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Cruise Report

Oceanus 149

March 12-19, 1984

Brad Butman

U.S. Geological Survey

Woods Hole, MA 02543

Vessel: OCEANUS 149

Departure: Woods Hole, Mass.

Dates: March 12-19, 1984

Area of Operation: Southern New England Shelf and Slope between 68° and 71°W.

Objectives:

This cruise was part of a continuing study of currents and sediment transport on the Continental Slope. The major objectives of the cruise were:

- 1) To recover Slope Array II (three subsurface moorings at stations SA, SE, and SF, and a bottom tripod at T, fig. 1).
- 2) To deploy Slope Array III (five subsurface moorings at stations SA, SE, SF, SG, and SH, and one bottom tripod at station T, fig. 2).
- 3) Recover and redeploy four surface guard buoys at stations SF and T.
- 4) Conduct a hydrographic survey across the outer shelf and upper slope between 68° and 71°W.

Personnel:

Brad Butman, Chief scientist	USGS
Mike Bothner	USGS
John Larson	USGS
Cathy O'Dell	USGS
Joe Newell	USGS
Carol Parmenter	USGS
Larry Poppe	USGS
Rick Rendigs	USGS
Polly Shoukimas	USGS
Bill Strahle	USGS
Andy Eliason	Eliason Data Service

11 (10 USGS)

Narrative:

March 12	1400	Depart Woods Hole
	2015	Arrive Mud Patch, BTF station 13A Start hydrostatically damped coring (HDC).
	2200	Complete coring. Underway to station SG.
March 13	0310	Start bathymetric survey.
	0600	Start assembly of mooring 281.
	0930	Complete bathymetry. Start to deploy mooring 281.
	1045	Mooring 281 deployed. Underway to SE.
	1200	Arrive station SE. Range to mooring.
	1226	Release mooring 274.
	1250	Begin recovery.
	1415	Mooring 274 recovered.
1450	Underway to station SF.	

March 13 (cont.)	1715 2000 2300	Mooring 275 recovered. Start bathymetry at SG. Bathymetry complete.
March 14	0800 1800	Seas too rough to work. Seas still too rough.
March 15	0800 1015 1050 1425 1530 1800 2015 2200 2230	Prepare mooring for deployment at SH. Complete grab sample at SH. Start deployment of mooring 282. Mooring 282 deployed. Underway to SE. Start to deploy mooring 278 at SE. Mooring 278 deployed. Underway to station T. Arrive station T. Tripod on deck (mooring 273). Deck secure for night.
March 16	0645 0915 1055 1200 1300 1420 1600 1810 1945 2145	Prepare to pickup surface buoys. Buoy H recovered. Buoy H redeployed. Buoy J recovered. Buoy J redeployed. Tripod deployed (mooring 280). Underway to SF. Arrive SF. Surface buoy L recovered and redeployed (with surface VACM, mooring 2791). Prepare to launch subsurface mooring 279. Deploy mooring 279. Start XBT transect up slope.
March 17	0140 0800 0945 1200 1430 1625	Complete XBT transect. Underway to SA. Arrive SA. Recover mooring 276. Prepare to deploy subsurface mooring 277. Mooring 277 deployed. Underway to start CTD transect. Complete first CTD.
March 18	0800	Continue CTD survey.
March 19	0430 1100	Complete CTD. Arrive Woods Hole.

Cruise Summary

The moorings deployed and recovered on OCEANUS 149 are part of a long-term study of currents and sediment transport on the Continental Slope. Three arrays of instruments are planned for this experiment (Array I, November 1982-October 1983; Array II October 1983-March 1984, and Array III, March 1984-November 1984). Array II was recovered and Array III deployed on OC149. Array III was designed to continue the long-term observations at SA and SE, to compare processes of sediment movement in "gully" and "non-gully" regions of the Continental Slope (stations SG and SH), and to complement the DOE SEEP (Shelf Edge Exchange Processes) experiment.

All mooring work was completed as planned. Bad weather curtailed mooring operations for one full day and made work difficult during most of the cruise. A moderate CTD survey was completed.

The current meter on the bottom tripod system failed after about 3 weeks, probably because of a bad connecting cable. To assure near-bottom current data, an additional subsurface mooring was deployed at station T on OCEANUS cruise 154 by M. Briscoe on May 16, 1984.

Tabulated information:

Days at sea:	8	✓
Moorings:		
Deployed:	6	✓
Recovered:	4	✓
Surface buoys:		
Deployed:	3	✓
Recovered:	3	✓
Hydrography:		
CTD:	18	✓
XBT:	18	✓
Salinity:	51	✓
Suspended Sediment:		
Oxygen	15	✓
Nutrients	34	✓

Table 1. Moorings deployed or recovered on OC149

Station	Depth (m)	Latitude (N.)	Longitude (W.)	Moorings ¹		Buoys	
				Recover	Deploy	Recover	Deploy
SA	100	40°04.8'	68°33.5'	276	277		
SE	200	39°53.8'	70°03.7'	274	278		
SF	500	39°57.7'	70°00.9'	275	279	2	2
T (Tripod)	100	40°11.0'	69°58.3'	273	280	2	2
SG	1150	39°48.5'	70°05.0'		281		
SH	1220	39°50.6	70°01.4'		282		

¹Number is USGS mooring identification number.

Table 2. Slope Array - Deployment II

Station	Mooring no.	Water depth (m)	Latitude(N.)/ Longitude(W.)	Mooring type	Inst. type	Inst. depth (m)	Inst. S.N.	Deploy (YrMoDy)	Recover (YrMoDy)
SA	276	485	40°04.8' 68°33.5'	SS	ST V	178	701	831020	840317
						185	542		
						ST	385	702T	
						ST	434	704T	
						ST	435	703	
						ST	460	705T	
						ST	477	706T	
						V	479	548	
						ST	480	707	
						ST	482	708	
SE	274	510	39°53.8' 70°03.7'	SS	ST VTCT	153	709T	831023	840313
						160	322		
						ST	185	710T	
						ST	210	711	
						ST	235	712T	
						VTCT	260	477	
						ST	367	713T	
						ST	395	714T	
						ST	396	715	
						ST	399	716T	
						ST	400	717	
						ST	403	718T	
						ST	404	719	
						ST	407	720T	
						V	410	549	
						ST	460	721T	
						ST	485	722T	
						ST	502	723T	
						VTCT	504	628	
						ST	505	724	
ST	507	725T							
SF	275	202	39°57.7' 70°00.9'	SS	VTCT ST	127	334	831018	840313
						129	726		
						ST	152	727T	
						ST	177	728T	
						ST	194	729T	
						VTCT	196	516	
						ST	197	730	
						ST	199	731T	
						ST	199	731T	
						T			
T	273	101	40°11.0' 69°58.3'	T	T	100	SD1	831018	840315

TDR = Temperature-depth recorder.

TCT = VACM modified for transmission and conductivity.

ST = Sediment trap (tube trap or Anderson trap).

Table 3. Slope Array - Deployment III

Station	Mooring No.	Water Depth (m)	Latitude (N.)/ Longitude (W.)	Mooring Type	Inst. Type	Inst. Depth (m)	Inst. SN	Deploy (YrMoDy)	Recover (YrMoDy)
SA	277	500	40°04.6' 68°33.8'	SS	TDR ST	134	163	840317	
						143	805		
						V	150	506	
						ST	350	806T	
						ST	400	807	
						ST	450	808T	
						ST	475	809T	
						ST		TILT	
						ST	490	814T	
						V	494	408	
						ST	496	815	
						ST	498	816T	
						SE	278	500	39°53.9' 70°03.7'
143	817T								
V	150	558							
ST	175	818T							
ST	200	819							
ST	225	820T							
V	250	491							
ST	357	821T							
ST	385	822T							
ST	386	823							
ST	389	824T							
ST	390	825							
ST	393	826T							
ST	394	827							
ST	397	828T							
V	400	585							
ST	450	829T							
ST	475	830T							
ST	490	831T							
VTCT	494	626							
ST	496	832							
ST	498	833T							
SF	279	205	39°57.6' 70°00.9'	S	V	10	624	840316	

Table 3. Slope Array - Deployment III (continued)

