TASADAY EXPEDITION

LEG 3

R/V T. WASHINGTON

INFORMAL REPORT AND INDEX OF

NAVIGATION, DEPTH, MAGNETIC AND SUBBOTTOM PROFILER DATA

Honolulu, Hawaii (21 July 1973)

to

Yokohama, Japan (6 August 1973)

Chief Scientist, Leg 3 - E. Shulenberger

Computer Tech - C. M. Butler

Resident Marine Techs - W. E. Keith, S. L. Witherow

Post-Cruise Processing by - S. M. Smith, U. Albright, O. McConnell

Prepared by

Underway Data Processing Group

S.I.O. Geological Data Center

Scripps Institution of Oceanography

La Jolla, California

November 1, 1973

Preliminary Report and Index of Navigation, Depth, Magnetic and Subbottom Profiler Data

Contents:

Index Chart - gives track of cruise leg and boundaries of depth compilation plots (see below).

Track Charts - annotated with dates (day/month) and hour ticks. The scale (.3"/deg. long) is the same as the index charts of previous SIO cruises published as Report IMR TR-25.

Profiles - Depth and magnetic anomaly vs. distance. Dates (day/month) and positions of major course changes (greater than 30 degrees) are annotated. Sections of track having subbottom profiler (airgun) records have a solid black line along the bottom of the profile.

For information on the availability and reproduction costs of data in the following forms contact T. E. Chase, Curator, Geological Data Center, Scripps Institution of Oceanography La Jolla, California 92037 (714-453-2000, Ext. 1534):

1. Navigation listing of times and positions of course and speed changes, fixes and drift velocity.

2. Depth compilation plots - in fathoms (assumed sound velocity of 800 fm./sec.) at approximately 1 mile spacing, plotted at 4" degree with standard U.S. Navy Oceanographic Office BC series boundaries (see index chart).

3. Plots of magnetic anomaly profiles along track-map scale = 1.2"/ degree; anomaly scale between 15°N and 15°S latitude = 500 gamma/inch; anomaly scale north of 15°N and south of 15°S = 1000 gamma/inch) from values retrieved at approximately 1 mile spacing and regional field removed using the 1965 IGRF.

4. Card Decks of navigation, depth and magnetics (for specific formats, contact S. M. Smith, Geological Data Center).

5. S.I.O. Sample Index - list of beginning and end times and positions of all underway records as well as all other samples (geology, biology, physical oceanography, etc.) collected on the cruise leg.

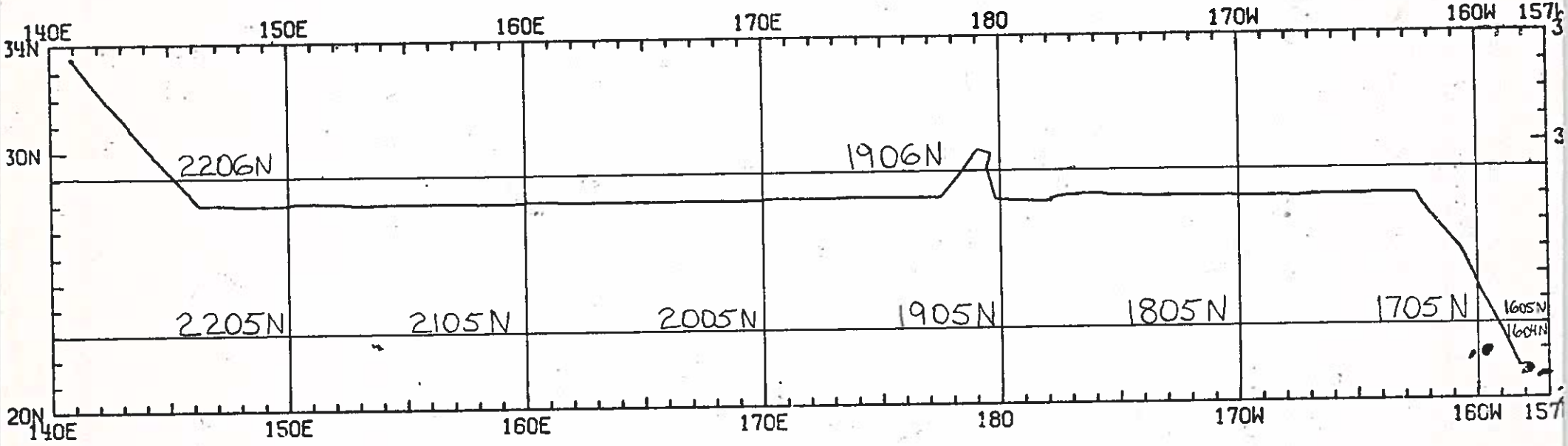
6. Microfilm or Xerox copies of:

