UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

DIGITAL MARINE GRAVITY DATA COLLECTED IN THE CHUKCHI SEA IN 1982

By

Steven D. May[1] *and Arthur Grantz*[1]

Open-File Report No. 85-742

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.
Any use of trade names is for descriptive purposes only and does not constitute endorsement by the U.S. Geological Survey

1985

[1]*U.S. Geological Survey, 345 Middlefield Road*
Mail Stop 904, Menlo Park, California 94025

The U.S. Geological Survey (USGS) collected approximately 2,260 km of digital marine gravity data in 1982 over the Chukchi Sea shelf (Figs. 1 and 2). The data were collected aboard the USGS research vessel S. P. Lee (cruise number L1182CS). These data have been included in a free-air gravity anomaly map of the United States Beaufort and Chukchi Seas (May, 1985). Geology of the Chukchi shelf is discussed in Grantz and May (1984).

Data were recorded at 20 second intervals using La Coste and Romberg sea gravimeter S-53 mounted on a two-axis inertial platform (La Coste and others, 1967). Navigation of the survey was by satellite fixes integrated with bottom-tracking doppler sonar. Final smoothed navigation was used to make Eotvos corrections and final free-air anomaly values were determined from the 1967 reference ellipsoid (International Association of Geodesy, 1971).

Digital data available from this survey are gravity and navigation at one minute (100 to 300 meter) intervals. Copies of the data are available through the National Geophysical Data Center, NOAA/EDIS/NGDC, Code 64, 325 Broadway, Boulder, CO 80303; telephone (303) 497-6338.

References

Grantz, Arthur, and May, S. D., 1984, Summary geologic report for Barrow arch planning area, Chukchi Sea, Alaska: U.S. Geological Survey Open-File Report 84-395, 40 p., 16 figs.

International Association of Geodesy, 1971, Geodetic reference system, 1967: Paris Bureau Central de l'Association Internationale de Geodesie Special Publication 3, 116 p.

La Coste, L. J. B., Clarkson, Neal, and Hamilton, George, 1967, La Coste and Romberg stabilized platform shipboard gravity meter: Geophysics, v. 32, no. 1, p. 99-109.

May, S. D., 1985, Free-air gravity anomaly map of the Chukchi and Beaufort seas, Arctic Ocean: U.S. Geological Survey Miscellaneous Investigations Series Map I-1182-E, 1 sheet, scale 1:1,000,000.

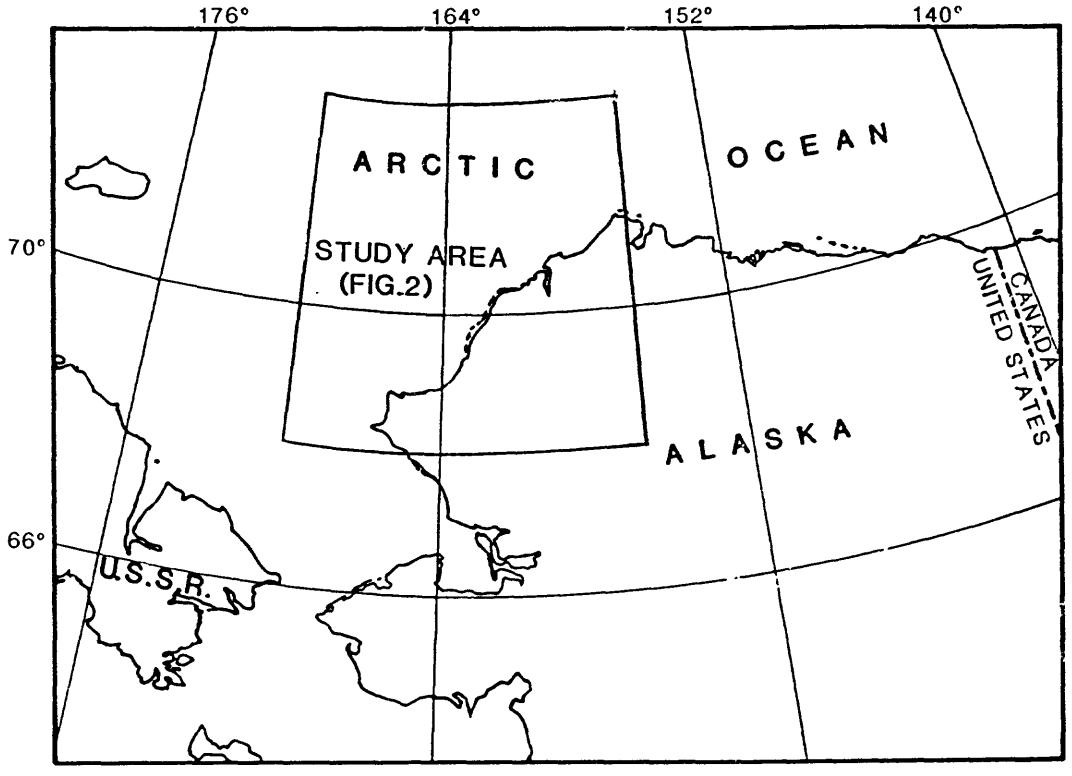

FIGURE 1: Index map showing location of trackline map, Figure 2.