Station	Mooring No.	Water Depth (m)	Latitude (N.)/ Longitude (W.)	Mooring Type	Inst. Type	Inst. Depth (m)	Inst. SN	Deploy	Recover
SF	204		39°57.7' 70°01.1'	SS	V VTCT	54	562	840316	
						129	518		
						ST	134	834	
						ST	154	835T	
						ST	179	836T	
						ST		TILT	
						ST	196	841T	
						VTCT	198	321	
						ST	200	842	
						ST	202	843T	
T	280	102	40°10.9' 68°58.3'	T				840316	
	283	100		SS					
						V	56	549	840516
						ST	60	864T	
						ST	75	867T	
						ST	85	866	
						ST	90	868T	
						VTCT	93	477	
						ST	97	865T	
SG	281	1150	39°48.5' 70°05.0'	SS	V ST	950	541	840313	
						955	856		
						ST	1000	857T	
						ST	1050	858T	
						ST	1100	859	
						ST	1125	860T	
						ST	1140	861T	
						VTCT	1144	443	
						ST	1146	862	
						ST	1147	863T	
SH	282	1220	39°50.6' 70°01.4'	SS	V ST	1020	405	840315	
						1025	844		
						ST	1070	845T	
						ST	1120	846T	
						ST	1170	847	
						ST	1195	848T	
						ST		TILT	
						ST	1210	853T	
						VTCT	1214	442	
						ST	1216	854	
ST	1217	855T							

Table 4. Hydrographic stations OC149, March 16-19, 1984

Station	Date	Time ¹	Latitude ² (N.)	Longitude (W.)	Depth (m)	CTD	XBT	Salinity		Nutrients		O ₂ ³ (m)
								Surf (m)	Deep ³ (m)	Surf (m)	Deep ³ (m)	
1	3/16	2241	39°48.30'	70°04.46'	1380		X	BS-1				
2 (SE)	3/16	2311	39°53.53'	70°02.67'	605		X	BS-2				
3 (SF)	3/16	2337	39°58.24'	70°01.41'	173		X	BS-3				
4	3/17	0015	40°04.82'	69°59.53'	145		X	BS-4				
5 (T)	3/17	0052	40°11.05'	69°57.81'	102		X	BS-5				
6	3/17	0135	40°18.04'	69°55.84'	87		X	BS-6				
7	3/17	1549	39°54.12'	68°28.84'	855	X		BS-7	X			
8	3/17	1701	39°58.94'	68°30.93'	1290		X	BS-8				
9	3/17	1755	40°04.08'	68°33.32'	600	X		BS-9	547.3	547.3	547.3	
10	3/17	1937	40°09.28'	68°37.03'	185		X	BS-11				
11	3/17	2011	40°13.62'	68°37.47'	146	X		BS-12	X			
12	3/17	2138	40°18.99'	68°34.60'	110	X		BS-13				
13	3/17	2317	40°23.02'	68°40.99'	90	X		BS-14	87.5	87.5	87.5	87.5
14	3/18	0100	40°29.99'	68°44.91'	75	X		BS-16	72.6	72.6	72.6	72.6
15	3/18	0304	40°29.89'	69°00.16'	75	X		BS-18	73.6	73.6	73.6	73.6
16	3/18	0457	40°30.07'	69°16.21'	75	X		BS-20	76.2	76.2	76.2	76.2
17	3/18	0605	40°24.96'	69°16.84'	---		X	BS-22	---	---	---	---
18	3/18	0709	40°20.40'	69°15.24'	85	X		BS-23	87.5	87.5	87.5	87.5
19	3/18	0823	40°14.82'	69°15.21'	95		X	BS-25				
20	3/18	0858	40°10.02'	69°13.90'	101	X		BS-27	103.7	103.7	---	---
21	3/18	0950	40°06.15'	69°13.67'	117		X	BS-29				
22	3/18	1020	40°01.52'	69°12.37'	195	X		BS-30	189.4	189.4	189.4	189.4
23	3/18	1131	39°55.04'	69°11.37'	~950	X		BS-32	---	---	561	561
24	3/18	1223	39°55.27'	69°11.56'	~955		X	BS-33				
25	3/18	1352	39°54.18'	69°24.81'	~985		X	BS-34				
26	3/18	1507	39°52.16'	69°38.86'	~880		X	BS-35				
27	3/18	1615	39°50.55'	69°51.10'	---		X	WL-1				
28	3/18	1758	39°48.34'	70°04.58'	1200	X		WL-2	1164	1164	1164	1164
29	3/18	2030	39°53.52'	70°03.91'	590	X		WL-4	588.8	588.8	588.8	588.8
30	3/18	2158	39°58.06'	70°01.85'	190	X		WL-6	196.7	196.7	196.7	196.7
31	3/18	2320	40°05.03'	69°59.93'	145	X		WL-8	147.1	147.1	147.1	147.1
32	3/19	0037	40°11.21'	69°57.85'	102	X		WL-10	104.3	104.3	104.3	104.3
33	3/19	0140	40°17.58'	69°58.10'	90	X		WL-12				
34	3/19	0223	40°23.02'	69°57.97'	80	X		WL-13	82.9	82.9	82.9	82.9
35	3/19	0330	40°30.10'	69°58.18'	69	X		WL-15				
36	3/19	0425	40°37.12'	69°58.08'	58	X		WL-16	58.5	58.5	58.5	58.5

¹Time is EST.

²Latitude and longitude from NORTHSTAR 5101 algorithm.

³Sample depths not corrected for fish offset (~7 m) or bottle position above fish (~5 m). About 12 m should be subtracted from tabulated depth to obtain sample depth from surface.

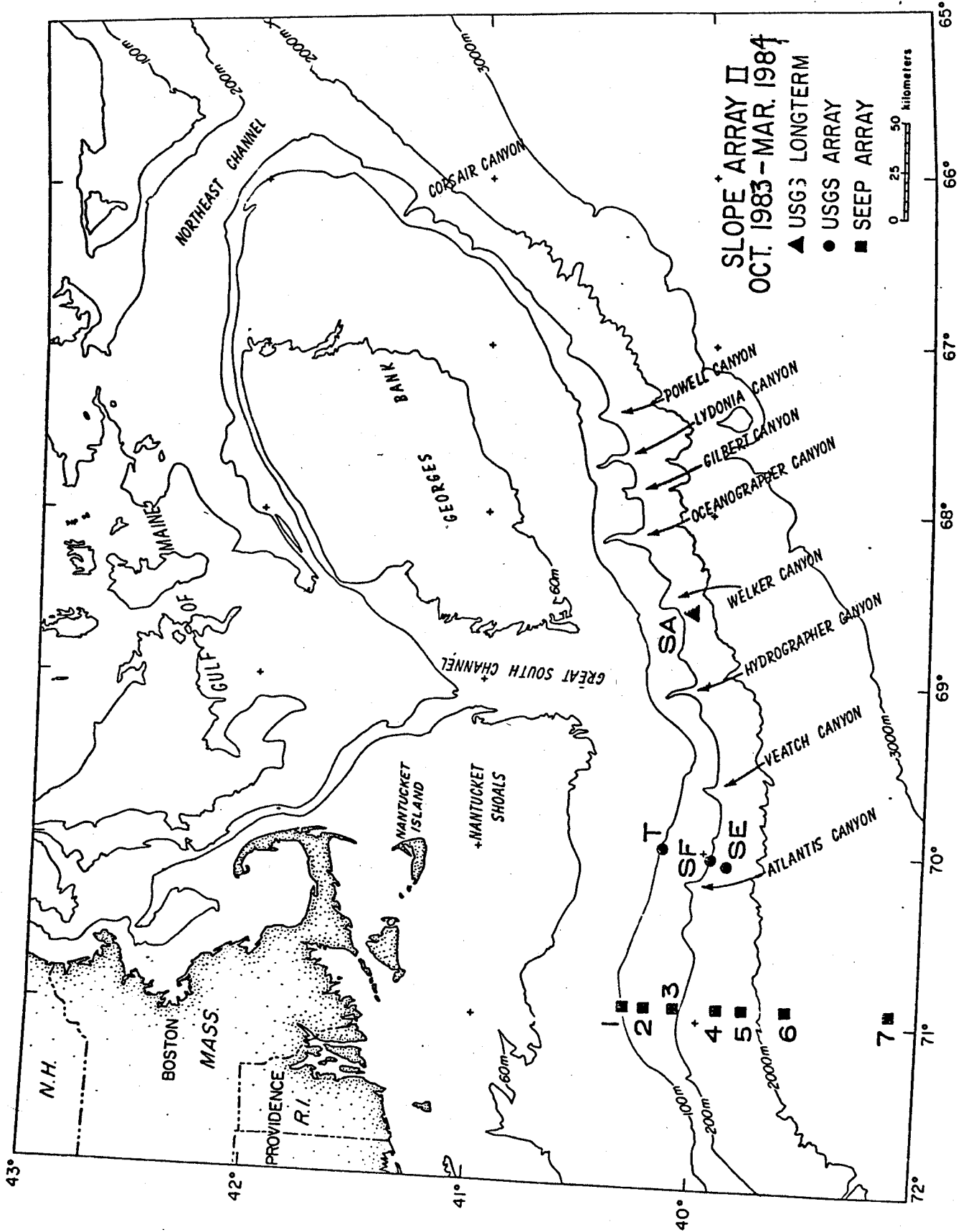


Figure 1. Location of moorings deployed in slope Array II. Stations 1-7 are SEEP stations.

