Unique No.: 196537 Date of Entry: 01/29/91

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY - DINDB)

Accession No.: 9000234 Reference No.: 749181
Former Accession No.: Former Reference No.: (Resub ONLY)

Media-In (DINDB): 09 - Digital Magnetic Tape

Exchange Format: E001 - Low Resolution STD

Processing Format: C022 - Low Resolution STD (SD2 Format)

* Note * If data is F022, create an additional record for C022.

Country/Institute Code: 3112 Country/Platform Code: 74DI

Platform Type (DINDB): 09 - Ship Orig. Cruise ID: TV5245

Cruise Start Date: 04/22/87 Project Code:

Cruise End Date: 05/05/87 Data Use Code (DUC): 3

Number of Stations: 65 Number of Records: 38,015

If stations/records not appropriate then:

Number: Units:

Ocean Area:

Code 1: 32 Meaning: South Atlantic Ocean
Code 2: Meaning:
Code 3: Meaning:

DINDB Transaction Date:

O. _____ FILE C022 TRACK 749181 PROJECT IDENTIFICATION _____

	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	LRECL	BLK SIZE	NO. RECORDS
	10/05/	CMH	A01291	120	80	800	190910
APE	10/12/	CMH	W05245	120	80	800	190910
TAPE	12/7/90	RPS	W00430 **				
DISK							
SK							
SK							
ALETED							

TED TO PRINCIPAL INVESTIGATOR: Tape W05245 is 9TRK, NL, 6250 bpi

** DNODC * LAMONTCTDOUT.

ERRORS/CORRECTIO (NOT REPORTED TO P.I.)

ACKS DELETED, FI LETED, ETC.)

NANSEN REF # 749181

MULDARS TRACK # IV5245

MONITOR: CONTACT M Lewis

LOCATION OF F022 SOURCE archives

RECORD ALL ERRORS FOUND

CONSEC(S)	ERRORS FOUND
	None

WOODS HOLE OCEANOGRAPHIC INSTITUTION
Woods Hole, Massachusetts 02543
Phone: (508) 548-1400
FAX: (508) 548-1400, Ext. 6013
Telex: 951679

FAX TRANSMISSION SHEET

Date: 12/3/90 Pages to Follow 3

TO: FAX No. 202 673 5586
Name: Bob STEIN
Organization: NODC
Location: WASH, DC

From: Sender's Name: George Heimerdinger
Organization: Woods Hole Oceanographic Institution
Location: Mc Lean Building
FAX No. (508) 457-2183

Special Instructions:

BOB: INFO YOU NEED FOR THE LAMONT DATA SET YOU ARE WORKING ON

--- George ---

If you experience difficulty receiving this, or you do not receive all of the pages, please call (508) 457-2000, Ext. 2777.

S0	potential density anomaly, reference level 0 dbar
S2	potential density anomaly, reference level 2000 dbar
S4	potential density anomaly, reference level 4000 dbar
AN	specific volume anomaly
HZ	dynamic height anomaly
BV	buoyancy frequency (cycles/hour)
RS	rosette salinity
RO	rosette oxygen (ml/l)
SI	silicate (µmol/l)
N3	nitrate plus nitrite (µmol/l)
PO	phosphate (µmol/l)
RN	record tag number

All calculations of oceanographic variables were done according to the Practical Salinity Scale 1978 and the International Equation of State for Seawater 1980, where appropriate.

Following is a list of cruise personnel involved in data collection:

F. Aikman (chief scientist)	L-DGO
J. Ardai	L-DGO
K. Bosley	L-DGO
R. Cember	L-DGO
R. McDevitt	WHOI
S. O'Hara	L-DGO
S. Pierce	WHOI
D. Robinson	L-DGO

The RRS discovery is operated by the Natural Environment Research Council. We are greatly appreciative to the officers and the crew of Discovery. This work was funded by the Office of Naval Research, under grant N00014-84-C-0132 SAI, Arnold L. Gordon, principal investigator.

Table 1

Station	Latitude			Longitude			GMT	Date	Bottom Depth(m)	Wind (m/s)	Wind Dir
1	31	48.60	S	9	32.40	E	09:11	87/04/22	4920	18	104
2	30	0.06	S	1	59.84	E	07:30	87/04/24	3850	3	70
3	29	54.37	S	2	22.18	E	13:01	87/04/24	2840	7	280
4	29	48.54	S	2	44.09	E	18:40	87/04/24	1960	7	256
5	29	43.23	S	3	6.26	E	23:23	87/04/24	3590	7	264
6	29	37.84	S	3	27.95	E	04:57	87/04/25	4725	10	139
7	29	32.60	S	3	48.00	E	11:31	87/04/25	4932	8	115
8	29	26.63	S	4	12.49	E	18:11	87/04/25	4990	8	120
9	29	20.88	S	4	34.48	E	00:19	87/04/26	4975	7	110
10	29	15.58	S	4	56.39	E	06:13	87/04/26	4953	5	125
11	29	9.94	S	5	18.28	E	12:07	87/04/26	5005		
12	29	4.67	S	5	39.70	E	18:13	87/04/26	4960		
13	28	58.14	S	6	2.27	E	02:02	87/04/27	4790	8	240
14	28	53.54	S	6	24.17	E	07:26	87/04/27	5005		
15	28	49.99	S	6	41.93	E	14:35	87/04/27	5055	4	245
16	28	42.01	S	7	7.95	E	20:15	87/04/27	5038		
17	28	36.15	S	7	30.02	E	01:11	87/04/28	4995	5	163
18	28	30.74	S	7	51.57	E	08:03	87/04/28	4835	0	—
19	28	25.08	S	8	13.25	E	14:02	87/04/28	5018		
20	28	19.51	S	8	35.23	E	20:17	87/04/28	4984	11	137
21	28	14.00	S	8	57.13	E	02:35	87/04/29	5030	15	130
22	28	8.07	S	9	19.15	E	08:54	87/04/29	4960	9	125
23	28	2.97	S	9	40.60	E	15:13	87/04/29	4914	10	105
24	27	57.03	S	10	2.48	E	22:05	87/04/29	4838	10	140
25	27	51.57	S	10	24.33	E	05:36	87/04/30	4760	14	120
26	27	46.27	S	10	45.95	E	11:58	87/04/30	4760	4	287
27	27	40.60	S	11	7.84	E	19:16	87/04/30	4630	7	110
28	27	34.87	S	11	29.68	E	01:22	87/05/01	4465	12	140
29	27	29.80	S	11	51.16	E	07:02	87/05/01	4293	12	160
30	27	26.67	S	12	1.99	E	11:24	87/05/01	4158	12	145
31	27	24.11	S	12	12.11	E	15:54	87/05/01	4064	12	149
32	27	21.43	S	12	22.67	E	19:56	87/05/01	3918	15	125

Station	Latitude			Longitude			GMT	Date	Bottom Depth(m)	Wind (m/s)	Wind Dir
33	27	17.78	S	12	34.75	E	23:38	87/05/01	3670	10	135
34	27	15.65	S	12	45.12	E	03:18	87/05/02	3365		
35	27	12.52	S	12	56.24	E	06:30	87/05/02	3040		
36	27	11.23	S	13	1.12	E	08:36	87/05/02	2870	11	160
37	27	10.04	S	13	7.01	E	12:04	87/05/02	2673	10	147
38	27	8.65	S	13	12.37	E	14:04	87/05/02	2442	10	150
39	27	7.19	S	13	18.13	E	17:10	87/05/02	2218	10	135
40	27	6.00	S	13	24.78	E	19:17	87/05/02	1980	9	140
41	27	4.53	S	13	28.67	E	21:54	87/05/02	1750	9	120
42	27	3.11	S	13	34.00	E	23:32	87/05/02	1455	8	185
43	27	1.71	S	13	39.46	E	01:38	87/05/03	1245		
44	27	0.47	S	13	44.76	E	03:12	87/05/03	965	11	180
45	26	59.12	S	13	50.20	E	05:02	87/05/03	682	12	180
46	26	57.67	S	13	55.63	E	06:15	87/05/03	460	11	155
47	26	56.07	S	14	0.86	E	07:44	87/05/03	418	8	163
48	26	54.79	S	14	6.49	E	09:06	87/05/03	395	8	191
49	26	53.54	S	14	11.64	E	12:16	87/05/03	385	8	195
50	26	52.06	S	14	17.08	E	13:46	87/05/03	358	8	195
51	26	50.72	S	14	22.40	E	15:48	87/05/03	340	5	178
52	26	49.39	S	14	27.74	E	17:06	87/05/03	317	3	163
53	26	47.96	S	14	33.17	E	18:38	87/05/03	272		
54	26	46.55	S	14	38.62	E	20:03	87/05/03	227	8	214
55	26	45.11	S	14	44.08	E	21:46	87/05/03	200	7	185
56	26	44.06	S	14	49.03	E	22:56	87/05/03	170	8	194
57	26	42.44	S	14	54.79	E	00:30	87/05/04	138	5	172
58	26	45.21	S	14	44.21	E	02:09	87/05/04	195	4	140
59	26	48.07	S	14	33.29	E	04:06	87/05/04	275	5	210
60	26	50.64	S	14	22.45	E	07:36	87/05/04	336	8	188
61	26	53.48	S	14	11.69	E	09:44	87/05/04	375	8	190
62	26	58.96	S	13	50.11	E	13:16	87/05/04	680	8	215
63	27	4.52	S	13	28.51	E	16:32	87/05/04	1735	10	202
64	27	9.84	S	13	6.95	E	20:22	87/05/04	2670	18	155
65	27	15.51	S	12	45.52	E	01:06	87/05/05	3380		

REQUEST FOR AD SERVICES

User Name	Phone #	Org/Task	Submit Date	Due Date
Cliff Hartley	633-5636	[6120085N3H119]	10/11/90	ASAP

PART I

Request/Problem Category

[ ] General Info [ ] Communications [ ] Equipment [ ] Supplies
[ ] Software [ ] Tape Library [ ] Computer Operations
[ ] Other Specify

PART II (For Operator Job Requests)

Operator Job Request Type

[ ] Run BRBUOY procedure *Name:* _____ [] See attached list
[ ] Run SELBUOY procedure *Name:* _____ [] See attached list
[ ] Run BUOYSUM procedure *Name:* _____ [] See attached list
[ ] Run *OTHER* procedure - see SPECIAL INSTRUCTIONS
[ ] Tape Scan
[X] Tape to Tape Copy *Scan OUTPUT tape?* [X] yes [] no
[ ] Disk to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Tape to Disk Copy
[ ] Print [] 80 column [] 132 column [] HEX [] OCTAL [] Character
All files/records? [] yes [] no, see SPECIAL INSTRUCTIONS
[ ] Restore VAX file *Name:* _____
[ ] *OTHER* - see SPECIAL INSTRUCTIONS

Special Operator Instructions:
Please send W tape to Asheville, N.C.

