SCIENTIFIC LOG

DATE	TIME	CORE #	CAMERA #	TGRAD #	RANK #	S
14 NOV 63	~1800	1	1		1	1
2 DEC 63	~1000	2	2	1		2
3 DEC 63	~1400	3		2		3
4 DEC 63	~1145	4	3	3	2	4
5 DEC 63	~1930	5		4		5
6 DEC 63	~1500	6	4	5	3	6
8 DEC 63	~1000	7	5	6	4	7
9 DEC 63	~1315	8	6	7		
10 DEC 63	~1815	9	7	8		
11 DEC 63	~1900	10	8	9		
12 DEC 63	~0930	11	9	10		
13 DEC 63	~1920	12		11		
14 DEC 63	~1700	13	10	12	5 CHLORO #1	
15 DEC 63	~1530	14	11	13		
16 DEC 63	~1430	15	12	14		
17 DEC 63			13			
18 DEC 63	~0445	16	14	15		
18 DEC 63	~1330	17	15	16		
18 DEC 63	~1930	18	16	17		
19 DEC 63	~0100	19	17	18	6	
19 DEC 63	~0625	20	18	19		
19 DEC 63	~1145	21	19	20		
19 DEC 63	~1615	22	20	21		
19 DEC 63	~2100	23	21	22		

Scientific Log

DATE	TIME	CORE #	CAMERA #	TGRAD #	RANKT. #
20 Dec 63	~0245	24	22	23	
20 Dec 63	~0845	25	23	24	
20 Dec 63	~1400	26	24	25	
20 Dec 63	~1955	27	25	26	7
21 Dec 63	~0430	28	26	27	
21 Dec 63	~1520	29	27	28	
21 Dec 63	~2300	30	28	29	8
22 Dec 63	~1520				9
23 Dec 63	~0920	31	29	30	
24 Dec 63	~1340	32	30	31	10
26 Dec 63	~1520	33	31	32	11
27 Dec 63	~1600	34		33	12
28 Dec 63	~2200				13

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PALISADES

Research Vessel ROBERT D. CONRAD
CRUISE N° C-3
CRUISE LEG—From S/HI - IAL To SAN JUAN

TEST CRUISE (Cu^+ IN H_2O) TIME ZONE 4

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
14	CAMERA	LOWER	1819					1	WIRE @ 15° AZIM. 110°
NOV.	# 1	1ST HIT	1904	1125		18°45	66°12'		15 HITS 15 PICTURES
A63		LAST	1927		1114	N	W		
14	CORE	LOW	2135	1015				1	1300 LB HEAD 1/4" WALL PIPE CORE LENGTH 446 CMS
NOV	# 1	HIT	2203	979					90% FORAMINIFERAL CALCILUTITE, 10% SILTY LUTITE
1963		SURF	2223		972				FORAMS FROM 5-15% OF SEDIMENT
14									
NOV.	PLANKTON	IN	2011					1	BPS (500-1000 m) ATTEMPTED UNSUCCESSFUL —
	STATION #1	OUT	2104						RESULT. — VERTICAL HAUL FROM 550m —
									SAMPLING TIME - 40 MIN.
			END OF TEST CRUISE						TIME ZONE +3
2								2	
DEC	T-GRAD	1040	HIT-1210	2430	2430	11°12'N (STOP)	48°05'W		T-GRAD GOOD NETWORK TRACES LIGHT.
1963	# 1	PULLOUT	1213	to 2500	TO 2500	U/W			PDR SHOWED THREE DISTINCT TRACES
			1301	3 DISTINCT TRACES		11°15.5'N	48°05.5'W		WIRE PAYED OUT WAS 2486 4 PROBES, 3 IN MUD
									ALSO HYDROGRAPHIC STATION
2	CORE	LOWER	1041	~2430		11°12N	48°05'W	2	1300 LB HEAD 1/4" WALL PIPE CORE LENGTH 989 CMS
DEC	# 2	HIT	1211	2458					0-~600 cms BRN. FORAMINIFERAL CALCILUTITE
1963		SURF	1310	2445					~600- BOTTOM WHITE CALCAREOUS OOZE CARBONATE CONTENT 90-100%
2	CAMERA	LOWER	1004	2440		11°12½	48°05'W	2	WIRE @ 10-15° AZIM 315° (REL)
DEC	# 2	1ST HIT	1107		2450				30 HITS 28 PICTURES SOME PICTURES SHOW SMALL CRATERS
63		LAST	1223						
3	T-GRAD	LOW	1448	PDR 2637	PDR 2637	11°03N	46°03W	3	T-GRAD A FAILURE DUE TO FILM RUNNING
DEC	# 2	HIT	1600	WIRE 2638					OUT BEFORE HIT - CAUSED BY DELAY IN
1963		SURF	1715						SENDING CORE AFTER T-GRAD PLACED ON
									CORE 3 PROBES, HYDROGRAPHIC STATION
4	T-GRAD	LOW	1223	PDR START	2741	10°48N	43°12'W	4	3 PROBES ON TWO PIPES, 2 PENETRATED GIVING
DEC	# 3	HIT	1357	END	2741				GOOD T-GRAD FILM ALSO HYDROGRAPHIC
1963		SURF	1502	WIRE	2735				STATION.

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CRUISE N° C-8
CRUISE LEG—From SAN JUAN To CAPETOWN

TIME ZONE +3

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
4	CAMERA					10° 48' N	43° 12' W	4	PLANKTON NET ON WIRE AT 1500 FATHOMS (6000 SAMPLE)
DEC	#3								HORSESHOE MAGNET ON TRIGGER WT. FAILED TO PICK
63									UP ANYTHING. CAMERA HIT SOMETHING ON BOTTOM
									WHICH DAMAGED FLASH UNIT, LEAKED, AND SHORTED OUT.
									NO PICTURES BUT ROLL WAS FULLY TRANSPORTED. 30 HITS
						STOP			
3	CORE	LOW	1448	2637		11° 03.9N	~~46° 03.6W~~	3	1300# CORE HEAD 1/4" WALL PIPE. CORE LENGTH: 461cms
DEC	#3	HIT	1601	2637		U W			BOTTOM PIPE BENT 20° CUTTING EDGE O.K. FERRUGINOUS
63		SURF	1716	2639		11° 02.5N	46° 02.5W		INDURATED LUTITE at 25-40 cms. 70-461cm GRAY SAND OF
									MEDIUM-FINE GRADE - CONTAINS ROUNDED, POLISHED QUARTZ
									GRAINS OF POSSIBLE BEACH ORIGIN.
						STOP			
4	CORE	LOW	1224	2740		10° 48 N	43° 12 W	4	1300# CORE HEAD 1/4" WALL PIPE. EXTRUDED LENGTH 527cms
DEC	#4	HIT	1357	2741		U W			PIPES & CUTTER O.K. FORAM LUTITE AT TOP, 20-23 cms,
63		SURF	1502		2741	10° 48'N	43° 12W		RED-BROWN INDURATED SILTY LUTITE FRAGMENTS
									(SIMILAR LAYER FOUND IN C8 #3) 25-50 cms - INTERCALATIONS
									of GRAY SILT & GRAY LUTITE. 50-BOTTOM, OLIVE-GRAY LUTITE
4	PLANKTON	IN	1220			10 48 N	43° 12 W	4	
DEC.	STATION	OUT	1450						½ METER SURFACE NET PUT ON HYDRO-WIRE ~~1500fm~~ 1500fm
63	#2								ABOVE CAMERA — SAMPLED from surface TO 1100 fm
						STOP			VERY "RICH" SAMPLE OBTAINED - ZOOPLANKTON ABUNDANT
5		LOW	1936	2345		6° 12.5 N	44° 13.0W	5	
DEC	T-GRAD	HIT	2039	2345		U W			T-GRAD A SUCCESS 3 PROBES DEEP SEA REVERSING
1963	#4	SURF	2125			6° 13.0N	44° 14.0W		THERMOMETERS CORE #5
6	CAMERA	LOWER	1501			STOP		6	PLANKTON NET ON WIRE 2000 FATHOMS ABOVE CAMERA
DEC.	#4	1ST HIT	1536	2460	2465	5° ~~08~~ 0N	43° ~~24~~ .0W		WIRE 4" 10 AZIM. - 70°, 15 HITS - 15 PICTURES
1963						U W			A FEW FRAMES SHOW LIGHT LEAK SPOTS
						5° 01.5' N			
						# ~~5340~~	43° ~~25~~W		
5	CORE	LOW	1936	2345					1300# HEAD 1/4" WALL PIPE CORE LENGTH 810 cms.
DEC	#5	HIT	2088	2345		6° 13.5 N	44° 13.0W	5	ORANGE BROWN FORAM LUTITE 0-32cm; 32-52cm RED BROWN
63		SURF	2125		2340				FERRUGINOUS INDURATED LUTITE (NOTE CORE C8 #3 & C8 #4)
									52-810 cms OLIVE GRAY LUTITE WITH A FORAMINIFERAL
									SAND HORIZON AT 357 cms

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To CAPETOWN

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
DEC	CORE	1757	LOWER	2450		5° 04.0'N	42° 24.0W	6	1360# HEAD, 1/4" WALL PIPE (2) ALL OK CORE LENGTH 595cms.
6	# 6	1859	HIT	2422					0-67cms: ORANGE BRN FORAM CALCILUTITE 67-68cm: INDURATED
1963		1947	SURF	2430					FERRUGINOUS LUTITE (NOTE CORES C8 # 3,4,5)
									68cms to Bottom: OLIVE GRAY LUTITE
6	T-GRAD	1757	LOWER	2450		5° 08'N	42° 24.0W	6	3 PROBES LEFT IN MUD 2.5 MINUTES.
DEC.	# 5	1859	HIT	2422					T-GRAD FAILURE - SILVER CELL DISCHARGED
1963		1947	SURF						AND LIGHT WENT OUT BEFORE HIT. CORE # 6
									DEEP SEA REVERSING THERMOMETERS
8	T-GRAD	1040	LOWER	2338		[illegible]00		7	3 PROBES PLACED ON 2 PIPER 2 PROBES
DEC	# 6	1151	HIT	2365		02° 16.5N	38° 19.0W		PENETRATED T-GRAD GOOD CORE # 7
963		1238	SURF			U.W			DEEP SEA REVERSING THERMOMETERS
						02° 16.5N	38° 20.1W		
6	PLANKTON	1524	1638			02° 16.5N	38° 19.0W	6	½ meter Surface NET PUT ON CAMERA - WI
Dec.	# 3								DOWN TO Depth of 460 fm - Zooplankton ABUNDANT
1963									
8	PLANKTON	1255	Lower			02° 16.5N	38° 19.0W	7	BPS (OPENING & CLOSING) Sampler SENT DOWN
DEC	#4	1302	OPEN						TO SAMPLE BETWEEN 500 - 1000 M - WIRE @ 45°
1963		1337	close						MAXIMUM Depth REACHED 1250 m (approx) —
		1345	Surf						35 MIN. of SAMPLING
8	CORE	1040	LOWER	2340		2° 16.5N	38° 19.0W	7	1300# HEAD, 1/4" WALL PIPE (2) ALL OK. CORE 1
DEC	# 7	1151	HIT	2365					0-64 cm ORANGE BRN. FORAM CALCILUTITE. 64-66
1963		1238	SURF		2378				AN INDURATED FERRUGINOUS LAYER (SEE CORES C.
									66 - BOTTOM - VARIICOLORED LUTITES AND CALCILU
9	T-GRAD	1336	LOWER	2410		STOP		8	T-GRAD GOOD PROBE LOWEST ON CORE DID NOT
DEC	# 7	1442	HIT	2408		02° 16.5N	38° 36.4W		COME TO EQUILIBRIUM. TWO OTHER PROBES
1963		1527	SURF			U.W.			ENTERED MUD AND A READING WAS OBTAINED
						02° 0'S	35° 37.0		DEEP SEA REVERSING THERMOMETERS CORE 8

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CRUISE N° _____
CRUISE LEG—From _____ To _____

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
10	T-GRAD	1836	LOWER	2068		SHOP		9	T-GRAD READABLE ALTHOUGH IT APPEARS
DEC	# 8	1937	HIT	2079		3° 31.0S	33° 18.0W		THAT CORE SLOWLY PULLED OUT OF MUD AFTER
1963		2020	SURF						HIT. CORE # 9 REVERSING THERMOMETERS
8	CAMERA	1015	LOWER	2335		02°16'S	36°15.0W	7	WIRE @ 045° AZIM 060° 23 HITS
DEC	#5	UP	1247		2346				NO PICTURES - SPRING ON CAMERA RIG STUCK
63		1ST HIT	1048						AND DIDN'T RELEASE WHEN TRIGGER HIT.
		LAST	1206						
9	CAMERA					00° 00'	35°36.0 W	8	WIRE 45° AZIM 60° 23 HITS
DEC	#6	1322	LOWER	2410					20 PICTURES
63		UP	1533		2408				
		1ST HIT	1354						
		LAST	1557						
10									WIRE @ 45° AZIM. 40° 36 HITS 36 PIX
DEC	CAMERA	1822	LOWER			3° 31.0 S	33 18.0 W	9	
63	#7	UP	2015						
		1ST HIT	1853						
		LAST	1950						
9	CORE	1336	LOW	2410		0° 00'	35° 35 W		1300# HEAD 1/4" WALL PIPE (2) ALL OK. CORE LENGTH 708 cms.
DEC	# 8	1442	HIT	2409				9	0-88 cms ORANGE BROWN FORAM CALCILUTITE, 88-221 VARICOLORED
63		1530	SURF		2409				LUTITES, CALCILUTITES & FORAM LUTITES. 221-435 - GREEN-GRAY LUTITE.
									435 - 708 GRAY FORAM SAND & LUTACEOUS SAND.
10	CORE	1836	LOW	2070					1300# HEAD 1/4" WALL PIPE (2) ALL OK CORE LENGTH - 588 cms.
DEC	# 9	1937	HIT	2078		3° 31.0S	33° 18.0 W	9	(1 HOLE CORE - FORAMINIFERAL CALCILUTITE (CaCO3 70%)
		2020	SURF		2070				AND FORAMINIFERAL SAND
11	CORE	1935	LOWER	2730		6° 26.5 S	30° 59.0W		1300# HEAD 1/4" PIPE (2) OK. CORE LENGTH 408 cms.
DEC	#10	2110	HIT	2727				10	0-152 cms MODERATE BROWN LUTITE. 152-266 cms
63		2208	SURF		2725				GRAY FORAM SAND AND ANGULAR-ROUNDED QUARTZ SAND
									266-408 cms BROWN LUTITE AND SILTY LUTITE.

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From SAN JUAN To CAPETOWN

TIME ZONE +2

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
11	T-GRAD	1935	LOWED	2730		6° 26.5S	30 59.0W	10	T-GRAD GOOD WITH 3 PROBE PENTRATION
DEC	# 9	2110	HIT	2727					CORE # 10 DEEP SEA REVERSING
1963		2208	SURF						THERMOMETERS
11	CAMERA	1915	LOWER			6° 26.5 S	30 59.0W		WIRE AZIM. 70° WIRE ∠ 5° 38 HITS, 29 PIX
DEC	# 8	UP	2200					10	
63		1ST HIT	1951	2730					
		LAST HIT	2112		2745				
13	CAMERA	0934	LOWER	2925		11° 16.0S	27° 07.0W		WIRE AZIM. 80° WIRE ∠ 20° 17 SURE HITS. 15 + ? PIX
DEC	# 9	UP	1215		2945			11	HAD TROUBLE SEEING FIRST HIT. BOTTOM PROBABLY
63		1ST HIT	???						EXTREMELY SOFT
		LAST	1132						
13	CORE	0952	LOW	2925		11° 16.0 S	27° 07.0W		1300# HEAD 1/4" WALL PIPE (2), OK, CORE LENGTH 1207cm
DEC	# 11	1107	HIT	2932				11	VARICOLOURED LUTITES WITH LITTLE OR NO CARBONATE
63		1213	SURF		2931				CONTENT. PDR SHOWED SEVERAL SUB BOTTOMS
13	CORE	1925	LOWER	2960		12° 05.5S	26° 14.0W	12	1300# HEAD 1/4" WALL PIPE (2), OK, CORE LENGTH: 503cm.
DEC	# 12	2059	HIT	3028					0-503 cms - GRAYISH RED LUTITE WITH NO
63		2245	SURF		3028				CARBONATE CONTENT AND APPARENTLY
									STRUCTURELESS. BETWEEN 24 & 33 CMS AND
									395 AND 404 CMS ARE TWO GRAYISH ORANGE LUTITE LAYERS
13	T-GRAD	0952	LOWER	2924		11° 16.0 S	27° 07.0W	11	T-GRAD GOOD 4 PROBE PENETRATION
DEC	# 10	1107	HIT	2932					CORE # 11 DEEP SEA REVERSING THERMOMETERS
1963		1213	SURF						
13	T-GRAD	1924	LOWER	~~2924~~	2960	12° 05.3 S	26° 18.0W	12	T-GRAD GOOD 3 PROBES OUT OF 4
DEC	# 11	2059	HIT	~~393~~	3022				PENETRATED. CORE 12 DEEP SEA
1963		2245	SURF						REVERSING THERMOMETERS

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To CAPE TOWN

TIME ZONE +2

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
14 DEC '63	CORE #13	1741	LOWER	2918		14° 11'0 S	24° 52.5 W	13	HEAD 1300 #1/4" WALL PIPE (2) OK. CORE LENGTH 470 cms
		1909	HIT	2921(?)					0-470 cms DARK RED BROWN LUTITE, STRUCTURELESS
		2020	SURF		2900(?)				
14 DEC 63	PLANKTON #5	1445	Lower					13	2 BPS (OPENING & CLOSING) Samplers ON Hydrowire
		1705	SURF			14° 11.0 S	24° 52.5 W		#1 - improper closing - Result: Oblique sample to surface. Sample Time 1hr 44min.
									#2 - successful Tow - 500m to 2600 m. To 500m Sample
									1hr 37mm -- Hydro wire under ship - delayed Tow 15 min
14 DEC 63	T-GRAD #12	1741	LOWER	2915		14° 11'0 S	24° 52.5 W	13	T-GRAD GOOD 3 OUT OF 4 PROBES
		1909	HIT	2921(?)					PENETRATED CORE #13 REVERSING
		2020	SURF						THERMOMETERS
15 DEC 63	T-GRAD #13	~~2560~~ 1547	LOWER	2560		16° 33'0 S	22° 49.1 W	14	~~T-GRAD GOOD 3 OF 4 PROBES PENETRATED~~
		~~2578~~ 1654	HIT	2578					CORE & T 14 REVERSING THERMOMETERS
		1745	SURF						4 PROBES PENETRATED BUT TOP PROBE
									WAS PULLED OUT BEFORE IT COULD
									COME TO EQUALIBRIUM. READING POSSIBLE
15 DEC 63	CORE #14	1547	LOWER	2560		16° 33'0 S	22° 49'5 W	14	HD 1300 # 1/4" WALL PIPE (2) OK CORE LENGTH 507 CMS
		1654	HIT	2510					0-507 cms - A MODERATE BROWN LUTITE - BURROW
		1745	SURF	~	~2460				MOTTLED. 0-17, 34-54 & 64-68 cms - LIGHT BROWN LUTITE.
									MANGANESE NODULE 6.6 x 4.4 x 4.0 cm IN TOP OF CORE.
15 DEC 63	Chloro* #1	1700	Lower			16° 33'0 S	22° 49.5 W	14	3 VAN DORN BOTTLES ON BT-WINCH - 6
		1720	SURF						SAMPLES TAKEN FROM SURF +25m +50
									TOTAL *Chlorophyll STUDIES
14 DEC 63	CAMERA #10	1712	LOWER	FIRST	2915	14° 11'0 S	24° 52.5 W	13	WIRE AZIM 350° WIRE 400 1/0 HITS 29 PIX
		UP	2023	LAST	2920				
		1810	1ST HIT						
		1924	LAST HIT						

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To CAPETOWN
TIME ZONE +2

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
15	CAMERA	LOWER	1540	2560		16°33.0 S	32° 49.5 W	14	WIRE 4 10° WIRE AZIM. 90° 25 HITS 23 PIX
DEC.	#11	UP	1745		2580				MANGANESE NODULES + LARGE ROCKS
63		1ST HIT	1621						
		LAST HIT	1712						
16	CAMERA	LOWER	1440			19°20.5 S	20° 32 W	15	WIRE 4 0-15° WIRE AZIM. 0-90°
DEC	#12	UP	1705						29 HITS 20 PIX LARGE ROCKS AND Mn NODULES
63		1ST HIT	1515	2530					REFLECTING MIRROR ADDED TO STROBE LIGHT
		LAST HIT	1627		2530				
16	T-GRAD	1501	LOWER	2530		19°20.5 S	20° 32 W	15	T-GRAD GOOD 4 PROBE PENETRATION
DEC	# 14	1615	HIT	2500					CORE # 15 REVESING THERMOMERS
63		1700	SURF						
17	CAMERA	1938	LOWER	2800		23° 56 S	11° 24 W	16	WIRE 4 20° WIRE AZIM. 90° 23 HITS 21 PIX
Dec	#13	UP	2225		2800				WIRE OUT 2877-2995 FLAT, SEDIMENTATION
		1ST HIT	2043						
		LAST HIT	2146						
16	CORE	1501	LOWER	2530		19°20.5 S	20° 32 W	15	1300# HEAD, 1/4" WALL PIPE (2) CK. CORE LENGTH: 686 CMS
Dec	#15	1615	HIT	~2500					0-686 DARK RED BROWN LUTITE, USUALLY BURROW
63		1705	UP		2457				MOTTLED. LAYERS OF CALCILUTITE 36-50, 59-69, + 186-201 CMS.
									SEVERAL MANGANESE NODULES IN TOP FEW CMS.
18	CAMERA	0455	LOWER			23° 21 S	16° 21.5 W	17	
DEC	#14	UP	0725						WIRE AZIM. 90° WIRE 4 15°
63		1ST HIT	0531	2340					27 HITS NO PIX BT WIRE FOR TRIGGER WT. BROKE.
		LAST HIT	0625		2380				WIRE OUT 2412-2447
								17	
18	CORE	0534	LOWER	2360		23° 21 0 S	16° 31.5 W		HEAD 1300# 1/4 WALL PIPE (2) CK CORE LENGTH: 414 CMS
Dec	#16	0645	HIT	2362					0-414 LIGHT BROWN TO PALE ORANGE FORAM
63		0726	SURF		2373				CALCILUTITE 29
						STOP			
18	CORE	1443	LOWER	2185		23° 49.0 S	15° 34.5 W	18	1/4" WALL PIPE (2) OK CORE LENGTH 824 CMS.
Dec	#17	1541	HIT	2255		U U			0-124 CMS LIGHT BROWN FORAM CALCILUTITE, 124-203
63		1619	SURF		2256	23° 50.0	15° 35.5 W		PALE ORANGE FORAM CALCILUTITE 203-246 FORAM SAND.