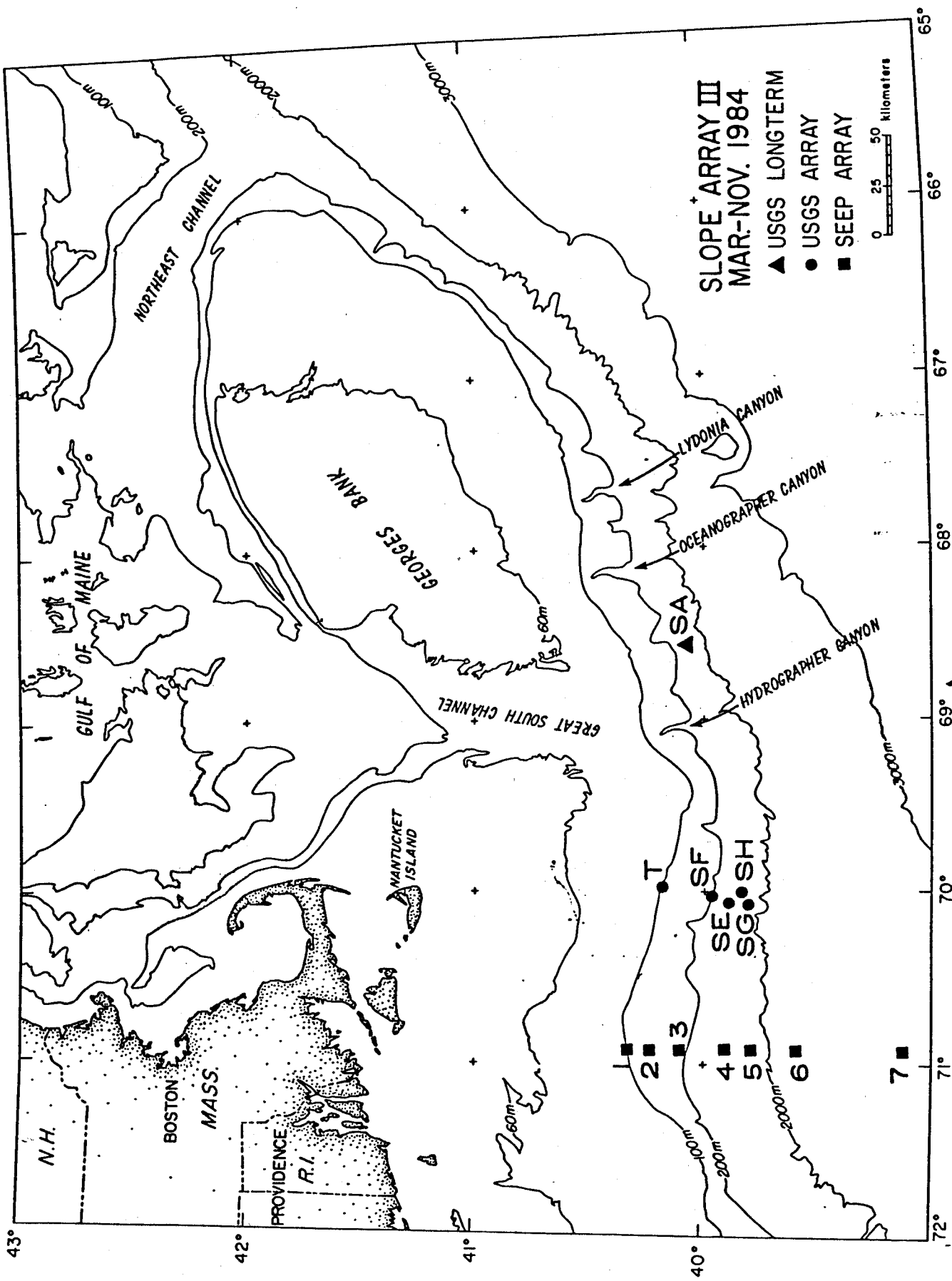


Figure 2a. Location of moorings deployed in slope Array III. Stations 1-7 are SEEP stations.

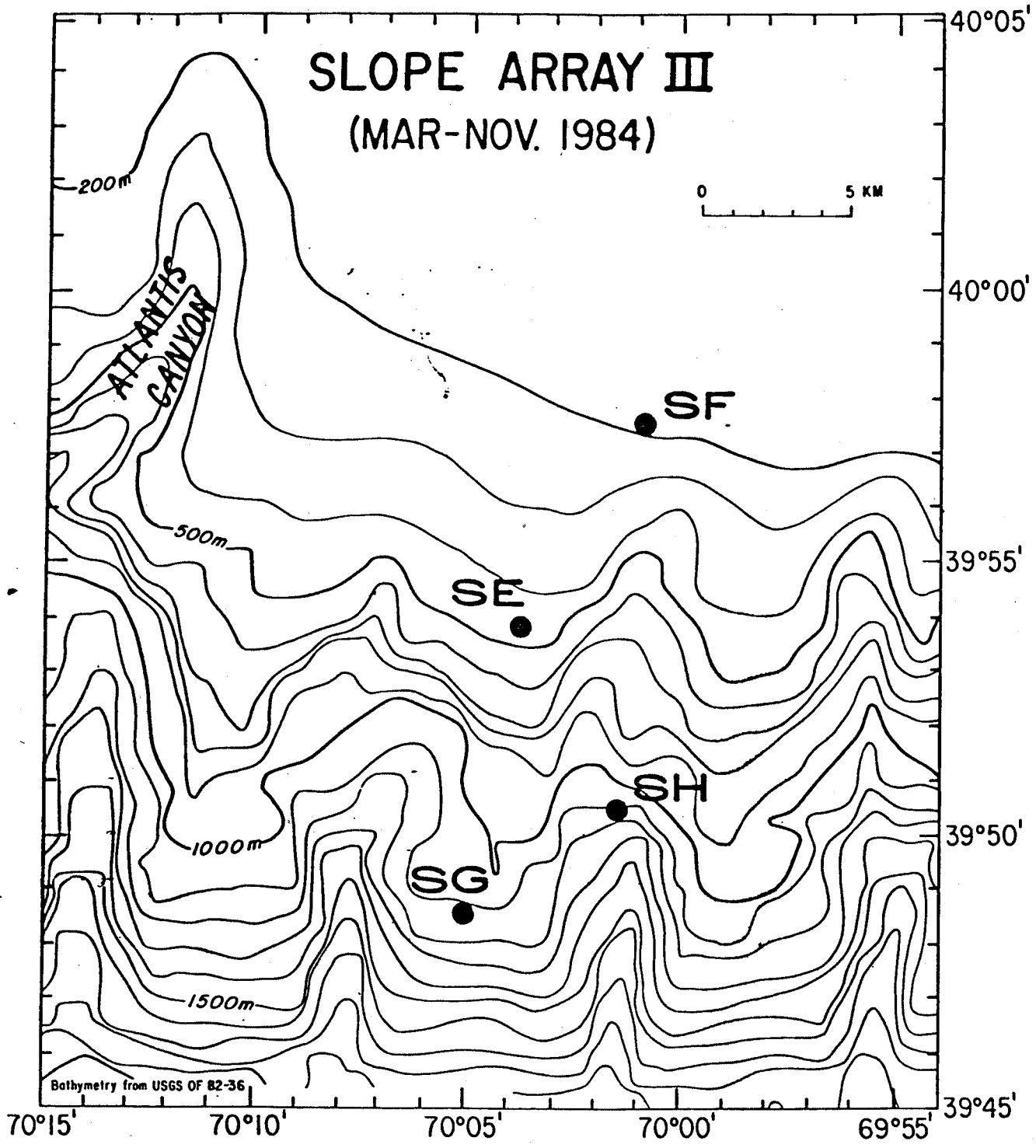


Figure 2b. Detailed bathymetric map showing locations of moorings SE, SF, SG, and SH. SG and SH are located in similar water depths but SG is on a smooth "intergully" area, and SH is in an adjacent "gully".