   a. Echosounder records - 12 and 3.5 kHz frequency

   b. Subbottom profiler records (airgun)

   c. Magnetometer records

   d. Underway Data Log

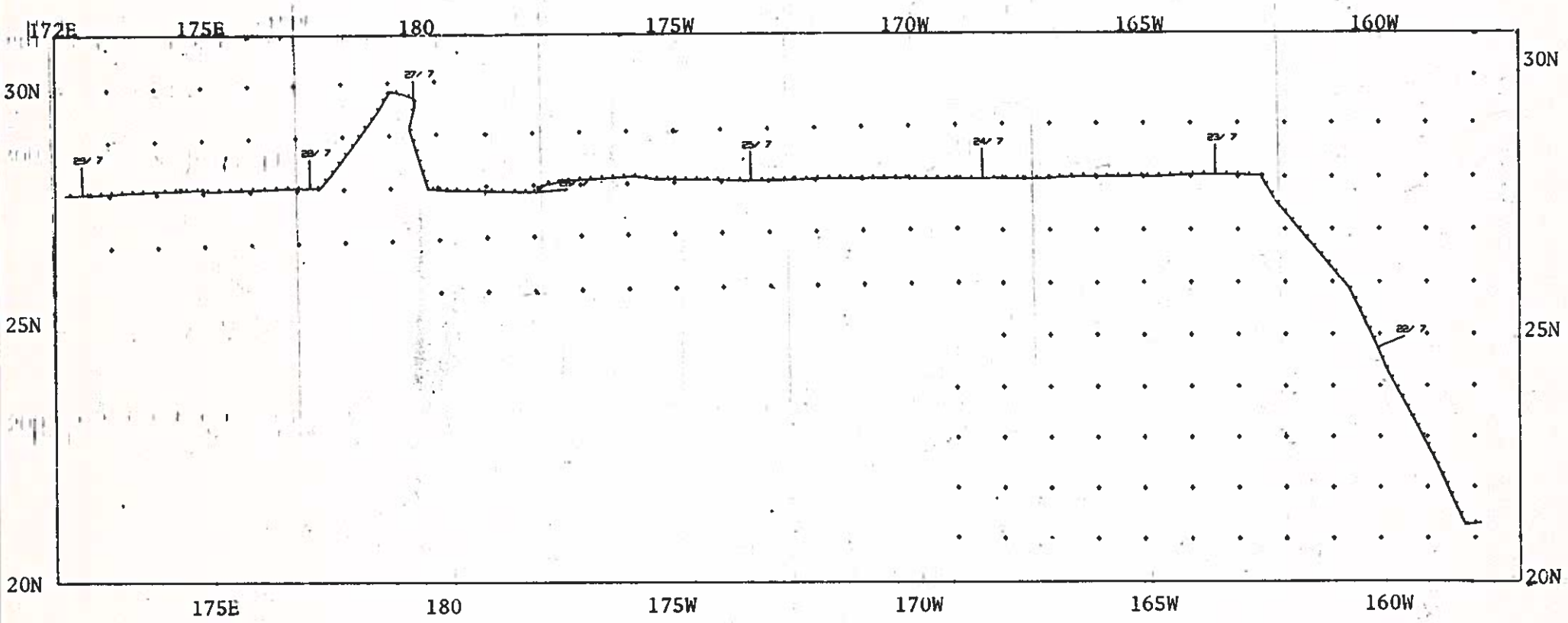


TASADAY EXPEDITION
LEG 3
R/V T.WASHINGTON
CHIEF SCIENTIST - E.SHULENBERGER

