MSG 81-005

OCEANOGRAPHIC DATA off PUERTO RICO and the VIRGIN ISLANDS

Prepared by:
J.V.A.Trumbull[1]

Compiled by:
P. Wilde,[2] T. E. Chase,[1] W. R. Normark,[1] C. P. Miller,[1] B. A. Seekins,[1] and J. D. Young.[1]

MERCATOR PROJECTION
CONTOUR INTERVAL 100 METERS
CORRECTED FOR SOUND VELOCITY
SCALE 1:781,786 at 18°N.

EXPLANATION:

THIS IS THE SECOND IN A SERIES OF SHEETS TO BE USED TO IDENTIFY THE MARINE GEOLOGIC FACTORS THAT INFLUENCE THE SUCCESSFUL OPERATION OF OCEAN THERMAL ENERGY CONVERSION (OTEC) PLANTS. THE FIRST SHEET WAS OFF THE SOUTHERN HAWAIIAN ISLANDS. (REFERENCE : LBL PUB. NO 359). THIS REGIONAL COMPILATION WILL FORM THE BASIS FOR SELECTION OF LARGER SCALE SITE SPECIFIC AREAS WHERE MORE DETAILED BOTTOM ASSESSMENT STUDIES WILL BE MADE.

THIS DATA COMPILATION IS DESIGNED TO GIVE REGIONAL COVERAGE OF THE MARINE AREAS IN THE VICINITY OF PUERTO RICO AND THE VIRGIN ISLANDS.

THE AIM OF THIS STYLE OF CHART IS TO PROVIDE MAPS OF CONVENIENT SIZE THAT (1) SUMMARIZES THE OCEANOGRAPHIC DATA FOR THE PARTICULAR AREA; (2) CAN BE USED AS A BASE MAP FOR MARINE GEOLOGIC INVESTIGATIONS; (3) IS A WORKING CHART DURING SUBSEQUENT SHIPBOARD OPERATIONS: AND (4) CAN BE REVISED AND MODIFIED EASILY AS NEW INFORMATION BECOMES AVAILABLE.

THIS MAP IS NOT TO BE USED FOR NAVIGATION. THE APPROPRIATE CHARTS ARE SHOWN IN FIGURE 1 TO THE LEFT.

LOCATION MAP

DEDICATED TO:
HARRY H. HESS
May 24, 1906 - Aug. 25, 1969
BS, Yale 1927 Phd. Princeton 1934
PIONEER CARIBBEAN GEOLOGIST

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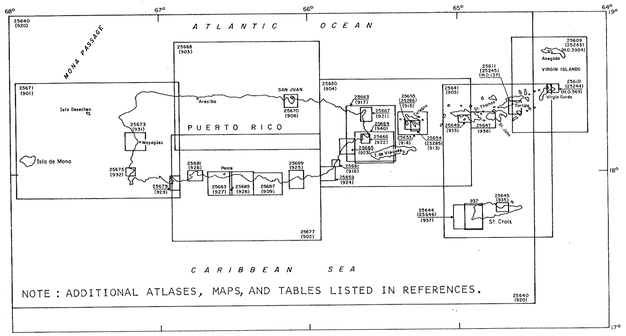
For Additional Copies, Contact
Lawrence Berkeley Laboratory
Earth Sciences Division
University of California
Berkeley, California 94720

1 U.S. Geological Survey
2 Lawrence Berkeley Laboratory, University of California Berkeley

NATIONAL OCEAN SURVEY CHARTS



NOTE : ADDITIONAL ATLASES, MAPS, AND TABLES LISTED IN REFERENCES.

GEOGRAPHIC FEATURES

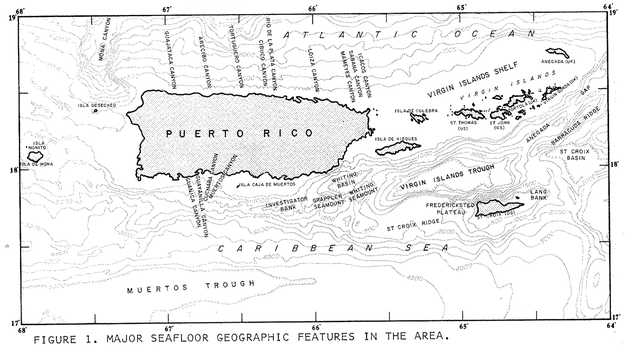


FIGURE 1. MAJOR SEAFLOOR GEOGRAPHIC FEATURES IN THE AREA.