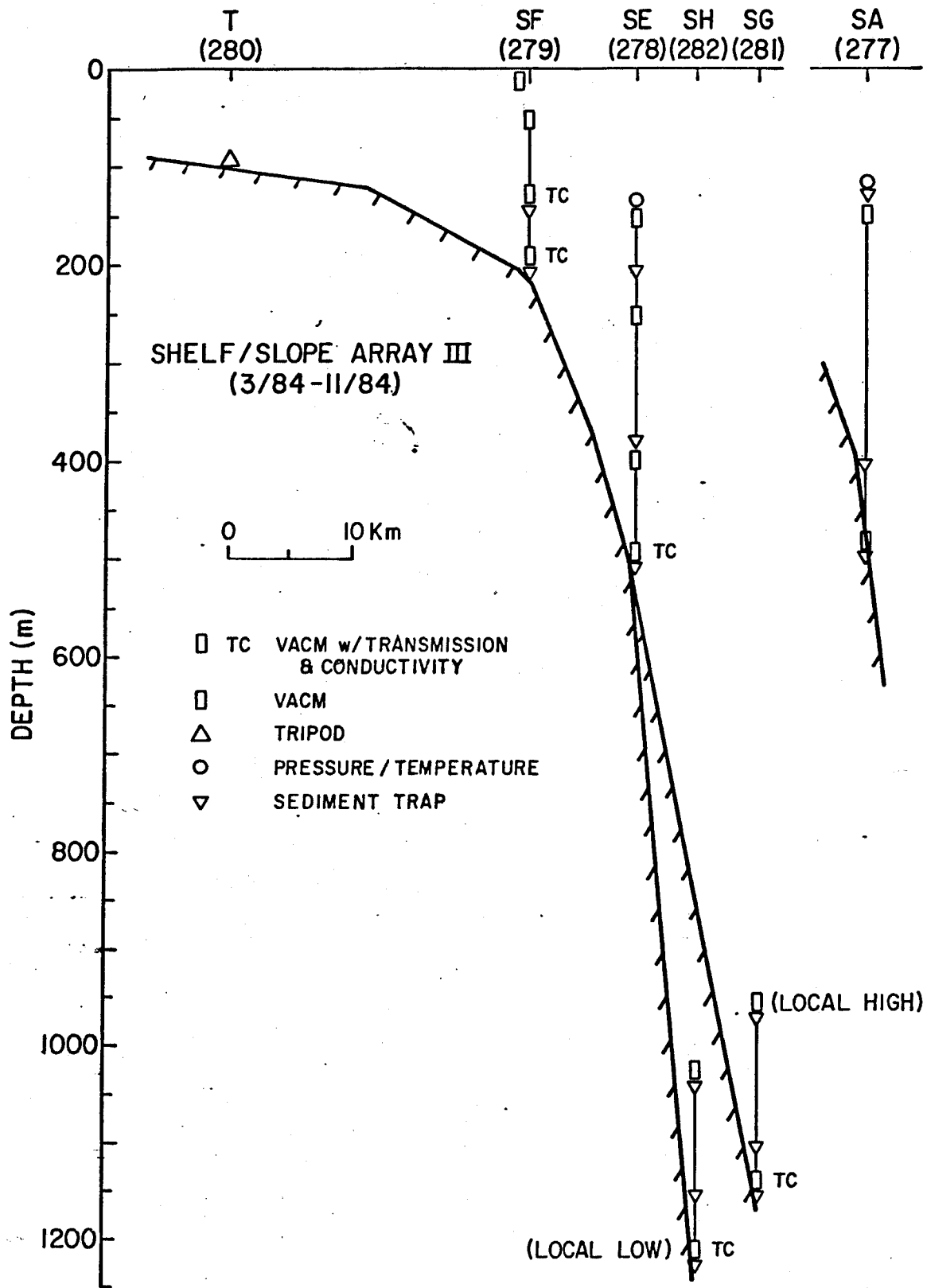


Figure 3. Schematic cross section of the Continental slope showing position of moorings and instrumentation in slope Array III.

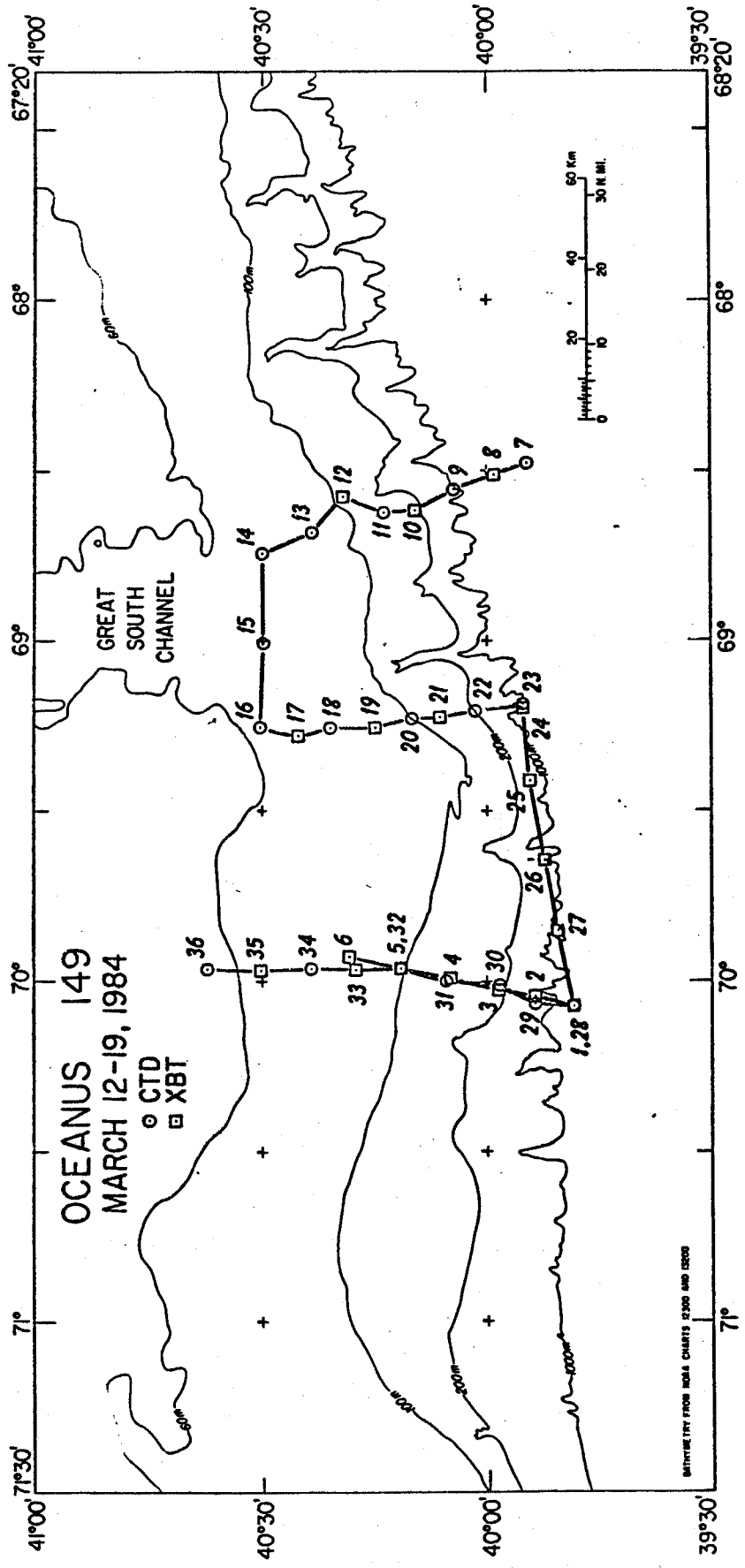


Figure 4. Location of hydrographic stations made on OCl49.