JOB INPUT Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [X] NL [ ] SL
MAX Record Length: 80 *MAX Blocksize:* 800

JOB OUTPUT Id#/Filename: W55745

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [X] NL [ ] SL
MAX Record Length: 80 *MAX Blocksize:* 800

(OC3 Use Only)
JOB Number: 90101243
Completed By: DS
Date/Time Start: 10-12-90 9:30
Date/Time Completed: 10-12-90 10:00

REQUEST FOR SERVICES

User Name	Phone #	Org/Task	Submit Date	Due Date
Cliff Hartley	673-5636	EG12008A3AH9	10/05/90	ASAP

PART A

Request/Problem Category

[ ] General Info [ ] Communications [ ] Equipment [ ] Supplies
[ ] Software [ ] Tape Library [X] Computer Operations
[ ] Other Specify:

Request/Problem Description

PART B (For Operator Job Requests)

Operator Job Request Type

[ ] Run BRBUOY procedure Name: _____ [] See attached list
[ ] Run SELBUOY procedure Name: _____ [] See attached list
[ ] Run BUOYSUM procedure Name: _____ [] See attached list
[ ] Run OTHER procedure - see SPECIAL INSTRUCTIONS
[X] Tape Scan
[ ] Tape to Tape Copy Scan OUTPUT tape? [] yes [] no
[ ] Disk to Tape Copy Scan OUTPUT tape? [] yes [] no
[ ] Tape to Disk Copy
[ ] Print [] 80 column [] 132 column [] HEX [] OCTAL [] Character
All files/records? [] yes [] no. see SPECIAL INSTRUCTIONS
[ ] Restore VAX file Name: _____
[ ] OTHER - see SPECIAL INSTRUCTIONS

Special Operator Instructions:
Please return tape A01291 to Bin 09

JOB INPUT Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [ ] NL [ ] SL
MAX Record Length: _ _ _ _ _ MAX Blocksize: _ _ 8 0 0

JOB OUTPUT Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [ ] NL [ ] SL
MAX Record Length: _ _ _ _ _ MAX Blocksize: _ _ 8 0 0

(OC3 Use Only)
JOB Number: 90490943
Completed By: J.S
Date/Time Start: 10-9-90/8:00
Date/Time Completed: 10-9-90/8:10

Lamont Doherty Geological Observatory
of Columbia University
Palisades, N.Y. 10964

National Oceanographic Data Center
NOAA/NESDIS OC21
Universal Building, Room 409
1825 Connecticut Ave., NW
Washington, D.C. 20235
Attn Ms. Patricia T. Kirk

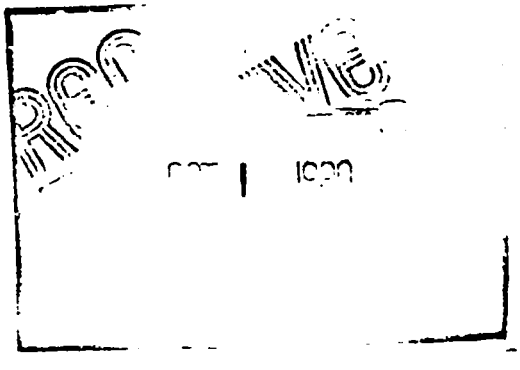
Dear Pat,

I am submitting a tape to NODC for Dr. Arnold L. Gordon of his cruise on the RRS Discovery #165B. The cruise was in the southeast Atlantic in the spring of 1987. The tape is written at 6250 bpi, ASCII logical record length = 80, blocksize = 800, blocked. The tape contains 120 files. Files 1-3 are documentation of our format, the next 52 are station data (bottle data) and the final 65 are hiresolution ctd data at 1 meter level.

William E. Haines

Lamont-Doherty Geological Observatory
of Columbia University
U.S. Route 9w
Palisades, New York
10964
914-359-2900x259

9000234
AØ1291



The S87 data format was developed to standardize the handling of ascii station data. The main parts of the S87 format file are the header line containing all pertinent station information, an id line with two character minimum mnemonics describing the data in the columns below and the data.

The first line must be the header line and contains all the information needed to identify the station, as described below:

```
1         2         3         4
1234567890123456789012345678901234567890123456789012345678
TPPCCSSSSCC SDD.DDDD SDDD.DDDD YY/MM/DD JJJ HH:MM CRUISE_ID
```

T - data type (C: ctd, B: bottle, A: ambt, X: xbt)

PP - NODC platform code

CC - NODC country code of the platform

SSSS - station number

CC - cast number

SDD.DDDD - latitude in decimal degrees

SDDD.DDDD - longitude in decimal degrees

YY/MM/DD - date (including "/")

JUL - year-day for year of collection

HH:MM - time (including ":")

CRUISE_ID - optional cruise identifier

Following the header line can be an optional secondary header line for end of cast information. There may also be an optional line describing important physical characteristics at the station location. This line must begin with the character '&' in the first column. At the moment there are eleven mnemonics, CS for PC02 insitu, CL for PC02 at lab T (15 degrees C), TC for total C02, TK for total Alkalinity, ZZ for bottom depth in meters, SS for bucket surface salinity, TA for air temperature in degrees C, PA for air pressure in millibars (hectopascals), TS for bucket surface temperature in degrees C, WS for wind speed in meters per second, and WD for wind direction in degrees. Fields are separated by tabs (this will be a problem for FORTRAN programs). A line to denote this would be:

```
&ZZ=4766        TA=-4.2 PA=0990 WS=0.6  WD=122
```

There may be as many comment lines as desired that do not start with an '&' or an '@'. It is suggested that any program used to create or modify an s87 format file add a new line giving the program name, the input file, the date and the person running the program.

The column identification line contains mnemonics of at least two unique characters that identify the data in the columns below. This line must start with an '@' in the first column. A list of present id's is included below. Tabs are used to seperate mnemonics and data columns to conserve disk space. Fortran programs DO NOT ACCEPT tabs.

For more information contact the Physical Oceanography Department at the Lamont-Doherty Geological Observatory.

11 - september - 1989

AG	adiabatic temperature
AN	specific volume anomally
BV	Brunt Vaisalla frequency
C	delta C-1
C	Delta C-
	chloro
	total
CL	pCO2 @ lab temperatur
CO	conductivity
CS	pCO2 @ insitu temperature
DE	depth
DF	density flux
DR	density ratio
F1	freon 11
F2	freon 12
FL	flags (from ctd78 format)
FR	freon ratio
FS	freon saturation
GV	geostrophic velocity
HZ	dynamic height
IT	ice thickness (cm)
LT	percent of light transmittted through water
N2	nitrite (stability)
N3	nitrate
NH	ammonia
OC	oxygen current
OS	% oxygen saturation
OT	oxygen temperature
OX	oxygen (ml/l)
PA	air pressure
PH	pH
PO	phosphate
PR	pressure
PT	potential temperature
RN	record number (bottle number)
RT	rosette temperature
RS	rosette salinity
RO	rosette oxygen
SE	sea state
S0	sigma theta
S1	sigma 1
S2	sigma 2
S3	sigma 3
S4	sigma 4
S	salinity

SI	silicate
ST	sigma t
SV	sound velocity
SW	swell
T1	tritium (TU)
T2	tritium (TU-81)
TA	air temperature
TC	total CO2 by titration
TE	temperature
TF	temperature above freezing
TG	temperature gradient
TI	tin
TA	total alkalinity (titration
VE	sound velocity
WD	wind direction
WE	weather
WS	wind speed (m/s)

```
/*
function: s87readhead

ad in an s87 file header and break out all information.  return -1 if there
 an error.  return 0 if there was no information after GMT, return 1 if there
was (saving only the first string encountered in "cruise") and return -1 in case
of trouble.

XBS35    1  1  24.8167  -18.9333 81/08/12 224 18:00   8101bs (FOCAL #)
 XBT type: T4
 FOCAL son xbt data: ORSTOM (J Merle & P Rual)    from NODC (G. H.), 86/10/2
 program: fxbt.c  87/05/15  p_mal
(!!      3
         2...
         2...
2        22.35

*/
#include <stdio.h>

FILE    *fpin;

char    code[5], cruise[13], date[9], gmt[6];
float   lat, lon;
int     cast, station, type, yrday;


s87readhead ()
{
        int     c, ia, return_code = -1;


        if ((type = getc (fpin)) == EOF)
                return (return_code);
        if (fgets (code, 5, fpin) == NULL)
                return (return_code);
        if (fscanf (fpin, "%d %d %f %f ", &station, &cast, &lat, &lon) != 4)
                return (return_code);
        if (fgets (date, 9, fpin) == NULL)
                return (return_code);
        if (fscanf (fpin, "%d ", &yrday) != 1)
                return (return_code);
        if (fgets (gmt, 6, fpin) == NULL)
                return (return_code);

        /*  no cruise info  */
        return_code = 0;
        cruise[0] = '\0';
        while ((c = getc(fpin)) != '\n') {
                if (c != ' ') {
                        cruise[0] = c;
                        ia = 1;
                        while ((c = getc(fpin)) != '\n'  &&  c != ' ') {
                                cruise[ia++] = c;
                                if (ia == 12)
                                        break;
                        }
                        cruise[ia] = '\0';
                        return_code = 1;

                        if (c != '\n')
                                while ((c = getc(fpin)) != '\n');

                        break;
```

```
                }
        }

        return (return_code);
```

AG	adiabatic temperature
AN	specific volume anomally
BV	Brunt Vaisalla frequency
C3	delta C-13
C4	Delta C-14
CA	chlorophyll a
CC	total CO2 by gas cromatograph
CL	pCO2 @ lab temperature
CO	conductivity
CS	pCO2 @ insitu temperature
DE	density
DI	density insitu
DR	density ratio
F1	freon 11
F2	freon 12
FL	flags (from ctd78 format)
FR	freon ratio
FS	freon saturation
GV	geostrophic velocity
HZ	dynamic height
IT	ice thickness (cm)
LT	percent of light transmitted through water
N2	nitrite (stability)
N3	nitrate
NH	ammonia
OC	oxygen current
OS	% oxygen saturation
OT	oxygen temperature
OX	oxygen (ml/l)
PA	air pressure
PH	pH
PO	phosphate
PR	pressure
PT	potential temperature
RN	record number (bottle number)
RT	rosette temperature
RS	rosette salinity
RO	rosette oxygen
SE	sea state
S0	sigma theta
S1	sigma 1
S2	sigma 2
S3	sigma 3
S4	sigma 4
SA	salinity
SI	silicate
ST	sigma t
SV	sound velocity
SW	swell
T1	tritium (TU)

