OCEANOGRAPHIC DATA off WASHINGTON 46° to 49° North including the NITINAT DEEP SEA FAN

by

P. Wilde[1], T.E. Chase[2], M.L. Holmes[3], W.R. Normark[2], and J.A. Thomas[2]

ASSISTED BY:
R. Hollar, J. Young, L. Bailey, P. Swenson, D. Clifford, T. Gilmore and K. Bachman

LBL Pub. 223

1st Edition Nov, 1977

For additional copies contact:
LAWRENCE BERKELEY LABORATORY
Energy and Environment Division
University of California
Berkeley, California 94720

Dedicated to the memory of our good friend

Milner B. "Benny" Schaefer

Dec. 1912 - June 1970

B.A. U. Wash. 1935, Ph.D. U. Wash. 1950

NATIONAL OCEAN SURVEY SAILING & GENERAL CHARTS

Chart Number Old System	Chart Number New System	Title	Scale
†5022	†18003	Cape Blanco to Cape Flattery	1:3,121,170
†5052	†18007	San Francisco to Cape Flattery	1:1,200,000
†6002	†18500	Columbia River to Destruction Island	1:180,789
†6102	†18480	Approaches to Strait of Juan de Fuca - Destruction I. to Amphitrite Pt.	1:176,253
†6300	†18400	Strait of Georgia and Strait of Juan de Fuca	1:200,000
†8500	† 531	Gulf of Alaska - Strait of Juan de Fuca to Kodiak Island	1:2,100,000
†9000	† 530	San Diego to Aleutian Islands and Hawaiian Archipelago	1:4,860,700

NOS Seamap Series (1:1,000,000)		Pilot Chart
12042-12M	Magnetics	1968 U.S. Coast Pilot No.7 Pacific Coast U.S. Dept. of Commerce
12042-12G	Gravity	
12042-12B	Bathymetry	

† Includes Loran-A Lines of Position

GEOGRAPHIC FEATURES

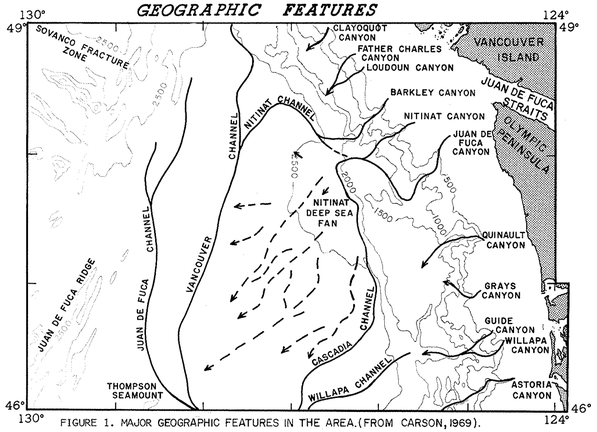


FIGURE 1. MAJOR GEOGRAPHIC FEATURES IN THE AREA. (FROM CARSON, 1969).

EARTHQUAKE EPICENTERS

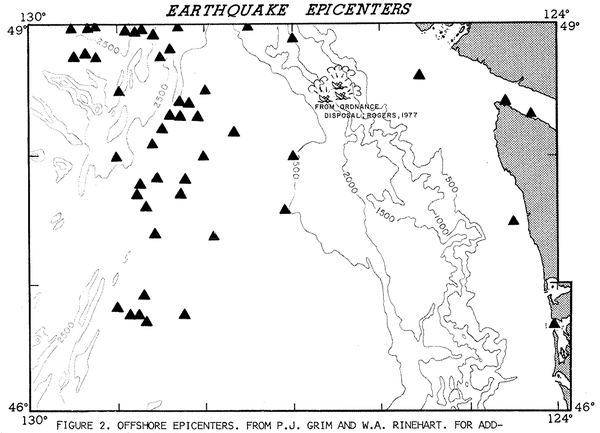


FIGURE 2. OFFSHORE EPICENTERS. FROM P.J. GRIM AND W.A. RINEHART. FOR ADDITIONAL INFORMATION, CONTACT NGSDC/NOAA.