APPENDIX

BRIDGE LOG

and

LOAN LOG

CRUISE NO. 149 OCEANUS DECK LOG

DATE MON, MARCH 12, 1984 From WOODS HOLE To SEA & RETURN TIME ZONE + 5R

Hour	Pat. Log	Course		Wind & Force	Sea State	Swell & Direction	Bar	Air	Water	Remarks	Stations										
		Stand	Straight								No	Lat	Long	Time							
1										0800 CREW TURNS TO: PREPS TO GET U/W FOR SEA											
2										1230-1300 TESTED BR. & NAV GEAR, ALL O.K. HORN FROZEN											
3										DEPARTURE DRAFT: 17'08" AFT, 11'07" FWD, -15.0 MEAN											
4										1330 SINGLE UP											
5																					
6										1401 U/w FM DOCK											
7										1410 BOOYS #1&2 ABEAM, DEP. W.H., VAR C/S TRANSITING VINEYARD SND.											
8										1453 ROBINSONS #28 ABEAM TO STBD, 2/10 MI											
9										1527 DEVILS BR #29 ABEAM TO FOOT, 3/10 MI, C/C 180 T) @ 170 RPM											
10																					
11																					
12																					
13																					
14																					
15										1545 S/C 178g											
16	194	180		WNW 4	2	WNW 1	1037	26		VIS EXCELLENT, EASY MOTION											
17										1600 C/C 187g											
18																					
19										1900 C/C 187g											
20	200	185		W'LY 3	2	W 1	1040	25		VIS IS GOOD, EASY MOTION, H.P.H.											
21										2010 H.T. CORE SITE											
22										2154 S/C 135g / 2305 C/C 130g											
23				E'LY AIRS	2																
24							1042	28		VIS GOOD, EASY MOTION, P.H.											
Gallon Used										On Hand				Made		Water		Feed		Por	
Length of Day										At Sea											

1st OFFICER

MASTER

P. HOWLAND

CRUISE NO. 149 OCEANUS DECK LOG

DATE TUES, MARCH 13, 1984 FROM WOODS HOLE TO SEA & RETURN TIME ZONE + 5R

Hour	Pat. Log	Course Slog	True	Wind & Force	Sea State	Swift & Direction	Bar	Air	Water Temp	Remarks	Stations																															
											No	Lat	Long																													
1										0001 U/W AS BEFORE																																
2										0100 S/C 132g																																
3										0200 S/C 129g																																
4		VAR		E 3-4	1-2	-	1042.29		BC	0300 V C/S TO SURVEY START																																
5										0310-0755 BATHYMETRY SURVEY, V C/S																																
6										VIS GOOD, CONT SURVEY.																																
7										L.T.B.																																
8		H.T.		EXS 4	2	EXN 1	1042.39		0	VIS IS GOOD, EASY MOTION.																																
9										H.P.H.																																
10										0814 C/C 090g @ 4kn(SURVEY) / 0911 VAR C/S																																
11										1045 SET SUBSURFACE MOORING "SG"																																
12		H.T.		E'LY 5	3	E'LY 1	1040.44		0	1115 V C/S TO MOORING SITE "SF" / 1158 H.T.																																
13										P.H.																																
14										1230-1420 MOORING RECOVERY "SF"																																
15										1454 F/W STA, "SE", S/C 044(T) @4kn.																																
16		VAR		ESE 8	4	ESE 3	1034.45		0	VIS GOOD, WIND & SEAS BUILDING.																																
17										L.T.B.																																
18										1619 H.T. STA "SF" / 1655 SUBSURFACE MOORING AT STA.																																
19										1715 MOORING ABD																																
20										"SF" ALONGSIDE 1805 END STA S/C 207g																																
21										1835 C/C 197g																																
22										VIS IS GOOD, MOD-HEAVY ROLL @ TIMES.																																
23										H.P.H.																																
24		JOGG		SE 7-8	5	SE 3	1023.54		0	1955 C/C 093g																																
										2102 C/C 270g																																
										2302 END SURVEY CMC JOGGING TO WEATHER STEERAGE WAY																																
										VIS GOOD, MOD ROLL & PITCH.																																
										P.H.																																
<table border="1"> <tr> <td>Gallon Used</td> <td>Oil</td> <td>On Hand</td> <td>Water</td> <td>Feed</td> </tr> <tr> <td>1292</td> <td></td> <td>32830</td> <td>USED 1000</td> <td>Per 7000</td> </tr> </table>											Gallon Used	Oil	On Hand	Water	Feed	1292		32830	USED 1000	Per 7000	<table border="1"> <tr> <td>Departure</td> <td>12/1610</td> </tr> <tr> <td>Arrival</td> <td>12h 50m</td> </tr> <tr> <td>Station Time Total</td> <td>9h 00m</td> </tr> <tr> <td>Boys Run</td> <td>148</td> </tr> <tr> <td>Total</td> <td>148</td> </tr> <tr> <td>Ass Speed</td> <td>11.5</td> </tr> <tr> <td>Grand Total Dist</td> <td>4866</td> </tr> <tr> <td>Length of Day</td> <td>21h 50m</td> </tr> <tr> <td>At Sea</td> <td>21h 50m</td> </tr> </table>				Departure	12/1610	Arrival	12h 50m	Station Time Total	9h 00m	Boys Run	148	Total	148	Ass Speed	11.5	Grand Total Dist	4866	Length of Day	21h 50m	At Sea	21h 50m
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At Sea	21h 50m																																									

P. HOWLAND MASTER 1st OFFICER

CRUISE NO. 149

OCEANUS

DECK LOG

DATE WED, MARCH 14, 1984

From WOODS HOLE

To SEA & RETURN

TIME ZONE + 5R

Hour	Pat. Log	Course	Wind & Force	Sea State	Swell & Direction	Bar	Air	Water	Weather	Remarks	Positions			
											Lat	Long	Time	
1										0001 H.T. AS BEFORE, JOGGING				
2										BAROMETER CONT. TO FALL RAPIDLY				
3										BAROMETER CONT. TO FALL RAPIDLY				
4		VAR	SMKS 8	5	SE'LY 4	1015	59		OP	VIS FAIR, MOD MOTION CONT TO JOGG. L.T.B.				
5														
6														
7										0710 CMC FOG SIGS, D S/A / 0730 SECURE FOG SIGS				
8		VAR	VAR 4	5	S'LY 8	1016	59			OR FAIR TO POOR VIS IN RAIN & FOG, DEEP SLOW ROLL. H.P.H.				
9										0910 H.T.				
10										1145 JOGGING TO WEATHER				
11														
12		VAR	WXN 7	5		1016	40		0	VIS FAIR TO GOOD, MOD ROLL. P.H.				
13														
14														
15														
16		327	310	NW 7-8	5-6	9	1019	40	BC	VIS GOOD, MOD MOTION, CONT TO JOGG. L.T.B.				
17														
18										1800 END JOGGING, H.T.				
19										1945 CMC JOGGING				
20														
21										VIS IS GOOD, SEAS MODERATING. H.P.H.				
22										2000 C/C 305R, JOGGING TO WEATHER				
23										2330 C/C 325R				
24										VIS GOOD. P.H.				
Gallon Used		On Hand	Made	Used	Food	Food	L.O. USED 16						L.O. ON HAND 501	
478		32352	USED 600		6400									
Departure: 1984-03-14 07:30 Arrival: 1984-03-14 19:30 Standing Time: 24h Station Time Total: 24h Day's Run: 148 Ave Speed: 4.866 Grand Total Dist: 4866 (1984) Length of Day: 24h At Sea: 1d 21h 50m														