T2	tritium (TU-81)
TA	air temperature
TC	total CO2 by titration
TE	temperature
TF	temperature above freezing
TG	temperature gradient
TI	time
TK	total alkalinity (titration)
VI	sound velocity
W	wind direct...
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]87.ids
[illegible]87doc.text
[illegible]87readhead.c
beng/ds87b.001
beng/ds87b.002
beng/ds87b.003
beng/ds87b.004
beng/ds87b.005
beng/ds87b.006
beng/ds87b.007
beng/ds87b.008
beng/ds87b.009
beng/ds87b.010
beng/ds87b.011
beng/ds87b.012
beng/ds87b.013
beng/ds87b.014
beng/ds87b.015
beng/ds87b.016
beng/ds87b.017
beng/ds87b.018
beng/ds87b.019
beng/ds87b.020
beng/ds87b.021
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beng/ds87b.023
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beng/ds87b.025
beng/ds87b.026
beng/ds87b.027
beng/ds87b.028
beng/ds87b.029
beng/ds87b.030
beng/ds87b.031
beng/ds87b.032
beng/ds87b.033
beng/ds87b.034
beng/ds87b.035
beng/ds87b.037
beng/ds87b.039
beng/ds87b.041
beng/ds87b.043
beng/ds87b.045
beng/ds87b.047
beng/ds87b.049
beng/ds87b.051
beng/ds87b.053
beng/ds87b.055
beng/ds87b.057
beng/ds87b.059
beng/ds87b.061
beng/ds87b.062
beng/ds87b.063
beng/ds87b.064
beng/ds87b.065
beng/ds87c.001
beng/ds87c.002
beng/ds87c.003
beng/ds87c.004
beng/ds87c.005
beng/ds87c.006
beng/ds87c.007
beng/ds87c.008
beng/ds87c.009
beng/ds87c.010
beng/ds87c.011
beng/ds87c.012
beng/ds87c.013
beng/ds87c.014
beng/ds87c.015
beng/ds87c.016
beng/ds87c.017
beng/ds87c.018
beng/ds87c.019
beng/ds87c.020
beng/ds87c.021
beng/ds87c.022
beng/ds87c.023
beng/ds87c.024
beng/ds87c.025
beng/ds87c.026
beng/ds87c.027
beng/ds87c.028
beng/ds87c.029
beng/ds87c.030
beng/ds87c.031
beng/ds87c.032
beng/ds87c.033
beng/ds87c.034
beng/ds87c.035
beng/ds87c.036
beng/ds87c.037
beng/ds87c.038
beng/ds87c.039
beng/ds87c.040
beng/ds87c.041
beng/ds87c.042
beng/ds87c.043
beng/ds87c.044
beng/ds87c.045
beng/ds87c.046
beng/ds87c.047
beng/ds87c.048
beng/ds87c.049
beng/ds87c.050
beng/ds87c.051
beng/ds87c.052
beng/ds87c.053
beng/ds87c.054
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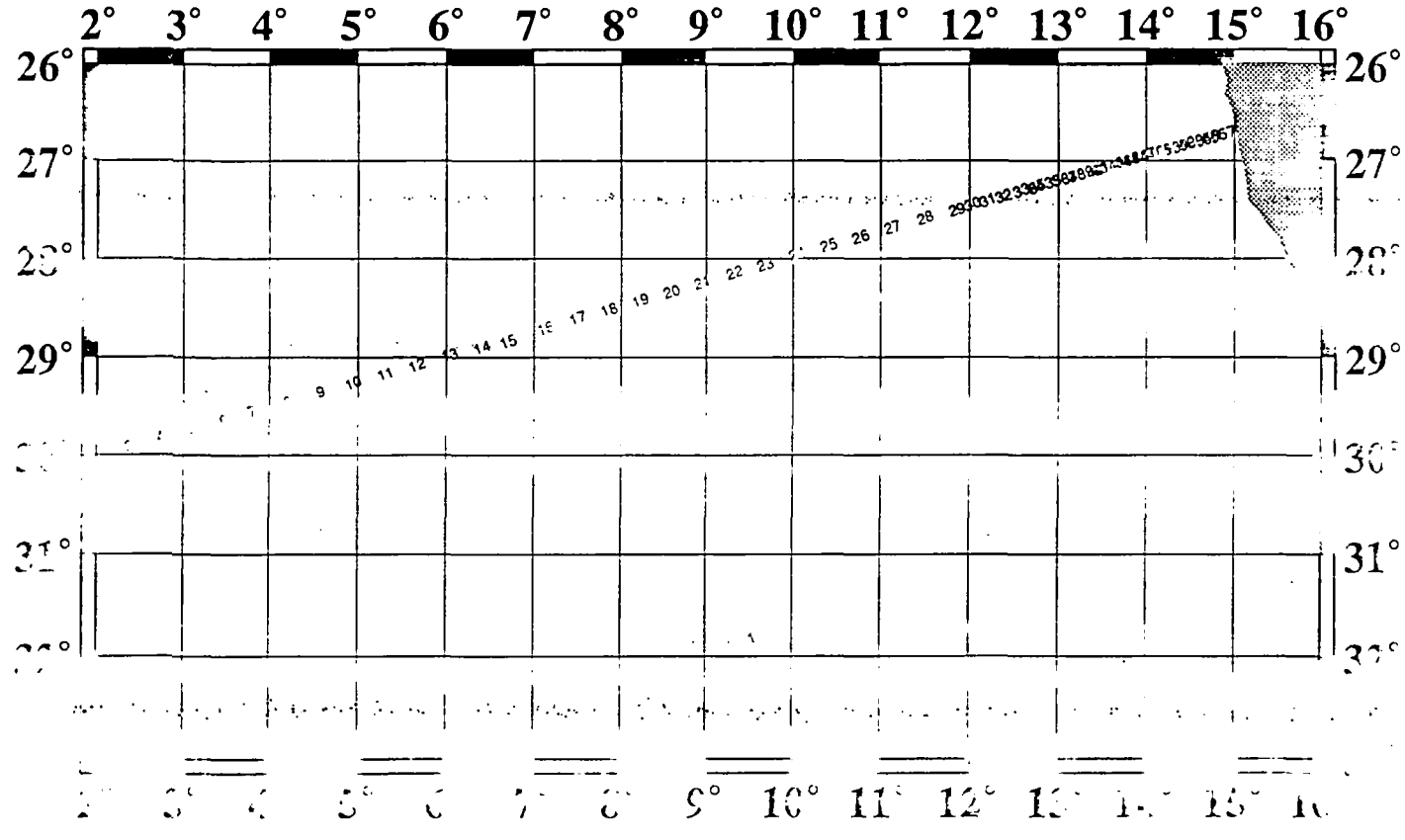
beng/ds87c.056
beng/ds87c.057
beng/ds87c.058
beng/ds87c.059
beng/ds87c.060
beng/ds87c.061
beng/ds87c.062
beng/ds87c.063
beng/ds87c.064
beng/ds87c.065

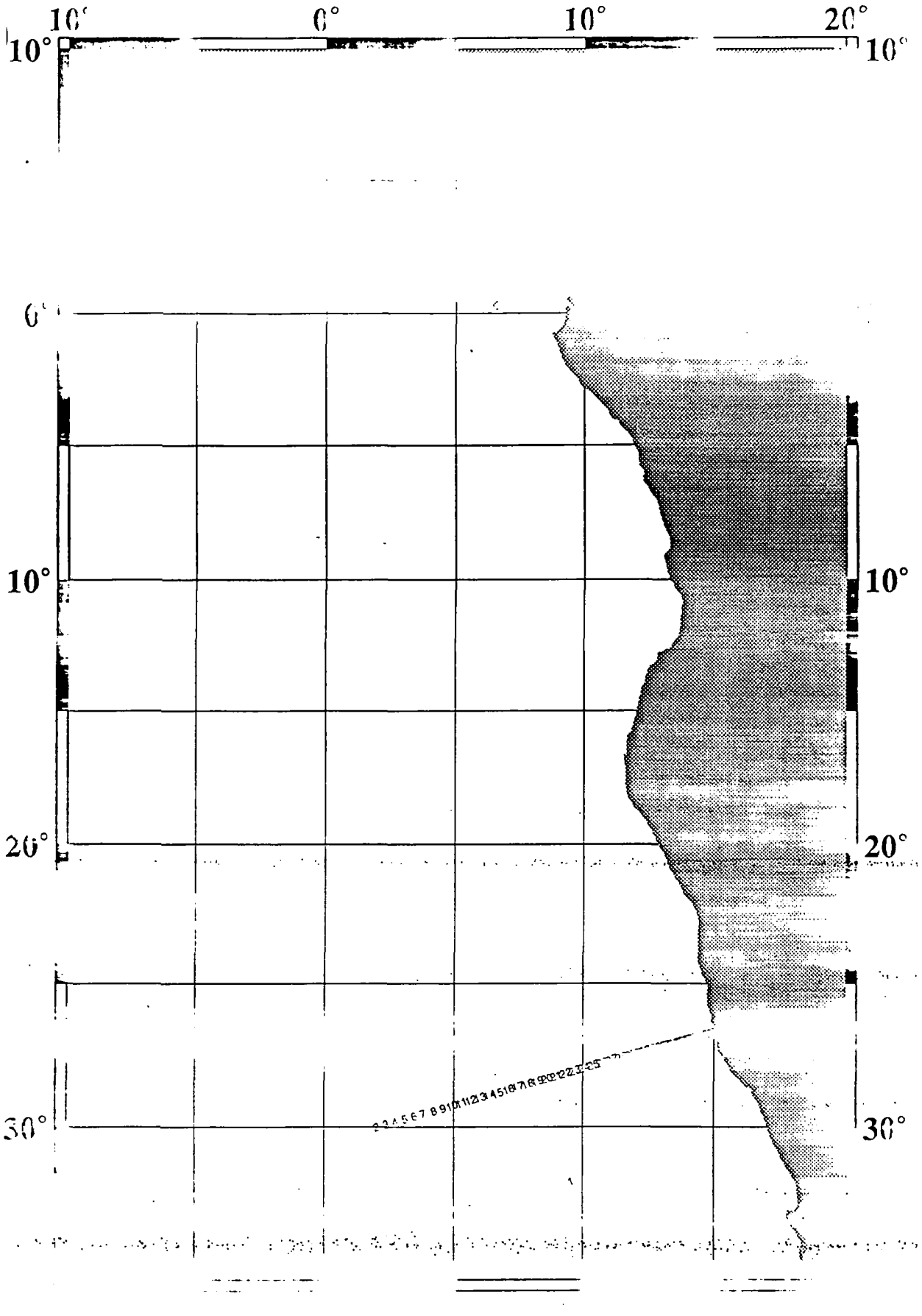
DISCOVERY 165B ctd



Sep 18 15:40

LAMONT-DOHERTY GEO. OBS. W. Haines 914 359 2900 x259

DISCOVERY 165.



Sep 21 09:3

LAMONT-DOHERTY GEO. OBS. W-tapes 914 351 4400 X25?

Unique No.: 196536 Date of Entry: 01/29/91

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY - DINDB)

Accession No.: 9000234 Reference No.: TV5245
Former Accession No.: Former Reference No.: (Resub ONLY)

Media-In (DINDB): 09 - Digital Magnetic Tape

Exchange Format: E018 - STD/CTD (F022)

Processing Format: F022 - CTD/STD

* Note * If data is F022, create an additional record for C022.

Country/Institute Code: 3112 Country/Platform Code: 74DI

Platform Type (DINDB): 09 - Ship Orig. Cruise ID: 165B

Cruise Start Date: 04/22/87 Project Code:

Cruise End Date: 05/05/87 Data Use Code (DUC): 3

Number of Stations: 65 Number of Records: 38,015

If stations/records not appropriate then:

Number: Units:

Ocean Area:

Code 1: 32 Meaning: South Atlantic Ocean
Code 2: Meaning:
Code 3: Meaning:

S. _____ FILE F022 TRACK TV5245 PROJECT IDENTIFICATION _____

	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	LRECL	BLK SIZE	NO. RECORDS
	10/0	CMH	A01291	120	80	800	190910
APE	10/	CMH	W05245	120	80	800	190910
TAPE	12/7/90	RPS	W00430 **	65			38015
DISK							
SK							
SK							
2							
ALIZED							

RTED TO PRINCIPAL IN ...TIGATOR: Tape W05245 is 9TRK, NL, 6250 bpi

** TAPE W00430 NODC* LAMONTCTDOCT

ERRORS/CORRECTIONS ... REPORTED TO P.I.)

TRACKS DELETED, FILES DELETED, ETC.)

WOODS HOLE OCEANOGRAPHIC INSTITUTION
Woods Hole, Massachusetts 02543
Phone: (508) 548-1400
FAX: (508) 548-1400, Ext. 6013
Telex: 951679

FAX TRANSMISSION SHEET

Date: 12/3/90 Pages to Follow 3

TO:
FAX No. 202 673 5586
Name: Bob STEIN
Organization: NODC
Location: WASH, DC

From:
Sender's Name: George Helmerdinger
Organization: Woods Hole Oceanographic Institution
Location: Mc Lean Building
FAX No. (508) 457-2183

Special Instructions:

BOB: INFO YOU NEED FOR THE LAMONT DATA SET YOU ARE WORKING ON

--- George ---

If you experience difficulty receiving this, or you do not receive all of the pages, please call (508) 457-2000, Ext. 2777.

S0	potential density anomaly, reference level 0 dbar
S2	potential density anomaly, reference level 2000 dbar
S4	potential density anomaly, reference level 4000 dbar
AN	specific volume anomaly
HZ	dynamic height anomaly
BV	buoyancy frequency (cycles/hour)
RS	rosette salinity
RO	rosette oxygen (ml/l)
SI	silicate (µmol/l)
N3	nitrate plus nitrite (µmol/l)
PO	phosphate (µmol/l)
RN	record tag number

All calculations of oceanographic variables were done according to the Practical Salinity Scale 1978 and the International Equation of State for Seawater 1980, where appropriate.

