	3110	980.76.0	-0.4	213.1
25	9	67	1700	38	52.14N	69	42.39W	3056	980.73.6	-5.9	203.9
25	9	67	1730	38	54.87N	69	43.85W	3001	980.77.4	-6.0	200.0
25	9	67	1800	38	57.57N	69	45.32W	2940	980.80.4	-7.0	194.8
25	9	67	1830	39	0.13N	69	46.81W	2868	980.84.0	-7.4	189.5
25	9	67	1900	39	2.63N	69	48.39W	2801	980.87.0	-7.8	184.4
25	9	67	1930	39	4.64N	69	50.61W	2746	980.91.1	-6.8	181.7
25	9	67	2000	39	6.75N	69	52.62W	2701	980.94.2	-6.8	178.6
25	9	67	2030	39	9.26N	69	53.80W	2657	980.97.1	-7.6	174.8
25	9	67	2200	39	18.66N	69	58.01W	2593	980.98.1	-20.5	157.5
25	9	67	2230	39	21.71N	69	58.63W	2558	980.98.6	-24.4	151.2
25	9	67	2300	39	24.69N	69	59.53W	2529	980.99.5	-28.0	145.6
25	9	67	2330	39	27.40N	70	1.02W	2461	980.101.8	-29.6	139.3
26	9	67	0	39	30.10N	70	2.10W	2395	980.102.3	-32.7	131.7
26	9	67	30	39	32.81N	70	2.89W	2347	980.110.7	-28.7	132.4
26	9	67	100	39	35.57N	70	3.85W	2268	980.107.9	-35.8	119.9
26	9	67	130	39	38.64N	70	5.70W	2180	980.115.4	-32.7	117.0
26	9	67	200	39	41.70N	70	7.57W	2115	980.121.0	-31.8	113.4
26	9	67	230	39	44.71N	70	9.56W	1958	980.133.1	-24.0	110.4
26	9	67	300	39	47.77N	70	11.55W	1345	980.160.1	-1.5	90.8
26	9	67	330	39	51.15N	70	13.58W	1202	980.177.5	11.0	93.5
26	9	67	400	39	54.28N	70	15.54W	1016	980.185.0	13.8	83.6
26	9	67	430	39	56.76N	70	17.33W	557	980.193.2	18.4	56.7
26	9	67	500	39	59.76N	70	19.15W	250	980.206.2	27.0	44.2

DATE & TIME				LATITUDE		LONGITUDE		DEPTH	OBSERVED IN	FREE-AIR BOUGUER ANOMALY	BOUGUER ANOMALY
DAY	MO.	YR.	HOUR	°	'	°	'	METERS	mgal	mgal	mgal
26	9	67	530	40	3°45N	70	21°01W	156	980212.9	27.9	38.6
26	9	67	630	40	12°15N	70	24°99W	110	980219.3	22.0	29.6
26	9	67	658	40	17°37N	70	27°26W	107	980206.6	1.1	8.5
26	9	67	800	40	29°62N	70	32°69W	100	980229.6	6.0	12.9
26	9	67	830	40	36°00N	70	35°76W	97	980250.2	17.0	23.7
26	9	67	1130	40	44°10N	70	53°42W	78	980255.3	10.1	15.5
26	9	67	1200	40	50°37N	70	53°16W	75	980266.9	12.3	17.5
26	9	67	1230	40	56°86N	70	52°77W	72	980281.5	17.3	22.3
26	9	67	1300	41	3°35N	70	52°39W	69	980295.5	21.8	26.6
26	9	67	1330	41	9°84N	70	52°00W	66	980304.4	20.8	25.3

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Profiles, tabulations, and charts are presented of principal gravity facts, free-air gravity anomalies, and simple Bouquer gravity anomalies obtained in the western North Atlantic Ocean during R/V CHAIN Cruise 73.