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CRUISE N° 8
CRUISE LEG—From JUAN To CAPETOWN
TIME ZONE +1

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
18	CAMERA	1340	LOWER			STOP		18	WIRE & 40° WIRE AZIM 90° 28 HITS
DEC	#15	UP	1625			23° 49.0S	15° 34.5W		WIRE OUT 2349-2650 24 PIX
63		1ST HIT	1426	2090		UW			
		LAST HIT	1529		2255	23° 50.0S	15° 35.5W		
18	CAMERA								
DEC	#16	1940	LOWER			STOP		19	WIRE & 5° WIRE AZIM. 90°
63		UP	2633			24° 03.5	15° 06.0W		26 HITS 26 PIX WIRE OUT 2111-2146
		1ST HIT	2018	2050		U.W			LARGE BOULDERS ON BOTTOM.
		LAST HIT	2609		2050	24° 04.5	15° 07.0W		
18	CORE	1958	LOWER	2150		STOP		19	1300# Hd 1/4" WALL PIPE(2) OK. CORE LENGTH
Dec	#18	2054	HIT	2120		24° 03.0S	15° 06.0W		0-1066 - PALE BROWN TO VERY PALE ORA.
63		2135	SURF		2140	U.W.			FORAMINIFERAL CALCILUTITE.
						24° 01.0S	15° 07.0W		
19	CAMERA	0110	LOWER					20	28 HITS 28 PIX WIRE & 5° WIRE AZIM 90°
DEC.	#17	UP	0305			STOP			WIRE OUT 1987-2016
63		1ST HIT	0140	1940		24° 16.0S	14° 39.0W		
		LAST HIT	0234		1941				
19						STOP			
Dec	CORE	0141	LOWER	1942		24° 12.0S	14° 39.0W	20	1300# Hd 1/4" WALL PIPE(2) - Bottom Pipe Bent In
63	#19	0230	HIT	1941		U.W			SHARP 20° ARC. CORE LENGTH 583 CMS. LIGHT BROWN
		0303	SURF		1938	24° 11.5S	14° 42.0W		FORAM CALCILUTITE WITH FORAM SANDS AT 156-157, 274, 282-283 Cms
19	CAMERA	0625	LOWER			STOP		21	WIRE & 20° WIRE AZIM. 90° 28 HITS
DEC.	# 18	UP	0825			24° 30.5S	14° 12.5W		WIRE OUT 2123-2149 28 PIX
63		1ST HIT	0700			U.W			
		LAST HIT	0751			24° 31.0S	14° 15.0W		
19	CAMERA	1147	LOWER			STOP		22	WIRE & 10° WIRE AZIM. 90°
DEC	#19	UP	1310			24° 16.5S	13° 46.0W		WIRE OUT 1076-1211 28 HITS 27 PIX
63		1ST HIT	1215	1005		U.W			VERY ROCKY AND JAGGED BOULDERS.
		LAST HIT	1257		1035	24° 18.5S	13° 45.0W		

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CRUISE LEG—From SAN JUAN To CAPETOWN
TIME ZONE +1

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
Dec	CORE	0643	LOWER	1960				21	1300# HD 1/4" WALL PIPE (2) PIPES OK, CORE CUTTER
19	#20	0743	HIT	1840		24° 53.5' S	14 12.5' W		BADLY CRIMPED. CORE LENGTH: 74 Cms. FORAM
63		0820	SURF		1830				CALCILUTITE, SAND and MANGANESE NODULE GRAVEL.
Dec	CORE	1212	LOWER	995				22	1300# HD. 1/4" WALL PIPE (2) PIPES OK - CORE CUTTER
19	# 21	1246	HIT	1014					RUINED. CORE LENGTH 30 cms FORAM SAND
63		1304	SURF		1050	24° 46'S	13° 46'W		AND SERPENTINITE ROCK FRAGMENTS WITH ASBESTOS.
19	CAMERA	1625	LOWER					23	WIRE 2 10° WIRE AZIM 70° WIRE OUT 1557-1626
DEC	#20	UP	1801			24° 58.5' S	13° 16'W		23 HITS 22 PIX COARSE SAND, SOME WITH
63		1ST HIT	1650	1480					RIPPLE MARKS.
		LAST HIT	1732	[illegible]	1365				
Dec	CORE	1645	LOWER	1440				23	1300# HD. 1/4" WALL PIPE (1) PIPE OK - CORE CUTTER
19	#22	1725	HIT	1390		24° 58.3' S	13° 16.0' W		BADLY SPLIT & CRIMPED - CORE LENGTH 291 Cms
63		1755	SURF		1365				0-291 Cms - FORAM SAND. SLICKENSIDED SERPENTINITE
									FRAGMENT (4 Cm DIA.) AT BOTTOM OF CORE — MAY HAVE
									BEEN PICKED UP BY A SECOND HIT. PULL OUT JERRY.
Dec	CORE	2131	LOWER	1727				24	1300# HD 1/4" WALL PIPE (2) ALL OK. CORE LENGTH - 391 Cms
19	#23	2224	HIT	1785		25° 05.5' S	12° 46.0' W		0 - 136 Cms GRAYISH ORANGE FORAMINIFERAL
63		2255	SURF		1790				CALCILUTITE 136 - BOTTOM VERY PALE ORANGE
									FORAMINIFERAL CALCILUTITE 1% FORAMS VARYING
19	CAMERA	2110	LOWER		1700				
DEC	#21	UP	2258			25° 05.5' S	12° 46' W	24	WIRE 4 20° WIRE AZIM 80° WIRE OUT ~~1788 - 1819~~ 1818
63		1ST HIT	2145	1730					25 HITS 24 PIX BOTTOM FLAT, SANDY, SLIGHT
		LAST HIT	2230		1812				RIPPLES.
20	CORE	0302	LOWER	2195				25	1300# HD. 1/9" WALL PIPE (2) OK CORE LENGTH 1212 Cms
Dec	#24	0401	HIT	2190		25° 23.5' S	12° 14' W		0-182 Cms GRAYISH ORANGE FORAM LUTITE WITH A
63		0438	SURF		1791				SAND LAYER at 129-131 Cms. 182-BOTTOM
									VERY PALE ORANGE FORAM CALCILUTITE, 1%
									FORAMS VARYING.

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TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20	CORE	0911	LOWER	2076		25° 40.0' S	11° 36.5' W	26	1300 #HD. 1/4" WALL PIPE (2) BOTTOM TUBE BENT IN
DEC.	# 25	1006	HIT	2072					A GENTLE ARC ~ 5° OFF NORMAL. CORE LENGTH 591 cms.
63		1042	SURF		2070				0-175 cms GRAYISH ORANGE FORAM CALCILUTITE. 175 cms
									TO BOTTOM VERY PALE ORANGE FORAM CALCILUTITE.
20	CORE	1431	LOWER	2220				27	1300 #HD. 1/4" WALL PIPE (2) BOTTOM TUBE BENT 20°
DEC	#26	1534	HIT	2198		25° 56.5' S	11° 06' W		FROM NORMAL - (ENVIRE OF SHORT BENDING) ARC : 5°
'63		1610	SURF		2180				FROM UPPER END. GRAYISH ORANGE TO WHITE
									FORAMINIFERAL CALCILUTITE AND SOME SAND
									LENGTH OF CORE : 945 CMS.
20	CAMERA	0247	LOWER					25	
DEC	#22	UP	0443			25° 23.0' S	12° 19.0 W		WIRE AZIM. 0° WIRE ∠ 0° WIRE OUT 2204-2215
63		1ST HIT	0322	2145					27 HITS 24 PIX
		LAST HIT	0414		2190				
20	CAMERA	0858	LOWER			25° 40.5' S	12° 38.6' W	26	WIRE AZIM. 080° WIRE ∠ 20° WIRE OUT 2132-3159
DEC	#23	UP	1045						27 HITS 19 PIX
63		1ST HIT	0926	2075					
		LAST HIT	1017		2052				
20	CAMERA	1416	LOWER					27	WIRE AZIM 70° WIRE ∠ 20° WIRE OUT 2346-2409
DEC	#24	UP	1613			25° 56.5' S	11° 06' W		27 HITS 13 PIX
63		1ST HIT	1445	2238					
		LAST HIT	1528		2163				
20	CAMERA	1955	LOWER					28	WIRE AZIM. 85° WIRE ∠ 5° WIRE OUT 1996-2018
DEC	#25	UP	2137			26° 14.0' S	10° 36.5' W		22 HITS 18 PIX
63		1ST HIT	2019	1970					
		LAST HIT	2108						
20	CAMERA	0432	LOWER			26° 34.5' S	9° 26.0 W	29	WIRE AZIM 85° WIRE ∠ 10° WIRE OUT 2272-2243
DEC	#26	UP	0637						28 HITS 26 PIX
63		1ST HIT	0510	2158					
		LAST HIT	0555		2175				

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TIME ZONE +1

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20	CORE	2006	LOWER	1970		26°14'S	10°32.5W	28	1300# HD. 1/4" WALL PIPE (2) LOWER TUBE BENT 65° FROM
Dec	#27	2059	HIT	1961					NORMAL. CORE LENGTH: 1049 CMS 0-1049 CMS
'63		2135	SURF		1959				LIGHT BROWN FORAMINIFERAL CALCILUTITE.
21	CORE	0503	LOWER	2175				29	1300# HD 1/4" WALL PIPE (2) LOWER TUBE BENT 30° FROM NORMAL
Dec	#28	1600	HIT	2180		26°34.5S	9°26.0W		UPPER TUBE SLIGHTLY BENT. CORE LENGTH: 652 CMS.
63		1637	SURF		2270				1-652 LIGHT BROWN FORAMINIFERAL CALCILUTITE.
21	CAMERA	1355	LOWER						WIRE AZIM. 80° WIRE @ 15° WIRE OUT 2154
DEC.	#27	UP	1520			27°01.5S	9°18.5W	30	15 HITS 14 PIX TO 2148
63		1ST HIT	1437	2085					
		LAST HIT	1458		2085				
21	CORE	1514	LOWER	2081		27°01.5S	9°18.5W	30	1300# HD 1/4" WALL PIPE (1) CE & TUBE OK. CORE LENGTH:
DEC	#29	1612	HIT	2080					508 CMS. 0-508 CMS GRAYISH ORANGE TO VERY
63		1647	SURF		2080				PALE ORANGE FORAMINIFERAL CALCILUTITE.
21-22	CORE	2311	LOWER	2300		27°20.0S	7°19.0W	31	1300# HD 1/4" WALL PIPE (1) CE & TUBE OK CORE LENGTH: 514 CM.
DEC	#30	1616	HIT	2230					GRAYISH ORANGE TO VERY PALE ORANGE TO
63		0100	SURF		2150				PALE BROWN FORAMINIFERAL CALCILUTITE.
~~DEC~~ 19									
~~1963~~									
18	T-GRAD	0534	LOWER	2350-2770		23°21S	16°31S W	17	T-GRAD GOOD 2 PROBE PENETRATION
DEC	#15	0645	HIT	2362?					CORE #16 DEEP SEA REVERSING THERMOMETERS
63		0725	SURF						
18	T-GRAD	1443 ~~0534~~	LOWER	~~2370~~ 2370	2185	23°49 S	15°34.5W	18	T-GRAD GOOD 2 PROBE PENETRATION SET MIDDLE
DEC	#16	1541 ~~0645~~	HIT	~~2362(?)~~	2255				PROBE SHOWS NO JUMP ON FILM CORE #17
63		1619 ~~0725~~	SURF						DEEP SEA REVERSING THERMOMETERS

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TIME ZONE _____

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18	T-GRAD	1958	LOWER	~2050		24° 03.5	15° 06 W	19	T-GRAD A FAILURE - CORE BOUNCED AROUND
DEC	# 17	2054	HIT	2120					AND TRACES NEVER STABALIZED
63		2135	SURF						CORE # 18 DEEP SEA REVERSING THERMOMETERS
19	T-GRAD	0148	LOWER	1939		24° 16.5	14° 35 W	20	T-GRAD GOOD WITH 1 PROBE PENETRATION
DEC	# 18	0230	HIT	1941					CORE # 19 DEEP SEA REVERSING THERMOMETERS
63		0303	SURF						
19	T-GRAD	0643	LOWER	1920		24°30'S	14°13 W	21	T-GRAD A FAILURE - NO PENETRATION
DEC	# 19	0743	HIT	1840					CORE # 20 DEEP SEA REVERSING THERMOMETERS
63		0820	SURF						
19	T-GRAD	1212	LOWER	995		24°46'S	13°46 W	22	T-GRAD A FAILURE - NO PENETRATION
DEC	# 20	1246	HIT	1014					CORE # 21 DEEP SEA REVERSING THERMOMETERS
		1304	SURF						
	T-GRAD	1645	LOWER	1500		24°23'S	13°16 W	23	T-GRAD A FAILURE FILM FAILED TO ADVANCE
19	# 21	1725	HIT	1390					CORE # 22 DEEP SEA REVERSING THERMOMETERS
DEC		1755	SURF						
63									
	T-GRAD	2131	LOWER	1725		25°05'S	12°36 W	24	T-GRAD GOOD 2 PROBES PENETRATED ALTHOUGH
19	# 22	2224	HIT	1911					THE UPPER PROBE SHORTED. CORE # 23
DEC		2255	SURF						DEEP SEA REVERSING THERMOMETERS
63									
	T-GRAD	0302	LOWER	2185		25°23'S	12°13 W	25	T-GRAD GOOD 2 PROBE PENETRATION CORE # 24
20	# 23	0400	HIT	2190					DEEP SEA REVERSING THERMOMETERS.
DEC		438	SURF						
63									

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201	T-GRAD	0911	LOWER	2076		25° 40 S	11° 31.1 W	26	T-GRAD GOOD 1 PROBE, POSSIBLY 2 PROBE PENETRATION
DEC	# 24	1006	HIT	2072					PROBE LOWEST ON PIPE SHORTED BUT IS STILL
63		1042	SURF						READABLE CORE # 25 THERMOMETERS
20	T-GRAD	1431	LOWER	2220		25° 56.5 S	11° 06' W		
DEC	# 25	1534	HIT	2198				27	T-GRAD GOOD 2 PROBE PENETRATION
63		1610	SURF						CORE # 26 THERMOMETERS
20	T-GRAD	2006	LOWER	1970		25° 14.3	10° 36 W	28	T-GRAD GOOD 2 PROBE PENETRATION BUT UPPER
DEC	# 26	2058	HIT	1963					MOST PROBE STOPPED WORKING HALF WAY THROUGH
63		2135	SURF						PENETRATION CORE # 27 THERMOMETERS
20	T-GRAD	0503	LOWER	2175		21° 34.5 S	9° 25 W	29	T-GRAD GOOD 2 PROBE PENETRATION BUT LOWEST
DEC	# 27	0600	HIT	2020-2290					PROBE IS ONLY ONE ON FILM DUE TO MOTOR STOPPING
63		0637	SURF						WITH SELECTOR SWITCH IN L POSITION CORE #28
									THERMOMETERS
21	T-GRAD	1519	LOWER	2082		27° 01 S	4° 18.3 W	30	T-GRAD GOOD BUT PROBE WIRES WERE CUT AT
DEC	# 28	1612	HIT	2080					PULL OUT. CORE # 29 THERMOMETERS
63		1647	SURF						
21	T-GRAD	2311	LOWER	-302		27° 20 S	1° 15' W	31	T-GRAD GOOD 2 PROBE PENETRATION CORE = 30
DEC	# 29	0016	HIT	2330					THERMOMETERS
63		0100	SURF						
Dec. 18, 1963	Phytoplankton #1	IN / OUT }	1507 (MEDIAN)			23° 45 S	15° 34 S W	18	SURFACE PHYTOPLANKTON TOW - ROPE LINE #20 mesh NET — 1HR. 45 min TOW.
Dec. 19	Phyto. - #2A	0252	(MED. AN)			24° 16 S	14° 39 W	20	35 min. SURFACE PHYTOPLANKTON TOW
"	Phyto. - #2B	0740	(MEDIAN)			24° 28.8 S	14° 35 W	21	1HR. 5 min SURF. PHYTO. TOW - ROPE LINE FROM FANTAIL.

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Dec.	PLANKTON	0245	(MEDIAN)			24°16 S	14°39 W	20	51 MIN. SURFACE ZOOPLANKTON TOW.
19,	#6-1								
1963									
	#6-2	[illegible]	(MEDIAN)			24°30'S	14°13 W	21	1 HR. 9 MIN " " "
		0737							
Dec.	PLANKTON							25	
20,	#7	2055	(MED.)			26°14S	10° 36'W		1 HR. ZOOPLANKTON TOW
1963									
20.	Chlorophyll	2100				26°14S	10° 36'W	26	4 VAN DORN BOTTLES ON BT WINCH — COLLECTED
Dec.	#2								AT 50m 25m 10m 0-SURFACE) FOR TOTAL CHLOROPHYLL
									STUDIES
21	Phyto.	23.55	(MED)			27°20'S	7°11'W	31	
Dec.	#3								1 HR. PHYTOPLANKTON TOW - SURFACE
Dec	PLANKTON	2337	(MED.)			27°20.5	7° 19.0 W	31	45 MIN SURFACE ZOOPLANKTON TOW
21	# 8								
Dec.	PLANKTON	IN	1523			28°09.5	5°08.5 W	31.1	2 BPS (OPENING-CLOSING SAMPLERS) ON HYDROWIRE
22	# 9	OUT	1715						RESULT - # 1 - SUCCESSFUL 1 HR. 18 MIN SAMPLE
1963									BETWEEN 500m → 1800m → 500m - ZOOPLANKTON
									VERY ABUNDANT esp. SMALL CRUSTACEANS - ALSO DARK +
									LUMINESCENT DEEP SEA FISHES - TUNICATE UROPODS
									CAUSED SOME CLOGGING - - - #2 - SUCCESSFUL 51 MIN.
									TOW BETWEEN 1000m → 1800m → 1000m - ORGANISMS SMALLER &
Dec	CAMERA	2255	OVER			27°20.5	7° 40 W	31	LESS ABUNDANT THAN #1 TOW.
21,	#28	UP	0107		2332				
1963		1ST HIT	2332	2295					WIRE & 20° WIRE AZM. 93° WIRE OUT 2390-2410
		LAST HIT	0015		2200				28 HITS 3 PIX. TRIGGER SPRING STIFFENED
Dec	CAMERA								
23	29	0923	OVER			25°04.5	2°26.5 W	32	WIRE & 20° WIRE AZIM. 95° WIRE OUT 2581-2621
1963		UP	1148						27 HITS 23 PIX.
		1ST HIT	0957	2452					
		LAST HIT	1046		2449				