EARTHQUAKE EPICENTERS

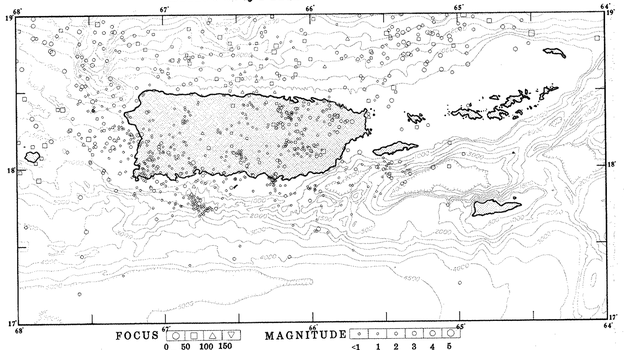


FIGURE 2. EARTHQUAKES LOCATED WITHIN THE PUERTO RICO REGION, 1 JULY,1975-31 DECEMBER, 1977, BY THE PUERTO RICO SEISMIC NETWORK, USING THE HYPO71 PROGRAM. REDRAFTED WITH PERMISSION FROM FIGURE 2 OF DART, TARR, CARVER, AND WHARTON, 1980.

GRAVITY ANOMALY

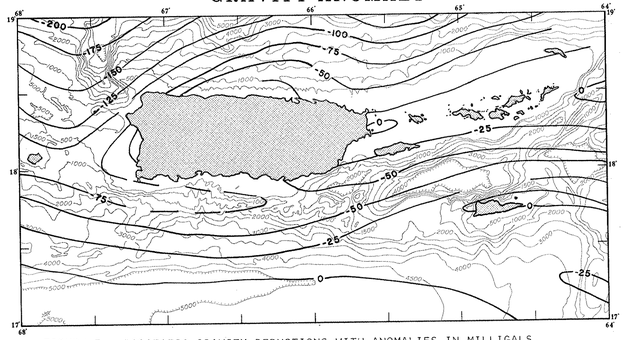
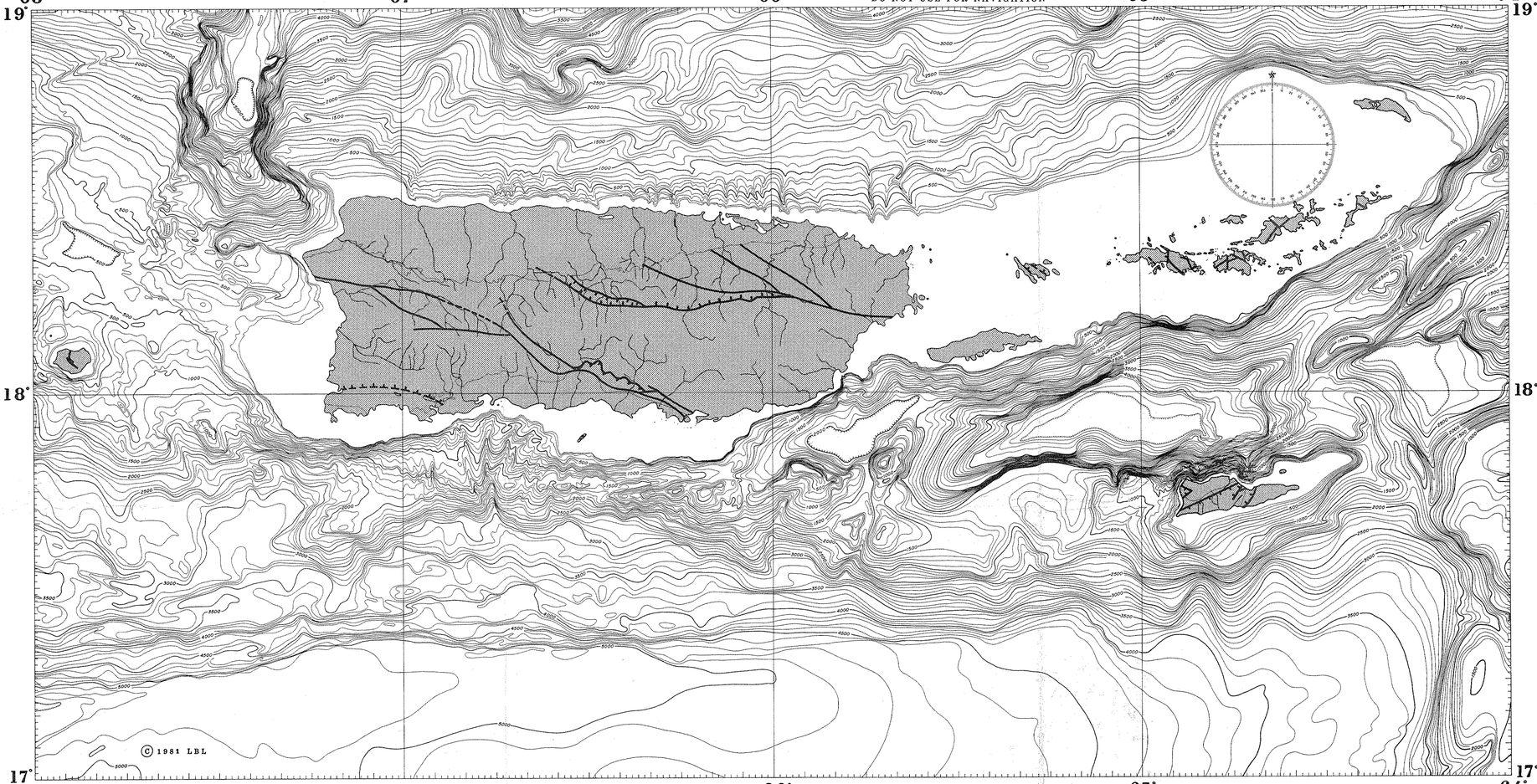