P. HOWLAND MASTER

1st OFFICER

CRUISE NO. 139

OCEANUS

DECK LOG

TIME ZONE + 5 R

To SEA & RETURN

From WOODS HOLE

DATE THURS, MARCH 15, 1984

Hour	Pat. Log	Course		Wind & Force	Sea State	Swell & Direction	Bar.	Air	Water	Remarks	Stations	
		Stand	Strg.								Lat	Long
1										0001 JOGGING AS BEFORE 0220-0228 CHECKED DECK GEAR, ALL SECURE		
2										0300 C/C 046(T) @ 140 RPM TO STA "SF"		
3												
4		058	042	NNW 6	4	NW 3	1025	33	C	VIS GOOD. L.T.B.		
5										0554 H.T. "SF"		
6												
7										0719 S/C 172g @8.0 KN		
8		188	172	NW 6	4	NNW 3	1027	33	0	VIS IS GOOD. H.P.H.		
9										0920-1001 MUD GRAB		
10										1058 CMC STREAMING MOORING.		
11												
12				NW 5	4	NNW 5	1025	36	0	VIS GOOD, MOD ROLL & PITCH @ TIMES. P. H.		
13										1345 LAUNCH MOORING SUBSURFACE #282 SLOPE "H".		
14										1443 CMC STREAMING MOORING #278 FOR STA #15E"		
15												
16				NNW 5-6	4	NNW 4	1024	36	0	VIS GOOD L.T.B.		
17										LAUNCH MOORING #282 STA "SE"		
18										1800 END STA, S/C 015g 8.0 KN		
19										1930 C/C 024g		
20		041	024	NNE 6	4	N 3	1024.5	36	0	VIS IS GOOD, MOD PITCH @ TIMES. H.P.H.		
21										2020 VAR C/S @ SITE"t"		
22										2148 RECOVER TRIPOD- H.T.		
23												
24				NNE 4	3	N'LY 1	1024	38	0	VIS GOOD. P. H.		
Gallon Used		718	On Hand	31570		USED	800	Water				
						Feed	5600	L.O. ON HAND		501		
						Net						
						Grand Total Dist				4866 (1984)		
						Length of Day				24h		
						At Sea				2d 21h 50m		

1st OFFICER

P. HOWLAND MASTER

CRUISE NO. 149

OCEANUS

DECK LOG

DATE FRI, MARCH 16, 1984

From WOODS HOLE

To SEA & RETURN

TIME ZONE + 5R

Hour	Post-Log	Course		Wind & Force	Sea State	Swell & Direction	Bar	Air	Water	Remarks	Stations		
		Stand	Strg								Lat	Long	Time
1										0001 H.T. AS BEFORE			
2													
3													
4		H.T.		NNE 4	2-3	N-1	1023	39	0	VIS GOOD, EASY ROLL.			L.T.B.
5										0530 V/C TO STA "T" 150 RPM			
6										0650 H.T. STA #1"t"			
7													
8		H.T.		NNE 4-5	3	NNE 2	1023	39	OF	VIS IS FAIR IN LT. FOG.			H.P.H.
9										0850 RECOVER W. SURFACE BOUY AT "T"			
10										1050 RESET SURFACE BOUY			
11										1110 RECOVER E. SURFACE BOUY			
12		VAR		NNE 4	3	NNE 1	1021	40	0	VIS GOOD, EASY ROLL.			P.H.
13										1258 LAUNCH & SET W. GUARD BOUYG SITE "T" # J			
14										1335 VIS REDUCED IN FOG. CMC SIGS-PRECAUTIONS			
15										1349 LAUNCH TRIPOD SITE "T"			
16		H.T.		N 4	3	N'LY 1-B	1018	43	F	1422 E/W STA "T", S/C 186(T) @ 150 RPM			
17										1552 H.T. BTA "SF"			
18										VIS NIL, CONT. FOG PRECAUTIONS.			L.T.B.
19										1635 RECOVER BOUY "L" AT SITE "SF"			
20		H.T.		N'LY 3	3	N'LY 2	1018	42	F	1806 RESET BOUY "L" AT SITE "SF"			
21										VIS CONT. NIL IN FOG.			H.P.H.
22										2121 SET SUBSURFACE MOORING @ "SF"			
23										2140 END STA S/C 196g @170 RPM			
24		029	015	NW'LY 3	3	E'LY 2	1017	42	0	2237 C/C 015g START XBT SURVEY			P.H.
On Hand: 31026 Made: USED 800 Water: 4800 Per: L.O. ON HAND 501											Length of Day: 24h At Sea: 3d 21h 50m		
Station: 544 Grand Total Dist: 4884 Length of Day: 24h At Sea: 3d 21h 50m											(1984)		

1st OFFICER

MASTER

F. HOWLAND

CRUISE NO. 149

OCEANUS

DECK LOG

TIME ZONE + 5R

DATE SAT, MARCH 17, 1984 From WOODS HOLE To SEA & RETURN

Hour	Pal-Log	Course		Wind & Force	Sea State	Swath & Direction	Bar	Air	Water	Remarks	Stations																																														
		Stand	Sirg.								Lat	Long	Time																																												
1										0001 XBT RUN AS BEFORE 0135 END XBT SURVEY. S/C 102(T) @ 170 RPM 0205 VIS UP & DOWN CMC FOG SIGNALS-RADAR WATCH AS NEEDED																																															
2																																																									
3																																																									
4	111	096		N-4	2-3	E'LY 3	1015	42		F VIS NIL CONT. FOG PRECAUTIONS. L.T.B. 0540 SECURE FOG SIGS																																															
5																																																									
6																																																									
7										0700 C/C 100g																																															
8	119	100		NE 3	3	E 2	1017	50		B VIS IS GOOD H.P.H. 0802 H.T. STA "SA"																																															
9																																																									
10																																																									
11																																																									
12			VAR	NW 4	3	E-2	1018	46		BC VIS GOOD, EASY ROLL P.H. 1225 VIS REDUCED IN FOG CMC SIGS & PRECAUTIONS 1403 LAUNCH MOORING #277 AT SITE "SA" 1435 F/W STA, S/C 157(T) @170 RPM																																															
13																																																									
14																																																									
15																																																									
16			H.T.	N-6	3-4	9	1017	49		F VIS POOR, CONT FOG PRECAUTIONS. L.T.B. 1705 SECURE FOG SIGNALS. 1741-1855 CTD #2																																															
17																																																									
18																																																									
19																																																									
20	020	002		N 6-7	5	NNW 3	1018	44		BC VIS IS GOOD, & PITCH MODERATE. H.P.H. 2010-2041 CTD #3 / 2048 S/C 033g @155 RPM. 2218 C/C 272g 2315 H.T. CTD #4																																															
21																																																									
22																																																									
23										2344 END STA S/C 338g @150 RPM P.H.																																															
24	357	338		N-6	4	N'LY 3	1018	40	0	VIS GOOD, MOD ROLL & PITCH.																																															
<table border="1"> <tr> <td rowspan="2">Gallon Used</td> <td>On Hand</td> <td>Made</td> <td>Water</td> <td>Feed</td> </tr> <tr> <td>30009</td> <td>USED 900</td> <td></td> <td>Pol 3900</td> </tr> </table>											Gallon Used	On Hand	Made	Water	Feed	30009	USED 900		Pol 3900	L.O. USED 5		L.O. ON HAND 496																																			
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1st OFFICER

P. HOWLAND MASTER

CRUISE NO. 149

OCEANUS

DECK LOG

TIME ZONE + 5R

DATE SUN, MARCH 18, 1984 From WOODS HOLE To SEA & RETURN

Hour	Pat. Log	Course		Wind & Force	Sea State	Swell & Direction	Bar.	Air	Water	Remarks	Stations	
		Stand	Sig.								Lat	Long
1										0001 CTD OPS AS BEFORE		
2										0053-0108 CTD #5 / 0120 S/C 271(T) @ 150 RPM		
3										0250-0300 CHECKED DECK GEAR, ALL O.K.		
4										0243-0310 CTD #6 / 0322 S/C 271(T) @ 150 RPM		
5				NNE 7-8	5-6	N'LY 6	1019	40		OR VIS FAIR TO POOR, HEAVY ROLLS. L.T.B.		
6										0400 R/S 7.0 kn. HEAVY WK.		
7										0456-0531 CTD #7		
8				NNE 7-8	6	N-6	1019	39		0645-0740 CTD #8		
9										OF VIS FAIR IN LT FOG. H.P.H.		
10										0900 H.T. CTD # 9 / 0922 END STA S/C 170g-155 RPM		
11										1022 H.T. CTD #10 / 1047 END STA S/C 170g @ 155 RPM		
12										1132 H.T. CTD #11		
13										OP VIS FAIR, MOD ROLL & PITCH P.H.		
14										1222 F/W CTD #11 / S/C 260(T) @ 140 RPM		
15										1314-1322 V C/S RESECURE GEAR		
16				NNE 7-8	5-6	N 3-6	1017	42		0 VIS FAIR, MOD-HEAVY ROLLS. L.T.B.		
17										1754-1920 CTD #12		
18										1920 S/C 018g. S/A		
19										0 VIS IS FAIR TO GOOD, MOD-HEAVY MOTION. H.P.H.		
20				NNE 7-8	7	NKE 3	1016	40		2030-h.t. ctd #13 / 2113 END STA S/C 023g-155 RPM		
21										2158 H.T. CTD #14 / 2221 END STA, S/C 013g-155 RPM		
22										2321 H.T. CTD #15 / 2348 END STA, S/C 021 @ 160 RPM		
23										OP VIS FAIR, MOD ROLL & PITCH. P.H.		
24												
Gallon Used		Oil		Water		Feed						
949	29060	USED 800	ON HAND	USED 800	3100	L.O. USED 16	L.O. ON HAND 480					
5d 21h 50m		5d 21h 50m		5d 21h 50m		5d 21h 50m						