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23	CORE	0943	LOWER	2490		29°34.5S	2°46.5W	32	1300# HD 1/4" PIPE(2) (OK) CORER TRIPPED PREMATURELY
DEC	#31	1056	HIT	—					DUE TO RAPID LOWERING A ~~[illegible]~~ GRAVITY CORE WITH
63		~1200	SURF		—				FULL PENETRATION OBTAINED HOWEVER 0-1258cm
									(BOTTOM) FORAMINIFERAL CALCILUTITE.
23	T-GRAD	0943	LOWER	2440-2540		29°34.5	2°46.5W	32	T-GRAD MAY BE READABLE IN 2 PROBE TRACES.
DEC	# 30	1056	HIT	2430					THERMOMETERS, CORE # 31
63		1145	SURF						
24	T-GRAD	1359	LOWER	1790		30°26.0S	2°18.0E	33	T-GRAD DID NOT COME TO EQUILIBRIUM.
DEC	# 31	1450	HIT	1821					CORE # 32 THERMOMETERS
63		1525	SURF						
24	CORE	1359	LOWER	1790		30°26.0S	2°18.0E	33	1300# HD. 1/4" PIPE(2) OK. CORE LENGTH: 1164cm.
DEC	#32	1450	HIT	~1820					C-1164: LIGHT BROWN TO VERY PALE ORANGE,
63		1525	SURF		1855				FORAMINIFERAL CALCILUTITE. FORAMS: 10-30 %, C60, 60-90%
24	PLANKTON	IN	1533			30°26.0S	2°18.0E	33	MPS TOW - SUCCESSFUL QUALITATIVE TOW
DEC	#10	OUT	1633						#1 (DEEP) 250m (OPEN) - 750m - 250m (CLOSE) - 26 min. FAIR SAMPLE -
1963									#2 (MIDDLE) 250 - 100m (CLOSE) - 11 min - VERY LITTLE. NOT TOO THICK
									#3 (UPPER) 100m (OPEN) - SURFACE - 12 min. " " " WITH ORGANISMS
									MUST TOW FOR LONGER PERIODS IN EACH ZONE
24	CAMERA	OVER	1340			30°26.0S	2°18.0E	33	FOR EFFECTIVE SAMPLING.
DEC	#30	UP	1530						
63		1ST HIT	1408	1790					WIRE AZIM. 80° WIRE # 20° WIRE OUT 1871-1902F
		LAST HIT	1456		1795				28 HITS 24 PIX.
26	CAMERA	1520	OVER			31°30S	8°13.0E	34	WIRE AZIM. 90° WIRE # 20°
DEC	#31	UP	1730						WIRE OUT 2018-2057
63		1ST HIT	[illegible]	1800					28 HITS 25 PIX
		LAST HIT	1[illegible]0		1710				

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26	T-GRAD	1540	LOWER	~1800		31° 30 S	5° 15.0 E	34	T-GRAD A FAILURE - NO PENETRATION
DEC	# 32	1649	HIT	~2020					CORE # 33 THERMOMETERS
63		1730	SURF						
26	CORE	1541	LOWER	~1800		31° 30 S	5° 15 E	34	1300# WD, 1/4" PIPES (2) OK. CORE LENGTH: 71 cms.
DEC	#33	1649	HIT	~2000					0-71 cms COARSE TO MEDIUM FORAMINIFERAL
63		1730	SURF		~2000				AND TUFFACEOUS SAND. PEBBLES OF
									BRECCIA (TUFF WITH ASH MATRIX) FOUND.
	GEOLOGICAL								
26	TRAWL	1927	LOWER			31° 35 S	4° 23 0E	35	3'x1' MOUTH WITH LARGE MESH BAG. SMALL TRAWL BEHIND THIS.
DEC	# 1	1928	HIT	25					MANY SPHERICAL, NODULAR-SURFACED BALLS = PRECIPITATED
63		1948	SURF		25				$CaCO_3$ (BY LITHOTHAMNION) ABOUT 2" IN DIA. SOME
									VESICULAR BASALT PEBBLES - VARIOUS SPONGES,
									BRYOZOA, ALGAE (LAMINARIA ETC) AND A "SEA
									CUCUMBER" 12" IN LENGTH) WERE ALSO RECOVERED.
26.	PLANKTON	1636 (MEDIAN)				31°30's	4° 15'0 E	35	½ Meter. SURFACE PLANKTON TOW - DURATION 1 hr. 58 min.
Dec.	# 11								TAKEN ON SLOPE of VEMA SEAMOUNT.
63	(SAMPLE 1)								
	(Sample 2)	IN -	2025			31°39's	5° 23 0E		½ meter - NET ON HYDRO WIRE 30 MIN. DURATION
		OUT	2055						TAKEN ON TOP of VEMA TO DETERMINE ZOOPLANKTON POPULATIONS over SEAMOUNT — ALSO FOR
									CORRELATIONS WITH TOW TAKEN ON SLOPE & THE YEOL.
									TRAWL #1 — NET RAISED & LOWERED 3 TIMES - DEPTH
									AVERAGE 45 fms.
27	PLANKTON	IN	1607			32° 37's	11° 41 E	36	
DEC.	#12	OUT	1715						BPS - TOW 1000M - 1530 meters — 32 min DURATION
1963									SUCCESSFUL OPERATION OF SAMPLER. SHOULD
									HAVE SAMPLED FOR LONGER PERIOD TO COMPENSATE
									FOR THINNESS of the PLANKTON POPULATION AT THAT
									DEPTH.

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PALISADES

Research Vessel ROBERT D. CONRAD
CRUISE N° _____
CRUISE LEG--From _____ To _____

TIME ZONE -1

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
27 DEC 1963	CORE #34	1738	LOWER HIT	2400		32°37'S	11° 41. E	36	1300 # HD 1¼" WALLPIPE (OK) CORE LENGTH 597cm. 0-147cm VARICOLORED, MOTTLED CALCILUTITE 147-203cm FORAM SAND. 203-597cm GREENISH GRAY CALCILUTITE.
		1859	HIT	2410					
		1953	SURF		2400				
27 DEC 63	T-GRAD #33	1738	LOWER	2410				36	T-GRAD GOOD 3 PROBE PENETRATION ON ONE PIPER CORE @ 34 THERMOMETERS
		1859	HIT	2410					
		1955	SURF						
28 DEC '63	PLANKTON #13	IN	2134			33°32	16° 34 E.	36.1	MULTIPLE PLANKTON SAMPLER ON HYDROWIRE — FAILURE OF WIRE TO RELEASE PREVENTED 2ND & 3RD NET FROM OPENING — RESULT: OBLIQUE SAMPLE FROM 250M TO 525 meters THEN TO SURFACE - TOTAL TIME - 1hr. + 19mm. — HUGH ~~clogging~~ SAMPLE (30 LITERS of SEAWATER + PLANKTON) CAUSED heavy clogging IN the NET - CONTENTS - MAINLY COELENTERATES & CRUSTACEAN LARVAE — Phyto-PLANKTON Very ABUNDANT.
		OUT	2300						
26 DEC 63	CAMERA #32	1953	LOWER					35	WIRE 4.0 WIREAZIM 000° WIRE OUT 28-40 12 HITS NO PIX MAGNETIC SWITCH BROKE.
		2018	UP						
		1ST HIT	1955	28					
		LAST HIT	2015		35				

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CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREEMANTLE
TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
JAN 8 1964	CORE # 35	1746	LOWER	1537		38°30'S	26°05'E	37	1300 # HD 1/4" WIRE PIPE. CORE CATCHER MANGLED. BOTTOM PIPE BENT IN SMOOTH ARC, 15° FROM NORMAL. CORE LENGTH 523 cms. 0-523 YELLOWISH GREY FORAM CALCILUTITE. FORAMS 5-15%. Colog 80-90%. THIS IS AN EXTREMELY COMPACTED SEDIMENT.
		1832	HIT	1563					
		1903	SURF		1558				
JAN. 8. 1964	PLANKTON #14	IN	1806			38°30'S	26°05'E	37	SURFACE TOW - DURATION 39 min - GREAT DEAL OF CLOGGING by ~~Coelenterate Type ORGANISMS~~.
		OUT	1845						
JAN. 9 1964	PLANKTON #15	———				40°26'S	25°55'E	38	#1 - 39 min SURFACE PLANKTON TOW - SAME RESULT AS Above.
		IN	1535						
		OUT	1614						#2. VERTICAL TOW from 300m - TO SURFACE
		IN	1710						SAMPLING [redacted] TIME: 10 min. - CLOGGING
		OUT	1725						AS Above
8 JAN 64	T-GRAD #34	1746	LOWER	1532		38°30'S	26°05'E	31	T-GRAD A FAILURE - NO → PENETRATION ON FILM CORE # [redacted] 35
		1832	HIT	1563					
		1903	SURF						
9 JAN. 64	T-GRAD #35	1526	LOWER	2194		40°26'S	28°55'E	38	T-GRAD GOOD 3 PROBE PENETRATION THERMOMETERS, CORE # 36 NORMAL HEAT FLOW INDICATED
		1625	HIT	2185					
		1704	SURF						
10 JAN 64	T-GRAD #36	1605	LOWER	2730		41°19'S	33°15'E	39	T-GRAD GOOD 1 PROBE PENETRATION THERMOMETERS CORE # 37
		1748	HIT	2542					
		1836	SURF						

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CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREEMANTLE

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
JAN	CORE	1526	LOWER	2194		40°26'S	28°55'E	38	1300# HD 1/4" wall PIPE - 2 (OK) 1279 Cms OF CORE.
9	#36	1626	HIT	2185					0-20 cm YELLOWISH GRAY FORAM CALCILUTITE 20-1279 - LIGHT GRAY
1964		1707	SURF		2185				AND GREENISH GRAY FORAM CALCILUTITES. FORAM SAND (289-374)(728-907)
									1300# HD 1/4" WALL PIPE (2) BOTTOM PIPE BENT 45° FROM NORMAL.
JAN	CORE	1605	LOWER	2624					CORE LENGTH 1049 cms SOME OF WHICH MAY BE FLOW-IN.
10	#37	1748	HIT	2542		41°19'S	33°13'E	39	MANGANESE BISCUIT AT TOP. 0-10 Ma GRAVEL & LUTITE. 10-365 cm
1964		1836	SURF		2520				SOFT BROWN LUTITE WITH COMPACTED LUTITE INCLUSIONS. AM
									NODULE AT 175 cms. 365-807 - COMPACT LIGHT BROWN LUTITE.
JAN	PLANKTON	IN	1557			41°19'S	33°13'E	39	(1) 1 meter - SURFACE TOW - DURATION 26 MIN.
10	#16	OUT	1623						
1964									
		IN	1846						(2) VERTICAL TOW from 300 m - surface - 11 min.
		OUT	1857						
JAN	CORE	1511	LOWER	1915		41°53'S	37°49'E	40	1300# HD. 1/4" WALL PIPE (2) BOTTOM PIPE BENT 40° FROM NORMAL
11	#38	1613	HIT	2025					CORE LENGTH: 593 cms 0-593 cm VERY PALE ORANGE
1964		1650	SURF		2125				10YR 8/2 GRADATIONS OF FORAM CALCILUTITE AND
									CALCILUTACEOUS FORAM SAND, $CaCO_3$ 80-90%
JAN	PLANKTON	IN	1712			41°53'S	37°49'E		UNSUCCESSFUL MPS TOW - CAUSED BY RELEASING WIRE FULL UP - 1½ hrs. NO SAMPLES
11	*	OUT	1842						
1964									
11	T-GRAD	1510	LOWER	1915		41°53'S	37°49'E	40	T-GRAD FAILURE CORE PENETRATED MUD
JAN	# 37	1613	HIT	~2025					BUT HIT SOMETHING SOLID GALS SHIFTED.
64		1650	SURF						THERMEMETERS CORE # 38
8	CAMERA	1720	LOWER			38°30'S	26°05'E	37	WIRE 4 40° WIRE AZIM. 080° WIRE OUT 1648
JAN	#33	UP	1905						27 HITS 8 PIX. DON'T KNOW WHY! 1758
64		1ST HIT	1754	1640					
		LAST HIT	1859		1562				

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CRUISE N° 8
CRUISE LEG—From CAPETOWN To FREEMANTLE

TIME ZONE +3

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
9 JAN 64	CAMERA #34	1455	LOWER			40°20'S	28°55'E	42	WIRE & #5 WIRE AZIM. 80° WIRE OUT 2278-2437
		UP	1705						27 HITS 3 PIX SWITCH NOT OPERATING.
		1ST HIT	1534	2190					
		LAST HIT	1640		2205				
10 JAN 64	CAMERA #35	1540	LOWER			41°19'S	33°13'E	43	WIRE & 20° WIRE AZIM 085°
		UP	1748						29 HITS 1 PICTURE MAGNET SPRING
		1ST HIT	1617	2625					SEEMS WEAK. WIRE OUT. 2724 2741
		LAST HIT	1704	[illegible]	2540				
11 JAN 64	CAMERA #36	1450	LOWER			41°53'S	37°49'E	44	WIRE & 20° WIRE AZIM 80° WIRE OUT {1989 2044
		UP	1635						15 HITS 7 PIX. DIFFICULTY SEEING
		1ST HIT	1520	1870					HITS ON ACCUMULATOR.
		LAST HIT	1550		1880				
12 JAN 64	CAMERA #37	1738	LOWER			42°57'S	42°21'E	45	WIRE & 30° WIRE AZIM. 080° WIRE OUT {2370 2423
		UP	1910						15 HITS NO PIX.
		1ST HIT	1810	2317					TRIGGER WT. WRAPPED AROUND FLASH
		LAST HIT	1830		2324				UNIT ON WAY DOWN.
13 JAN 64	CAMERA #38	1314	LOWER			43°47'S	46°12'E	46	WIRE & 25° WIRE AZIM. 070° WIRE OUT 1282-1444
		UP	1442						29 HITS 23 PIX FILM RAN OUT.
		1ST HIT	1339	1372					
		LAST HIT	1417		1372				
12 JAN 64	T-GRAD #38	1655	LOWER	2301		42°53'S	42°21'E	41	T-GRAD GOOD HIGH HEAT FLOW INDICATED
		1803	HIT	2318					NO CONDUCTIVITY OWING TO MACHINE FAILURE
		1846	SURF						CORE 39 THERMOMETERS
JAN 12 1964	CORE #39	1655	LOWER	2300		42°53'S	42°21'E	47	1300# HD 1/4" WALL PIPE 2 (OK) CORE LENGTH 1308 CMS
		1803	HIT	2315					MINUS 343 CMS OF FLOW IN MULTI-LAYERED
		1846	SURF		2346				GREENISH GRAY, LIGHT GRAY & OLIVE GRAY
									CALCILUTITES. FEW FORAMINIFERA

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CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREEMANTLE

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
13	T-GRAD	1328	LOW	1372		43°47'S	46°12'E	41	T-GRAD GOOD 3 PROBE PENETRATION NO
JAN	□ 39	1407	HIT	1372					CONDUCTIVITIES TAKE - MACHINE FAILURE
64		1433	SURF						CORE □ 40 THERMOMETERS
14	T-GRAD	1442	LOW	1542		43°38'S	51°16'E	43	T-GRAD GOOD 3 PROBE PENETRATION
JAN	□ 40	1530	HIT	1562					CORE # 41 THERMOMETERS
64		1602	SURF						
13	CORE	1328	LOWER	1372		43°47'S	46°12'E	42	1300# HD 1/4" WALL PIPE (2) OK. CORE LENGTH: 1237cm
JAN	#40	[illegible]	HIT	1372					VARICOLORED CALCILUTITES AND LUTITES.
64		1433	SURF		1373				
14	CORE	1442	LOWER	1542		43°38'S	51°16'E	43	1300# HD 1/4" WALL PIPE (2) OK CORE LENGTH 1257cm.
JAN	#41	1530	HIT	1562					0-693cm - VARICOLORED CALCILUTITES. 693-BOTTOM
64		1602	SURF	1570					"OFF WHITE" & VERY PALE PINK CALCILUTITE.
						45°01'S	54°54'E	42	
15	CORE	1419	LOWER	2080					1300# HD 1/4" WALL PIPE (2) LOWER PIPE DENT 50 DEGREES.
JAN	#42	1528	HIT	2103					CORE LENGTH 777cm. NB → DESCRIPTION OF CORE # 43:
64		1613	SURF		2113				VARICOLORED. NON CARBONATE LUTITES. SOME VOLCANIC DEBRIS
16	CORE	1555	LOWER	2310		48°41'S	57°22'E	45	1300# HD 1/4" WALL PIPE (2) OK 814cm. 0-83cm,
JAN	#43	1652	HIT	2319					4107-777cm OLIVE GRAY TO GRAY BLACK SILTY LUTITE
64		1745	SURF		2315				CONTAINING VOLCANIC DEBRIS. 83-107 VERY LIGHT FORAM
									CALCILUTITE. NB. THIS SEDIMENT DESCRIPTION BELONGS TO #42
15	T-GRAD	1419	LOWER	2080		45°41'S	54°54'E	44	T-GRAD GOOD BUT ONLY 1 PROBE PENETRATION
JAN	□ 41	1528	HIT	2102					CORE # 42 THERMOMETERS
64		1607	SURF						
17									
FEB	T-GRAD	1513	LOWER HITS	2542		51°04'S	60°18'E	46	T-GRAD GOOD TWO PROBE PENETRATION
JAN	□ 42	1625	HIT	2505					LOWEST PROBE SHORTED. CORE # 44
		1712	SURF						THERMOMETERS

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CRUISE N° 8
CRUISE LEG—From CAPETOWN To FREEMANTLE

TIME ZONE -4

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
15 JAN 64	CAMERA #39					45°41'S	54°34'E	41	WIRE & 040° WIRE AZIM. 080° 25 HITS 23 PIX. LOG LOST.
16 JAN 64	CAMERA #40	1540 UP	OVER 1743			48°41'S	57°22'E	42	WIRE & 50° WIRE AZIM. 90° WIRE OUT 2680 COULD NOT SEE HITS. SHIP ROLLING TOO VIOLENTLY.
		1ST HIT	???	2315					NO HITS AT 2680 FATHOMS. NO FIX.
		LAST HIT	???		2319				
17 JAN 64	CAMERA #41	1435	OVER			51°04'S	60°13'E	43	WIRE & 40° WIRE AZIM. 85° WIRE OUT 2682-2840
		1650	UP						29 HITS 28 PIX
		1ST HIT	1519	2560					
		LAST HIT	1611		2570				
18 JAN 64	CAMERA #42	1625	LOWER			53°02'S	62°33'E	44	WIRE & 040° WIRE AZIM. 010° WIRE OUT 2677-2865
		UP	1910						26 HITS 21 PIX
		1ST HIT	1708						
		LAST HIT	1817						
19 JAN 64	CAMERA #43	1356	LOWER			53°20'S	65°25'E	45	WIRE & 010° WIRE AZIM. 090° WIRE OUT 1510-1556
		UP	1535						29 HITS 29 PIX
		1ST HIT	1419	1500					
		LAST HIT	1459		1510				
18 JAN 64	T-GRAD #43	1658	LOWER	~2420		53°02'S	62°33'E	47	T-GRAD GOOD WITH 3 PROBE PENETRATION BUT L WIRE NOT WORKING DUE TO BREAK IN WIRE
		1825	H.T	~430					CORE # 45 THERMOMETERS
			SURF						
19 JAN 64	T-GRAD #44	1417	LOWER	1500		55°20'S	65°28'E	48	T-GRAD FAILURE OWING TO LOOSE CONNECTION
		1504	H.T	1498					BEING PUT ON CORE # 46 THERMOMETERS
		1530	SURF						

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREMANTLE

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
JAN 12 1964	PLANKTON #17	IN	1738			42°53'S	42°21'E	41	① 57 mm SURFACE PLANKTON TOW
		OUT	1835						
		IN	1923						② 11 MIN. VERTICAL PLANKTON TOW (VPT) FROM 300 meters TO SURFACE.
		OUT	1934						
JAN 13 1964	PLANKTON #18	IN	1337			43°47'S	46°12'E	42	① 1 hr. 27 MIN SURFACE 200 PLANKTON TOW
		OUT	1504						
		IN	1449						② 12 MIN VPT FROM 300 METERS TO SURFACE
		OUT	1501						
JAN 15, 1964	PLANKTON #19	IN	1427			45°41'S	54°54'E	44	40 MIN SURFACE TOW
		OUT	1507						
JAN 16, 1964	PLANKTON #20	IN	1755			48°41'S	57°22'E	45	MPS - (OPENING & CLOSING TOW ATTEMPTED)
		OUT	1924						# 1 - 37 MIN TOW BETWEEN 475M — 250M ZONE.
									# 2 - 46 MIN TOW — 250M — SURFACE
									#3 - FAILED TO OPEN - TRIPPING WIRE FAILED.
JAN 17 1964	PLANKTON #21	IN	1521			51°04'S	60°18'E	46	43 MIN - SURFACE TOW
		OUT	1604						
		IN	1810						② 13 MIN - VPT - FROM 300 METERS — SURFACE
		OUT	1823						
JAN 19	PLANKTON #22	IN	1558			55°2'S	65°28'E	48	IOSN #1
									18 MIN VERT. CAL TOW with the INDIAN OCEAN STANDARD NET (IOSN) - from 200 METERS
JAN 20 1964	PLANKTON #23	IN	1723			55°03'S	71°47'E	49	IOSN TOW from 200 meters to SURFACE 5 MIN.
		OUT	1728						

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From CAPETOWN To FREEMANTLE
TIME ZONE -5

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20 JAN 64	CAMERA #44	1515	LOWER			55°03'S	71°47'E	46	WIRE @ 20° WIRE AZIM. 90° WIRE OUT 1921-1947
		UP	1710						29 HITS 29 PIX
		1ST HIT	1545	1890					
		LAST HIT	1627		1880	~~53°40'S~~	~~76°55'E~~		
21 JAN 64	CAMERA #45	1440	LOWER			53°16'S	76°55'E	50	WIRE @ 40°-30° WIRE AZIM. 95° WIRE OUT 603-646
		UP	1545						27 HITS 23 PIX FILM RAN OUT.
		1ST HIT	1457	590					CAMERA CAME UP WITHOUT TRIGGER WT.
		LAST HIT	1535		597				LOST AFTER LAST HIT.
20 JAN 64	T-GRAD #45	1532	LOWER	1888		55°03'S	71°47'E	49	T-GRAD GOOD 3 PROBE PENETRATION
		1630	1717	1894					CORE 47 THERMOMETERS
			SURF						
21 JAN 64	T-GRAD #46	1503	LOWER	588		53°16'S	76°55'E	50	T-GRAD GOOD 3 PROBE PENETRATION
		1529	HIT	600					CORE #48 THERMOMETERS
		1542	SURF						
19 JAN 64	CORE #46	1417	LOWER	1500		55°20'S	65°28'E	45	1300# HD 1/4" WALL PIPE (2) TOP TUBE HAD A 20° BEND. 1280cm Lo
		1504	HIT		1448				0-504 cms LIGHT COLORED LUTITES WITH LOW CARBONATE
		1535	SURF		1493				CONTENTS. 504- BOTTOM · YELLOWISH GRAY LUTITE WITH VOLCANIC DEBRIS.
20 JAN 64	CORE #47	1532	LOWER	1888		55°03'S	71°47'E	49	1300# HD 1/4" WALL PIPE (2) OK CORE LENGTH 1322 CMS.
		1630	HIT	1894					VARICOLORED, NON CARBONATE LUTITES SEVERAL
		1705	SURF		1905				THIN CHERT LAYERS OF VOLCANIC DEBRIS
21 JAN 64	CORE #48	1502	LOWER	588		53°16'S	76°55'E	50	1300# HD 1/4" WALL PIPE (2) OK. CORE LENGTH 1010 CMS 0-264 cm
		1530	HIT	600					PALE ORANGE TO DK BROWN LUTITES AND CALCILUTITE.
		1550	SURF		600				264- BOTTOM MULTILAYERED SILTY CLAY ~~LUTITES~~ VOLCANIC
									DEBRIS PRESENT
22 JAN 64	CORE #49	1516	LOWER	2090		51°04'S	81°33'E	51	1300 # HD 1/4" WALL PIPE (2) OK-OK, LOWER TUBE BENT
		1626	HIT	2102					55° FROM NORMAL - LENGTH 998cms 0-998 cm
		1607	SURF		2158				YELLOWISH BROWN LUTITE WHICH HAS IN TOP 600cms
									0 5-10% VOLCANIC SAND AND SILT FRACTION.