1. Gravity data, CHAIN Cruise 73
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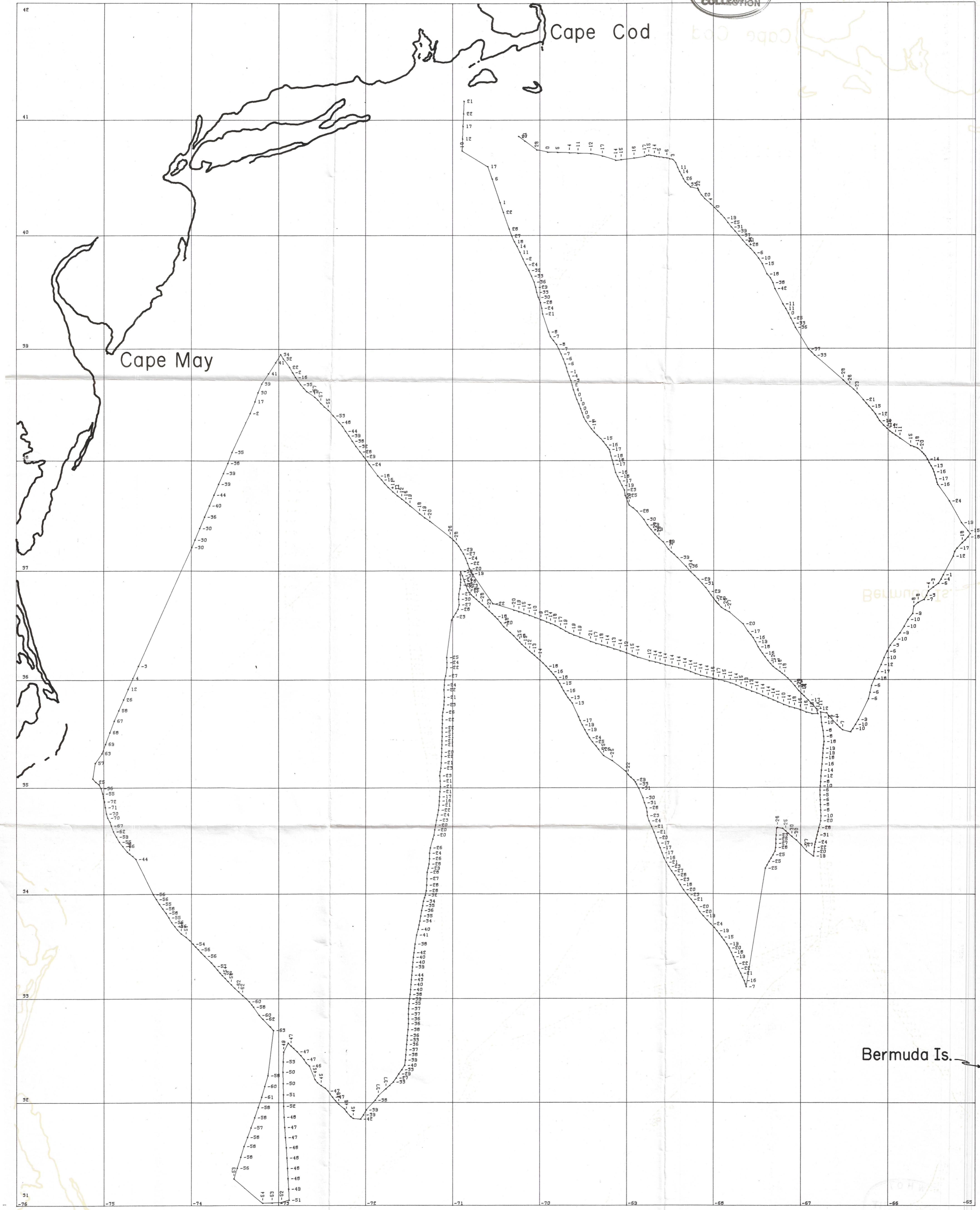