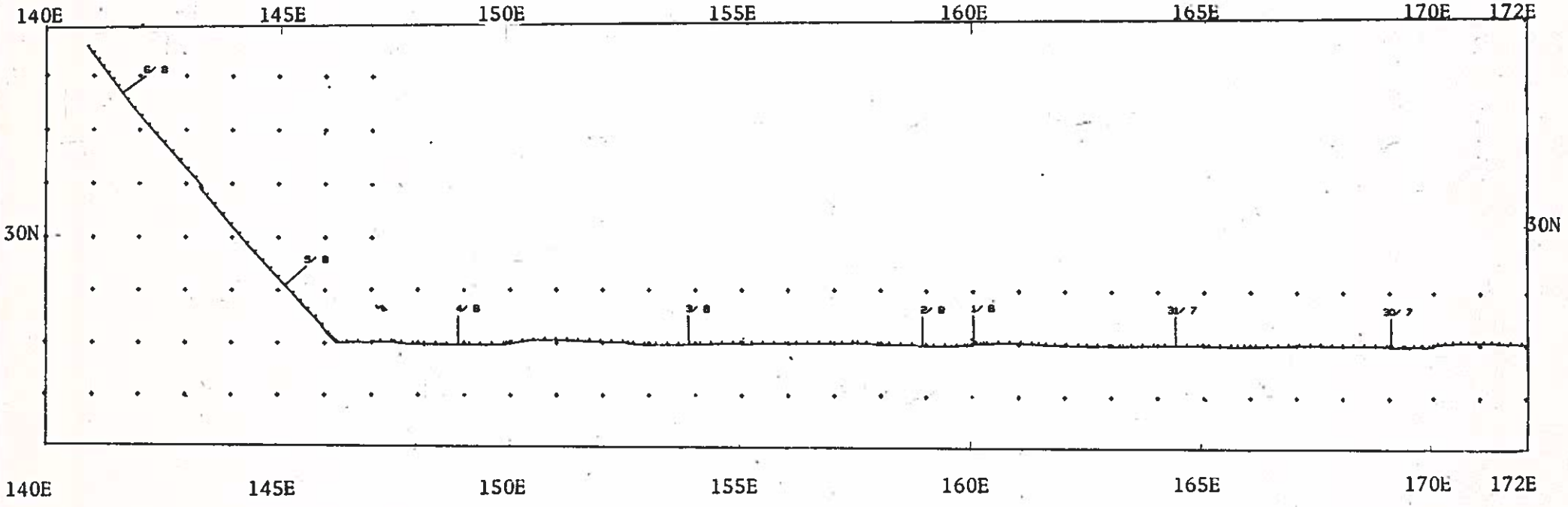
Honolulu - Yokohama (21 July 1973 - 6 Aug. 1973)

TOTAL MILEAGE

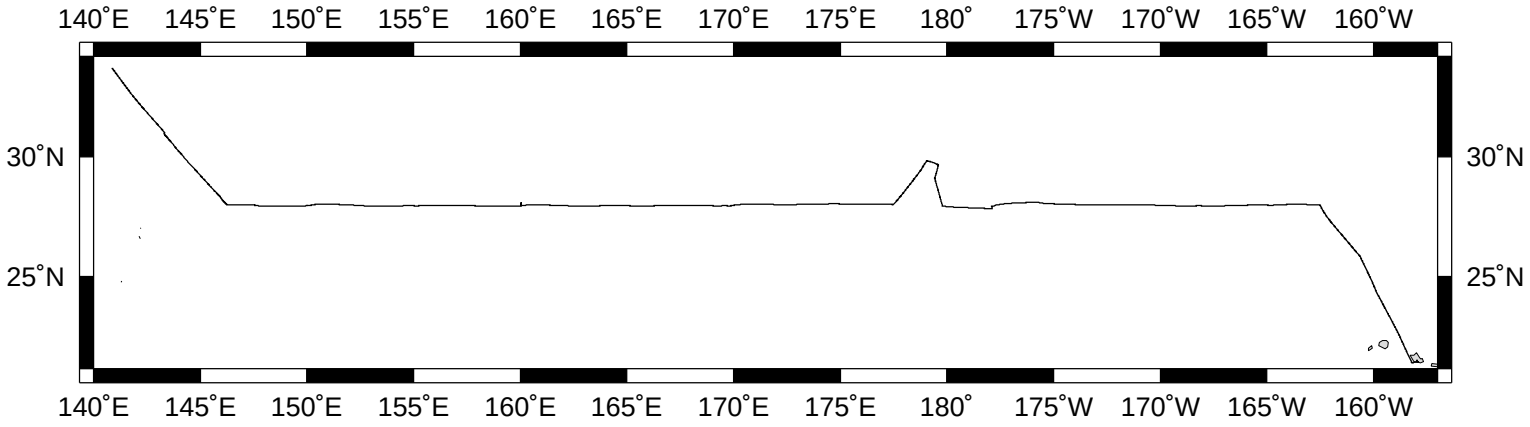
1) Cruise - 3838 miles
2) Magnetics - 3270 miles
3) Bathymetry - 3524 miles
4) Seismic Reflection - 255 miles