20 CORES 44 THRU 45 on following page

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREEMANTLE
TIME ZONE -6

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
17 JAN 64	CORE # 44	1513	LOWER	2542		51°04'S	60°18'E	46	1300# Ho 1/4" PIPE(2) 1/8" PIPE(1) 2 LOWER TUBES BENT 55°
		1695 *1625	HIT	2545					FROM NORMAL CORE LENGTH 2005 CMS.
		1713	SURF		2695				0-2005 cm. VARICOLORED LUTITES.
18 JAN 64	CORE #45	1658	LOWER	~2400		53°02'S	62°33'E	47	1300# Ho 1/4" PIPE(2) OK CORE LENGTH 1322 CMS
		1825	HIT	2438					0-1322 VARICOLORED LUTITES.
		1914	SURF	2504					
22 JAN 64	T-GRAD # 47	1516	LOWER	2040		51°04'S	51°33'E	51	T-GRAD GOOD LOWER THAN NORMAL HEAT
		1626	HIT	2102					FLOW INDICATED CORE @ 49 THERMOMETERS
		1707	SURF						
22 JAN 64	CAMERA # 46	1435	LOWER			51°04'S	51°33'E	48	WIRE @ 45° WIRE AZIM 100° WIRE OUT 2303-2661
		UP	1710						28 HITS 23 PIX
		1ST HIT	1534	2098					
		LAST HIT	1620	2100					
21 JAN 64	PLANKTON #24	IN	1600			53°16'S	76°55'E	50	IOSN - TOW 200 meters To SURFACE.
		OUT	1614						DURATION of TOW 5 MIN
22 JAN 64	PLANKTON #25	IN	1725			57°09'S	81°33'E	51	2BPS - TOWS ON HYDROWINCH
		OUT	1923						#1. - 50 mm TOW from 500 m - 1750m - 500m
									#2. - 60mm TOW " 1000m - 1750m To SURFACE*
						22 40	92 25		* FAILURE OF PISTON WIRE PREVENTED PROPER
						~~44°02'S~~	~~93°33'E~~	49	CLOSURE at 1000m - SAMPLE WAS QUANTITATIVE
26 JAN 64	CAMERA #47	1041	LOWER						However
		UP	1238						
		1ST HIT	1127	1700					WIRE @ 40° WIRE AZIM 0°-80° WIRE OUT 1808-1865
		LAST HIT	1213		1740				21 HITS 22 PIX
26 JAN 64	CORE #50	1100	LOWER	1687		44°46'S	92°25'E	52	1300# Ho 1/4" WALL PIPE(2) OK. CORE LENGTH 1208 cms
		1204	HIT	1730					0-600 cms VERY PALE ORANGE FORAMINIFERAL SAND
		1236	SURF		1758				600- BOTTOM VERY PALE ORANGE FORAMINIFERAL CALCILUTITE

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Research Vessel ROBERT D. CONRAD — TIME ZONE −6

CRUISE N° 8

CRUISE LEG—From CAPE TOWN To FREEMANTLE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
26 JAN 64	T-GRAD ~~# 46~~ 47	1100	LOWER	~1687		44°46'S	92°25'E	52	T-GRAD GOOD 3 PROBE PENETRATION. CORE # 50 5 THERMOMETERS
		1203	HIT	~1730					
		1236	SURF						
26	CAMERA #48	2057	OVER			44°02'S	93°53'E	50	WIRE 40° WIRE AZIM. 085° WIRE OUT 1643-1845 26 HITS 26 PIX.
		UP	2300						
		1ST HIT	2129	1500					
		LAST HIT	2205	1520					
26 JAN 64	T-GRAD ~~# 48~~ 49	~~2133~~ 2200	LOWER	1500		44°02'S	93°53'E	53	T-GRAD GOOD BUT ONLY 1 PROBE PENETRATION CORE #50 THERMOMETERS
		2220	HIT	1472					
		2251	SURF						
28 JAN 64	CAMERA #49	1305	OVER			41°06'S	101°25'E	54	WIRE 45° WIRE AZIM. 50° WIRE OUT 2387-2409 29 HITS 28 PIX
		UP	1530						
		1ST HIT	1340	2351					
		LAST HIT	1425		2350				
28 JAN 64	PLANKTON #26 ~~#48~~	IN	1600			41°06'S	101°25'E	54	BPS (OPENING & CLOSING SAMPLER) TOW 500m TO 1,187m TO 500m DURATION of SAMPLING 1 HR. 14 MIN. SUCCESSFUL OPERATION of SAMPLER
		OUT	1732						
29 JAN 64	CAMERA #50	1115	OVER			39°23'S	104°22'E	55	WIRE 45° WIRE AZIM. 090° WIRE OUT 2380-2403 29 HITS 26 PIX
		UP	1340						
		1ST HIT	1157	2362					
		LAST HIT	1233		2362				
28 JAN 64	T-GRAD #50	1338	LOWER	2350		41°06'S	101°25'E	54	T-GRAD GOOD 2 PROBE PENETRATION CORE #52 THERMOMETERS
		1455	HIT	2343					
		1541	SURF						

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CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREEMANTLE

TIME ZONE −7

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
JAN	CORE	2123	LOWER	1500		44°02'S	93°53'E	53	1300# HD 1/4" WALL PIPE (2) CRUMANGLED. LOWER TUBE BENT 70°
26	#51	2220	HIT	1472					FROM NORMAL. CORE LENGTH 396 cms. 0-127 cms YELLOWISH
196A	.	2251	SURF		~1500				GRAY FORAM SAND, CONTAINING LARGE VOLCANIC SHARDS
									127-376 cms VERY PALE ORANGE FORAM CALCILUTITE.
									376-396 cms GRAVEL TO PEBBLE SIZED FRAGMENTS OF OBSIDIAN
JAN	CORE	1338	LOWER	2350		41°06'S	101°25'E	54	1300# HD, 1/4" PIPE (2) OK 0-157 cms GRAYISH PINK FORAM
28	#52	1455	HIT	2343					CALCILUTITE. 157-1145 (BOTTOM) VARICOLORED
196A		1542	SURF		2342				LUTITES - THOROUGHLY BURROW MOTTLED
JAN	CORE	1130	LOWER	2358		39°23'S	104°22'E	55	1300# HD 1/4" PIPE (2) OK CORE LENGTH: 1264 cms.
29	#53	1237	HIT	2362					0-17 cms GRAYISH PINK FORAM CALCILUTITE. 17-794 cms
1963		1320	SURF		2352				VARICOLORED, THOROUGHLY BURROW MOTTLED LUTITES.
									794-973 cms DARK BROWN, FAINTLY MOTTLED LUTITE.
									973-1264 cms DARK BROWN LUTITE - "FLOW IN"
29	T-GRAD	1130	LOWER	2358		39°23'S	104°22'E	55	
JAN	#51	1236	HIT	2362					T-GRAD GOOD 3 PROBE PENETRATION
63		1319	SURF						CORE #53 THERMOMETERS
30	CAMERA	1343	LOWER			37°35'S	107°27'E	56	WIRE 4 0° WIRE OUT 2304-2313
JAN	#51	UP	1545						29 HITS 30 PIX
64		1ST HIT	1423	2280					
		LAST HIT	1459		2280				
30	T-GRAD	1400	LOWER	2283		37°35'S	107°27'E	56	T-GRAD A FAILURE OWING TO NO PENETRATION
JAN	#52	1519	HIT	2319					CORE #54 THERMOMETER
64		1605	SURF						
JAN	PLANKTON	IN	1325			39°23'S	104°22'E	55	2 - BPS SAMPLERS ON HYDRO WIRE —
29	#27	OUT	1506						A. 500m - 1500m - 500m - DURATION - 60 MIN.
1964	35 samples								B. 1000m - 1791m - 1000m - " - 56 M.N.
									* PROPER OPERATION of A + B; LOW FLOWMETER READING ON B.
		IN	1522						e. IOSN - VERTICAL TOW from 200m. TIME 3 MIN.
		OUT	1535						

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CRUISE N° 8
CRUISE LEG—From CAPE TOWN To FREEMANTLE

TIME ZONE - 7

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
JAN	PLANKTON	IN	1618			37°35'S	107°27'E	56	BPS - TOW - 500 M. TO 1185 M TO 500 M.
30,	# 28	OUT	1729						DURATION OF TOW. 49 MIN.
1964									SUCCESSFUL OPERATION OF SAMPLER
JAN	CORE	1400	LOWER	2283		37°35'S	107°27'E	56	1300# HD ½" WALL PIPE (2) PIPES OK, CUTTING EDGE
30	# 54	1520	HIT	2320					SHEARED OFF - NO CORE! MANGANESE
1964		1605	SURF		2130				INDENTATIONS FILLED ON TRIGGER CORE WEIGHT - NO TRIGGER CORE
JAN	PLANKTON	IN	1358			35°49'S	109°57'E	57	1 Meter² - NET USED TO SAMPLE
31	# 29	OUT	1505						OBLIQUELY FROM 0 - 1063 Meter. DURAT. ON
1964									1HR. 7MIN. - VERY RICH ZOOPLANKTON
									SAMPLE. * HYDRO-WIRE FOULED ON ITSELF
									ON WAY DOWN - CAUSED BY OVER-RUNNING
									WEIGHT - DELAYED TOW 30 MIN - WHILE ~60
									FATHOMS OF WIRE WERE CUT FREE.
31	T-GRAD	1106	LOWER			35°49'S	109°57'E	57	T-GRAD GOOD 2 PROBE PENETRATION
JAN	# 53	1233	HIT						CORE #55 THERMOMETERS
64		1328	SURE						
1	T-GRAD	1218	LOWER	1638				58	T-GRAD GOOD 1 PROBE PENETRATION
FEB	# 54	1308	HIT	1641					CORE # 56 THERMOMETERS
64		1350	SURF						
JAN	CORE	1106	LOWER	2896		35°49'S	109°57'E	57	1300# HD ¼" WALL PIPE (2) (OK) CORE LENGTH 1174 cms.
31	#55	1233	HIT	2895					0- ~450 cm GRAYISH RED LUTITE. ~450 - 1174 cm
1964		1229	SURF		2840				LIGHT BROWN LUTITE WITH MANGANESE MOTTLING
FEB	CORE	1218	LOWER	1636		33°40'S	112°40'E	58	1300# HD ¼ x 1/8" WALL PIPE 2 (¼"), (⅛") % OK - LOWER
1	#56	1308	HIT	1641					TUBE BENT 30°. CORE LENGTH: 616 cms
1964		1355	SURF		1636				0-119 cm GRAYISH ORANGE PINK FORAM CHALK LUTITE
			1800						119-616 cm VERY PALE ORANGE CALCILUTITE
FEB	SED IN WATER		0800	START		33°40'S	112°40'E	59	55 L OF WATER CENTRIFUGED IN 25 MINUTES.
7/64	# 2		0825	END					

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CRUISE LEG—From FREMANTLE To CHRISTCHURCH

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
FEB	CORE	1835	LOWER	110		35°07'S	115°24'E	59	1300# HD 1/4" WALL PIPE (1) CE FRAMED, CORE OR
7	#57	1850	HIT	113					CORE LENGTH 122 Cms: 0-122 cms YELLOWISH
1964		1856	SURF		113				GRAY, SAND TO GRAVEL GRADE, CALCAREOUS DEBRIS
									COMPOSED OF BRYOZOA & CORAL FRAGMENTS.
FEB	CORE	0745	LOWER	119		35°24'S	116°36'E	60	1300# HD. 1/4" WALL PIPE (1) OR CORE LENGTH 531 Cms
8X	#58	0752	HIT	121					0-BOTTOM SAND TO MEDIUM GRAVEL GRADE
1964		0755	SURF		113				DETRITUS - BRYOZOA, CORAL, ECHINODERM - SPONGE
									SPICULE FRAGMENTS
FEB	CORE	1654	LOWER	190		35°28'S	117°51'E	61	1300# HD. 1/4" PIPE (2) CE OR BOTTOM TUBE BENT 40° FROM NORMAL
8	#59	1702	HIT	172					ONLY TOP 198 CMS (FROM TOP PIPE) COULD BE EXTRUDED
1964		1706	SURF		163				-SAND-GRAVEL GRADE DETRITUS CONSISTING OF BRYOZOAN
									AND CORAL FRAGMENTS. BOTTOM TUBE NOT EXTRUDED.
									CORE LENGTHS 198 cms + ~600 cms
Feb	PLANKTON	IN	1327			33°40'S	112°40'E	58	Perfect MPS TOW - 3 QUANTITATIVE
1,	# 30	OUT	1457						SAMPLES:
1964									A- 33 MIN. TOW between 250 - 570 m
									B. 30 MIN. TOW " 250 - 100 m
									C. 22 MIN. TOW 100 - SURFACE
9	T-GRAD	2116	LOWER	2845		36°45'S	120°54'E	62	
FEB	# 55	2240	HIT	2844					
64		2337	SURF						
9	CORE	2116	LOWER	2845		36°45'S	120°54'E	62	1300# HD 1/4" WALL PIPE (1) × 1/8" WALL PIPE (2) TOP PIPE OF
FEB	#60	2240	HIT	2844					LOWER PIPE PARTIALLY SHEARED OFF CE OR. CORE
1964		2337	SURF		2845				LENGTH: 155 Cms. - MEDIUM TO COARSE SAND
									CONTAINING - BRYOZOAN FRAGMENTS VARIOUS FORAMINIFERA
									SPONGE SPICULES, ECHINODERM SPINES, ANGULAR QUARTZ
									GRAINS + NODULAR GRAINS OF GLAUCONITE (?)
12	T-GRAD	1516	LOWER	2200		46°32'S	125°34'E	63	FAILURE OWING TO CORE BOUNCING AROUND.
FEB	#56	1630	HIT	2272					CORE #61 THERMOMETERS
64		1722	SURF						

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CRUISE N° 8
CRUISE LEG—From FREMANTLE To CHRISTCHURCH

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
11 FEB 1964	SEDIMENT IN WATER #3	1822	1855			43°27'S	124°00'E	62	~55 GALLONS OF SEAWATER CENTRIFUGED
12 FEB 1964	CORE #61	1516	LOWER	~2200		46°32'S	125°34'E	63	1300# HD. 1/4" WALL PIPE FOR CORE LENGTH 391 Cm.
		1630	HIT	2272					0-391 - INTERCALATIONS OF LIGHT BROWN
		1722	SURF		2355				CALCILUTITE AND MODERATE BROWN LUTITE.
13 FEB 64	T-GRAD #57	1444	LOWER	1800		49°20'S	127°07'E	64	T-GRAD A FAILURE OWING TO CORE SOUNDING
		1600	HIT	2083					AROUND CORE #62 THERMOMETERS
		1645	SURF						
13 FEB 1964	CORE #62	1445	LOWER	~1800		49°20'S	127°07'E	64	1300# HD 1/4 x 1/8" WALL PIPE - OK. 0-BOTTOM
		1600	HIT	2080					YELLOWISH GRAY AND VERY PALE
		1645	SURF		1970				ORANGE CALCILUTITE AND LUTITE. CORE
									LENGTH: 1268 Cms.
Feb 9. 1964	PLANKTON #31 1964	IN	2142			36°45'S	120°54'E	62	
		OUT	2202						SURFACE TOW ½ meter NET - 40 mins.
	"	IN	2338						IOSN #6 - (INDIAN OCEAN STANDARD NET TOW #6)
		OUT	2350						DURATION 4 mins 200m - SURF
Feb 13 1964	PLANKTON [redacted] (NO sample)	——	——			49°20'S	127°07'E		1 hr. oblique haul with 1 meter NET — BOTTOM of COD-END KNOCKED OUT by force of WATER — SAMPLE LOST
Feb 14 1964	PLANKTON #32	IN	1505			51°05'S	129°58'E	65	IOSN - TOW #7 - 200 meters to surface
		OUT	1515						DURATION - 4 MINS.
[redacted] Feb 15 64	PLANKTON #33	IN	1600			51°30'S	135°51'E	66	IOSN - TOW #8 - 200 meters to surface
		OUT	1612						DURATION - 7 MINS

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CRUISE N° 8
CRUISE LEG—From FREMANTLE To CHRISTCHURCH

TIME ZONE -8, -9

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
14	T-GRAD	1317	LOWER	1855		51°05'S	129°58'E	65	T-GRAD VERY GOOD 3 PROBE PENETRATION
FEB	# 58	1412	HIT	1853					CORE # 63 .THERMOMETERS
64		1450	SURF						
15	T-GRAD	1420	LOWER	1757		51°30'S	135°51'E	66	T-GRAD GOOD 2 PROBE PENETRATION
FEB	# 59	1509	HIT	1725					CORE # 64 THERMOMETERS
64		1543	SURF						
FEB	CORE	1317	LOWER	1855		51°05'S	129°58'E	65	1300# HD 1/4"(2) x 1/8"(1) WALL PIPES. OK. CORE LENG. 1905 cm
14	#63	1412	HIT	1853					0-1412 cm GRAY - GREENISH GRAY LUTITES & CALCILUTITES
1964		1451	SURF		1847				1412-1905 - PURE WHITE, SOFT CALCILUTITE.
FEB	CORE	1420	LOWER	1757		51°30'S	135°51'E	66	1300# HD 1/4"(2) x 1/8"(1) WALL PIPE - OK CORE LENGTH 1898
15	#64	1509	HIT	1725					0-798 cm INTERCALATIONS OF PALE ORANGE & YELLOWISH
1964		1543	SURF		1698				1300# WH CALCILUTITE. 798-BOT. LIGHT BROWN CALCILUTITE.
FEB	CORE	1548	LOWER	1959		51°32'S	142°13'E	67	1300 HD 1/4"(1) x 1/8"(1) WALL PIPE - CUTTING EDGE BROKEN
16	#65	1654	HIT	1967					OFF WHEN MANGANESE ENCRUSTED ROCK
1964		1735	SURF		1990				ENCOUNTERED - NO CORE OR TRIGGER CORE. H. TALGER
									SAMPLE OF Mn x FORAMS FOUND BETWEEN CORE-LINER x TC PIPE
Feb.	PLANKTON	IN	1750			51°32'S	142°13'E	67	IOSN# 9 4 min. vert TOW from 200 meters
16	# 34	OUT	1807						
1964									

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CRUISE N° _____
CRUISE LEG—From FREMANTLE To CHRISTCHURCH