FIGURE 3. ISOSTATIC GRAVITY REDUCTIONS WITH ANOMALIES IN MILLIGALS. FROM S.A. BUSH AND P.A. BUSH, 1969, TRANSACTIONS - GULF COAST ASSOSIATION OF GEOLOGICAL SOCIETIES, V. XIX.



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MAGNETIC LINEATIONS

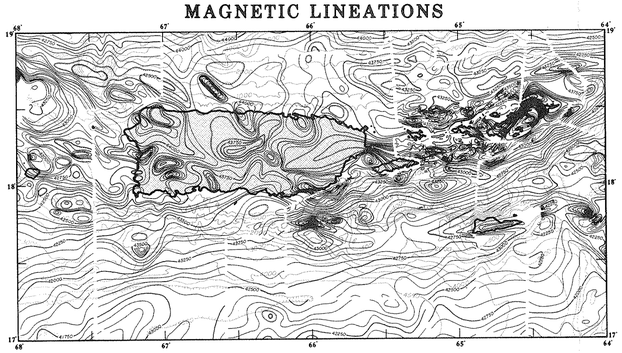

FIGURE 4. TOTAL INTENSITY MAGNETIC FIELD IN THE AREA. REGIONAL FIELD IS NOT REMOVED. CONTOUR INTERVAL IS 50 GAMMAS. REDRAFTED BY PERMISSION FROM MATTHEWS AND HOLCOMBE, 1976. COMPILED FROM VARIOUS DETAILED SURVEYS BY MATTHEWS AND HOLCOMBE.

BOTTOM SEDIMENTS & HEAT FLOW STATIONS

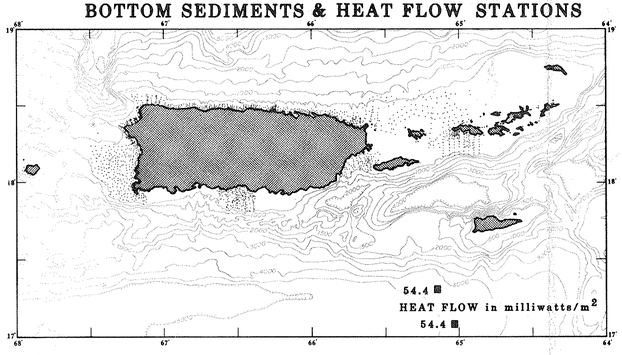

FIGURE 5. DATA FROM C.W. HOLMES, U.S. GEOLOGICAL SURVEY, CORPUS CHRISTI, TEXAS; R.F. DILL, WEST INDIES LABORATORY, FAIRLEIGH DICKENSON UNIVERSITY, CHRISTIANSTED, ST. CROIX; FILES OF THE NATIONAL GEOPHYSICAL AND SOLAR TERRESTRIAL DATA CENTER, BOULDER, COLORADO; AND FILES OF THE COMMONWEALTH OF PUERTO RICO, DEPARTMENT OF NATURAL RESOURCES COOPERATIVE MARINE GEOLOGY PROGRAM.

SURFACE WINDS

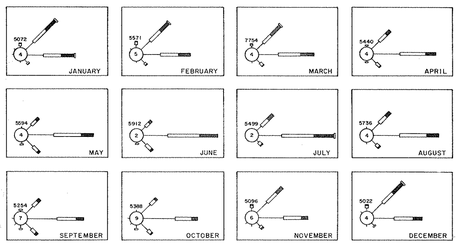

FIGURE 6. SURFACE WINDS BY MONTH. FROM U.S. NAVAL OCEANOGRAPHIC OFFICE, 1967, SECTION IV, PAGES 6-50.