BOTTOM SEDIMENTS & HEAT FLOW STATIONS

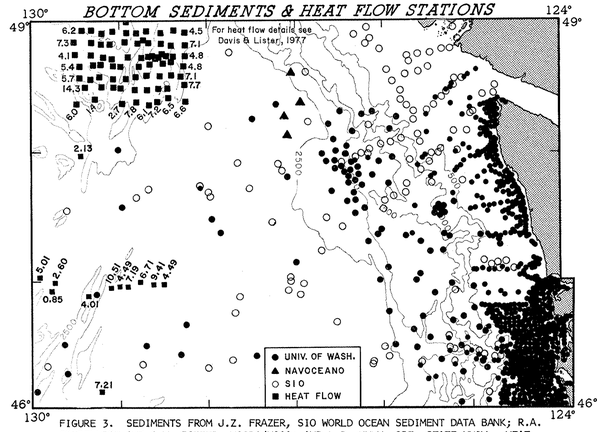
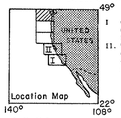


FIGURE 3. SEDIMENTS FROM J.Z. FRAZER, SIO WORLD OCEAN SEDIMENT DATA BANK; R.A. COMBELLICK AND C.W. POTTER, NGSDC/NOAA; AND L.D. KULM, ORE. STATE UNIV. HEAT FLOW DATA (IN MICROCALORIES/CM/SECOND) FROM LISTER, 1970, DAVIS AND LISTER, 1977, IN PRESS, AND P.J. GRIM, NGSDC/NOAA.

Location Map



PREVIOUSLY ISSUED SHEETS IN THIS SERIES

I CHASE, T.E., W.R. NORMARK, AND P. WILDE, 1975. OCEANOGRAPHIC DATA OF THE MONTEREY DEEP SEA FAN: IMR TECH. REPT. SERIES TR-58, UNIVERSITY OF CALIFORNIA, SAN DIEGO.

II. WILDE, P., W.R. NORMARK, AND T.E. CHASE, 1976. OCEANOGRAPHIC DATA OFF CENTRAL CALIFORNIA 37°TO 40°NORTH INCLUDING THE DELGADA DEEP SEA FAN: LBL PUB. 92, UNIVERSITY OF CALIFORNIA, BERKELEY.

MERCATOR PROJECTION

SCALE

1 TO 748,602 AT 47°N LATITUDE

CONTOUR INTERVAL = 100 METERS CORRECTED FOR SOUND VELOCITY FROM MATTHEWS TABLES, AREAS 24 AND 44

BOTTOM CONTOURS FROM R.J. HURLEY, D.A. MC MANUS, H.W. MENARD, T.E. CHASE, J. MAMMERICKX, AND NATIONAL OCEAN SURVEY. NOS SOUNDINGS SUPPLIED BY LT. C.B. LAWRENCE, NOAA CORPS.

EXPLANATION

THIS DATA COMPILATION IS A COMPANION SHEET TO TWO PREVIOUSLY ISSUED MAPS (MONTEREY DEEP SEA FAN; IMR-TR-58 AND DELGADA DEEP SEA FAN; LBL PUB.92) PROVIDING OFFSHORE COVERAGE OF THE WEST COAST OF THE UNITED STATES BETWEEN LATITUDE 34° NORTH AND THE CANADIAN BORDER.