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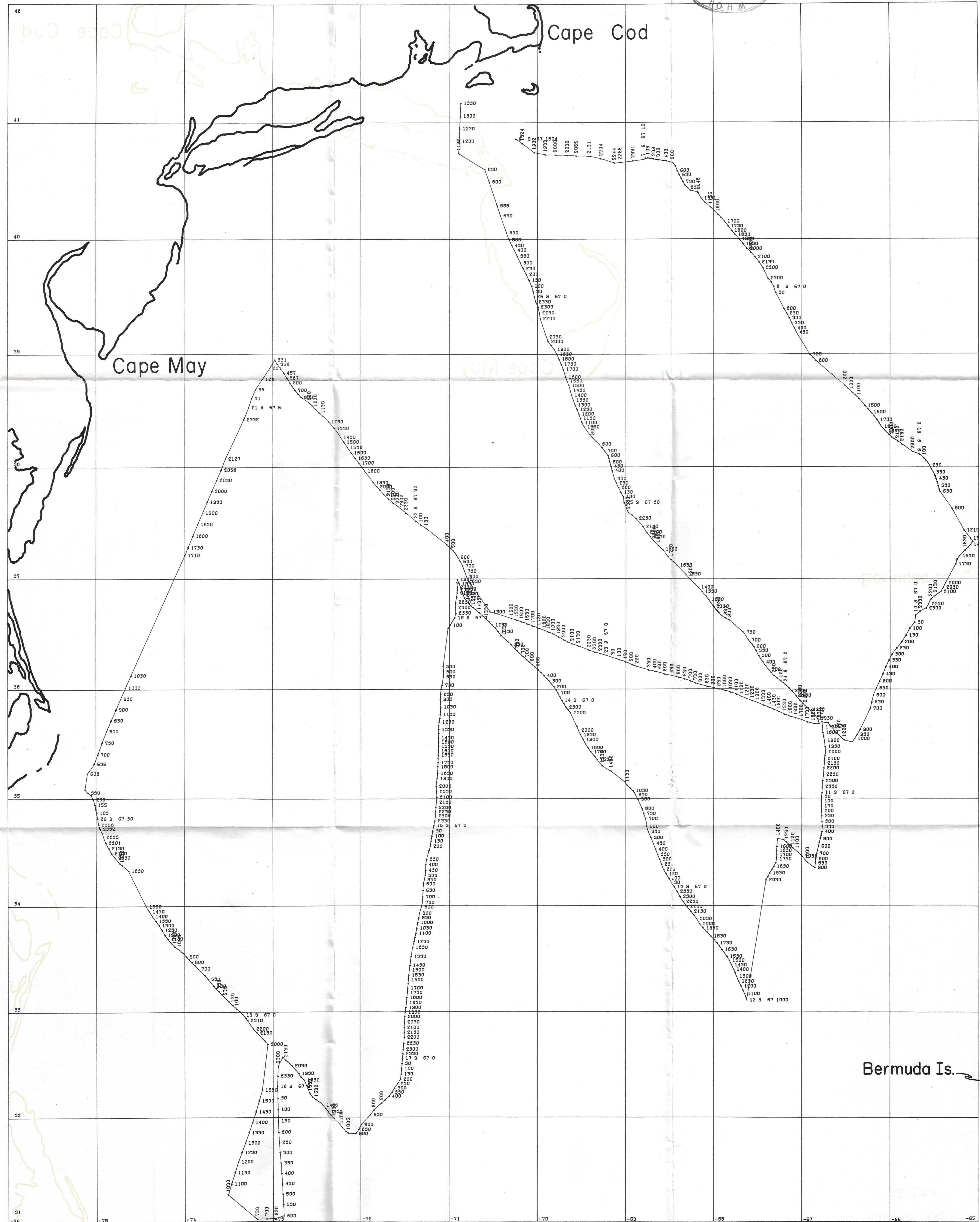


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