Following is a list of cruise personnel involved in data collection:

F. Aikman (chief scientist)	L-DGO
J. Ardai	L-DGO
K. Bosley	L-DGO
R. Cember	L-DGO
R. McDevitt	WHOI
S. O'Hara	L-DGO
S. Pierce	WHOI
D. Robinson	L-DGO

The RRS discovery is operated by the Natural Environment Research Council. We are greatly appreciative to the officers and the crew of Discovery. This work was funded by the Office of Naval Research, under grant N00014-84-C-0132 SAI, Arnold L. Gordon, principal investigator.

Table I

Station	Latitude			Longitude			GMT	Date	Bottom Depth(m)	Wind (m/s)	Wind Dir
1	31	48.60	S	9	32.40	E	09:11	87/04/22	4920	18	104
2	30	0.06	S	1	59.84	E	07:30	87/04/24	3850	3	70
3	29	54.37	S	2	22.18	E	13:01	87/04/24	2840	7	280
4	29	48.54	S	2	44.09	E	18:40	87/04/24	1960	7	256
5	29	43.23	S	3	6.26	E	23:23	87/04/24	3590	7	264
6	29	37.84	S	3	27.95	E	04:57	87/04/25	4725	10	139
7	29	32.60	S	3	48.00	E	11:31	87/04/25	4932	8	115
8	29	26.63	S	4	12.49	E	18:11	87/04/25	4990	8	120
9	29	20.88	S	4	34.48	E	00:19	87/04/26	4975	7	110
10	29	15.58	S	4	56.39	E	06:13	87/04/26	4953	5	125
11	29	9.94	S	5	18.28	E	12:07	87/04/26	5005		
12	29	4.67	S	5	39.70	E	18:13	87/04/26	4960		
13	28	58.14	S	6	2.27	E	02:02	87/04/27	4790	8	240
14	28	53.54	S	6	24.17	E	07:26	87/04/27	5005		
15	28	49.99	S	6	41.93	E	14:35	87/04/27	5055	4	245
16	28	42.01	S	7	7.95	E	20:15	87/04/27	5038		
17	28	36.15	S	7	30.02	E	01:11	87/04/28	4995	5	163
18	28	30.74	S	7	51.57	E	08:03	87/04/28	4835	0	—
19	28	25.08	S	8	13.25	E	14:02	87/04/28	5018		
20	28	19.51	S	8	35.23	E	20:17	87/04/28	4984	11	137
21	28	14.00	S	8	57.13	E	02:35	87/04/29	5030	15	130
22	28	8.07	S	9	19.15	E	08:54	87/04/29	4960	9	125
23	28	2.97	S	9	40.60	E	15:13	87/04/29	4914	10	105
24	27	57.03	S	10	2.48	E	22:05	87/04/29	4838	10	140
25	27	51.57	S	10	24.33	E	05:36	87/04/30	4760	14	120
26	27	46.27	S	10	45.95	E	11:58	87/04/30	4760	4	287
27	27	40.60	S	11	7.84	E	19:16	87/04/30	4630	7	110
28	27	34.87	S	11	29.68	E	01:22	87/05/01	4465	12	140
29	27	29.80	S	11	51.16	E	07:02	87/05/01	4293	12	160
30	27	26.67	S	12	1.99	E	11:24	87/05/01	4158	12	145
31	27	24.11	S	12	12.11	E	15:54	87/05/01	4064	12	149
32	27	21.43	S	12	22.67	E	19:56	87/05/01	3918	15	125

Station	Latitude			Longitude			GMT	Date	Bottom Depth(m)	Wind (m/s)	Wind Dir
33	27	17.78	S	12	34.75	E	23:38	87/05/01	3670	10	135
34	27	15.65	S	12	45.12	E	03:18	87/05/02	3365		
35	27	12.52	S	12	56.24	E	06:30	87/05/02	3040		
36	27	11.23	S	13	1.12	E	08:36	87/05/02	2870	11	160
37	27	10.04	S	13	7.01	E	12:04	87/05/02	2673	10	147
38	27	8.65	S	13	12.37	E	14:04	87/05/02	2442	10	150
39	27	7.19	S	13	18.13	E	17:10	87/05/02	2218	10	135
40	27	6.00	S	13	24.78	E	19:17	87/05/02	1980	9	140
41	27	4.53	S	13	28.67	E	21:54	87/05/02	1750	9	120
42	27	3.11	S	13	34.00	E	23:32	87/05/02	1455	8	185
43	27	1.71	S	13	39.46	E	01:38	87/05/03	1245		
44	27	0.47	S	13	44.76	E	03:12	87/05/03	965	11	180
45	26	59.12	S	13	50.20	E	05:02	87/05/03	682	12	180
46	26	57.67	S	13	55.63	E	06:15	87/05/03	460	11	155
47	26	56.07	S	14	0.86	E	07:44	87/05/03	418	8	163
48	26	54.79	S	14	6.49	E	09:06	87/05/03	395	8	191
49	26	53.54	S	14	11.64	E	12:16	87/05/03	385	8	195
50	26	52.06	S	14	17.08	E	13:46	87/05/03	358	8	195
51	26	50.72	S	14	22.40	E	15:48	87/05/03	340	5	178
52	26	49.39	S	14	27.74	E	17:06	87/05/03	317	3	163
53	26	47.96	S	14	33.17	E	18:38	87/05/03	272		
54	26	46.55	S	14	38.62	E	20:03	87/05/03	227	8	214
55	26	45.11	S	14	44.08	E	21:46	87/05/03	200	7	185
56	26	44.06	S	14	49.03	E	22:56	87/05/03	170	8	194
57	26	42.44	S	14	54.79	E	00:30	87/05/04	138	5	172
58	26	45.21	S	14	44.21	E	02:09	87/05/04	195	4	140
59	26	48.07	S	14	33.29	E	04:06	87/05/04	275	5	210
60	26	50.64	S	14	22.45	E	07:36	87/05/04	336	8	188
61	26	53.48	S	14	11.69	E	09:44	87/05/04	375	8	190
62	26	58.96	S	13	50.11	E	13:16	87/05/04	680	8	215
63	27	4.52	S	13	28.51	E	16:32	87/05/04	1735	10	202
64	27	9.84	S	13	6.95	E	20:22	87/05/04	2670	18	155
65	27	15.51	S	12	45.52	E	01:06	87/05/05	3380		

REQUEST FOR ADP SERVICES

User Name	Phone #	Org/Task	Submit Date	Due Date
Cliff Hartley	673-5636	EG12-008N3111H9	10/11/90	ASAP

PART A

Request/Problem Category

[ ] General Info [ ] Communications [ ] Equipment [ ] Supplies
[ ] Software [ ] Tape Library [ ] Computer Operations
[ ] *Other* Specify

Request/Problem Description

PART E (For Operator Job Requests)

Operator Job Request Type

[ ] Run BRBUOY procedure *Name:* _____ [] See attached list
[ ] Run SELBUOY procedure *Name:* _____ [] See attached list
[ ] Run BUOYSUM procedure *Name:* _____ [] See attached list
[ ] Run *OTHER* procedure - see SPECIAL INSTRUCTIONS
[ ] Tape Scan
[X] Tape to Tape Copy *Scan OUTPUT tape?* [X] yes [] no
[ ] Disk to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Tape to Disk Copy
[ ] Print [] 80 column [] 132 column [] HEX [] OCTAL [] Character
All files/records? [] yes [] no, see SPECIAL INSTRUCTIONS
[ ] Restore VAX file *Name:* _____
[ ] *OTHER* - see SPECIAL INSTRUCTIONS

Special Operator Instructions:
Please send W tapes to Asheville, N.C.

JOB INPUT Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [X] NL [ ] SL
MAX Record Length: 80 *MAX Blocksize:* 800

JOB OUTPUT Id#/Filename: W55745

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [X] NL [ ] SL
MAX Record Length: 80 *MAX Blocksize:* 800

(OC3 Use Only)
JOB Number: 90121243
Completed By: JS
Date/Time Start: 10-12-90 9:30
Date/Time Completed: 10-12-90 10:00

REQUEST FOR ADP SERVICES

User Name	Phone #	Org/Task	Submit Date	Due Date
Cliff Hartley	673-5636	EG12008X3AH9	10/05/90	ASAP

PART A

Request/Problem Category

[ ] General Info [ ] Communications [ ] Equipment [ ] Supplies
[ ] Software [ ] Tape Library [X] Computer Operations
[ ] Other Specify:

Request/Problem Description:

PART B (For Operator Job Requests)

Operator Job Request Type

[ ] Run BRBUOY procedure *Name:* _____ [] See attached list
[ ] Run SELBUOY procedure *Name:* _____ [] See attached list
[ ] Run BUOYSUM procedure *Name:* _____ [] See attached list
[ ] Run *OTHER* procedure - see SPECIAL INSTRUCTIONS
[X] Tape Scan
[ ] Tape to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Disk to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Tape to Disk Copy
[ ] Print [] 80 column [] 132 column [] HEX [] OCTAL [] Character
All files/records? [] yes [] no. see SPECIAL INSTRUCTIONS
[ ] Restore VAX file *Name:* _____
[ ] *OTHER* - see SPECIAL INSTRUCTIONS

Special Operator Instructions:
Please return tape A01291 to Bin 09

JOB INPUT

Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [ ] NL [ ] SL
MAX Record Length: _____ *MAX Blocksize:* 800

JOB OUTPUT

Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [ ] NL [ ] SL
MAX Record Length: _____ *MAX Blocksize:* 800

(OC3 Use Only)
JOB Number: 9044093
Completed By: J.S

Date/Time Start: 10-9-90/8:00
Date/Time Completed: 10-9-90/8:10

Lamont-Doherty Geological Observatory | *Palisades, N.Y. 10964*
of Columbia University

National Oceanographic Data Cent.
NOAA/NESDIS OC21
Universal Building, Room 409
1825 Connecticut Ave., NW
Washington, D.C. 20235
Attn Ms. Patricia T. Kirk

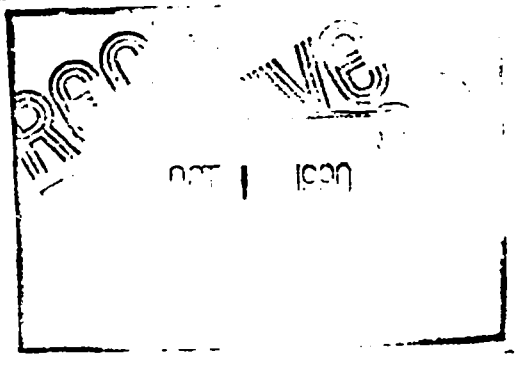
Dear Pat,

I am submitting a tape to NODC for Dr. Arnold L. Gordon of his cruise on the RRS Discovery #165B. The cruise was in the southeast Atlantic in the spring of 1987. The tape is written at 6250 bpi, ASCII logical record length = 80, blocksize = 800, blocked. The tape contains 120 files. Files 1-3 are documentation of our format, the next 52 are station data (bottle data) and the final 65 are hiresolution ctd data at 1 meter level.

William E. Haines

Lamont-Doherty Geological Observatory
of Columbia University
U.S. Route 9w
Palisades, New York
10964
914-359-2900x259

9000234
AØ1291



The S87 data format was developed to standardize the handling of ascii station data. The main parts of the S87 format file are the header line containing all pertinent station information, an id line with two character minimum mnemonics describing the data in the columns below and the data.