THE AIM OF THIS WORK IS TO PROVIDE A MAP OF CONVENIENT SIZE WHICH (1) SUMMARIZES THE OCEANOGRAPHIC DATA TO DATE FOR A PARTICULAR AREA; (2) CAN BE USED BOTH AS A BASE MAP FOR GEOLOGIC INVESTIGATIONS AND (3) CAN BE A WORKING CHART DURING SHIPBOARD OPERATIONS; AND (4) COULD BE EASILY REVISED AND MODIFIED AS NEW INFORMATION BECOMES AVAILABLE. ALTHOUGH WE ARE MARINE GEOLOGISTS, WE RECOGNIZE THAT DATA FROM OTHER BRANCHES OF OCEANOGRAPHY WILL ULTIMATELY HAVE BEARING ON MARINE GEOLOGIC PROBLEMS. THUS WE HAVE INCLUDED DATA FROM OTHER FIELDS OF MARINE SCIENCES.

THE SUBJECT MATTER OF THE ADDITIONAL FIGURES, IN ESSENCE, IS A DIGEST OF WHAT OCEANOGRAPHIC INFORMATION HAS BEEN COMPILED.

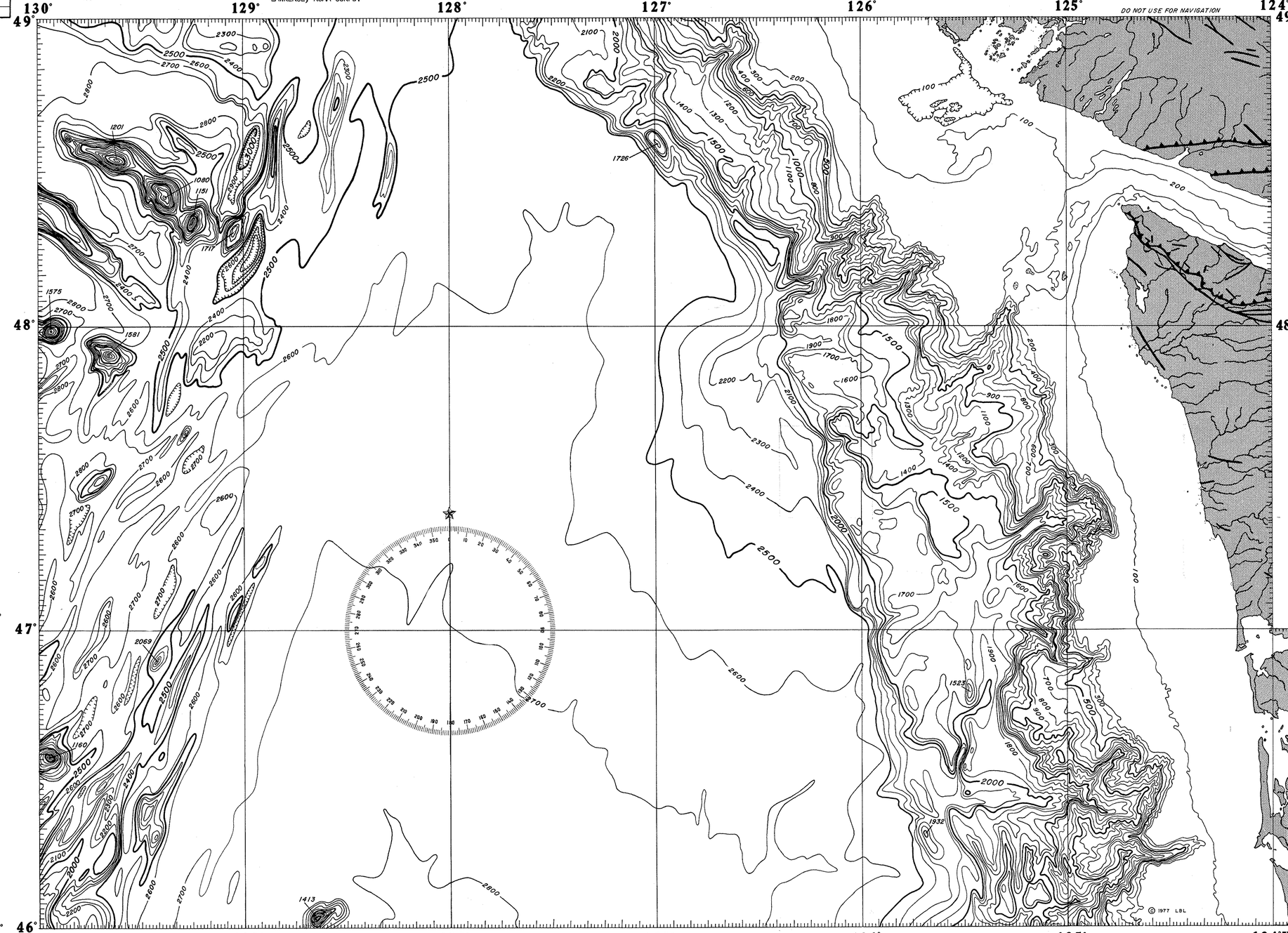
THE REFERENCES LISTED ARE EXTENSIVE (BUT UNLIKELY TO BE EXHAUSTIVE) OF THOSE WRITTEN ABOUT THE AREA. WE LIST PARTICULARILY THOSE PAPERS AND REPORTS WE BELIEVE TO BE OF GENERAL INTEREST AND LET THE READER USE BIBLIOGRAPHIES FOR DETAILS.