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
16	T-GRAD	1548	LOWER	1953		51°32'S	142°13'E	67	T-GRAD A FAILURE - NO PENETRATION
FEB	# 60	1654	HIT	1967					CORE # 65 THERMOMETERS
64		1735	SURF						
17	T-GRAD	1526	LOWER	2139		51°33'S	147°51'E	68	T-GRAD A FAILURE CORE PENETRATED
FEB	# 61	1638	HIT	2150					WITH 1 PROBE IN SEDIMENT BUT IT WAS
64		1728	SURF						SMASHED AND FAILED CORE # 66
									THERMOMETER
18	T-GRAD	1440	LOWER	2339		51°08'S	152°56'E	69	T-GRAD A FAILURE CORE PENETRATED WITH
FEB	# 62	1548	HIT	2332					1 PROBE IN SEDIMENT BUT IT WAS SMASHED
64		1639	SURF						AND TRACE WENT OFF FILM. CORE # 67
									THERMOMETER
17	CORE	1527	LOWER	2138		51°33'S	147°51'E	68	1300# HD 1/4" & 1/8" WALL PIPES (2) CE AND BOTTOM JET
FEB	#66	1638	HIT	2150					BROKEN OFF BUT SAVED. CORE LENGTH: 0. THE CE
1964		1728	SURF		2081				WAS BLOCKED BY A LARGE SPHERICAL NODULE DIA 3"
FEB	PLANKTON					51°33'S	147°51'E	68	
17	# 35	IN		1846					
1964		OUT		1955					TOSN # 10 : 4 MIN TOW 200 meters TO SURF
18	CORE	1514	LOWER	2339		51°08'S	152°56'E	69	1300# HD, 1/4"(2) & 1/8"(1) WALL PIPES LOWER 10 FT OF
FEB		1549	HIT	2332					BOTTOM PIPE (1/8" WALL) BROKEN OFF. REST OF LOWER
1964	# 67	1639	SURF		2330				PIPE BENT 30° FROM NORMAL LENGTH 11.25 CORE
									0-8 cm YELLOW BROWN FORAMINIFERAL CALCILUTITE.
									8 cm - 185 cm MODERATE BROWN LUTITE - STRUCTURELESS
									ALL BUT APPROX TOP 300 CM IS PROBABLY "FLOW IN" -
19	CORE	1240	LOWER	2452		50°34'S	155°34'E	70	1300# HD 1/4"(2) 1/8"(1) WALL PIPES CE OF LOWER TUBE (1/8")
FEB	# 68	1353	HIT	2462					BENT 30° FROM NORMAL. PENETRATION
1964		1447	SURF		2469				19 FT, CORE LENGTH: 0 cm SEDIMENT
									PENETRATED UPPER 8 cm SIMILAR TO THAT OF C8 # 67

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CRUISE N° 8
CRUISE LEG—From FREMANTLE To CHRISTCHURCH

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
Feb.	PLANKTON					51°08'S	152°56'E	69	
18,	#36		IN	1705					IOSN#11 - 5 MIN TOW. 200 meters - SURF.
1964	1-2		OUT	1716					
			IN	1720					BPS TOW 500 meters - 1000 meters 55 min
			OUT	1831					DURATION. SUCCESSFUL OPERATION of SAMPLER.
Feb.									
19	PLANKTON		IN	1617					2hr TOW with INCLINOR NOT ATTEMPTED — HYDRO.
1964			OUT	1717					WIRE SNAPPED 250 fm. FROM SURF. ON WAY
	(NO SAMPLE)								UP. RESULTING IN LOSS of CAMERA FRAME
									which was being used at ~~1000~~ meters.
									Net, BRIDLE + MAXIMUM Depth 6407
19									
FEB	T-GRAD	1240	LOWER	2452		50°34'S	175°34'E	70	
64	#63	1353	HIT	2462					T-GRAD 4 FAILURE - CORE RECOVERED
		1447	SURF						AROUND END TIMES NEVER TABULATED
									CORE # 68 THERMOMETERS
31	CAMERA	1049	OVER			35°49'S	109°57'E	57	
JAN	#52	UP	1330						WIRE 4 5° WIRE AZIM 80° WIRE OUT (2942 (2957
64		1ST HIT	~~1326~~	2892					29 HITS
		LAST HIT	~~1323~~ 1325		2894				
								58	WIRE 4 10° WIRE AZIM. 30° WIRE OUT 1663-1679
1	CAMERA	1110	OVER						~~1665~~
FEB	#53	UP	1310						29 HITS 23 PIX
64		1ST HIT	1142	1640					
		LAST HIT	1232	~~1635~~	1635				
7	CAMERA	1825	OVER			35°07'S	115°24'E	59	WIRE 4 0° WIRE AZIM. 0° WIRE OUT 110-129
FEB	#54	1918	UP						20 HITS
64		1ST HIT	1836	108					
		LAST HIT	1915	~~[illegible]~~	110				
8	CAMERA	0733	OVER	1		35°24'S	116°36'E	60	WIRE 4 10° WIRE AZIM 70° WIRE OUT 110-135
FEB.	#55	UP	0805						16 HITS 15 PIX
4		1ST HIT	0736	110					
		LAST HIT	0755		120				

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Research Vessel ROBERT D. CONRAD
CRUISE N° 3
CRUISE LEG—From FREMANTLE To CHRISTCHURCH

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
9	#56	2045	OVER			36°45'S	120°54'E	62	WIRE 4 10° WIRE AZIM. 60° WIRE OUT 2963-2984
FEB	CAMERA	UP	2333						29 HITS
64		1ST HIT	2144	2845					
		LAST HIT	2222		2845				
12	CAMERA	1442	OVER			46°32'S	125°34'E	63	WIRE 4 10° WIRE AZIM. 80° WIRE OUT
FEB	#57	UP	1728						3 HITS 2 PIX
64		HIT	???	2128					WRONG P.D.R. DEPTH READING. TOO MUCH WIRE LET OUT
		LAST HIT	???		2128				WIRE CAME UP TWISTED IN 4 PLACES
14	CAMERA	1345	OVER			51°05'S	129°58'E	65	WIRE 4 5° WIRE AZIM. 180° WIRE OUT 1846-1848
FEB	#58	UP	1452						15 HITS
64		1ST HIT	1411	1855					
		LAST HIT	1435		1855				
15	CAMERA	HOB	OVER			51°30'S	135°51'E	66	WIRE 4 10° WIRE AZIM. 80° WIRE OUT 1805-1814
FEB	#59	UP	1550						29 HITS
64		1ST HIT	1434	1780					
		LAST HIT	1510		1725				
16	CAMERA	1530	OVER			51°32'S	142°13'E	67	WIRE OUT 2048-2200 WIRE 4 30° WIRE AZIM 95°
FEB	#60	UP	1745						29 HITS 32 PIX
64		1ST HIT	1600	1955					
		LAST HIT	1654		1957				
17	CAMERA	1510	OVER			51°32'S	147°51'E	68	WIRE 4 50° WIRE AZIM. 85° WIRE OUT 2700
FEB	#61	UP	1730						1 HIT, 1 PICTURE. COULD NOT SEE HIT, BROUGHT
64		1ST HIT	???	???	~2170				CAMERA UP
18	CAMERA	1358	OVER			51°08'S	152°36'E	69	WIRE 4 5° WIRE AZIM 90° WIRE OUT 2329-2334
FEB	#62	UP	1645						28 HITS 27 PIX
64		1ST HIT	[illegible]	2340					
		LAST HIT	1540		2342				

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PALISADES

Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From FREMANTLE To CHRISTCHURCH
TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
21 FEB 64	CAMERA #63	1220 UP	OVER 1450			53°29'S	155°37'E	70	WIRE @ 20° WIRE AZIM. 90° WIRE OUT 2580-2590
		1ST HIT		2450					29 HITS TRIGGER WT NOT HEAVY ENOUGH
		LAST HIT			2460				FOR ADDED SHOCK CORD. TRIPPED FREELY ON WAY DOWN ~ 6 PRINTABLE PIX.
22 FEB 64	CAMERA #64	0200 UP	OVER 0330			58°03'S	155°47'E	72	WIRE @ 30° WIRE AZIM. 085° WIRE OUT 1817-1825
		1ST HIT	0233	1770					18 HITS 18 PIX
		LAST HIT	0254		1775				
23 FEB 64	CAMERA #65	1625 UP	OVER 1808			56°00'S	153°46'E	75	WIRE @ 10° WIRE AZIM. 10° WIRE OUT 1813-1840
		1ST HIT	1651	1805					29 HITS 23 PIX
		LAST HIT	1729		1810				
FEB 20 1964	CORE #69	1538 LOWER	1730 SURF	2332 HIT	2307 2298	53°29'S	155°37'E	71	1300# HD. 1/4" PIPE (2) CE OK SLIGHT BEND IN LOWER PIPE. LENGTH: 165 Cms. 0-10 cms No NODULES, 10-32 cm BROWNISH GRAY LUTITE. 32-165 cm PALE OLIVE, HARD LUTITE.
FEB 22 1964	CORE #70	0215 LOWER	0334 SURF	1773 HIT	1783 1788	58°03'S	155°47'E	72	1300# HD 1/4" PIPE (2) OK, CE SLIGHTLY DENTED. LENGTH 1105 cm 0-80 cm YELLOWISH BROWN SILTY LUTITE 80-245 cms 245-BOTTOM = MODERATE YELLOWISH BROWN SILTY LUTITE. VERY PALE ORANGE, STRUCTURELESS LUTITE.
FEB 22 1964	CORE #71	0555 LOWER	0723 SURF	1742 HIT	1742 1742	58°03'S	155°44'E	73	1300# HD 1/4" PIPE (2) OK CORE LENGTH: 1245 Cms. 0-51 cms LIGHT BROWN LUTITE 51-~670 cm COMPACT, VERY PALE ORANGE LUTITE CONTAINING YELLOWISH GRAY LUTITE LAYERS, 670-802 LT GREENISH GRAY LUTITE.
FEB 22 1964	CORE #72	1012 LOWER	1430 SURF	1748 HIT	1746 1750	58°03'S	155°39'E	74	1300# HD 1/4"(2)+1/8"(1) WALL PIPE ALL OK. LENGTH 1645 cm 0-724 cm LT GREENISH GRAY LUTITE & SILTY LUTITE 724-830 LIGHT GRAY CALCILUTITE. 830-BOTTOM, SAME AS 724-830 LAYER BUT LESS COMPACT.

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CRUISE N° 8

CRUISE LEG—From FREMANTLE To CHRISTCHURCH

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
FEB	CORE	1650	LOWER	1814		56°00'S	158°46'E	75	300# HD, 1¼" PIPE (2) OF, 1E SLIGHTLY DENTED
23	#73	1748	HIT	1815					CORE LENGTH: 196 Cms.
1964		1813	SURF		1815				
24	CAMERA	1507	OVER			54°48'S	159°10'E	76	WIRE @ 25° WIRE AZIM 85° WIRE OUT 3072-3214
FEB	#66	UP	1830						15 HITS 15 PIX
64		1ST HIT	1607	2882					
		LAST HIT	1634		2905				
24	T-GRAD	1528	LOWER	2885		54°48'S	159°10'E	76	T-GRAD MEASURE 1 PROBE PENETRATION
FEB	#64	1705	HIT	~2800					BOT GALS SHIFTED. CORE @ 74 THERMOMETER
64		1933	SURF						
Feb	PLANKTON	IN	1843			56°00'S	158°46'E	75	BPS (OPENING + CLOSING TOW)
23	#37	OUT	2043						500M — 1035 M — 500M — DURATION 1hr 37min
1964									SUCCESS of operation - LARGE ZOO - PLANKTON sample.
Feb	PLANKTON	IN	1035			54°48'S	159°03'E	75.1	VERTICAL PLANKTON TOW (VPT) 300m —
24	#38	OUT	1051						TO SURF — TIME: 10 min ½m Rigid VERT
1964									NET
Feb.	PLANKTON	IN	1723			53°54'S	164°43'E	77	VPT - 300 m - SURF DURATION 11 min.
25.	#39	OUT	1739						(RIGID VERTICAL NET) SPARSE SAMPLE
1964									COMPARED TO phytoPLANKTON Bch #38
25	CAMERA	1535	OVER			53°54'S	164°43'E	77	WIRE @ 20° AZIM. 80° WIRE OUT 1176-1235
FEB	#67	1707	UP						29 HITS 29 PIX
64		1ST HIT	1553	1150					
		LAST HIT	1627		1140				
26	CAMERA	1337	OVER			52°35'S	169°21'E	78	WIRE @ 8° WIRE AZIM 90° WIRE OUT 94-97
FEB	#68	UP	1420						29 HITS 29 PIX.
64		1ST HIT	1339	92					
		LAST HIT	1412		92				

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CRUISE N° 8
CRUISE LEG—From FREMANTLE To CHRISTCHURCH

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
FEB	CORE	1528	LOWER	2885		54°45'S	159°10'E	76	1300# HD 1¼"(2)×⅛"(1) WALL PIPE S. CE CRIMPED, LOWER
24	#74	1705	HIT	2800					TUBE BENT & BUCKLED. CORE LENGTH: 363 cms.
1964	1528	1533	SURF	2800					0-363 Cms - BLACK VOLCANIC DETRITUS RANGING
	17								IN SIZE GRADE FROM FINE SAND TO MEDIUM GRAVEL
									AND PASSING FROM FINEST AT THE TOP TO THE
									COARSEST MATERIAL AT THE BOTTOM.
FEB	CORE	1552	LOWER	1148					
25	#75	1632	HIT	1139		53°54'S	164°43'E	77	1300# HD ¼" WALL PIPE (2) CE NICKED. BIRDS OK
1964		1706	SURF	1140					CORE LENGTH: 190 cms. 0-190 cms. YELLOWISH
									GRAY FORAMINIFERAL SAND AND SHELL
									DEBRIS OF BRACHIOPOD OR MOLLUSCAN ORIGIN

_____
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CRUISE N° 8
CRUISE LEG—From CHRIST CHURCH To AUCKLAND

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
MAR		2258	LOWER	745		42°34'	173°45'	79	1300 #HD 1/4"(2) & 1/8"(1) WALL PIPES CE SLIGHTLY NICKED
4	CORE #76	2318	HIT	740					LOWER PIPE SLIGHTLY BENT. CORE LENGTH: 191 cm.
1964		2338	SURF		734				0-45 cm. (?) SOFT, DK. GRAY LUTITE. 45- BOTTOM
									VERY HARD DK. GRAY LUTITE H_2S EVOLVED WHEN
									IN CONTACT WITH DILUTE HCL
10	T-GRAD	1014	LOWER	1023		36°56'	177°37'	E80	T-GRAD GOOD- ? ? ? ? PENETRATION
MAR	#66	1053	HIT	1014					WITH CORE #77
64		1118	SURF						
MAR									
4.	PLANKTON	IN	2317					79	22 MIN SURFACE PLANKTON TOW
1964	#42	OUT	2339						
	1-2								
		IN	0016						22 min VPT-2 from 770 fm TO
		OUT	0038						SURFACE
			AUCKLAND — WELLINGTON.						
MAR	PLANKTON								
10,	#43	IN	1027					80	40 min. Vertical Plankton tow - 2 (Deep)
1964		OUT	1109						from 1070 fm to surface.
MAR	CORE	1014	LOWER	1023		36°56'	177°37'	E80	1300 #HD 1/4" WALL PIPE (2) CE OF LOWER PIPE
10	#77	1053	HIT	1014					BENT 40° FROM NORMAL. CORE LENGTH: 260 cm
1964		1118	SURF		1002				0-95 cm GREENISH GRAY LUTITE. 95-102
									MED GRAY SILTY (~25%) LUTITE GRADING TO
									LUTACEOUS SAND IN LOWER 2 cm. SAND
									IS OF VOLCANIC ASH. @ 2-157 cm GREENISH
									GRAY LUTITE 157-232 COARSE-MED
									GREENISH GRAY SAND VOLCANIC ASH
									232 - BOT. VISION DISTORTED MIXTURE OF
									ASH & GREENISH GRAY LUTITE.

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CRUISE N° 8
CRUISE LEG—From WELLINGTON To PANAMA

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
MAR	CORE	1923	LOWER	950		44°47' S	175°46' W	81	1300# CORE HD 1/4" WALL PIPE (2) OK CORE LENGTH:
18	# 78	2003	HIT	947					1228 Cm. 0-321 cm. GREENISH GRAY LUTITE 321-379
1964		2028	SURF		947				DARK GREENISH GRAY LUTITE 379-1040 GREENISH
									GRAY STRUCTURELESS LUTITE 1040-1041 GREENISH
									GRAY LUTACEOUS FORAM SAND 1041-1228 DK GREENISH
									GRAY LUTITE.
MAR	SEDIMENT	1923	LOWER	950				81	55 GAL WATER BARREL, CLOSED AT 920 7mo.
18	IN WATER	1950	MESSENGER SENT						~45 GALS CENTRIFUGED
1964	# 4	2000	MESSENGER HIT		920				
		CROSSED INTERNATIONAL DATE LINE.							
MAR	CORE	1317	LOWER	2635		46°19'	172°51'	82	1300# CORE HD 1/4(2) & 1/8(1) WALL PIPE ALL OK. CORE
18	# 79	1419	HIT	2638					LENGTH: 1729 cms. 0-20 cm. Lt. OLIVE GRAY MOTTLED
1964		1524	SURF		2643				WITH GREENISH GRAY LUTITE 20-41 GREENISH GRAY LUTITE.
									41-1729 cm. DK GREENISH GRAY-MED BLUISH GRAY
									LUTITE 1094-1096 VOLCANIC ASH (PDR SUBBOTTOM?)
MAR	CORE	1619	LOWER	2652		48°18'	162°54'	83	1300# HD 1/4(1) & 1/8(1) WALL PIPE OK CORE LENGTH:
20	#80	1752	HIT	2664					1313 cms. PALE YELLOWISH BROWN - LIGHT
1964		~2000	SURF		2375				BROWN LUTITE
22	T-GRAD	1341	LOWER	2372				85	T-GRAD A FAILURE OWING TO NO PENETRATION
MAR	#67	1514	HIT	2300					CORE #82 THERMOMETERS
64		1558	SURF						
20	PLANKTON	1600 — IN						83	1hr 51 MIN. Deep VERTICAL TOW from
MAR	#44	OUT — 1905							4,500 meters TO SURFACE
22	PLANKTON	IN ~1415						85	VERTICAL NET ON WITH CAMERA. — SAMPLED
MAR.	#45	OUT	1615						from BOTTOM TO SURFACE ~ 4,200 METERS
									Time ~ 2 hrs
23	PLANKTON								* MPS - TOW ATTEMPTED. SAMPLER LOST when
MAR.	— *								HYDRO. WIRE RAN AGAINST CORING WIRE

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CRUISE N° _____
CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
23	T-GRAD	1427	LOWER	2690				86	T-GRAD A FAILURE OWING TO NOT
MAR	# 68	1616	HIT	2526					ENOUGH PENETRATION CORE # 83
64		1742	SURF						THERMOMETERS
MAR	CORE	1354	LOWER	2738		47°57'	159°03'	84	1300# HD 1/4(2)-1/8(1) WALL PIPES ALL OK CORE
21	#81	1526	HIT	2734					LENGTH 1610 cm 0-80 PALE BROWN/LUTITE
1964		1633	SURF		2730				80-1610 cm MODERATE BROWN - PALE BROWN
									LUTITE BURROW MOTTLING COMMON MICRO.
									PALAEO CONCENTRATIONS CONSIST OF RADIOLARIA
MAR	CORE	1342	LOWER	2372		46°56'	154°15'	85	1300# HD 1/4" WALL PIPE CE CRIMPED. PIECES OF
22	#82	1514	HIT	2300					CORE LENGTH ~ 150 cm MANGANESE
1964		1558	SURF		2330				NODULES & FRAGMENTS TRIGGER CORE
									CONSISTS OF WHITE FORAMINIFERAL SAND
MAR	CORE	1427	LOWER	2690		45°53'	149°45'	86	1300# HD 1/4"(2) & 1/8"(1) WALL PIPE CE SHEARED
23	#83	1616	HIT	2526					OFF, LOWER TUBE BUCKLED SHARPLY JUST ABOVE CE
1964		1745	SURF		2490				CORE LENGTH ~ 10 cm — MANGANESE NODULES.
MAR	CORE	1716	LOWER	~2500		43°25'	141°17'	87	1300# HD 1/4" WALL PIPE (2) LOWER TUBE SLIGHTLY
25	#84	1834	HIT	~2300					BENT IN LOWER 30 cm. CORE LENGTH ~ 5 cm
1964		1935	SURF		~2600				OF MANGANESE NODULES & FRAGMENTS
MAR	CORE	1530	LOWER	2675		41°34'	133°12'	89	1300# HD 1/4" WALL PIPE (1) OK CORE LENGTH 112 cm.
27	#85	1706	HIT	2670					0-7 cm MN nodules. 7-39 LIGHT BROWNISH
1964		1757	SURF		2675				GRAY LUTITE. 39- BOTTOM DK YELLOWISH BROWN
									LUTITE.
MAR	CORE	1418	LOWER	2587		40°33'	129°23'	90	1300# HD 1/4" WALL PIPE (1) OK CORE LENGTH 470 cm
28	#86	1428	HIT	2580					0-187 cm DUSKY BROWN LUTITE 187-270
64		1613	SURF		2572				BURROW MOTTLED MODERATE BROWN LUTITE
									270-370 VERY COMPACT VERY PALE
									ORANGE CALCILUTITE / Ca CO3 100% 370
									- BOTTOM SOFT CALCILUTITE - "FLOW IN"

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CRUISE N° _____
CRUISE LEG—From _____ To _____