The first line must be the header line and contains all the information needed to identify the station, as described below:

```
0         1         2         3         4         5
12345678901234567890123456789012345678901234567890
T PPCC SSSS CC SDD.DDDD SDDD.DDDD YY/MM/DD JUL HH:MM CRUISE_ID
```

T - data type (C: ctd, B: bottle, A: axbt, X: xbt)

PP - NODC platform code

CC - NODC country code of the platform

SSSS - station number

CC - cast number

SDD.DDDD - latitude in decimal degrees

SDDD.DDDD - longitude in decimal degrees

YY/MM/DD - date (including "/")

JUL - year-day for year of collection

HH:MM - time (including ":")

CRUISE_ID - optional cruise identifier

Following the header line can be an optional secondary header line for end of cast information. There may also be an optional line describing important physical characteristics at the station location. This line must begin with the character '&' in the first column. At the moment there are eleven mnemonics, CS for PC02 insitu, CL for PC02 at lab T (15 degrees C), TC for total C02, TK for total Alkalinity, ZZ for bottom depth in meters, SS for bucket surface salinity, TA for air temperature in degrees C, PA for air pressure in millibars (hectopascals), TS for bucket surface temperature in degrees C, WS for wind speed in meters per second, and WD for wind direction in degrees. Fields are separated by tabs (this will be a problem for FORTRAN programs). A line to denote this would be:

```
&ZZ=4766        TA=-4.2 PA=0990 WS=0.6  WD=122
```

There may be as many comment lines as desired that do not start with an '&' or an '@'. It is suggested that any program used to create or modify an s87 format file add a new line giving the program name, the input file, the date and the person running the program.

The column identification line contains mnemonics of at least two unique characters that identify the data in the columns below. This line must start with an '@' in the first column. A list of present id's is included below. Tabs are used to seperate mnemonics and data columns to conserve disk space. Fortran programs DO NOT ACCEPT tabs.

For more information contact the Physical Oceanography Department at the Lamont-Doherty Geological Observatory.

11 - september - 1989

AG adiabatic temperature
AN specific volume anomally

BV Brunt Vaisalla frequency

C1 delta C-13
C4 Delta C-14
CH chlorophyll
[illegible]
CL pCO2 @ lab temperature
CO conductivity
CS pCO2 @ insitu temperature

DE depth
DF density flux
DR density ratio

F1 freon 11
F2 freon 12
FL flags (from ctd78 format)
FR freon ratio
FS freon saturation

GV geostrophic velocity

HZ dynamic height

IT ice thickness (cm)

LT percent of light transmittted through water

N2 nitrite (stability)
N3 nitrate
NH ammonia

OC oxygen current
OS % oxygen saturation
OT oxygen temperature
OX oxygen (ml/l)

PA air pressure
PH pH
PO phosphate
PR pressure
PT potential temperature

RN record number (bottle number)
RT rosette temperature
RS rosette salinity
RO rosette oxygen

SE sea state
S0 sigma theta
S1 sigma 1
S2 sigma 2
S3 sigma 3
S4 sigma 4
SA salinity

SI	silicate
ST	sigma t
SV	sound velocity
SW	swell
T1	tritium (TU)
T2	tritium (TU-81)
TA	air temperature
TC	total CO2 by titration
TF	temperature
TI	temperature above freezing
TG	temperature gradient
TI	tin
T	total alkalinity (titration)
VE	sound velocity
WD	wind direction
WE	weather
WS	wind speed (m/s)

```
/*
function: s87readhead

d in an s87 file header and break out all information.  return -1 if there
an error.  return 0 if there was no information after GMT, return 1 if ther
was (saving only the first string encountered in "cruise") and return -1 in ca
of trouble.

XBS35    1  1  24.8167  -18.9333 81/08/12 224 18:00   8101bs (FOCAL #)
 XBT type: T4
 FOCAL sop xbt data: ORSTOM (J Merle & P Rual)    from NODC (G. H.), 86/10/2
 program: fxbt.c  87/05/15  p_me
DL.     T
        22.3
        22.3
2       22.35

*/
#include <stdio.h>

FILE    *fpin;

char    code[5], cruise[13], date[9], gmt[6];
float   lat, lon;
int     cast, station, type, yrday;


s87readhead ()
{
        int     c, ia, return_code = -1;


        if ((type = getc (fpin)) == EOF)
                return (return_code);
        if (fgets (code, 5, fpin) == NULL)
                return (return_code);
        if (fscanf (fpin, "%d %d %f %f ", &station, &cast, &lat, &lon) != 4)
                return (return_code);
        if (fgets (date, 9, fpin) == NULL)
                return (return_code);
        if (fscanf (fpin, "%d ", &yrday) != 1)
                return (return_code);
        if (fgets (gmt, 6, fpin) == NULL)
                return (return_code);

        /*  no cruise info  */
        return_code = 0;
        cruise[0] = '\0';
        while ((c = getc(fpin)) != '\n') {
                if (c != ' ') {
                        cruise[0] = c;
                        ia = 1;
                        while ((c = getc(fpin)) != '\n'  &&  c != ' ') {
                                cruise[ia++] = c;
                                if (ia == 12)
                                        break;
                        }
                        cruise[ia] = '\0';
                        return_code = 1;

                        if (c != '\n')
                                while ((c = getc(fpin)) != '\n');

                        break;
```

```
                }
        }

        return (return_code);
```

AG	adiabatic temperature
AN	specific volume anomally
BV	Brunt Vaisalla frequency
C3	delta C-13
C4	Delta C-14
CA	chlorophyll a
CC	total CO2 by gas cromatograph
CL	pCO2 @ lab temperature
CO	conductivity
CT	pCO2 @ insitu temperatur
DE	depth
DN	density flu
DR	density ratio
F1	freon 11
F2	freon 12
FL	flags (from ctd78 format)
FR	freon ratio
FS	freon saturation
GV	geostrophic velocity
HZ	dynamic height
IT	ice thickness (cm)
LT	percent of light transmitted through water
N2	nitrite (stability)
N3	nitrate
NH	ammonia
OC	oxygen current
OS	% oxygen saturation
OT	oxygen temperature
OX	oxygen (ml/l)
PA	air pressure
PH	pH
PO	phosphate
PR	pressure
PT	potential temperature
RN	record number (bottle number)
RT	rosette temperature
RS	rosette salinity
RO	rosette oxygen
SE	sea state
S0	sigma theta
S1	sigma 1
S2	sigma 2
S3	sigma 3
S4	sigma 4
SA	salinity
SI	silicate
ST	sigma t
SV	sound velocity
SW	swell
T1	tritium (TU)

T2	tritium (TU-81)
TA	air temperature
TC	total CO2 by titration
TE	temperature
TF	temperature above freezing
TG	temperature gradient
TI	time
TT	total alkalinity (titration)
V	sound velocity
W	wind direction
WS	wind speed

.87.ids
.87doc.text
.87readhead.c
beng/ds87b.001
beng/ds87b.002
beng/ds87b.003
beng/ds87b.004
beng/ds87b.005
beng/ds87b.006
beng/ds87b.007
beng/ds87b.008
beng/ds87b.009
beng/ds87b.010
beng/ds87b.011
beng/ds87b.012
beng/ds87b.013
beng/ds87b.014
beng/ds87b.015
beng/ds87b.016
beng/ds87b.017
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beng/ds87b.063
beng/ds87b.064
beng/ds87b.065
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beng/ds87c.006
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beng/ds87c.062
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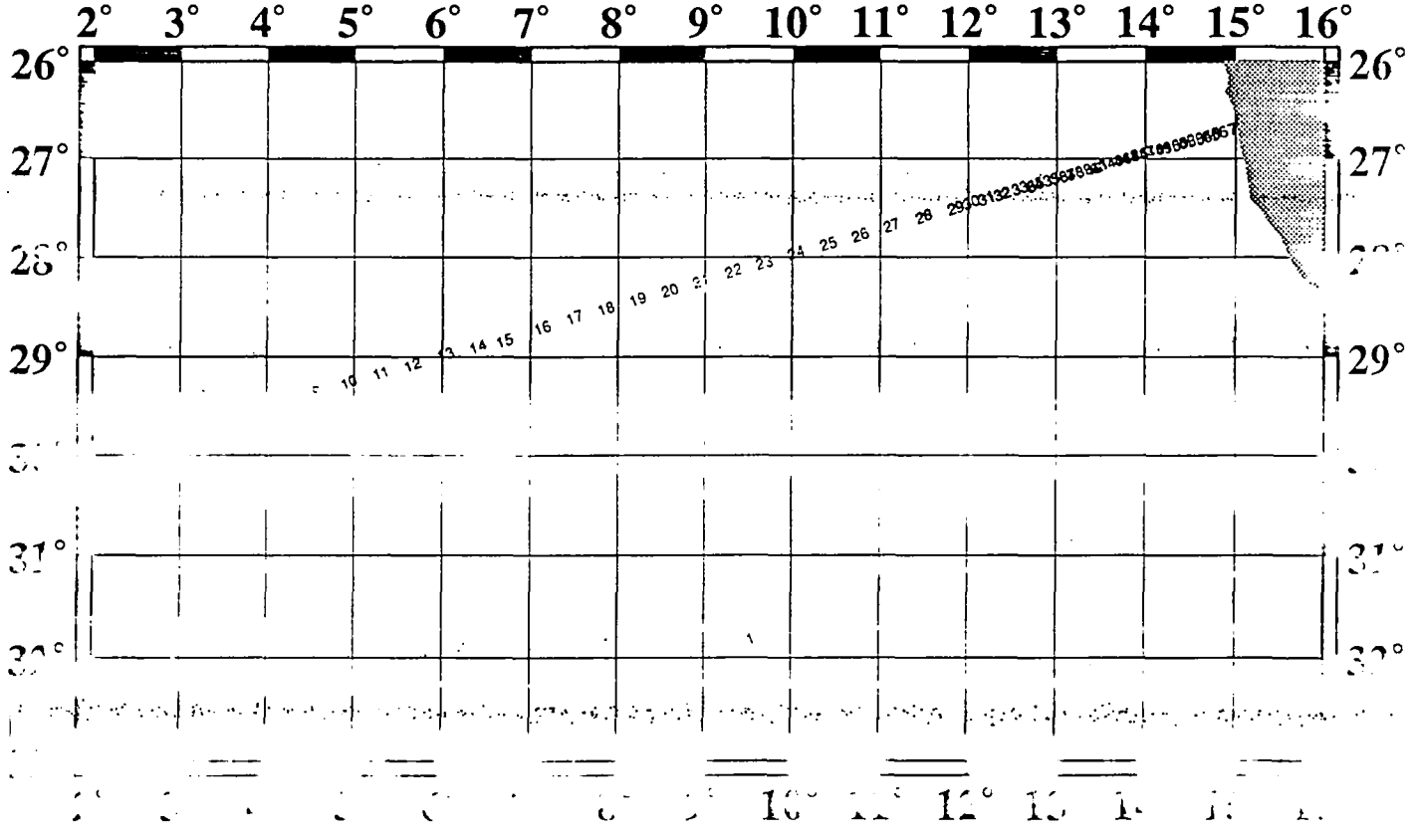
beng/ds87c.064
beng/ds87c.065