AS OUR BASE MAP IS NOT TO BE USED FOR NAVIGATION, WE LIST THE PUBLISHED NAVIGATIONAL CHARTS PLUS THE PERTINENT COAST PILOT FOR THOSE PLANNING CRUISES IN THE AREA. THE COAST PILOT IS A VALUABLE AID AS IT GIVES WEATHER AND HARBOR INFORMATION WHICH IS NECESSARY FOR OPERATIONS IN THE ROUGH SEA OFF THE COAST.

1. LAWRENCE BERKELEY LABORATORY, ENERGY AND ENVIRONMENT DIVISION, UNIVERSITY OF CALIFORNIA, BERKELEY, 94720.
2. U.S. GEOLOGICAL SURVEY, MENLO PARK, CALIFORNIA, 94025.
3. U.S. GEOLOGICAL SURVEY, SEATTLE, WASHINGTON, 98105.

LAND INTERPRETATION FROM: N.S. MAC LEOD, D.L. TIFFIN, P.N. SNAVELY JR. AND R.G. CURRIE, CANADIAN JOURNAL OF EARTH SCIENCES, V.14, 1977 AND TECTONIC MAP OF THE UNITED STATES, USGS.

DO NOT USE FOR NAVIGATION



ACKOWLEDGEMENTS

WE WISH TO THANK THE FOLLOWING INDIVIDUALS AND THEIR SPONSORING GROUPS FOR THEIR HELP IN COMPILING THE DATA PRESENTED HERE.

UNIVERSITY OF WASHINGTON: J.S. CREAGER, D.A. MC MANUS, C.R.B. LISTER, R.W. STERNBERG, D. R. MORRISON, B.J. WATKINS, D.R. DOYLE, AND B. T.R. LEWIS; LEHIGH UNIVERSITY: B. CARSON; U.S. ARMY CORPS OF ENGINEERS: W.D. BARNARD; NOAA/ PACIFIC MARINE ENVIROMENTAL LAB: E.T. BAKER; NOAA/NATIONAL GEOPHYSICAL SOLAR-TERRESTRIAL DATA CENTER: C.B. LAWRENCE, N.F. HOLMBERG, P.J. GRIM, R.A. COMBELLICK, M.B. MOORE, J.S. SPENCER, C.W. POTTER, AND W.A. RINEHART; SCRIPPS INSTITUTION OF OCEANOGRAPHY: J.Z. FRAZER, D.L. HAWKINS; UNASSOCIATED: L.C. BENNETT. R.P. RIDDIHOUGH; VICTORIA GEOPHYSICAL OBSERVATORY, CANADA