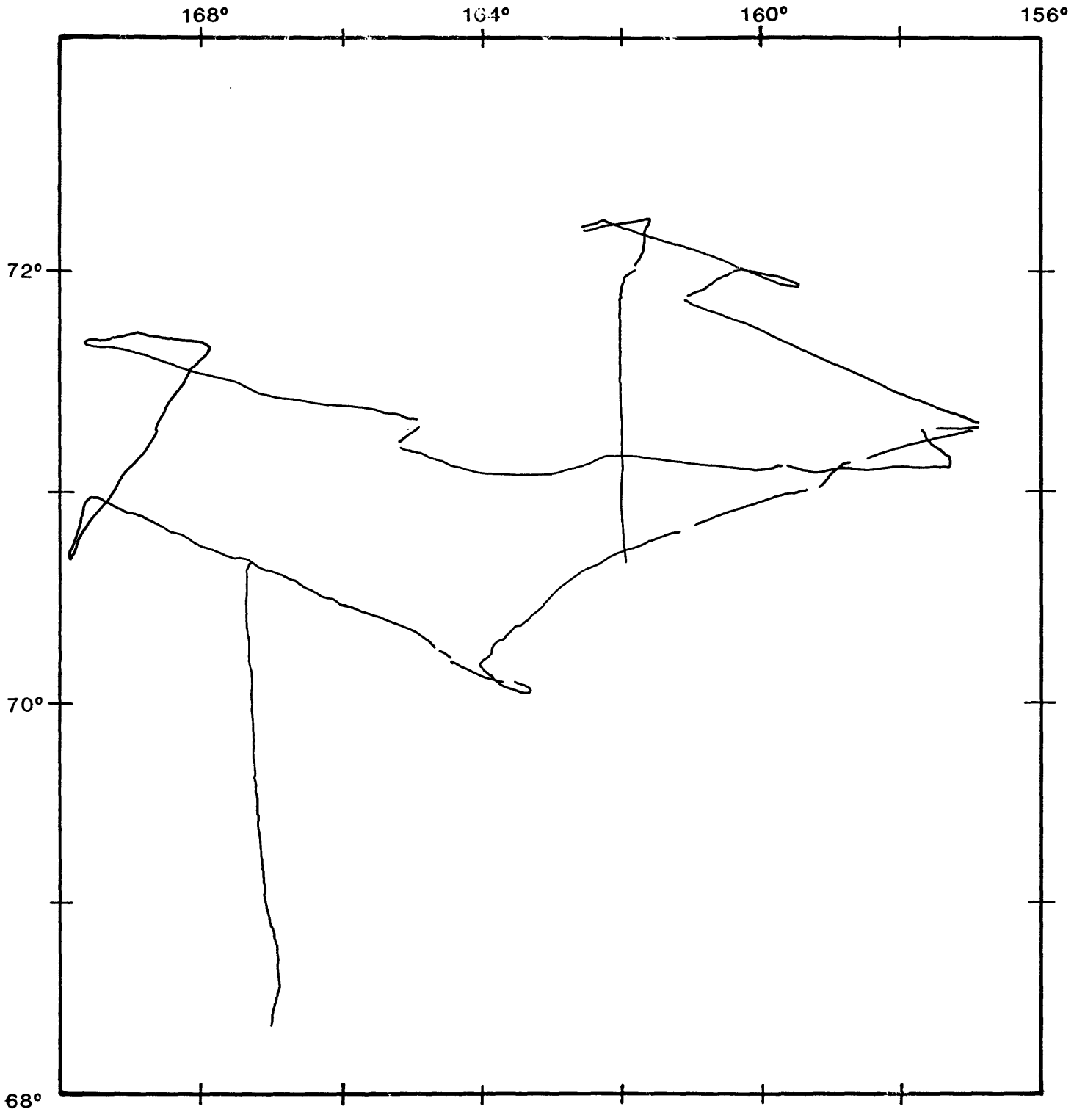

Figure 2.--Location of U.S. Geological Survey R/V S. P. LEE cruise L1182CS digital marine gravity data collected in the central Chukchi Sea in 1982.