TASADAY LEG 3 TRACK PLOT(1 of 2)



TASADAY LEG 3 TRACK PLOT(2 of 2)



Cruise: TSDY03WT

Begin date (dd/mm/yyyy): 21/07/1973 End date: 06/08/1973

Data collected (# points): twtt: 3766 tcor: 3766 mtot: 3215 manm: 3215

File: TSDY03WT.gmtd

GMT 2003 Jul 11 11:43:22 **:plotted_from_the_SIO/GDC_gmtplus_database:**

Cruise level information
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cruise-id::TSDY03WT
cruise-name::TASADAY LEG 3
cruise-narrative::investigations to provide information on the westward extent of the central gyre water mass. Continuous monitoring of surface chlorophyll and temperature will be carried out in addition to stations of water bottle cases, zooplankton tows and STD profile.
science-themes::Biological Oceanography, Chemical Oceanography, Geological Oceanography, Marine Geophysics
scientific-party-equipment::NEUSTON SURFACE NET, ISAACS-KIDD MIDWATER TRAWL, ISAACS-KIDD MIDWATER PLANKTON TRAWL, 50 CM OPEN NET, 20 CM OPEN NET, NISKIN BOTTLE HYDROGRAPHIC CAST, ROCK DREDGE, AIRGUN
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cruise-start-date::1973-07-21
cruise-start-port::HONOLULU
latitude-start::21.2983
longitude-start::202.1284
cruise-end-date::1973-08-06
cruise-end-port::YOKOHAMA,JAPAN
latitude-end::33.5479
longitude-end::140.87179
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latitude-minimum::21.26000
longitude-minimum::140.87179
latitude-maximum::33.54790
longitude-maximum::202.12840
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data-corrected-for-ship-draft::YES
data-corrected-for-tides::NO
data-types::depth_sec magnetic_field magnetic_anomaly subbottom_3.5 seismic_reflection
---
pi-city-state-zip::Seattle, WA 98195-2100
pi-email::ericshul@u.washington.edu
pi-fax::206 543-3254
pi-institution::University of Washington
pi-name:: Shulenberger, Eric
pi-phone::206 685-1457
pi-street-address::Multidisciplinary Research Development, Graduate School, Box 352100
pi-title::Director of Multidisciplinary Research Development, Office of Research
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SIO Log weekly reports
Tasaday Expedition Leg 03

Thomas Washington 242140Z, July 73. Thus far all work going better than hoped. 75 minute station every 2.5 deg includes 500 meter STD, 18 bottle 200 meter chlorophyll cast, phyto culture and tows, Neuston net tow for pollution analysis. Sound volume-scattering measurements indicate particles in water. 12 KHZ GDR, 3.5 KHZ GDR, Mag all on line. Air gun operational, producing readable records at 13 kts, bottom still there. Autoanalyzer not up yet, expected soon, am freezing nutrients. Two night IKMT hauls so far, very rich, much like CATO equatorial hauls, two gals per tow. One metamorphosed panulirus at 167.5W very sharp chlormax at 130-145m, 0.095 micrograms per meter, cubed. Mixed layer at 30m or less. Plan to continue two stations per day, IKMT every other night. All geology still upcoming will make one long bio station 160E, planning 3 each IKMT and 2 or 3 casts. More if time. Expect 3 stations in Kuroshio, weather permitting. All is sweetness and light, all Scientifics well satisfied. What happened? Shulenberger.