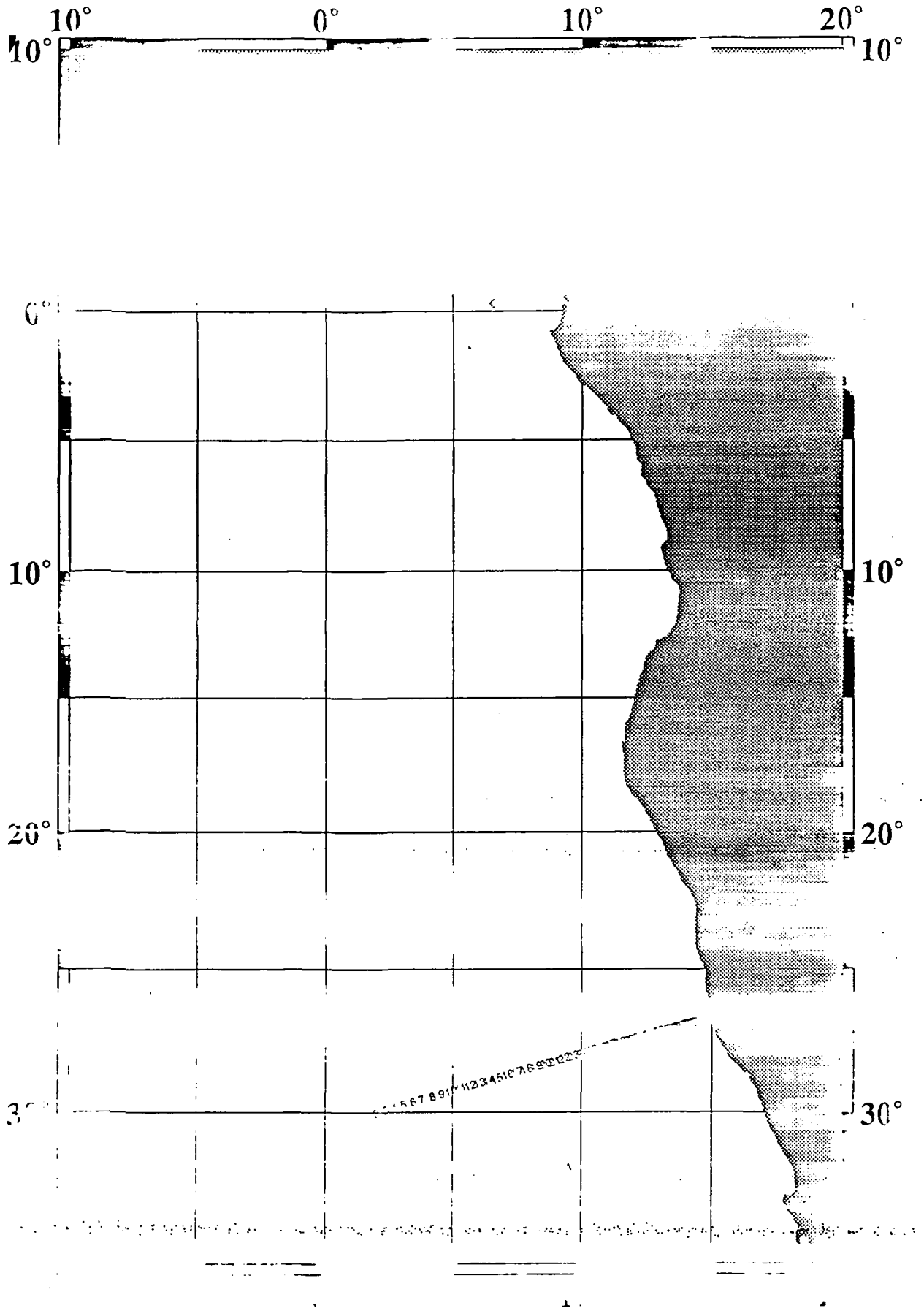
DISCOVERY 165B ctd



Sep 18 15:45

LAMONT-DOHERTY GEO. OBS. W. Haines 914 359 2400 x 259

DISCOVERY 105B



Sep 21 00:3

LAMONT-DOHERTY GEO. OBS. W. Hines 914 358 2424 x257

Unique No.: 196535 Date of Entry: 01/29/91

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY - DINDB)

Accession No.: 9000234 Reference No.: 741535
Former Accession No.: Former Reference No.: (Resub ONLY)

Media-In (DINDB): 09 - Digital Magnetic Tape

Exchange Format: E003 - Ocean Station Data (SD2-112 Byte)

Processing Format: C100 - Ocean Station Data (SD2 Format)

* Note * If data is F022, create an additional record for C022.

Country/Institute Code: 3112 Country/Platform Code: 74DI

Platform Type (DINDB): 09 - Ship Orig. Cruise ID: 165B

Cruise Start Date: 04/22/87 Project Code:

Cruise End Date: 05/05/87 Data Use Code (DUC): 3

Number of Stations: 52 Number of Records: 596

If stations/records not appropriate then:

Number: Units:

Ocean Area:

Code 1: 32 Meaning: South Atlantic Ocean
Code 2: Meaning:

NO._____ FILETYPE_____ TRACK NO._____ PROJECT IDENTIFICATION_____

	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	LRECL	BLK SIZE	NO. RECORDS
	10/09/90	CMH	A01291	120	80	800	190910
TAPE	10/12/90	CMH	W05745	120	80	800	190910
D TAPE	12/7/90	RPS	W17899	52	80		
ED DISK							
CHEK							
CHEK							
P022							
FINALIZED							

ORTED TO PRINCIPAL INVESTIGATOR: Tape W05745 is 9TRK, NL, 6250 bpi

TAPE W17899 : DNBDC* LAMONT STAOOT.

L ERRORS/CORRECTIONS (NOT REPORTED TO P.I.)

(TRACKS DELETED, FIELDS DELETED, ETC.)

REQUEST FOR ADP SERVICES

User Name	Phone #	Org/Task	Submit Date	Due Date
Cliff Hartley	673-5636	EG12008NS#119	10/11/90	ASAP

PART A

Request/Problem Category

[ ] General Info [ ] Communications [ ] Equipment [ ] Supplies
[ ] Software [ ] Tape Library [X] Computer Operations
[ ] *Other* Specify:

Request/Problem Description:
Copy tape A01291 to a 'W' tape
Please scan 'W' tape

PART B (For Operator Job Requests)

Operator Job Request Type

[ ] Run BRBUOY procedure *Name:* _____ [] See attached list
[ ] Run SELBUOY procedure *Name:* _____ [] See attached list
[ ] Run BUOYSUM procedure *Name:* _____ [] See attached list
[ ] Run *OTHER* procedure - see SPECIAL INSTRUCTIONS
[ ] Tape Scan
[X] Tape to Tape Copy *Scan OUTPUT tape?* [X] yes [] no
[ ] Disk to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Tape to Disk Copy
[ ] Print [] 80 column [] 132 column [] HEX [] OCTAL [] Character
All files/records? [] yes [] no, see SPECIAL INSTRUCTIONS
[ ] Restore VAX file *Name:* _____
[ ] *OTHER* - see SPECIAL INSTRUCTIONS

Special Operator Instructions:
Please send 'W' tape to Asheville, N.C.

JOB INPUT

Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [X] NL [ ] SL
MAX Record Length: 80 *MAX Blocksize:* 800

JOB OUTPUT

Id#/Filename: W85745

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [X] NL [ ] SL
MAX Record Length: 80 *MAX Blocksize:* 800

(OC3 Use Only)
JOB Number: 90101243
Completed By: JS
Date/Time Start: 10-12-90 9:30
Date/Time Completed: 10-12-90 10:00

REQUEST FOR ADP SERVICES

User Name	Phone #	Org/Task	Submit Date	Due Date
Cliff Hartley	673-5636	EG12008N3AH9	10/05/90	ASAP

PART A

Request/Problem Category

[ ] General Info [ ] Communications [ ] Equipment [ ] Supplies
[ ] Software [ ] Tape Library [X] Computer Operations
[ ] *Other* Specify:

Request/Problem Description:

Please scan tape A01291

PART B (For Operator Job Requests)

Operator Job Request Type

[ ] Run BRBUOY procedure *Name:* _____ [] See attached list
[ ] Run SELBUOY procedure *Name:* _____ [] See attached list
[ ] Run BUOYSUM procedure *Name:* _____ [] See attached list
[ ] Run *OTHER* procedure - see SPECIAL INSTRUCTIONS
[X] Tape Scan
[ ] Tape to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Disk to Tape Copy *Scan OUTPUT tape?* [] yes [] no
[ ] Tape to Disk Copy
[ ] Print [] 80 column [] 132 column [] HEX [] OCTAL [] Character
All files/records? [] yes [] no. see SPECIAL INSTRUCTIONS
[ ] Restore VAX file *Name:* _____
[ ] *OTHER* - see SPECIAL INSTRUCTIONS

Special Operator Instructions:

Please return tape A01291 to Bin 09

JOB INPUT

Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [ ] NL [ ] SL
MAX Record Length: _____ *MAX Blocksize:* 800

JOB OUTPUT

Id#/Filename: A01291

Medium: [X] Tape [ ] Disk [ ] Diskette [ ] Other Specify:
Code: [X] ASCII [ ] EBCDIC [ ] Binary [ ] Other Specify:
Tape Specs: [ ] 800 [ ] 1600 [X] 6250 [ ] NL [ ] SL
MAX Record Length: _____ *MAX Blocksize:* 800

(OC3 Use Only)
JOB Number: 90140903
Completed By: J.S

Date/Time Start: 10-9-90/8:00
Date/Time Completed: 10-9-90/8:10

Lamont-Doherty Geological Observatory | *Palisades, N.Y. 10964*
of Columbia University

Cable: LAMONTGEO
Telex: 710-576-2653
Fax: (914) 359-2931

Telephone: (914) 359-2900

25 Sept. 90.

National Oceanographic Data Center
NOAA/NESDIS OC21
Universal Building, Room 409
1825 Connecticut Ave., NW
Washington, D.C. 20235
Attn Ms. Patricia T. Kirk

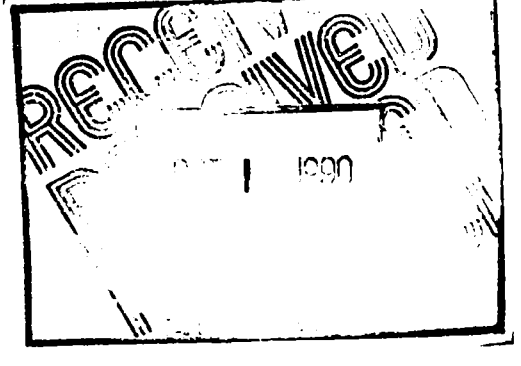
Dear Pat,

I am submitting a tape to NODC for Dr. Arnold L. Gordon of his cruise on the RRS Discovery #165B. The cruise was in the southeast Atlantic in the spring of 1987. The tape is written at 6250 bpi, ASCII logical record length = 80, blocksize = 800, blocked. The tape contains 120 files. Files 1-3 are documentation of our format, the next 52 are station data (bottle data) and the final 65 are hiresolution ctd data at 1 meter level.

William E. Haines

Lamont-Doherty Geological Observatory
of Columbia University
U.S. Route 9w
Palisades, New York
10964
914-359-2900x259

9000234
AΦ1291



WOODS HOLE OCEANOGRAPHIC INSTITUTION
Woods Hole, Massachusetts 02543
Phone: (508) 548-1400
FAX: (508) 548-1400, Ext. 6013
Telex: 951679

FAX TRANSMISSION SHEET

Date: 12/3/90 Pages to Follow 3

TO: FAX No. 202 673 5586
Name: Bob STEIN
Organization: NODC
Location: WASH, DC

From: Sender's Name: George Heimerdinger
Organization: Woods Hole Oceanographic Institution
Location: Mc Lean Building
FAX No. (508) 457-2183

Special Instructions:

BOI INFO YOU NEED FOR THE
IMAGERY DATA SET YOU ARE WORK...
ON

-- George --

If you experience difficulty receiving this, or you do not receive all the pages, please call (508) 457-2000, Ext. 2777.

P.01

DEC-3-90 MON 10:51

S0	potential density anomaly, reference level 0 dbar
S2	potential density anomaly, reference level 2000 dbar
S4	potential density anomaly, reference level 4000 dbar
AN	specific volume anomaly
HZ	dynamic height anomaly
BV	buoyancy frequency (cycles/hour)
RS	rosette salinity
RO	rosette oxygen (ml/l)
SI	silicate (µmol/l)
N3	nitrate plus nitrite (µmol/l)
PO	phosphate (µmol/l)
RN	record tag number

All calculations of oceanographic variables were done according to the Practical Salinity Scale 1978 and the International Equation of State for Seawater 1980, where appropriate.

Following is a list of cruise personnel involved in data collection:

F. Aikman (chief scientist)	L-DGO
J. Ardai	L-DGO
K. Bosley	L-DGO
R. Cember	L-DGO
R. McDevitt	WHOI
S. O'Hara	L-DGO
S. Pierce	WHOI
D. Robinson	L-DGO

The RRS discovery is operated by the Natural Environment Research Council. We are greatly appreciative to the officers and the crew of Discovery. This work was funded by the Office of Naval Research, under grant N00014-94-C-0132 SA1, Arnold L. Gordon, principal investigator.