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
MAR 25 1964	PLANKTON #46	IN	1500					87½	½ meter Rigid vertical Net out with camera — 1 hr. sampling Time - from ~4000 meters
MAR 28 1964	PLANKTON #47	IN	1441					90	½ m Rigid Vertical Net ON Hydro wire Depth 4,663 meters. DURATION = 1 hr. 21 min.
MAR 30 1964	PLANKTON #48	IN	1340					92½	2 hr. SURFACE TOW with NO. 20 mesh phytoplankton Net
MAR 31 1964	PLANKTON #49	IN	1415					93	1½ hr. SURFACE TOW — AS Above — SMALL SAMPLE
MAR 29 1964	CORE #87	1327	LOWER	2465		39°28'	125°30'	91	1300# HD ¼" WALL PIPE (1) OK. CORE LENGTH 648 cm
		1434	HIT	2440					0-225 cm DUSKY BROWN LUTITE 225-367 cm
		1517	SURF		2440				HARD MODERATE YELLOWISH BROWN CALCILUTITE
MAR 30 1964	CORE #88	1331	LOWER	2440		38°00'	121°55'	92	1300# HD ¼" WALL PIPE (1) OF SHEARED OFF CORE CATCHER & SOME CORE LOST. CORE LENGTH 39 cm
		1447	HIT	2440					0-39 cms DUSKY BROWN LUTITE
		1533	SURF		2450				
MAR 31 1964	CORE #89	1413	LOWER	2064		36°23'	118°06'	93	1300# HD ¼" WALL PIPE (1) OK CORE LENGTH · 465 cm
		1447	HIT	2085					0-12 cm LIGHT BROWN CALCILUTITE ($CaCO_3$ - 30%)
		1510	SURF		2075				12-85 GRAYISH BROWN LUTITE 85-170 cm DK YELLOWISH BROWN LUTITE 170-370 HARD YELLOWISH GRAY CALCILUTITE
									$CaCO_3$ (90-100%) 370 465 SOFT YELLOWISH GRAY CALCIL. MUD in
	T-GRAD	1331	LOWER	2375					T-GRAD A FAILURE OWING TO
~~APR~~	~~#90~~								
~~1964~~									

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CRUISE N° 8
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TIME ZONE

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APR.	CORE	1334	LOWER	1752		34°52'	114°48'	94	1300# HD 1½" WALL PIPE (1), OF, CORE LENGTH: 553cm
1	#90	1424	HIT	1819					0-20cm PALE YELLOWISH BROWN FORAM SAND
1964		1454	SURF	1818					20-272 PALE YELLOWISH BROWN FORAM LUTITE 272-278cm
									GRAYISH YELLOW BROWN LUTACEOUS FORAM SAND 278-510cm
									YELLOWISH GRAY CALCILUTITE 510-553 Yellow Brn Calc Lutite
2	T-GRAD	1312	LOWER	1460				95	T-GRAD + FAILURE CORE FELL OVER
APR	#70	1402	HIT	1462					CORE # 91
64		1430	SURF						
3	T-GRAD	1340	LOWER	N1568				96	T-GRAD GOOD 3 PROBE PENETRATION
APR	#71	1421	HIT	1455					CORE # 92
64		1451	SURF						
APRIL	PLANKTON	IN	1445					94	BATHYPELAGIC SAMPLER (BPS) 500METERS TO 1,100M.
1	#50	OUT	1640						SAMPLING TIME: 1HR. 39 MIN. — PROPER OPENING +
1964									CLOSING.
APRIL	PLANKTON	IN	1302					95	#1 — 2hr. 48min SURFACE TOW - Rope Line
2	#51	OUT	1550						#2 — Deep VERTICAL TOW (VPT-2), ON WITH
1964	(2 samples)	IN	~1575						CAMERA. DOWN TO 2700m, ~ 50MIN TOW
		OUT	1555						
APRIL	PLANKTON							96	25MIN SURFACE TOW
3	#52	IN	1430						
1964		OUT	1455						
APRIL	PLANKTON	IN	1345					97	1HR. 23MIN. SURFACE TOW
4	#53	OUT	1508						
1964	(3 samples)	IN	M28						43 MIN Deep VERTICAL TOW - 3,050m - SURF.
		OUT	1511						
APRIL	PLANKTON	IN	1353					98	2hr 17MIN. SURFACE TOW
6	#54	OUT	1610						
1964		IN	1500						2hr BPS TOW ATTEMPTED - "HANG-FIRE" - NO
		OUT	1700						SAMPLE — BUT INFO. WAS OBTAINED CONFIRMING CONTAMINATION.

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APRIL	CORE	1334	LOWER	1752		34°51'	114°48'	94	1300# HD 1/4" WALL PIPE (1) OK. CORE LENGTH:
1	#90	1424	HIT	1819					SEE PREVIOUS PAGE.
1964		1454	SURF		1818				
APRIL	CORE	1312	LOWER	1460		33°25'	111°54'	95	1300# HD 1/4" WALL PIPE (1) RECRIMPED SLIGHTLY PIPE OK
2	#91	1402	HIT	1462					CORE LENGTH: 213 cm 0-7 cm A CRUDE SPHERE
1964		1430	SURF	1440					OF MUCH FRACTURED OBSIDIAN. 7-62 cm GRAYISH
									ORANGE CALCILUTITEOUS FORAM SAND. 62- BOTTOM
									PALE BROWN FORAM CALCILUTITE.
APRIL	CORE	1340	LOWER	1568		31°33'	108°30'	96	1300# HD 1/4" WALL PIPE (1) OK CORE LENGTH: 568 cm
3	#92	1415	HIT	1455					0-505 cm COMPACT, PALE BROWN FORAMINIFERAL
1964		1452	SURF		1438				CALCILUTITE. 505-568 SOFT SEDIMENT
									"FLOW IN" OTHERWISE SIMILAR TO 0-505 cm LAYER
APRIL	CORE	1325	LOWER	1692		29°22'	105°14'	97	1300# HD 1/4" WALL PIPE (2) OK, CORE LENGTH: 1154 cm
4	#93	1423	HIT	1692					0-147 cms MODERATE BROWN FORAMINIFERAL LUTITE.
1964		1454	SURF		1693				147-157 PALE YELLOWISH BROWN FORAM SAND
									157- BOTTOM MODERATE BROWN FORAM LUTITE
									CONTAINING FORAM SAND LAYERS BETWEEN
									178-180 cms, 437-440 cms 962-963 cms.
APRIL	CORE	1341	LOWER	1642		27°17'	102°05'	98	1300# HD 1/4" WALL PIPE (2) OK SLIGHT BEND IN LOWER PIPE
5	#94	1430	HIT	1648					CORE LENGTH: 520 cm 0-385 cm MOD. BRN FORAM
		1457	SURF		1696				LUTITE. 385-501 PALE YELLOWISH BRN FORAM LUTITE.
									CONTAINING 7 DISTINCT LAYERS (INCLUDING ONE
									OF VOLCANIC GLASS) BETWEEN 479 cm & 490 cm.
APR.	BOTTOM	1414	LOWER			25°31'	99°08'	100	3'x1' MESH BAG, SMALL TRAWL BEHIND THIS. SMALL
7	TRAWL	1423	HIT BOTTOM		256				SAMPLE 1 SILICEOUS SPONGE, POLYCHAETE WORMS
	#2	1455	OFF BOTTOM		273				SEVERAL CORAL FRAGMENTS, TO FRAGMENTS
		1512	SURF						(NOT OUTCROP) OF VERY FINE GRAINED
									BASALTIC ROCKS.

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CRUISE LEG—From _____ To _____

TIME ZONE _____

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4	T-GRAD	1324	LOWER	1692				99	T-GRAD GOOD ALTHOUGH PROBE 6
APR	# 72	1423	HIT	1692					SHORTED DURING HIT FOR TWO CYCLES
64		1454	SURF						CORE # 93
APR	CORE	1400	LOWER	2105		22°38'	97°11'	100	1300# HD 1¼" WALL PIPE (2) TE OK, LOWER PIPE BENT
7	#95	1507	HIT	2099					5° FROM NORMAL. CORE LENGTH: 1170 Cms.
1964		1545	SURF		200				0-15cms MODERATE BROWN LUTITE 15-FC OLIVE GRAY,
									INDURATED LUTITE. 19-30 MOD BRN – LT. BRN
									CALCILUTITE 30-1170 LT GRAY TO ORANGE CALCILUTITE.
APR	CORE	1330	1786			19°45'	95°37'	101	1300# HD 1¼" WALL PIPE (2) TE OK, LOWER PIPE BENT
8	#96	1423	1786						45° FROM NORMAL CORE LENGTH: 780cm
1964		1453		1790					0 – BOTTOM VERY PALE ORANGE FORAM CALCILUTITE.
MAR	C¹⁴ #1	1617	DOWN	2652				83	BARREL FUNCTIONED SATISFACTORILY – THERMOMETERS COLUMN
26		1930	SURF						SEPARATION – SAMPLE 2500 METERS
1964		2105	AIR SWEEP START TIME						NO_3 27.58 gm BUBB #44 + #45
		2305	FINISH TIME						SAL. #1005 SLIDE OK
MAR	C¹¹ #2	1442	DOWN	2610				86	BARREL FUNCTIONED OK NO READING ON THERMOMETERS
23		1745	SURF						SAMPLE ~~2500 METERS~~ 2046 METERS MISS SENT WRONG TIME
1964		1745	AIR SWEEP START TIME						TRIPPED BBL UNABLE DOWN
		XXXX	FINISH						CARBONATE 31.80 gm EQ BUBB #46 + #47
									SAL 1137 SLIDE OK
MAR	C¹¹ 3	1645	DOWN	2867				88	BBL FUNCTION OK NO THERMOMETERS SEPARATED COR.
1964		1700	SURF						SAMPLE 200 METERS CARBONATE 27.98 gm EQ.
		2138	AIR SWEEP START TIME						BUB #48 + #49 SAL. #1131 NO CORE. SLIDE NEEDLE
		0000	FINISH						BROKE.
MAR	C¹⁴ 4	1720	DOWN			42°31'	137°17'	88	BBL OK NO THERMOMETERS
1964		1900	SURF						SAMPLE 650 METERS CARBONATE 28.62 gm eq.
		1635	AIR SWEEP START TIME						BUBB #50 + #51 SAL 1455 SLIDE OK
		0000	FINISH						

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Research Vessel ROBERT D. CONRAD
CRUISE N° _____
CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
MAR 22 64	C'T 5	1529	DOWN	2670				89	BBL OK NO THERMOMETER READING SAMPLE 2500 METERS
		1757	SURF						CARBONATE 28.60 gm eq BUBB #52 + #53
		1950	AIR SWITCHED START TIME						SAL 1138 SLIDE OK
		2200	FINISH						
MAR 23 64	C'T 6	1417	DOWN					90	BBL OK NO THERMO SAMPLE 4545 METERS
		1612	SURF						CARBONATE 31.8 gm eq BUBB #54 + #55
		1645	AIR SWITCH START						SAL 1498 SLIDE OK
		1723	FINISH						
4 MAR 64	CAMERA #69	2232	OVER					79	WIRE 4 20' WIRE AZIM 70° WIRE OUT 786-820
		UP	2343						28 HITS
		1ST HIT	2256	720					No Good
		LAST HIT	2334		720				
18 MAR 64	CAMERA #70	1848	OVER			46.44.0 S	172. 9.0 W	81	WIRE 4 5° WIRE AZIM 85° WIRE OUT 957-964
		UP	2025						27 HITS
		1ST HIT	1905	950					
		LAST HIT	1943		950				
						PROV.			
18 MAR 64	CAMERA #71	1253	OVER			46.19.5 S	171-51.0 W	82	WIRE 4 15° WIRE AZIM 90° WIRE OUT 2726-2778
		UP	1520						21 HITS
		1ST HIT	1336	2635					
		LAST HIT	1416		2650				
22 MAR 64	CAMERA #72	OVER	1415					85	LENS SLIPPED OUT OF CAMERA. PICTURES OUT OF FOCUS.
		UP	1615						
			[illegible]						
26 MAR 64	CAMERA #73	OVER	1600					88	WIRE JUMPED SHEAVE AT 500 fathoms HAD TO BRING CAMERA UP AND CUT WIRE

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From WELLINGTON to PANAMA

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
APRIL 9 1964	CORE #97	1328	LOWER	1640		16°50'	94°07'	102	1300# HD 16" \ 1/8" WALL PIPE 5.2 CF OK CORE PIPE BENT 45° FROM NORMAL. CORE LENGTH: 1162 cm 0-BOTTOM VERY PALE ORANGE FORAMINIFERAL CALCILUTITE CONSISTENT IN TEXTURE & COLOR
		1421	HIT	1470					
		1450	SURF		1420				
26 MAR 64	CAMERA #74					42°31'	137°17'	88	ELECTRIC HYDRO CABLE WINCH USED WIRE JUMPED SHEAVE AT 700 FATHOMS NO STATION
29 MAR 64	CAMERA #75	1310	OVER			39°28'S	125°30'W	91	WIRE 4 35-45° WIRE AZIM 90° WIRE OUT 2159-2740 15 HITS NO PIX.
		UP	1540						
		1ST HIT	1431	2450					
		LAST HIT	1458		2420				
30 MAR 64	CAMERA #76	1308	OVER			38°00'S	121°55'W	92	WIRE 4 5° WIRE AZIM 15° WIRE OUT 2489-2493 27 HITS
		UP	1540						
		1ST HIT	1353	2475					
		LAST HIT	1429	2470					
31 MAR 64	CAMERA #77	1355	OVER			36°25'S	118°06'W	93	WIRE 4 5° WIRE AZIM. 80° WIRE OUT 2167-2181 29 HITS 27 PIX.
		UP	1555						
		1ST HIT	1432	2073					
		LAST HIT	1504		2086				
9 APR 64	T-GRAD #73	1328	LOWER	1640				102	T-GRAD A FAILURE FRESH WATER WAS TURNED OFF WITHOUT PRIOR NOTICE T-GRAD FILM RUINED IN DEVELOPMENT CORE #97
		1420	HIT	1470					
		1450	SURF						
APR 10 1964	CORE #98	1454	LOWER	2065		18°28'	92°35'	103	1300# HD 1/4" WALL PIPE (2) CF BADLY CRIMPED, LOWER PIPE SLIGHTLY BENT. CORE LENGTH: 167 cm. 0-30 cm YELLOW BAND FORAM LUTITE 30-58 PALE BAND LUTITE 58-118 cm LT. BEN FORAM LUTITE 118-BOT VARICOLORED LUTITES
		1601	HIT	2050					
		1640	SURF		2065				

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103	10 APR 64	T-GRAD #74	1454 1601 1640	LOWER HIT SURF	2065 2000				T-GRAD A FAILURE NO PENETRATION CORE # 98
94	1 APRIL 64	CAMERA #78	1305 UP 1ST HIT LAST HIT	OVER 1425 1333 1405	1750 1760		31 53.0 S. Lat. 114 37.5 W (Prov.)		WIRE ∠ 15° WIRE AZIM. 90° WIRE OUT 1776-1845 29 HITS 27 PIX
95	2 APRIL 64	CAMERA #79	1340 UP 1ST HIT LAST HIT	OVER 1430 1340 1413	1460		33 24.5 S (W) 111 56.5 W (Prov)		WIRE ∠ 45° WIRE AZIM. 80° WIRE OUT 1622-1742 24 HITS 23 PIX
96	3 APRIL 64	CAMERA #80	1325 UP 1ST HIT LAST HIT	OVER 1449 1359 1427	1750 1750		31 35.5 S (W) 108 30.0 W (Prov)		WIRE ∠ 25° WIRE AZIM 90° WIRE OUT 1786-1776 27 HITS 24 PIX
104	11 APR 64	T-GRAD #75	1326 1421 1500	LOWER HIT SURF	2070 2040				T-GRAD A FAILURE · CORE PULLED OUT DURING 3 MINUTE WAIT CORE # 99
104	APRIL 11 1964	CORE #99	1327 1422 1500	LOWER HIT SURF	2070 2040 2070		10°37' 91°19'		1300# HD 1/4" WALL PIPE (2) CENTRIMPED. PIPE OK CORE LENGTH 533 Cms. 0-280 Cms Pale Yellowish Brn Lut AND Yellowish Gray Lutite. 280-607. Grayish Brown Lutite. Mn Nodules at top of Core.
105	APRL 12 1964	CORE #100	1351 1509 1554	LOWER HIT SURF	2172 2209 2154		07°42' 90°02'		1300# HD 1/4" WALL PIPE (2) OK CORE LENGTH: 1160 Cm. 0-8 Cm Dk Yellowish Brn Lutite. 8-350 Pale Yellowish Brn Lutite 350-395 Lt Brn Lutite. 395-1030 Grayish Brn Lutite 1030-1160 Pale Brown Lutite.

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Research Vessel ROBERT D. CONRAD
CRUISE N° _____
CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
4	CAMERA	1308	OVER			29 23.0 S	105 M.5 W	97	WIRE 4 000° WIRE AZIM 000° WIRE OUT 1697-1700
APRIL	#81	UP	1515			NJ			27 HITS 26 PIX
64		1ST HIT	1354	1690					PLANKTON NET ON AT 20 FATHOMS
		LAST HIT	1423		1690				
5	CAMERA	1320	OVER					98	WIRE 4 30° WIRE AZIM 90° WIRE OUT 1716-1760
APRIL	#82	UP	1437						27 HITS 26 PIX
64		1ST HIT	1348	1650					
		LAST HIT	1417		1650				
6	CAMERA	1245	OVER			35°03'S	99°08'W	99	WIRE 4 40° WIRE AZIM 85° WIRE OUT 283-323
APRIL	#83	UP	1358						29 HITS 28 PIX
64		1ST HIT	1259	260					PLANKTON NET COMBINATION
		LAST HIT	1328		260				
6	PLANKTON	IN	OUT					99	#1 1HR 15 MIN. SURFACE TOW
APRIL	#55	1305	1420						
64	2 SAMPLES	1328	1338						#2 VERTICAL TOW FROM 480M-0 IN 44 MIN OVER SEAMOUNT
7	PLANKTON	IN	1414					100	1HR. 33 M.N SURFACE TOW
APRIL	#56	OUT	1547						
8	PLANKTON	IN	1332					101	2HR 58 M. N. SURFACE TOW
APRIL	#57	OUT	1630						* BPS (500 M) ATTEMPTED — UNEXPLAINED "MISS-FIRE" — PREVENTED NET FROM OPENING
	ALSO 2HR BPS. ATTEMPTED								
9								102	
APRIL	PLANKTON	IN	1345						1HR 29 M. N. SURFACE TOW — + PHYTOPLANKTON TOW
	#58	OUT	1514						
	3 SAMPLES	IN	1424						55 M. N. VERTICAL TOW FROM 2,743M — 0 ON CAMERA
		OUT	1519						
10	PLANKTON	IN	1500					103	1HR 45 MIN SURFACE TOW — + PHYTOPLANKTON TOW
APRIL	#59	OUT	1645						
	3 SAMPLES								

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CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
APRIL 1964	PLANKTON #60 2 samples	IN	1528					104	SUCCESSFUL QUANTITATIVE RPS TOW — 500M — 1,500m TIME - 1HR 6MIN. - VERY LARGE ZOOPLANKTON SAMPLE.
		OUT	1634						
		IN	1615						30 MIN DEEP VERTICAL TOW FROM 300 METERS TO SURFACE. LARGE SAMPLE.
		OUT	1645						
APRIL 12 1964	PLANKTON #61	IN	1415					105	1HR SURFACE TOW - THICK SAMPLE — ALSO 1HR PHYTOPLANKTON TOW.
		OUT	1515						
7 APRIL 64	CAMERA #84	1334	OVER			22°38'S	99°11'W	100	WIRE @ 35° WIRE AZIM 90° WIRE OUT 2218-2327 27 HITS 26 PIX
		UP	1523						
		1ST HIT	1412	2080					
		LAST HIT	1447		2100				
8 APRIL 64	CAMERA #85	1305	OVER			19°45'S	95°37'W	101	WIRE @ 10° WIRE AZIM 90° WIRE OUT 1843-1831 27 HITS 26 PIX
		UP	1500						
		1ST HIT	1341	1787					
		LAST HIT	1409		1785				
9 APRIL 64	CAMERA #86	1305	OVER					102	WIRE @ 15° WIRE AZIM 90° WIRE OUT 1740-1713 28 HITS 26 PIX
		UP	1521						
		1ST HIT	1355	1560					
		LAST HIT	1424		1560				
12 APRIL 64	T-GRAD #76	1351	LOWER	2172				105	T-GRAD GOOD WITH 3 PROBE PENETRATION CORE MAY HAVE PULLED OUT SOME BEFORE PROBES "TORALIZED" - NO READING ON UPPER CORE @ 100
		1509	HIT	2209					
		1554	SURF						
13 APRIL 64	T-GRAD #77	1339	LOWER	2105					T-GRAD GOOD - FULL PENETRATION BUT ALL WIRES CUT ON PULL OUT
		1453	HIT	2097					
		1539	SURF						

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CRUISE N° _____
CRUISE LEG—From _____ To _____

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
10 APRIL 64	CAMERA #87	1435	OVER					103	WIRE Δ 45° WIRE AZIM. 80° WIRE OUT 2179-2259
		UP	1607						27 HITS 26 PIX
		1ST HIT	1510	2060					
		LAST HIT	1539		2060				
11 APRIL 64	CAMERA #88	1255	OVER					104	WIRE Δ 30° WIRE AZIM 90° WIRE OUT 2225-2264
		UP	1425						28 HITS 26 PIX
		1ST HIT	1332	2070					
		LAST HIT	1401						
12 APRIL 64	CAMERA #89	1333	OVER					105	WIRE Δ 40° WIRE AZIM 90° WIRE OUT 2339-2462
		UP	1510						27 HITS 26 PIX
		1ST HIT	1412	2180					
		LAST HIT	1441		2210				
14 APRIL 1964	T-GRAD #78	1555	LOWER	1187				108	T-GRAD GOOD WITH FULL PENETRATION
		1634	HIT	1169					CORE @ 102
		1700	SURF						
13 APRIL 1964	PLANKTON #62 (2 samples)	IN	1355					106	1 HR. 17 MIN. SURF. TOW
		OUT	1512						
		IN	1447						1 HR 13 MIN Deep Vertical ON CAMERA — —
		OUT	1604						Depth 3,817m — SURF.
14 APRIL 1964	PLANKTON #63							107	
		IN	1542						1 HR. 23 MIN. SURF. TOW
		OUT	1705						
15 APRIL 1964	PLANKTON #64	IN	1445					109	Deep VERTICAL TOW ON CAMERA — 47 MIN.
		OUT	1532						Depth. 2,944 meters
16 APRIL 1964	PLANKTON #65	IN	1450	← 1450		03°39'N	82°56'	109	1 HR 30 MIN (SUCCESSFUL OPEN, NOT CLOSING)
		OUT	1650	← 1650					BPS TOW 1000m — 2250 meters — LARGE
									200μ PLANKTON SAMPLE.