P. HOWLAND MASTER

1ST OFFICER

CRUISE NO. 149

OCEANUS

DECK LOG

DATE MON, MARCH 19, 1984

From WOODS HOLE To SEA & RETURN

TIME ZONE + 5R

Hour	Poi-Log	Course		Wind & Force	Sea State	Swath & Direction	Bar.	Air	Water Number	Remarks	Stations																																																																
		Stand	Strg								Lat	Long	Time																																																														
1										0001 CTD SURVEY AS BEFORE 0031-0058 CTD #16 S/C 001(T)-160 RPM																																																																	
2										0219-0240 CTD #17, S/C 001(T) - 160 RPM																																																																	
3																																																																											
4			004	NNW 6	5	N'LY 3	1013	37	OP	VIS FAIR, MOD FITCH. L. T. B.																																																																	
5										0410-0436 CTD #18 / 0436 S/C 312g - 200 RPM																																																																	
6										0600 C/C 310g																																																																	
7																																																																											
8		325	310	NNW 6	4	N 1	1014	36	OR	VIS IS FAIR TB GOOD IN LT. RAIN. H. P. H.																																																																	
9										0843 S.W. SWOAL BOUY ABEAM TO STEED .55mi																																																																	
10										1045 BOUYS #1&2 ABEAM, ARRIVE W. H.																																																																	
11										1057 MOORED W.H.O.I. DOCK, FWE																																																																	
12																																																																											
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1ST OFFICER

P. HOWLAND MASTER

Vessel OCEANUS

Page 1

Cruise #149

LORAN LOG

MON, MARCH 12 1984

Date	^{TS} Time	^Z Sta.	^{TYPE} +/-	^{T.D.'s} Reading	^N Latitude	^W Longitude	Remarks
	1410	1900	BOOYS #1+2	⊖	DEP	W.H.	
	1527	2027	L.C.		41-22.09	70-51.91	DEVILS 82 → 3/10 m 1/2 180 @ 170
	1600	2100	LC ⁷		41-16.04	70-52.07	1600 c/c 187 ^g
	1700	2200	LC ⁷		41-05.5	70-54.19	
	1800	2300	LC ⁷		40-54.27	70-56.40	
	1900	0000	LC ⁷		40-42.98	70-58.84	1900 c/c 185 ^g
	2010	0100	LC		40-30.09	70-00.83	H-T
	2044	0144	LC		40-30.22	70-00.76	Core hit bottom #1
	2128	0228	LC		40-30.16	70-00.82	Core hit bottom #2
	2154	0254					5/c 135-G @ 170 RPM
	2305	0405			40-20.21	70-49.79	c/c 130-G

TUES. MARCH 13 1984

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	0000	0500	LC	-	40-13.57	70-40.53	Pos. T
	0100	0600	LC		40-06.62	70-30.27	" %C 132g
	0200	0700	LC		39-58.93	70-20.40	%C 129g
	0300	0800	LC		39-51.43	70-09.94	Pos. T U ^{1/2} TO SURVEY STA
	0310	0810	LC		39-50.25	70-08.37	CMC BATHYMETRY SURVEY U ^{1/2}
	0400	0900	LC ¹		39.50.00	70.04.67	
	0525	1025	LC ¹		39.49.98	69.58.13	0525 %C 180 ^g
	0606	1106	LC ¹		39.47.62	69.57.98	0606 %C 267 ^g
	0755	1255	LC ¹		39.47.50	70.08.23	0755 END SURVEY - H-T
	0805	1305	LC		39-47.48	70-08.55	V _{max} °/spds
	0814	1314	LC		39-48.51	70-08.35	%C 090-L @ 46L
	0911	1411	LC		39-48.51	70-08.58	V _{max} °/spds.
	1011	1511	LC		39-48.58	70-06.01	Steaming Morning SG
	1045	1545	LC		39 48.45	70-05 08	Ly go Morning anchor "SG"
	1115	1615	LC		39-49-17	70-05-02	V _{max} °/spds to "SE"
	1200	1700	LC		39-53.90	70-03.77	H.T. NOON STA "SE"
	1252	1752					"CMC" MOORING RECOVERY OPS @ STA "SE"
	1420	1920	LC		39-54.00	70-05.47	F/W RECOVERY STA "SE"
	1454	1954	LC		39-54.04	70-05.55	F/W STA %C 044 @ 4KN
	1655	2155	LC ¹		39-57.88	70.01.31	1619 H.T. 1655 SUBSURFACE MOORING
	1715	2215	LC ¹		39.57.95	70.01.20	ALONGSIDE 1715 BUOY ASD
							1805 END STA %C 207 ^g 4
							1835 %C 197 ^g
	1900	0000	LC ¹		39.54.96	70.04.90	1955 %C 098 ^g
	1957	0057			39-51.07	70-07.95	

Date	+S Time	Z Sta.	TYPE +/-	Reading	N Latitude	W Longitude	Remarks
	0000	0500	LC		39-50.12	70-04.30	POSIT H.T.
	0100	0600	LC		39-49.72	70-03.67	" "
	0200	0700	LC		39-49.40	70-02.90	" "
	0220	0720	SAT	54 ²	39-49.24	70-02.48	SAT FIX
	0300	0800	LC		39-49.08	70-01.90	POSIT H.T.
	0400	0900	LC [?]		39-48.46	70-01.04	
	0600	1100	LC [?]		39-46.46	69-59.04	0600 JOGGING TO 'SE' 1/2
	0700	1200	LC [?]		39-50.84	70-01.45	
	0804	1304	LC		39-53.8	70-02.97	
	—						—
	1200	1700	LC		39-47.12	69-58.38	NOON POSIT
	1400	1900	LC		39-44.07	70-00.33	POSIT
	1430	1930	LC		39-42.45	70-00.71	POSIT
	1500	2000	LC		39-41.93	70-01.70	POSIT
	1518	2018	SAT	18 ²	39-41.96	70-02.18	SAT FIX
	1600	2100	LC [?]		39-42.66	70-03.76	
	1800	2300	LC [?]		39-44.36	70-08.24	
	1900	0000	LC [?]		39-43.67	70-07.92	
	2000				39-42.17	70-06.77	c/c 305-C
							2330 c/c 325

THURS, MARCH 15 1984

Date	TS Time	Z Sta.	TYPE +/-	Reading	N Latitude	W Longitude	Remarks
	0000	0500	LC		39-42.77	70-13.93	POSIT
	0011	0511	SAT	21 ²	39-43.01	70-13.86	SAT FIX
	0300	0500	LC		39-44.10	70-19.51	1/2 046(T) @ 140RIM
	0318	0818	SAT	19 ²	39-45.21	70-19.21	SAT FIX
	0400	0900	LC ²		39-48.32	70-13.79	
	0500	1000	LC ²		39-53.20	70-07.72	
	0554	1054	LC ²		39-57.25	70-01.82	0554 H.T. STA 'SF'
	0719	1219	LC ²		39-58.72	70-01.09	CHANGE PLAN 1/2 172; 8.0KTS
	0800	1300	LC ²		39-53.34	70-00.98	Var Co/ops
	0942	1442	LC		39-50.63	70-02.01	0920 - Mud Grab 0942 - Grab on bottom 1011 Grab abrd
	1058	1558			39-48.42	70-03.02	Cmc streaming moving
	1200	1700	LC		39-49.51	70-02.83	NOON POSIT
	1345	1845	LC	14261.8 43213.9 25311.4	39-50.51	70-01.48	LAUNCH MOORING #282 SLOPE H
	1443	1943	LC		39-52.08	70-03.72	CMC STREAMING MOORING #278 FOR STA "S.E."
	1731	2231	LC ²	14264.2 25311.7	39-53.85	70-03.83	AWAY "SE"
	1800	2300	LC ²	43239.2	39-54.02	70-03.76	1800 END STA 1/2 015; 8KT
	1900	0000	LC ²		40-01.97	70-01.12	1930 1/2 024; 8
	2020				40-10.88	69-58.66	Var Co/ops @ site "T"
	2135				40-10.97	69-58.51	Tripod on the surface
							2148 Tripod on deck