[redacted]ion	Latitude		Longitude		GMT	Date	Bottom Depth(m)	Wind (m/s)	Wind Dir
1	31 48.60	S	9 32.40	E	09:11	87/04/22	4920	18	104
2	30 0.06	S	1 59.84	E	07:30	87/04/24	3850	3	70
3	29 54.37	S	2 22.18	E	13:01	87/04/24	2840	7	280
4	29 48.54	S	2 44.09	E	18:40	87/04/24	1960	7	256
5	29 43.23	S	3 6.26	E	23:23	87/04/24	3590	7	264
6	29 [illegible]	S	3 27.95	E	04:57	25	4725	10	139
7	29 [illegible]	S	3 48.00	E	11:3[illegible]	25	4932	8	115
8	29 20.63	S	4 12.49	E	18:1[illegible]	[illegible]/25	4990	8	120
9	29 20.88	S	4 34.48	E	00:19	87/04/26	[illegible]	7	110
10	29 15.58	S	4 56.39	E	06:13	87/04/26	4953	5	125
11	29 9.94	S	5 18.28	E	12:07	87/04/26	5005		
12	29 [illegible]	S	5 39.70	E	18:13	87/04/26	4960		
13	28 [illegible]	[illegible]	6 2.27	E	02:02	87/04/27	4790	8	249
14	28 53.54	S	6 24.17	E	07:26	87/04/27	5005		
15	28 49.99	S	6 41.93	E	14:35	87/04/27	5055	4	245
16	28 [illegible]	S	7 7.95	E	20:15	87/04/27	5038		
17	28 36.[illegible]	S	7 30.0[illegible]	E	01:11	87/04/28	4995	5	163
18	28 30.74	S	7 51.57	E	08:03	87/04/28	4835	0	—
19	28 25.08	S	8 13.25	E	14:02	87/04/28	5018		
20	28 19.51	S	8 35.23	E	20:17	87/04/28	4984	11	137
21	28 14.00	S	8 57.13	E	02:35	87/04/29	5030	15	130
22	28 8.07	S	9 19.15	E	08:54	87/04/29	4960	9	135
23	28 2.97	S	9 40.60	E	15:13	87/04/29	4914	10	135
24	27 57.03	S	10 2.48	E	22:05	87/04/29	4838	10	140
25	27 51.57	S	10 24.33	E	[illegible]	87/04/30	4960	[illegible]	120
26	27 46.27	S	10 [illegible]	[illegible]	[illegible]	87/04/30	4960	4	287
27	27 40.60	S	11 [illegible]	[illegible]	09:15	87/04/30	4830	7	110
28	27 34.97	S	11 [illegible]	[illegible]	01:[illegible]	87/05/01	4965	12	140
29	27 29.80	S	11 [illegible]	[illegible]	07:02	[illegible]	[illegible]	12	160
30	27 25.63	S	12 [illegible]	[illegible]	[illegible]	[illegible]	4959	12	145
31	[illegible]	[illegible]	12 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12	149
32	27 21.43	S	12 22.67	E	[illegible]	87/05/01	[illegible]	15	125

Station	Latitude			Longitude			GMT	Date	Bottom Depth(m)	Wind (m/s)	Wind Dir
33	27	17.78	S	12	34.75	E	23:38	87/05/01	3670	10	135
34	27	15.65	S	12	45.12	E	03:18	87/05/02	3365		
35	27	12.52	S	12	56.24	E	06:30	87/05/02	3040		
36	27	11.23	S	13	1.12	E	08:36	87/05/02	28[illegible]	11	160
37	27	10.04	S	13	7.01	E	12:04	87/05/02	26[illegible]	10	147
38	27	8.65	S	13	12.37	E	14:04	87/05/02	244[illegible]	10	150
39	27	7.19	S	13	18.1[illegible]		17:10	87/05/02	22[illegible]	10	135
40	27	[illegible]	S	13	24.78	E	19:17	87/05/02	[illegible]	[illegible]	140
41	27	[illegible]4.53	S	13	28.67	E	21:54	87/05/02	1750	9	120
42	[illegible]	3.11	S	13	34.00	E	23:32	87/05/02	1455	8	185
43	27	1.71	S	13	39.46	E	01:38	87/05/03	124[illegible]		
44	27	0.47	S	13	44.76	E	03:12	87/05/03	965	[illegible]	180
45	26	59.12	S	13	50.20	E	05:02	87/05/03	682	[illegible]	180
46	26	57.67	S	13	[illegible]	E	06:15	87/05/03	460	[illegible]	155
47	26	56.07	S	14	0.86	E	07:44	87/05/03	[illegible]	8	163
48	26	54.79	S	14	6.49	E	09:06	87/05/03	[illegible]	8	[illegible]
49	26	53.54	S	14	11.64	E	12:16	87/05/03	285	8	[illegible]
50	26	52.06	S	14	17.08	E	13:46	87/05/03	358	9	195
51	26	50.72	S	14	22.40	E	15:48	87/05/03	340	5	178
52	26	49.39	S	14	27.74	E	17:06	87/05/03	317	3	[illegible]
53	26	47.96	S	14	33.17	E	18:38	87/05/03	372		
54	26	46.55	S	14	38.62	E	20:03	87/05/03	27[illegible]	8	[illegible]
55	26	45.11	S	14	44.08	E	21:46	87/05/03	203	[illegible]	185
56	26	44.06	S	14	49.03	E	22:56	87/05/03	17[illegible]	8	[illegible]4
57	26	42.44	S	14	54.79	E	00:30	87/05/04	138	[illegible]	[illegible]
58	26	45.21	S	14	44.21	E	02:09	[illegible]/05/04	19[illegible]		140
59	26	48.07	S	14	33.29	E	04:06	[illegible]	275		210
60	26	50.64	S	14	22.45	E	[illegible]	[illegible]	[illegible]		188
61	26	53.48	S	14	[illegible]	E	[illegible]	[illegible]	276	[illegible]	[illegible]90
62	26	58.96	S	13	[illegible]		[illegible]	[illegible]	689	[illegible]	
63	27	4.52	S	[illegible]	[illegible]		[illegible]	[illegible]	1735	10	
64	27	9.84	S	[illegible]			[illegible]	[illegible]/05/04	2670	18	155
65	27	15.51	[illegible]	[illegible]			[illegible]	[illegible]/05/05	538[illegible]		

The S87 data format was developed to standardize the handling of ascii station data. The main parts of the S87 format file are the header line containing all pertinent station information, an id line with two character minimum mnemonics describing the data in the columns below and the data.

The first line must be the header line and contains all the information needed to identify the station, as described below:

```
0         1         2         3         4         5

12345678901234567890123456789012345678901234567890123456789

TPPCC SSSS CC SDD.DDDD SDDD.DDDD YY/MM/DD JUL HH:MM  CRUISE_ID
```

T - data type (C: ctd, B: bottle, A: axbt, X: xbt)

PP - NODC platform code

CC - NODC country code of the platform

SSSS - station number

CC - cast number

SDD.DDDD - latitude in decimal degrees

SDDD.DDDD - longitude in decimal degrees

YY/MM/DD - date (including "/")

JUL - year-day for year of collection

HH:MM - time (including ":")

CRUISE_ID - optional cruise identifier

Following the header line can be an optional secondary header line for end of cast information. There may also be an optional line describing important physical characteristics at the station location. This line must begin with the character '&' in the first column. At the moment there are eleven mnemonics, CS for PC02 insitu, CL for PC02 at lab T (15 degrees C), TC for total C02, TK for total Alkalinity, ZZ for bottom depth in meters, SS for bucket surface salinity, TA for air temperature in degrees C, PA for air pressure in millibars (hectopascals), TS for bucket surface temperature in degrees C, WS for wind speed in meters per second, and WD for wind direction in degrees. Fields are separated by tabs (this will be a problem for FORTRAN programs). A line to denote this would be:

```
&ZZ=4766        TA=-4.2 PA=0990 WS=0.6  WD=122
```

There may be as many comment lines as desired that do not start with an '&' or an '@'. It is suggested that any program used to create or modify an s87 format file add a new line giving the program name, the input file, the date and the person running the program.

The column identification line contains mnemonics of at least two unique characters that identify the data in the columns below. This line must start with an '@' in the first column. A list of present id's is included below. Tabs are used to seperate mnemonics and data columns to conserve disk space. Fortran programs DO NOT ACCEPT tabs.

For more information contact the Physical Oceanography Department at the Lamont-Doherty Geological Observatory.

11 - september - 1989

AG	adiabatic temperature
AN	specific volume anomally
BV	Brunt Vaisalla frequency
C3	delta C-13
C4	Delta C-14
CA	chlorophyll a
CC	total CO2 by gas cromatograph
CL	pCO2 @ lab temperature
CO	conductivity
CS	pCO2 @ insitu temperature
DE	depth
DF	density flux
DR	density ratio
F1	freon 11
F2	freon 12
FL	flags (from ctd78 format)
FR	freon ratio
FS	freon saturation
GV	geostrophic velocity
HZ	dynamic height
IT	ice thickness (cm)
LT	percent of light transmittted through water
N2	nitrite (stability)
N3	nitrate
NH	ammonia
OC	oxygen current
OS	% oxygen saturation
OT	oxygen temperature
OX	oxygen (ml/l)
PA	air pressure
PH	pH
PO	phosphate
PR	pressure
PT	potential temperature
RN	record number (bottle number)
RT	rosette temperature
RS	rosette salinity
RO	rosette oxygen
SE	sea state
S0	sigma theta
S1	sigma 1
S2	sigma 2
S3	sigma 3
S4	sigma 4
SA	salinity

SI	silicate
ST	sigma t
SV	sound velocity
SW	swell
T1	tritium (TU)
T2	tritium (TU-81)
TA	air temperature
TC	total CO2 by titration
TE	temperature
TF	temperature above freezing
TG	temperature gradient
TI	time
TK	total alkalinity (titration)
VE	sound velocity
WD	wind direction
WE	weather
WS	wind speed (m/s)

```
/*
function: s87readhead

read in an s87 file header and break out all information.  return -1 if there
is an error.  return 0 if there was no information after GMT, return 1 if there
was (saving only the first string encountered in "cruise") and return -1 in case
of trouble.

XBS35    1  1  24.8167  -18.9333 81/08/12 224 18:00   8101bs (FOCAL #)
 XBT type: T4
 FOCAL sop xbt data: ORSTOM (J Merle & P Rual)   from NODC (G. H.), 86/10/28
 program: fxbt.c  87/05/15  p_mele
@DE     TE
0       22.33
1       22.33
2       22.33

*/
#include <stdio.h>

FILE    *fpin;

char    code[5], cruise[13], date[9], gmt[6];
float   lat, lon;
int     cast, station, type, yrday;


s87readhead ()
{
        int     c, ia, return_code = -1;


        if ((type = getc (fpin)) == EOF)
                return (return_code);
        if (fgets (code, 5, fpin) == NULL)
                return (return_code);
        if (fscanf (fpin, "%d %d %f %f ", &station, &cast, &lat, &lon) != 4)
                return (return_code);
        if (fgets (date, 9, fpin) == NULL)
                return (return_code);
        if (fscanf (fpin, "%d ", &yrday) != 1)
                return (return_code);
        if (fgets (gmt, 6, fpin) == NULL)
                return (return_code);

        /*  no cruise info  */
        return_code = 0;
        cruise[0] = '\0';
        while ((c = getc(fpin)) != '\n') {
                if (c != ' ') {
                        cruise[0] = c;
                        ia = 1;
                        while ((c = getc(fpin)) != '\n'  &&  c != ' ') {
                                cruise[ia++] = c;
                                if (ia == 12)
                                        break;
                        }
                        cruise[ia] = '\0';
                        return_code = 1;

                        if (c != '\n')
                                while ((c = getc(fpin)) != '\n');

                        break;
```

```
                }
        }

        return (return_code);
```