Thomas Washington, 292050Z, July 73. All programs proceeding very smoothly. Clague dredges good, tow hauls 29 50 N 179 15 E, 462 FMS. Site 179 45E 29.5N no go, heavy sediment. Spent much time on dredge sit playing chicken with a Japanese trawler (his fishing ground). Airgun finally operational, made nine hour 9KT run 28N 171.5E to 28N 170E, unable to locate south extension of fracture zone shown on chart. Will do two or three sonobuoy runs at opportune location on 28N. Grahams meters almost all prepared for Leg 4, making tow bio stations daily including STD, 19 bottle Chlor a, phyto two, nightly IKPT. IKPT hauls now more like A area. Chlor max does strange things, very elusive 55 to 135 m. Extremely pronounced halocline at 177.5E 28N, break in trace coincident with bottom of mixed layer, looks more like temp record than saline. No reappearance since. Autoanalyzer up, starting to produce data. Shulenberger.

Thomas Washington 050450Z Aug. 73. Final weekly report, Tasaday 3. All major and most minor objectives accomplished. Biol transect 28N from 162.5W to 145E, plus 24 our station 162E. Occupied 23 stations lat 28N. Each included 500M STD, 18 or 25 bottle cast to 200m for chlor, nutrients, salt, and oxygen. Phyto tows for species list alternate stations. Chlor max 135 m E or 170 W. Bounces around wildly 170W to 170E, steady at 85m farther west. Suggestive of Sverdrups splitting gyre into two parts, per the oceans. Nutrient data now being processed, no solid results yet, but suspect will show same thing. Very high chlor peak (over 0.75MGM/M3) at 90-100 m at 147.5, 146 E. Took 14 standard IKPT tows. 6 at 24 hour station (3 day, 3 night), others at 5 deg intervals. Plankton shows distinct change between 146-150E, probably due to western edge gyre. Plankton volumes may also support two gyre patterns. Took 5 IKWT tows, 4 at 24 hr station (2 day, 2 night), one at 146E. Four full hydrocasts, XBT every 2 hours, at Big Station. All ancillary work went well. Clague tried 3 dredge hauls, all got rock. First, Nero Bank, yielded volcanic breccias, ash basalt pebbles, MN nodules, other two hauls 29 50N 179 05E got basalt, oceanite?, limestone. 3 sonobuoy runs Mesozoic anomalies m-1, m-17, m-21. Recorder, airgun, probs plus uneven topography make it unlikely that m-1, m-17 runs are useable. Good airgun records across all three, plus across paig F. Z. 170-171E. MAG, 12 kHz, 3.5 kHz records continuous throughout leg 3. Recording 3.5 on dry paper Edo, excellent resolution, penetrations to 75m. Green neuston samples for Tarball and plastics analysis at each station plus ten replicate tows during Big Station (samples to SIO collections). Baily got phyto samples desired plus prelim data on enrichment. Casailt got 45 min. observing time per station re sound volume-scattering, lost one mike to prop. Our thanks to the crew. They worked extremely hard to make all this possible in spite of short work time and many gear difficulties. Chlorophyll has lost its thrill. Shulenberger

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MGD77 file information
4TSDY03WTMGD77           5513320030711SCRIPPS INSTITUTION OF OCEANOGRAPHY    01
USA               R/V THOMAS WASHINGTON1SHIP  SHULENBERGER E.                 02
TASADAY LEG 3                                                                 03
19730721HONOLULU                        19730806YOKOHAMA,JAPAN                04
SATNAV,AUTOLOG GYRO + EMLOG             LINEAR INTERP.BETWEEN ADJACENT FIXES  05
3.5-12KHZ/GIFFT RECORDERS/WIDE BEAM     ANAL.RECORDS,CARDS,35MMFILM(3.5KHZ)   06
VARIAN MFD PROTON PRECESSION MOD 4970   ANAL.RECORDS,CARDS                    07
                                                                              08
20TO300CU.IN.AIRGUN,10-300HZ,EDO PSR RECANAL.RECORDS,35MM MICROFILM           09
A(I1,A8,I3,I4,3I2,F5.3,F8.5,F9.5,I1,F6.4,F6.1,I2,I1,3F6.1,I1,F5.1,F6.0,       10
F7.1,F6.1,F5.1,A5,A6,I1)                                                      11
0501SECONDSWEEP14630005 MINUTE INTERVAL                                       12
05006            03IGRF 1965   LIN. INTERP.POINTS WITHIN ONE DEGREE SQUARE    13
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