FRI, MARCH 16 1984

Date	TS Time	Z Sta.	TYPE +/-	Fim T.D.S Reading	N Latitude	W Longitude	Remarks
	0000	0500	LC		40-10.56	70-01.56	POSIT H.T.
	0200	0700	LC		40-08.92	70-04.90	POSIT H.T.
	0300	0800	LC		40-08.17	70-06.96	" "
	0400	0900	LC ²		40-07.36	70-09.05	0530 1/2 TO STA 'T'
	0600	1100	LC ²		40-09.03	70-07.16	
	0650	1150	LC ²		40-11.31	69-59.25	0650 HT. 1/2 BY STA 'T'
	0850						Recover Surface Buoy @ 'T'
	1050			141839 433575	40-10.92	69-58.06	Set Surface Buoy @ 'T'
	1110						Recover 2nd Surface Buoy @ 'T'
	1200	1700	LC ²		40-10.70	69-58.38	NOON
	1258	1758	LC	14186.4 43357.4	40-10.89	69-58.52	LAUNCH W. GUARD BOUY @ SITE 'T' ~ 35 mi. W of E. buoy
	1349	1849	LC	14185.4 43357.0	40-10.86	69-58.31	LAUNCH T4700 @ SITE 'T'
	1422	1922					F/W STA 'T' S/C 186(T) @ 1500 AM
	1552	2052	LC		39-57.57	70-00.98	CLO BY BOUY 177. STA F "SF"
	1635	2135					1635 CME HAULING BUOY "L"
	1806	2306	LC ²	14238.9 25287.8 43264.8	39-57.63	70-00.96	RESET 1806 OVERSIDE BUOY "L"
	2042				39-56.64	70-01.05	Cone lowered of subsurface mooring
	2121				39-57.64	70-01.16	Ld go to sub surface "SF"
	2140	0240			39-57.77	70-01.44	S/C 196-G @ 1700 AM
	2237				39-48.00	70-05.00	C/C 015-G - XBT mooring

Date	+S Time	Z Sta.	TYPE +/-	Fim T-D Reading	N Latitude	W Longitude	Remarks
	0000	0500	LC		40-02.14	70-00.50	Pos. T
	0100	0600	LC		40-12.25	69-57.57	"
	0135	0635	LC		40-18.00	69-55.93	F/W XBT SURVEY S/C 102(G) @ 170 RPM
	0200	0700	LC		40-17.20	69-50.51	Pos. T
	0300	0800	LC		40-15.20	69-37.38	Pos. T
	0325	0825	SAT	13 ²	40-14.32	69-31.79	SAT FIX
	0400	0900	LC ²		40-13.21	69-24.31	
	0500	1000	LC ²		40-11.22	69-11.01	
	0600	1100	LC ²		40-09.43	68-57.75	
	0700	1200	LC ¹		40-06.65	68-45.99	0700 o/c 100g
	0802				40-04.81	68-33.49	H-T STA SA
	0846						Cmc hauling sub. surface mooring
	1200	1700	LC		40-04.20	68-38.94	NODN
	1230	1730	LC		40-04.20	68-36.50	CMC STREAMING "SA" MOORING ARRAY
	1403	1903	LC	13794.5 43271.0	40-04.58	68-33.94	LAUNCH MOORING # 277 SITE "SA"
	1435	1935	LC		40-03.63	68-34.24	F/W STA "SA" S/C 157(G) @ 170
	1530	2030	LC		39-53.98	68-28.93	H-T CTD #1
	1550	2050	LC		39-54.10	68-29.00	CMC CTD #1
	1616	2116	LC ²		39-54.24	68-29.07	1616 END CTD #1 S/C 343g 4
	1741	2241	LC ²		40-03.85	68-33.12	1741 HT CTD #2
	1754	2254	LC ²		40-04.03	68-33.01	1754 CMC CTD #2
	1839	2339	LC		40-05.32	68-31.9	CTD abt 1855 S/C 343g 4
	2016	0116			40-13.59	68-37.65	2010 - H-T CTD #3 2016 CTD array
	2041				40-13.93	68-38.5	2041 CTD abt 2041 S/C 033-G @ 155 RPM
	2218				40-23-05	68-31.02	c/c 272-G

Sat., March 17, 1983

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	<u>T5</u>	<u>Z</u>			<u>N</u>	<u>W</u>	
	2315	0415	LC		40-22.97	68-41.11	H-T CTD #3
	2344	0444	LC		40-22.81	68-41.12	End Sta S/C 338-C-150 RPM
SUNDAY MARCH 18 1984							
	0000	0500	LC		40-24.53	68-42.22	MIDNIGHT POS IT
	0053	0553	LC		40-30.00	68-45.00	H-T CTD STA # 5
	0108	0608	LC		40-29.88	68-44.99	F/w CTD S/C 271(D) @ 150 RPM ^{LTB}
	0120	0620	LC		"	"	S/C 271(D) @ 150 RPM
	0243	0743	LC		40-30.02	69-00.03	H-T CTD STA # 6 v/s
	0310	0810	LC		40-29.80	69-00.30	F/w CTD # 6
	0322	0822	LC		40-29.76	69-00.43	F/w STA S/C 271(D) 150 RPM
	0400	0900	LC		40-29.86	69-07.68	0400 R/S 7.0 KTS
	0505	1005	LC		40-29.72	69-16.64	0456 HT 0505 CME CTD
	0519	1019	LC		40-29.84	69-17.29	0519 CTD ADD 0531 END STA
	0645	1145	LC		40-20.26	69-15.15	S/C 162° - 150 RPM ⁰⁶⁴⁵ HT STA #8
	0710	1210	LC		40-20.75	69-15.41	0710 CME CTD #8
	0723	1223	LC		40-20.40	69-15.72	0723 CTD #8 ADD / 0740 ^{END STA} S/C 167°
	0900	1400			40-10.0	69-14.01	H-T CTD #9
	0922	1422			40-10.17	69-14.44	END STA S/C 170-GD 150 RPM
	1022	1522			40-01.49	69-12.51	H-T CTD #10
	1047				40-01.62	69-12.95	END STA S/C 170-GD
	1132	1632			39-56.02	69-11.47	H-T CTD # 11
	1222	1722	LC		39-55.00	69-11.64	END STA #11 S/C 260° @ 140 RPM
	1300	1800	LC		39-55.00	69-16.90	Pos IT
	1400	1900	LC		39-53.86	69-26.86	"

LORAN LOG

Cruise # 149

MONDAY MARCH 19, 1984

Date	+S Time	Z Sta.	TYPE +/-	Fm T-D Reading	N Latitude	W Longitude	Remarks
3/19	0000	0500	LC		40-07.24	69-59.87	MIDNIGHT POS. T.
	0031	0531	LC		40-11.03	69-57.86	HT. CTD STA # 16
	0050	0550	LC		40-11.39	69-58.14	F/w CTD #16
	0059	0559	LC		40-11.58	69-58.26	F/w STA S/CODI ^(D) @ 160 RPM
	0219	0719	LC		40-22.94	69-58.01	HT. CTD STA # 17
	0232	0732	LC		40-23.00	69-58.23	F/w CTD #17
	0240	0740	LC		40-23.11	69-58.45	F/w STA S/CODI ^(D) @ 160 RPM
	0420	0920	LC [?]		40-37.06	69-58.25	0410 HT 0420 CTD #18
	0436	0936	LC [?]		40-37.08	69-58.87	0436 END CTD #18 S/C 315; 4H
	0500	1000	LC [?]		40-39.52	70-02.54	
	0600	1100	LC [?]		40-48.91	70-15.92	0600 C/C 310; y
	0700	1200	LC [?]		40-57.06	70-28.30	
	0800	1300	LC		40-05.73	70-41.3	
	0843	1342	LC		41-11.9	70-50.55	SW Show Buoy → 0.55 mi
	0850	1350	LC		41-12.84	70-51.98	C/C 355-G
	1045	1545	BOUYS #1+2		⊖ AR	W.H.	
	1057	1557	MOORED W. T. O.J		DUCK	FLWE	
							JTB.