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CRUISE N° _____
CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
13 APRIL 64	CAMERA #90	1320 UP	OVER 1600			04°46'S	88°34'W	106	WIRE 4 5° WIRE AZIM. 70° WIRE OUT 2146-2139 28 HITS 20 PIX.
		1ST HIT	1415	2107					TRIGGER WT. BROKE OFF.
		LAST HIT	1447		2108				
14 APRIL 64	CAMERA #91	1527 UP	OVER 1628			01°25'S	86°51'W	107	WIRE 4 55° WIRE AZIM. 70° WIRE OUT 1600 NO HITS NO PIX
		1ST HIT	—	1178					WIRE 4 TOO great PROBABLY DUE TO CURRENTS
		LAST HIT	—						
15 APRIL 64	CAMERA #92	1320 UP	OVER 1600			01°16'N	85°10'W	168	WIRE 4 45° WIRE AZIM. 90° WIRE OUT 20 HITS 19 PIX.
		1ST HIT		1630					
		LAST HIT							
13 APRIL 64	CORE #101	1339 LOWER		2106		04°46'	88°34'	106	1300# HD 1/4" WALL PIPE · OK CORE LENGTH: 1058cm 0-10cm. DK YELLOWISH BRN LUTITE. 10-50cm YELLOWISH GRAY LUTITE. 50-608. INTERIALATED: LT GREENISH GRAY, GREENISH GRAY & DK GREENISH GRAY LUTITES. 608-726 LT GREENISH GRAY CALCILUTITE. 726-1058 SIMILAR TO 50-608 LAYER
		1453 HIT		2097					
		1539 SURF			2070				
14 APRIL 64	CORE #102	1555 LOWER		1187		01°25'S	86°51'	107	1300# HD 1/4"(2)x1/8"(1) WALL PIPE CE OK - LOWER TUBE BENT SLIGHTLY. 0-53cm PALE OLIVE FORAM CALCILUTITE. 53-150cm LT OLIVE GRAY CALCILUTACEOUS FORAM SAND. 150-375 PALE OLIVE FORAM CALCILUTITE 375-470 LIGHT OLIVE GRAY CALCILUTACEOUS FORAM SAND. 470-680 SIMILAR TO 0-55cm Core. 680-1862 (BOTTOM) LT GREENISH GRAY CALCILUTITE.
		1634 HIT		1169					
		1700 SURF		1165					
15 APRIL 64	CORE #103	1355 LOWER		1627		01°16'N	85°10'	168	1300# HD 1/4" PIPE (1) OK CORE LENGTH: 612cm. 0-6cm DK YELLOW BRN LUTITE. 6-77 GREENISH GRAY FORAM CALCILUTITE. 77-155 LT OLIVE GRAY FORAM LUTITE. 155-BOTTOM LT GREENISH GRAY LUTITE.
		1440 1575							
		1507		1542					

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From Balboa To San Juan

TIME ZONE +5

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
22 APR 64	T-GRAD # 79	1503	LOWER	1863				110	T-GRAD GRAD 2 PROBE PENETRATION, BUT L NEVER STABALIZED - FOUND BENT 180°
		1621	HIT	1863					CORE # 104
		1702	SURF						
23 APR 64	T-GRAD # 80	1418	LOWER	2103				111	T-GRAD GOOD 2 PROBE PENETRATION
		1531	HIT	2102					CORE # 105
		1619	SURF						
16 APRIL 64	CAMERA #93	1340	LOWER			approx See Plankton 6		109	WIRE @ 65° WIRE AZIM. 30° WIRE OUT 1600 ft.
		UP	1425			03°39'N	82° 56'W		CAMERA BROUGHT UP BEFORE HIT. WIRE @ TOO
									GREAT DUE TO CURRENTS.
22 APRIL 64	CAMERA #94	1335	LOWER			11-02	78-30	116	WIRE @ 2' WIRE AZIM 80° WIRE OUT 1883-1890
		UP	1500						12 HITS NO PIX. LOST TRIGGER WT.
		1ST HIT	1418	1861					
		LAST HIT	1433		1863				
23 APRIL 64	CAMERA #95	1349	LOWER			13-12	76-55	111	WIRE @ 30° WIRE AZIM. 45° WIRE OUT 2429-2470
		UP	1610						28 HITS 20 PIX.
		1ST HIT	1442	2103					
		LAST HIT	1515						
24 APRIL 1964	CAMERA #96	1404	LOWER			14-00	74-53	112	WIRE @ 30° WIRE AZIM 70° WIRE OUT 2160-2129
		UP	1602						30 HITS 29 PIX.
		1ST HIT	1441						
		LAST HIT	1314						
APRIL 22 1964	PLANKTON #66	IN	1400			11-02	78-30	110	1 HR. 15 M.N. SURFACE TOW - NET OUT OF
		OUT	1515						WATER - While Ship WAS MANUVERING.

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From Balboa To San Juan

TIME ZONE +5

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
23	PLANKTON	IN	1429			13-12	76-55	111	1hr.10 min. SURFACE TOW — Net SURFACED
APRIL	#67	OUT	1539						AGAIN — caught ship's DISCHARGES
1964									* VERTICAL TOW ATTEMPTED — UNSUCCESSFUL
									AS HYDRO. WIRE CROSSED OVER IN COMING
									CORE WIRE: — SMALL SAMPLE FROM ~300 meters.
24	PLANKTON	IN	1609			14-00	74-53	112	
APRL	#68	OUT	1755						SUCCESSFUL (OPENING & CLOSING) BPS - TOW
1964									1,000 METERS — 2,600 METERS - VERY SMALL
									ZOO PLANKTON SAMPLE — DURATION of TOW
									1hr.17 MIN. MORE TIME NEEDED AS DEPTH INCREASES.
APR.	CORE	1503	LOWER	1863		11-02	78-30	110	1300# HD. 1/4" WALL PIPE (2) OK. CORE LENGTH: 1365cm.
22	#104	1621	HIT	1863					0-274cm INTERCALATIONS OF Lt. OLIVE GRAY AND OLIVE
1964		1702	SURF		1863				GRAY LUTITE. (WOOD FRAGMENT AT 200cm) 274-1365
									INTERCALATIONS OF OLIVE GRAY LUTITE AND Dk.
									GREENISH GRAY SILT.
APR	CORE	1418	LOWER	2103		13-12	76-55	111	1300# HD. 1/4"(2) 7/8"(1) WALL PIPES CE OK, MIDDLE TUBE BENT
23	#105	1531	HIT	2102					15° FROM NORMAL. CORE LENGTH ~ 1640cm (MIDDLE
1964		1619	SURF		2102				PIPE COULD NOT BE EXTRUDED). 0-14cm LIGHT BROWN
									LUTITE. 14-591cm (BOT OF TOP PIPE) INTERCALATIONS
									OF OLIVE GRAY LUTITE & DARK GRAY SILT. TOP OF LOWER
									PIPE TO CE - A NOBLE MIXTURE OF OLIVE GRAY LUTITE
									AND DARK GRAY SILT — PROBABLY "FLOW IN".
APR.	CORE	1420	LOWER	2000		14-00	74-53	112	1300# HD 1/4" WALL PIPE (2) CE OK, UPPER TUBE BENT
24	#106	1520	HIT	2075					30° FROM NORMAL CORE LENGTH: 1317cm 0-85cm
1964		1602	SURF		2098				YEL. BRN LUT. 85-130cm & OLIVE GRAY LUT. 130-181 GRN. GRAY
									FORAM LUT GRADING TO LUT. 181-250 YEL BRN LUT. 250-395
									Lt OLIVE GRAY LUT. 395-530 ORANGE LUT. 530-1317cm OLIVE GRAY LUT.
24	T-GRAD	1420	LOWER	2000		14-08	74-53	112	T-GRAD POSSIBLY GOOD & VERY POOR TRACE
APR	#81	1520	HIT	2075					+ M SHORTED CORE #106
		1602	SURF						

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From Balboa To San Juan
TIME ZONE +5

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
25	PLANKTON	IN	1425			14-33	72-34	113	1 HR. 25 MIN. SURFACE TOW
APRIL	#69	OUT	1550						
1964	(2 samples)	IN	1540						Successful (OPENING + CLOSING) BPS TOW -
		OUT	1708						1000 meters TO 2,125 meters - SMALL
									SAMPLE - SAMPLING TIME = 48 MIN.
APR.	CORE	1355	LOWER	1723		14-33	72-34	113	1300# HD ¼" WALL PIPE (2), OK. CORE LENGTH 1235 cm.
25	# 107	1451	HIT	1712					0-55 cm LT BRN FORAM LUTITE. 55-600 YELLOW BRN FORAM
1964		1530	SURF		1710				LUTITE. 600-717 cm GREENISH GRAY LUTITE. 717-BOTTOM
									PALE YELLOWISH BRN LUTITE.
		1340	LOWER						WIRE @ 50° WIRE AZIM. 90° WIRE OUT 1999-2328
		UP	1530						27 HITS 25 PIX.
APR	CAMERA	1ST HIT	1420	1722		14-33	72-34	113	
25	#97	LAST HIT	1506		1712				
1964									
APRIL									
26									
1964									
25	T-GRAD	1355	LOWER	1723				113	T-GRAD A FAILURE GAL BLOCK SHORTED
APR	# 82	1450	HIT	1712					TO CHASIS. CORE # 107
64		1530	SURF						
APR.	CORE	2200	LOWER	2090		14-41	70-47	114	1300# HD ¼" WALL PIPE (2). CP SHEARED OFF ON PULL OUT,
26	# 108	2253	HIT	1945					LOWER TUBE VERY SLIGHTLY BENT IN LOWER 2FT.
1964		2335	SURF.		1905				CORE LENGTH 0cm. 9 cm OF FORAM SAND RETAINED
									BY TRIGGER CORE. A SMALL PIECE OF VERY HARD
									PHOSPHATIC WAS OBTAINED FROM THE TRIGGER
									CORE CUTTING EDGE.
APR	PLANKTON	IN	2210			14-41	70-47	114	65 MIN SURFACE TOW SAMPLE #1 (over)
26	#70	OUT	2315						
1964	(3 SAMPLES)								

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From Balboa To San Juan

TIME ZONE +4

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
APR	PLANKTON	IN	1522			14-40	70-54	116	1 HR 28 MIN SURFACE TOW #2
27	#70	OUT	1650						
1964		IN	2035						45 MIN SURFACE TOW #3
		OUT	2120						
26	CAMERA	2150	LOWER			14-41	70-47	114	WIRE 4 40° WIRE AZIM 90° WIRE OUT 2303-2530
APRIL	#98	UP	2350						30 HITS 29 PIX.
64		1ST HIT	2236	1970					
		LAST HIT	2321		1893				
27	CAMERA	1505	LOWER			14-40	70-54	116	WIRE 4 40° WIRE AZIM 95° WIRE OUT 2024-2128
APRIL	#99	UP	1640						30 HITS 26 PIX.
64		1ST HIT	1544	1882					
		LAST HIT	1614		1889				
27	CAMERA	1925	LOWER			14-42	70-52	117	WIRE 4 20° WIRE AZIM 95° WIRE OUT 2100-2143
APRIL	#100	UP	2105						30 HITS 30 PIX.
64		1ST HIT	2002	2000					
		LAST HIT	2035						
26	T-GRAD	2200	LOWER	2090		14-41	70-47	114	T-GRAD A FAILURE - CORE FELL OVER
APR	# 83	2253	HIT	1945					CORE # 108
64		2335	SURF						
28	T-GRAD	1408	LOWER	2130		14-16	70-20	118	T-GRAD GOOD 3 PROBE PENETRATION
	#84	1515	HIT	2430					CORE # 112
		1601	SURF						
29	T-GRAD	1315	LOWER	2500		14-50	68-40	119	
APR	# 85	1517	HIT	2508					T-GRAD GOOD 3 PROBE PENETRATION
64		1611	SURF						CORE # 113

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Research Vessel ROBERT D. CONRAD
CRUISE N° 6
CRUISE LEG—From BALBOA To SAN JUAN
TIME ZONE +4

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
APR. 28 1964	PLANKTON #71	IN OUT	1452 1612			16-16	70-20	118	1hr 20 MIN. VERTICAL TOW FROM 3,840 M. TO SURF. — SMALLEST SAMPLE TAKEN FOR A VERTICAL (Deep) THUS. FAR.
APR 29 1964	PLANKTON #72	IN OUT	1329 1529			16-50	68-40	119	2hr. SURFACE TOW
APR 27 1964	CORE #109	LOWER HIT SURF	0205 0252 0400	2085 2000	1980	14-38	70-50	115	1300# NO. 1/4" WALL PIPE (1). CR SHEARED OFF ON PULL OUT. PULL OUT LASTED 24 MINUTES! CORE LENGTH: 390 cm 0-172 cm LIGHT BRN FORAM SAND & LUTITE. 172-200 cm VERY COMPACT YELLOWISH GRAY CALCILUTITE-CLOSE 90% NO APPARENT FOSSILS SURMOUNTING THIS IS A 48" THICK CRUST OF LITHIFIED CALCILUTITE(?) WHICH CONSTITUTES A FACING OF AN ANGULAR (30 DEGREE X DIP) UPPER CONTACT. AT THE LOWER CTC 13 cm YELLOWISH GRAY, LITHIFIED MATERIAL ONLY PARTIALLY REACTIVE WITH HCL. 200cm - 390cm) LIGHT BROWN FORAM LUTITE
APR 27 1964	CORE #110	LOWER HIT SURF	1524 1608 1645	1875 1890 ↓	1890	14-40	70-54	116	1300# NO. 1/4" WALL PIPE (1) TOO PIPES OR CORE LENGTH 575 cms 0-104 cms LIGHT BROWN FORAM LUTITE 104-295 cms GRAYISH ORANGE FORAM LUTITE. 295-390 PALE YELLOWISH BRN FORAM LUTITE. 390-575 LIGHT BRN FORAM LUTITE.
APR 27 1964	CORE #111	LOWER HIT SURF	1948 2031 2115	2000 2008	2020	14-42	70-52	117	1300# NO 1/4" WALL PIPE (1) CR. CORE LENGTH: 481cm 0-30 cms LT BRN LUTACEOUS FORAM SAND. 30-386 cm LT BRN FORAM LUTITE 386-472 cms GRAYISH ORANGE FORAM LUTITE 472-481 PALE BRN LUTACEOUS FORAM SAND.

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Research Vessel ROBERT D. CONRAD — TIME ZONE _____

CRUISE N° 8

CRUISE LEG—From BALBOA To SAN JUAN

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
APR 28 1968	CORE #112	1408	LOWER	2130		16-16	70-20	118	1300# HD 1¼" WALL PIPE (2) - OK. CORE LENGTH: 1150cm
		1515	HIT	2130					0-520 cms PALE BROWN FORAM LUTITE.
		1601	SURF	2130					520- BOTTOM - LT. GRAYISH ORANGE FORAM LUTITE.
APR 29 1968	CORE #113	1315	LOWER	2500		16-50	68-40	119	1300# HD 1¼" WALL PIPE (2) - OK. CORE LENGTH: 1300cm
		1451	HIT	2508					0-549 cms LIGHT BROWN FORAM LUTITE
		1611	SURF	2502					549- BOTTOM BROWN LUTITES WITH LOW FORAMINIFERA CONTENTS
29 APR	CAMERA 101	1302	1605	2502		16° 50'N	68° 40'W	119	
14 MAY	CAMERA 102	1220		3270		20°20'N	65°30'W	120	
15 MAY	CAMERA 103	1905				20°00'N	66°25'W	121	DID NOT HIT BOTTOM
15 MAY	CAMERA 104	2157		3840		20°00.9'	66°20'W	122	26 PRINTS
17 MAY	CAMERA 105	2035	0130	3700		19°59.6'	66°27.5'W	123	64 PRINTS
20 MAY	CAMERA 106	0933	1435	3770		19°59.9'	66°16'W	124	62 PRINTS
21 MAY	CAMERA 107	1730		3690		19°12'N	66°17'W	125	44 PRINTS
22 MAY	CAMERA 108	0450	0830	3680		19°09'N	66°14'W	126	43 PRINTS
23 MAY	CAMERA 109	2000		2780		19°10'N	66°10.5'W	127	34 PRINTS

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N/S	POSITION Long. E/W	LOG	REMARKS
20	CORE	OVER	1631	PDR	3630	19°69'	65°50'	124	705 cm. Yellowish brown moderately well compacted manganiferous lutite.
M	#	HIT	1815		3626				
Y	114	SURF	2020		3443				
64									
21	CORE	OVER	1016	PDR	3685	19°10.5'	66°46.7'	125	1000 cm. Light brown to gray moderately well compacted lutite. The foraminifera content is approximately 40% near the interface. The 851-857 cm zone is mottled. Sponge spicules are very abundant. MnOx is occasionally present.
M	#	HIT	1148		3619				
Y	115	SURF	1334		3594				
64									
22	CORE	OVER	0922	PDR	3773	19°11'	66°46.5	126	739 cm. Dark yellowish brown to greenish gray moderately well to very well compacted lutite. The foraminifera content is approximately 5% near the interface. The 248-289 cm zone is lithocalcarenite. Mica, quartz, and feldspar are occasionally found.
M	#	HIT	1045		3763				
Y	116	SURF	1300		3630				
64									
23	CORE	OVER	0955	PDR	2983	19°10'	65°13'	127	191 cm Yellowish brown and greenish gray very well compacted calcilutite. Fine grain to pebble size reef detritus is abundant in the 14-19 cm zone. Fine grain pyritic material is abundant. Fine grain quartz and feldspar are common.
M	#	HIT	1101		2969				
Y	117	SURF	1208		2984				
64									
23	CORE	OVER	1330	PDR	2995	19°11.5'	65°14'	128	270 cm Yellowish brown and greenish gray very well compacted calcilutite. The 24-57 cm zone contains abundant fine grain to pebble size calcareous reef detritus. Pyritized particles are abundant. Diascosters are occasionally found.
M	#	HIT	1504		2965				
Y	118	SURF	1607		2960				
64									
24	CORE	OVER	1349	PDR	3253	20°19.2'	65°27.7'	129	497 cm. Brown moderately well compacted lutite. Foraminifera are rare. Radiolarians and sponge spicules are abundant. A positive reaction for MnOx was obtained. Mica and mafic minerals are rare.
MY	#	HIT	1505		3165				
64	119	SURF	1640		3109				
25	CORE	OVER	2236	PDR	3571	20°11.5'	65°23.5'	130	428 cm. Brown moderately well compacted lutite. Radiolarians and sponge spicules are common. The 305-330 cm zone appears to be diatomaceous. Foraminifera are rare.
MY	#	HIT	0030		3625				
64	120	SURF	0230		3580				

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Research Vessel ROBERT D. CONRAD
CRUISE N° _____
CRUISE LEG—From _____ To _____ TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
25	CORE	OVER	1821	PDR	3615	19°06.5	66°09.3	131	Several small pebbles and one cobble of [illegible] rounded reef limestone. Several pebbles of green silicates, probable metasediments.
M	#	HIT	1941		3600				
Y	121	SURF	2255		3450				
64									
25	CORE	OVER	2303	PDR	3480	19°05.9	66°11.4'	132	Several small white limestone pebbles and green silicates, probable metasediments.
M	#	HIT	0021		3420				Calcareous reef detritus, shallow water foraminifera
Y	122	SURF	0240		3310				and [illegible] to coarse grain angular quartz.
27	CORE	OVER	0810	PDR	3400	20°07.1'	65°07.9'	133	160 cm. Moderate brown poorly compacted quartz
M	#	HIT	0923		3408				and yellowish gray moderately well compacted
Y	123	SURF	1135		3340				lutite sponge spicules and radiolarians are rarely
64									present. Mn⁰₂ staining is common. Quartz,
									feldspar, mafic minerals and silicate grains are common.
2	CORE	OVER	0637	PDR	3600	20°05.8	65°06.6	134	400 cm. Moderate brown soft lutite and yellowish
J	#	HIT	0823		3600				brown moderately well compacted calcilutite conglomer-
N	124	SURF	1200		3600				ate. Discoasters are present in the indurated
64									lutite phenoclasts. Possible planktal foraminifera
									Fine grain quartz, mica, and Mn⁰₂ micronodules are occasionally present
4	CORE	OVER	0740	PDR	3360	20°07.5	65°07'	135	529 cm. Yellowish brown well compacted lutite. Fine
J	#125	HIT	0930		3325				grain angular quartz, mica, and pigmental particles are
N		SURF	1135		3300				occasionally present. The 500 cm. sample contains
64									approximately 3% fine grain calcite? shoulder. The
									300-500 cm. zone is variegated
05	CORE#	OVER	2316	PDR	3460	20°07'	65°06'	136	One pebble of green silicate material abundant
J	126	HIT	0048		3500				fine grain to granule size silicates.
N		SURF	0325		3510				
64									
6	DREDGE	OVER	1235	PDR	3461	20°06.8'	65°06.5'	137	(CROWN DREDGE) Approximately 2 pounds brown and
J	#	ON BOT	1440						black shale (fissile), occasional chert, rarely carbonate,
N	1	OFF BOT	1800						and common igneous material. Most of the material is
64		SURF	2033		3430				[illegible] and cobble to cobble size. The shale appears to
									[illegible]

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Research Vessel ROBERT D. CONRAD
CRUISE N° _____
CRUISE LEG—From _____ To _____
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
7	CORE	OVER	1715	PDR	3370	19°30.5'	65°16.8'	138	1180cm. Brown and gray moderately well consorted brittle. a Positive reaction for mOs was obtained. There is approximately 5% foraminifera at the interface. Very fine grain angular quartz is common. Mica and rock fragments occurred
JN	# 127	HIT	1825		3365				
64		SURF	2030		3340				
4	CAMERA	1308	1658	3600?	3500	20°07'	65°06'	135	60 FRAMES TAKEN, SOME SHOWING ANGULAR ROCK FRAGMENTS + OTHERS SHOWING RIPPLE MARKS
Jn	C8-110	[redacted]							
64									
5	CAMERA	1800	2148	3280	3202	FEW TENTHS OF MILE N. OF STA 110		136	60 FRAMES SHOWING MUD, BOTTOM TRACKS.
Jn	C8-111								
64									
6	CAMERA	2155	0630	3930	3600	FEW TENTHS MILE SOUTH OF STA 110		137	60 FRAMES SHOWING SEDIMENT, SLOPING LEVEL AND TRACKS
Jn	C8-112								
64									

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From San Juan To S. J.