AG	adiabatic temperature
AN	specific volume anomally
BV	Brunt Vaisalla frequency
C3	delta C-13
C4	Delta C-14
CA	chlorophyll a
CC	total CO2 by gas cromatograph
CL	pCO2 @ lab temperature
CO	conductivity
CS	pCO2 @ insitu temperature
DE	depth
DF	density flux
DR	density ratio
F1	freon 11
F2	freon 12
FL	flags (from ctd78 format)
FR	freon ratio
FS	freon saturation
GV	geostrophic velocity
HZ	dynamic height
IT	ice thickness (cm)
LT	percent of light transmitted through water
N2	nitrite (stability)
N3	nitrate
NH	ammonia
OC	oxygen current
OS	% oxygen saturation
OT	oxygen temperature
OX	oxygen (ml/l)
PA	air pressure
PH	pH
PO	phosphate
PR	pressure
PT	potential temperature
RN	record number (bottle number)
RT	rosette temperature
RS	rosette salinity
RO	rosette oxygen
SE	sea state
S0	sigma theta
S1	sigma 1
S2	sigma 2
S3	sigma 3
S4	sigma 4
SA	salinity
SI	silicate
ST	sigma t
SV	sound velocity
SW	swell
T1	tritium (TU)

T2	tritium (TU-81)
TA	air temperature
TC	total CO2 by titration
TE	temperature
TF	temperature above freezing
TG	temperature gradient
TI	time
TK	total alkalinity (titration)
VE	sound velocity
WD	wind direction
WE	weather
WS	wind speed (m/s)

s87.ids
s87doc.text
s87readhead.c
beng/ds87b.001
beng/ds87b.002
beng/ds87b.003
beng/ds87b.004
beng/ds87b.005
beng/ds87b.006
beng/ds87b.007
beng/ds87b.008
beng/ds87b.009
beng/ds87b.010
beng/ds87b.011
beng/ds87b.012
beng/ds87b.013
beng/ds87b.014
beng/ds87b.015
beng/ds87b.016
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beng/ds87b.018
beng/ds87b.019
beng/ds87b.020
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beng/ds87b.022
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beng/ds87b.024
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beng/ds87b.026
beng/ds87b.027
beng/ds87b.028
beng/ds87b.029
beng/ds87b.030
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beng/ds87b.032
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beng/ds87b.034
beng/ds87b.035
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beng/ds87b.063
beng/ds87b.064
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beng/ds87c.001
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beng/ds87c.003
beng/ds87c.004
beng/ds87c.005
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beng/ds87c.007
beng/ds87c.008
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beng/ds87c.011
beng/ds87c.012
beng/ds87c.013
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beng/ds87c.015
beng/ds87c.016
beng/ds87c.017
beng/ds87c.018
beng/ds87c.019
beng/ds87c.020
beng/ds87c.021
beng/ds87c.022
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beng/ds87c.028
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beng/ds87c.030
beng/ds87c.031
beng/ds87c.032
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beng/ds87c.057
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beng/ds87c.059
beng/ds87c.060
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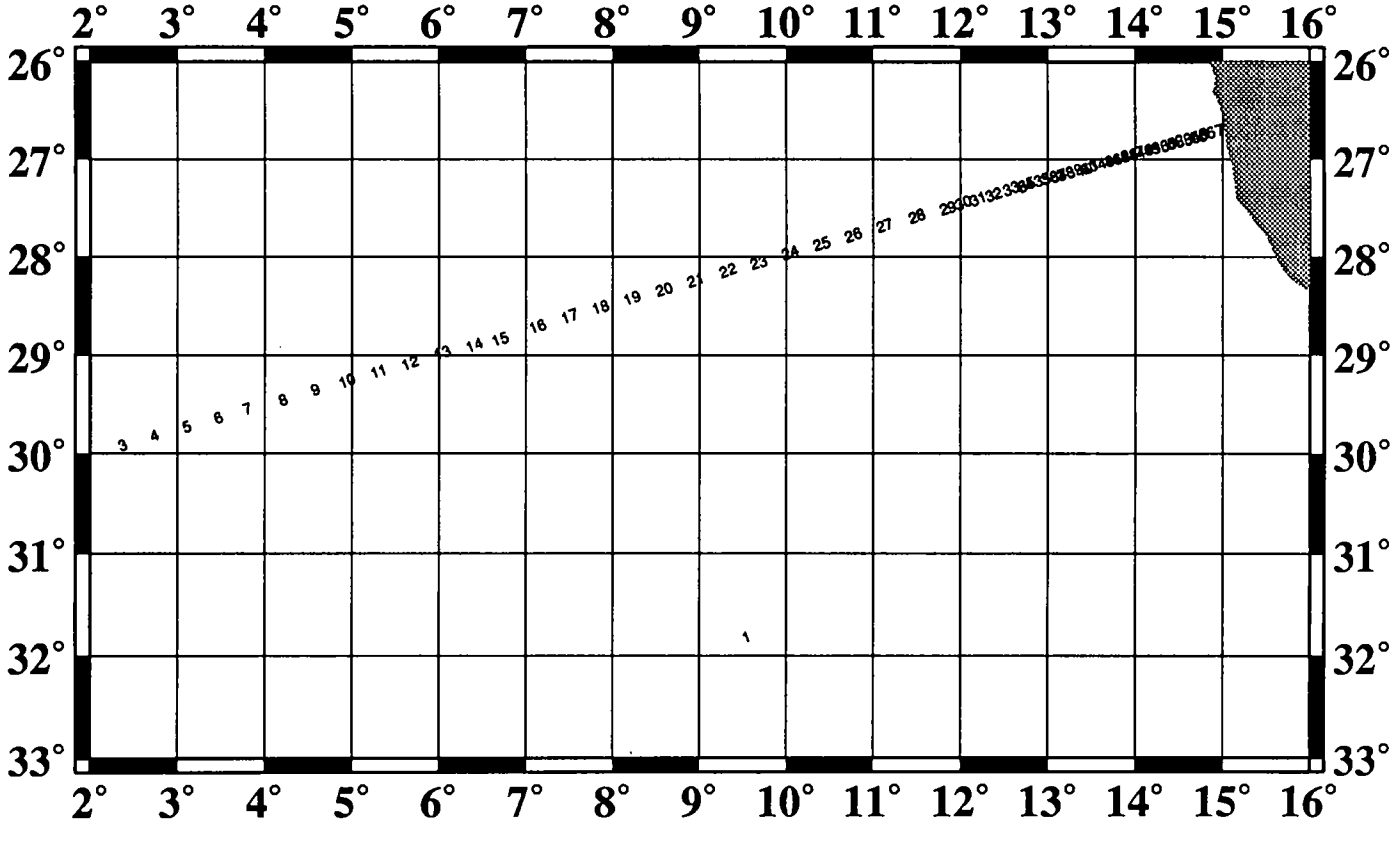
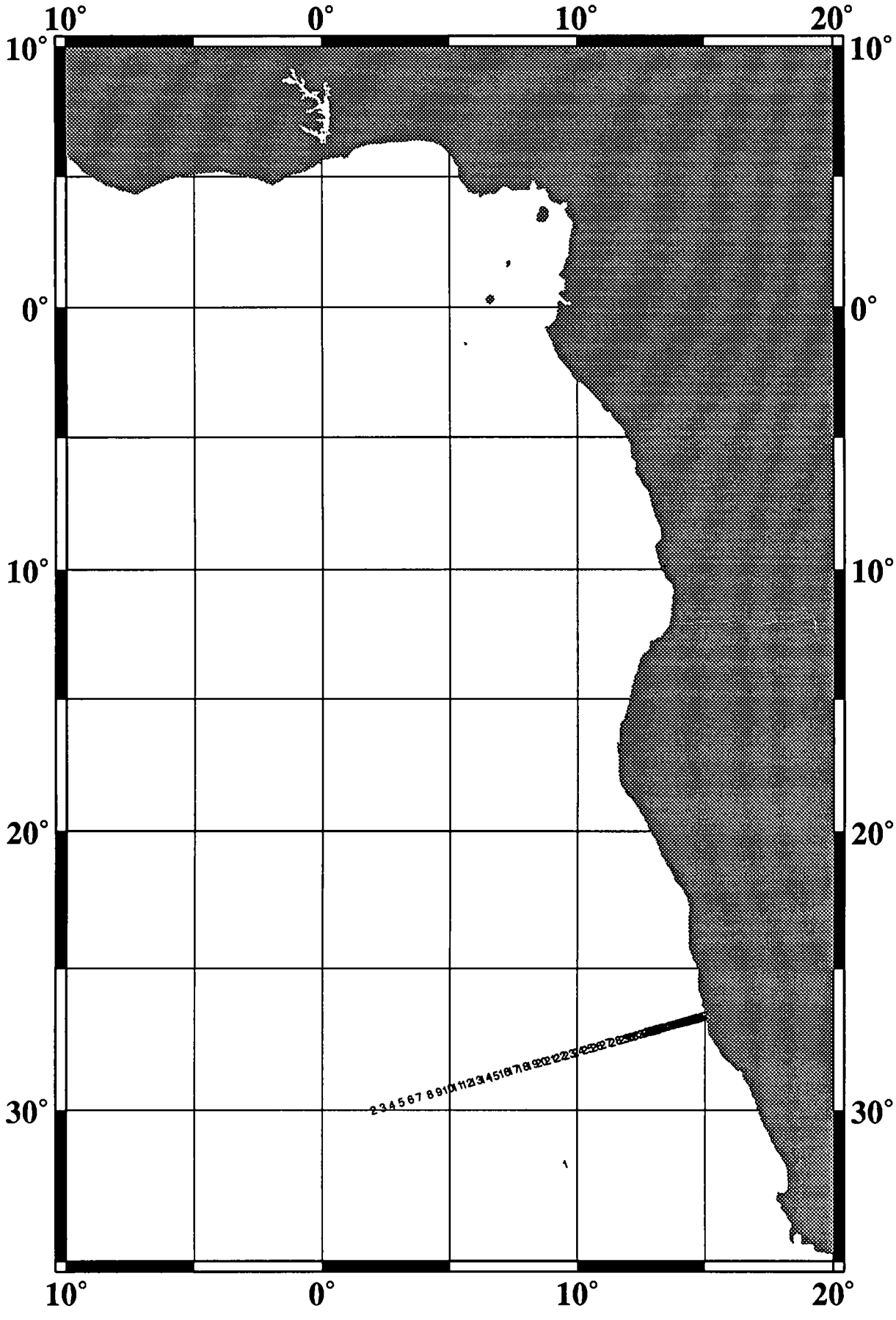
beng/ds87c.064
beng/ds87c.065

DISCOVERY 165B ctd



LAMONT-DOHERTY GEO. OBS. W. Haines 914 359 2800 x259

DISCOVERY 165B



LAMONT-DOHERTY GEO. OBS. W. Haines 914 358 2900 x259

```
Password:
 accNo   fleA refNo  proj inst ship    startDate  cruise   catId
 ------- ---- ------ ---- ---- ------- ---------- -------- ----------
 9000234 C100 741535 9999 3112 74DI    1987/04/22 165B          193595
 9000234 C022 749181 9999 3112 74DI    1987/04/22 TV5245        193596
 9000234 F022 TV5245 9999 3112 74DI    1987/04/22 165B          193597

(3 rows affected)
```

```
Password:
 accNo   fleA refNo  ship staCnt recCnt startDate  endDate
 ------- ---- ------ ---- ------ ------ ---------- ----------
 9000234 C100 741535 74DI 52     52     87/04/22   87/05/05
 9000234 C022 749181 74DI 65     140    87/04/22   87/05/05
 9000234 F022 TV5245 74DI 65     38015  87/04/22   87/05/05

(3 rows affected)
```