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
11 JUN 64	CORE C-8 128	2028	2316	2791	2852	14°28.6	65°25.7'	139	26 FT PENETRATION = 1092 CMS OF CORE (INCLUDING FLOW-IN) MOSTLY TAN FORAMINIF. LUTITE.
11 JUN 64	CAMERA C-6 113	2335	0310	2875	2885	14°26.	65°25.7'	139	GOT ONLY 2-3 EXPOSURES DUE TO LAYING CAMERA ON BOTTOM WITHOUT SEEING HT.
15 JUN 64	DREDGE C-S-2	1845	2215	3510	3490	20°53	65°04.8	140	GOT 3 ROCKS BOULDER SIZE, 2 GREYISH CRYSTALLINE BASALT? ONE AMYGDALOID BASALT WITH QUARTZ CONTACT + CRYSTALS

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1964

Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From SANJUAN To SAN JUAN

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
J	#1	1007						140.1	TEST OF INSTRUMENT TO 500 M while on way FROM SAN JUAN to Roos Roads.
U	INSITU								
N	S.T.D								
									Major rep. on board.
18									— test successful —
J	#2	1400	1500					140.2	Test to 2000 M.
U	INSITU								
N	S.T.D.								
19									
J	DREDGE	0150	0815	3375	3340	20°03'	64°49'	141	NO ROCKS, ONLY MUD TRACES ON CORE HEAD AND DREDGE —
U									
N	#3								
20									
J	CAMERA	20:50	00:21	3760	3740	19°55.2	66°40.5'	142	40 MTS 39 PICTURES
U	114	1st hit	+22:12						WIRE AZ. - 102°
N		last "	23:04						ANGLE 5°
									Mostly sediment — very little drift.
20									Dust clouds from previous hits seen.
J	#3	00:40	0200			19-55	66-40	142.1	Test to 1500 M
U	INSITU								Successful test — NANSEN cast taken
N	S.T.D								do not fall on curve made by Sin Shu
									recorder
21							66°38'W		
J	CORE	1105	1500	2840	2840	21-21	66°-08	143	TWO PIPES - FULL PENETRATION 43'10" 1252
U	#129								CM CORE. POSSIBLY 1/2 M FLOW-IN.
N									VERY UNIFORM SOFT LUTITE THROUGHOUT.
									MODERATE BROWN COLOR.
21									
J	CORE	1500	1800	3410	3382	20°05'	65°10W	144	47'7" penetration — 835 cm of good
U	#130								core. Soft brown lutite ole small
N									ash layer at 735 cm, MICRO nodules
22									on Mn present

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG From SAN JUAN To SAN JUAN

TIME ZONE +4

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
J	DREDGE	10:00	1502	3300	3800	19-36	65-04	145	Pieces of weathered dense, fine-grained basalt of rather uniform size. One ammunition box full.
V	#4								
N 20									
23									
J	IN SITU	[illegible]	1502			20°05'	66°06'	145	TEST TO 1500 M SUCCESSFUL
U	S, T, D								Compared against 5 Nansen Bot.
N	STATION								
	#4								
22									
		0932	OVER						WIRE ∠ 0-30° WIRE AZIM. 090° WIRE OUT
22	CAMERA	UP	1235			20°09.5'N	66°04'W	143	40 HITS 38 PIX. 3714-3813
JUNE	#115	1ST HIT	1038	3550					NO OUT CROP. SIGNS OF LIFE ON BOTTOM.
64		LAST HIT	1124		3490				
25	IN SITU	1330	1455					145.1	TEST TO 1500 M Successful
J	S, T, D								compared against 5 Nansen Bot.
N	#5								
N									
	PLANKTON 1	1540	1642			20-09N	65-04W	145.1	1ST SAMPLING TOW WITH NEW 1m SHUTTER SAMPLER — EXCELLENT RESULTS
								146	Test to 3000 M depth Sensor
26	In Situ								Failed at approx. 2000 M
J	S, T, D								
U	#6								
N									
	PLANKTON 2	0737	0830			20-37N	65-09W	146	2nd SAMPLING TOW WITH NEW 1m SHUTTER SAMPLER — EXCELLENT RESULTS
26	DREDGE	1830	0030	3940	—			146	No Rocks — evidence of digging in sediment.
J	#5								
U									
N									
28	DREDGE	1422	2000	3600	—	20-07N	65°06	147	NO Rocks — only sediment smear
J	#6								
U									
N									

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Research Vessel ROBERT D. CONRAD
CRUISE N° 6
CRUISE LEG—From SAN JUAN To SAN JUAN

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
JULY 4	CORE 131	1255	1402	1082	1083	16°19.5'	62°53.5'	148	BENT PIPE - 47¼ CM. OF SANDY SEDIMENT WITH FORAMS AND SHELL FRAGMENTS
6 JULY	ANCHOR STA #1	0515 6TH	0600 8TH	592	586	15°21.9	61°03.9'	149.1	ANCHOR STA ON OUTER SILL OF DOMINICA CHANNEL
6 JULY	CORE 132	0800		600		"	"	149.	TRIGGER CORE - MOST OF SAMPLE WASHED OUT - FEW PEBBLES + SHELL FRAGMENTS RECOVERED
6 JULY	THOM-DYKE #1 BOTTOM CURRENT METER	0850	1000	592	592	"	"	149.2	PICTURES SHOWED MIN. IF ANY CURRENT USING WEIGHTED FLAPPERS (2 SCREWS)
6 JULY	BEAN CON DECK #1 RECORD CURRENT METER	1100 ANCHOR CB-1 LOWERING #1	1645	600	600	"	"	149.3	RECORDED CURRENT AT CLOSE INTERVALS GOING DOWN AND COMING UP
6 JULY	SOUND VELOC METER TEST #1	1730	1900	600		"	"	149.4	TEST SUCCESSFUL
6 JULY	SURFACE current Meter #1	2000 6th	0325 8TH	600	584	"	"	149.5	HOURLY RECORDING MADE DURING ANCHOR STA.

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6 JUL 6	ANCHOR C-8-1					15°21.9'	66°03.9'	149.1	PUT DOWN HYTECH IAS. RIG WITH 5 NANSEN BOTTLES
	VIDEO #8	2235	0020	1083 M				149.6	RECORDED DOWN AND UP ALL GOOD.
	BIO C-8-3T	1500		599 FMS		"	"	149.7	VERTICAL 12", 732 M TO SURF.
	C-8-4T	1800		"		"	"		" " " " " "
	C-8-5T	2100		"		"	"		VERTICAL 1M SHUTTER 500 M TO SURF
	[redacted]								
7 JUL	C-8-1 LOWERING #2 BEACON C/M	0300	0700	593		"	"	150	RECORDED CURRENT VELOC + DIR AT CLOSELY SPACED INTERVALS DOWN AND UP
7 JUL	SOUND VELOC. 35/1	0820	0920	593		"	"	150.1	MADE DOWN AND UP S/V MEASUREMENT USING TWO S/V METERS
	35/2	0922	1029	593		"	"	150.2	
	SURF DROGUE C-8-1	1000	—	590		"	"		SET OUT SURFACE DROGUE SPAR BUOY WITH RADAR REFLECTOR -PLOTTED FROM SHIP
7 JUL	BIO C8-6T	1045		600		"	"	150.3	VERTICAL 12" 732 M TO SURF.
	C8-7T	1700		600		"	"		SURFACE 1/2 M
	C8-8T	2045		600		"	"		[redacted] 1/2M SURFACE
	C8-9T	2100		600		"	"		VERTICAL 12" 585 M TO SURF.

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To SAN JUAN

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
7	ANCHOR 1	1040	1207	590	FMS	15°21.9'	61°03.9'	150.4	REMOVED SCREEN WEIGHTS ON FLAPPERS AND GOT GOOD RECORD.
J	THERMOX								
J	BOTTOM								
L	CAM/METER								
Y	C/8/2								
7	ANCHOR 1 LOWERING	1300	1648	590	FMS	"	"	150.4	RECORDED DOWN AND UP FOR CLOSE SPACED CURRENT MEAS.
7	HYDRO	1900	0423	590	584	"	"	150.5	MADE TIME SERIES OBS. AT SAL. MAX. (100 M) PUT SIGNAL INTO FREQ COUNTER.
↓	8a								
8									
8	ANCHOR STA # C-8-2	0916 8TH	1430 9TH	1008	1081	15°05.0'	61°14.0'	151	ANCHOR STA ON INNER SILL OF DOMINICA CHANNEL
8	CORE 133	1030		1075		"	"	151	TRIGGER CORE ONLY TAKEN ON HYDRO WIRE - 35 CM OF SHELLY, SANDY MTRL.
	BIO:					"	"	151.2	VERTICAL - 1M SHUTTER - 500-0M
	10-T	1100		1050	AVG 1100	"	"		SURFACE - 1/2M OPEN - SURF
	C-8 11-T	1800				"	"		VERTICAL - 12" OPEN - 275-0M
	C-8 12-T	1900				"	"		SURFACE 1/2 M OPEN - SURF
	C8-13-T	2200		1108		"	"		
8	SOUND VELOC							151.3	
	36/1	1138	1242	1108		"	"		MEAS MADE DOWN, AND UP. ALL OK.
	36/1a	1242	1310	"		"	"		

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
8	THERMOK	1329	1522	1108	1108	15°05'	61°14'	151.4	GOOD FILM RECORD OBTAINED
V	BOTTOM								
V	METER								
L	#3								
V									
8	DROGUE	1415	[redacted]	1108		"	"	151.5	PUT OUT SURFACE DROGUE OF SHEET CANVAS AND A SPAR BUOY WITH RADAR REFLECTOR
	SURF #	[redacted]	[redacted]						
	2								
			1225						
8/9	SURFACE	1504	[redacted]	1100	1100	"	"	151.6	RECORDED FROM SURFACE CURRENT METER HOURLY DURING THIS PERIOD.
	CURRENT	[redacted]	[redacted]						
	METER	8TH	9TH						
	STA								
	2								
8	HYDRO	1600	2000	1100		"	"	151.7	MADE LOWERING WITH HYTECH T.O.S. METER + 3 NANSEN BOTTLES COMING UP PUT FREQUENCIES INTO A PRINT OUT COUNTER FOR MORE PRECISION.
	#9								
8	BEACON	2028	1200	1100		"	"	151.8	DOWN AND UP MEASUREMENTS USING DECK RECORDING INSTRUMENT
	CORR/INTR.								
	STA 2,								
	LOWERG								
	#1								
8	BEACON	1200	0800	1100		"	"	151.9	DOWN AND UP CURRENT MEAS. MADE
	C/M								
	C-8-2								
	LOWERG								
	#2								
								151.10	
8	SOUND VELOC								DOWN AND UP S/V MEAS TAKEN USING TWO S/V METERS
	36/2	0843	0940	1100		"	"		
	3/3	0940	1028	1100		"	"		

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
9	510 :					15°05'	61°14'	152.1	SURFACE ½ M
J	14-T	0430		1100		"	"		" " "
U	15-T	0700		1100		"	"		" " "
L	16-T	1000		1100		"	"		" " "
Y	17-T	1150		1100		"	"		VERTICAL 1M SHUTTER 500-0M
	18-T	1300		1100		"	"		SURFACE ½ M
9	DROGUES							152.2	
V	SET								SPAR BUOYS WITH SUBSURFACE
O	OUT								PARACHUTE DROGUES PUT OUT:
	# 1	1655		ABOUT	APPROX POSITION	15°05	61°14		— 1000 METERS TO CHUTE
Y	# 2	1612		1100		"	"		— 375 METERS TO CHUTE
	# 3	1542		500		"	"		— 100 METERS TO CHUTE
11	HYDRO # 10	1440	1630	2027 METERS		15°05'	61°21'	152.3	HYTECH T.D.S. + 3 NANSEN BOTTLES
11	HYDRO # 11	1920	2010	1102 FMS		14°56'	61°18'	152.4	T.D.S. + 3 NANSEN BOTTLES
9	CORE 134	2350	2400	40	40	15°14'	61°00'	152	CORE USING ½ PIPE (10 FT) ON BANK E OF DOMINICA CHANNEL GOT HARD CALCAREOUS CHUNK AT BOTTOM OF 180 CM. CORE
12	ANCHOR STA #3	0230 12Th	2000 12Th	546	553			153	ANCHOR STA IN MID ST LUCIA CHANNEL

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
12	HYDRO #12	0315	0445	553		14°17.7	60°54.9'	153.1	TDS LOWERING WITH 3 NANSEN BOTTLES
12	SURF METER STA #3	0330	1900	550	553	"	"	153.2	HOURLY RECORDINGS MADE DURING ANCHOR STA.
12	THOMPSON BOTTOM C/M # 4	0503	0644	553		"	"	153.3	GOOD PICTURES OF BOTTOM CURRENT.
12	BRAINCON C/M STA 3 LOWERING #1	0746	1115	542		"	"	153.4	DOWN AND UP RECORDING OF CURRENT VELOC. & DIR. AT CLOSE VERTICAL INTERVALS
12	DEGUE STA 3 SURFACE	1100		540		"	"	153.5	PUT IN SURF PARACHUTE DEGUE AND SPAR BUOY FROM ANCHOR POSITION.
12	SOUND VELOC.							153.6	
	37/1	1130	1223	546		"	"		MADE TWO DOWN AND ONE UP RECORDINGS.
	37/2	1305	1334						
	37/3	1335	1419		546				
12	HYDRO #13	1445	1645	555	555	"	"	153.7	MADE DOWN RECORD OF T. & S. VS. D - UP MADE T/S DIAG. PUT ONE BOTTLE ON AT SAL MAX.

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
12	C-8 #3	1555	1943	553	553	14°17.7'	60°54.9'	153.8	MADE DOWN AND UP RECORD IN CLOSELY SPACED DEPTH INTERVALS USING BRANCON METER.
	ANCHOR								
	#2								
	LOWERING								
	C/M							153.9	
12	BIO:								
	C-8-21T	0130		553		14-17.5N	60-54W		VERTICAL 1 m SHUTTER
	C-8-22T	0500		"		"	"		SURFACE ½ m
	C-8-23T	0700		"		"	"		" "
	C-8-24T	0700		"		"	"		VERTICAL 12 INCH
	C-8-25T	1000		"		"	"	154.1	SURFACE ½ m
	C-8-26T	1300		"		"	"		" "
	C-8-27T	1300		"		"	"		VERTICAL 12 INCH
	C-8-28T	1600		"		"	"		SURFACE ½ m
	C-8-29T	1830		"		"	"		VERTICAL 12 INCH
	C-8-30T	1900		"		"	"		SURFACE ½ m
15	ANCHOR STA #4	1058	2235	900	1007	18°22	64°15.5'	154	ANCHOR STA IN ANEGADA PASSAGE
15	SURF CURRENT METER	1130	2130	900	1010	"	"	154.2	USED H.P. METER AT SURFACE RECORDING HOURLY
15	THORNDYKE BOTTOM C/M #5	1115	1325	954	966	"	"	154.3	LOWERED RIG TO BOTTOM FOR TWO 15 MIN FILM RUNS PICTURES GOOD
	BIO							154.4	
14	C-8-31T	1530		—		18°55'	62°13.5'		½ M SURFACE NET
15	C-8-32T	1030				18°22	64°15.5'		VERTICAL 1M 500-0M

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
15	SURF.	1305		966		18°22'	64°55'	154.5	PUT OVER SURFACE STAR BOOY
J	DROGUE								WITH 2 8FT PARACHUTES AS
U	ANCHOR								SURFACE DROGUE - GOT
L	Sta. #4								GOOD RADAR PLOT OF ITS
Y									DRIFT
15	C/M	1345	1820	973	1010	"	"	154.6	DECK LOWERED METER
	C/S/4								GOT DOWN TO NEAR-BOTTOM
	BRAINCON								HAD TO SHOT DOWN ON WAY
	METER								UP — ELEC. TROUBLE
	LOWRNG1								
15	SOUND							154.9	PUT DOWN S/V METER BOT
	VELOC								DID NOT GO ALL WAY TO
	38/1	1830		1010	1007	"	"		BOTTOM DUE WIRE ANGLE.
	38/2		2049			"	"		
15	HYDRO 14	2100	2225	1006	1006	"	"	154.8	USED HYTECH T.D.S, RIG WITH 2 NANSEN BOTTLES.

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CRUISE LEG ~~From~~ SAN JUAN To SAN JUAN

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20		1530							LOADED 70 CASES OF POWDER ~~7000~~ ALL ½ LB BLOCKS + 7000 CAPS
J									
U									
L									
Y									
21	SOUND	0624	0714	3510	3510	20°07N	65°11W	159.1	LOWERED TO 1000 FMS BUT HAD TO BE RAISED EARLY BECAUSE OF IMPENDING DIVE
J	VELOC								
U	IMETER	1005	1130	3405	3405	20°07N	65°20W		SUCCESSFUL LOWERING TO 1000 FMS
L									
Y									
21	CAMERA	2225	0430	3370	3635	20°10N	65°32W	155	COULD NOT DETECT HITS CAMERA PROBABLY LAY ON BOTTOM. ONE PICTURE
J	#116								SHOWING MUD BOTTOM
U									
L									
Y									
22									
22	MAGNETO	1845	2100	2810	2840	20°54N	65°42W	150.2	AN ATTEMPT WAS MADE TO ~~BUOY~~ PLANT
J	VARIOMETER								ON THE BOTTOM AND BUOY OFF A
U	~~PROBE~~								CORED COIL VARIOMETER. THE ATTEMPT WAS
L									ABORTED BECAUSE OF DIFFICULTIES IN
Y									GETTING THE EQUIPMENT OVER THE SIDE
23	CAMERA	2022	0050	2928	2920	22°13N	66°43W	150	WIRE AZ ⊙ WIRE ANGLE 20° NO HITS
J	#117	2022		1ST	LAST				NO PICTURES. ALL SEEM TO SHOW MUD
U				HIT	HIT				BOTTOM SOME PICTURES BLURRED
L									BECAUSE OF POOR DEVELOPER
Y									
24									
24	MAG.	1607	1900	2783	2791	21°24N	66°08W	150.1	PLANTED THE VARIOMETER AND BUOYED IT
J	VARIOMETER	START	BUOY						OFF USING 5700 METERS OF NYLON AND
U		LOWER	AWAY						A RICHARDSON BUOY. TWO CLUMPS EACH
L		IN°							500 LBS. THE ORDER WAS: COIL 100' OF
Y									NYLON AND ELECTRIC CABLE; ELECTRONICS
									; 200' NYLON; 80' CHAIN; CLUMP; 20' CHAIN;
									CLUMP; 20' CHAIN; 5700 METERS NYLON;
									BUOY. THE INSTRUMENT WAS PUT OVER USING
									DUMMY LINES PASSED THRU ~~THE~~ ANGLES IN THE A FRAME TO TAKE THE STRAIN

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
25	CAMERA	0036	0410	2715	2523	20°49'N	66°55'W	157	WIRE AZ 90 WIRE ANGLE 030°
J	# 118			1ST	LAST				NO HITS 43 PIX THE FIRST PICTURES SHOW
U				HIT	HIT				LUMPY MUD BOTTOM. PICTURES 30, 32, 35 SHOW
L									ROCK. MANY OF THE PICTURES FROM 30 ON SHOW
Y									NODULES APPARENTLY BECAUSE OF THE STEEPNESS
									OF THE SLOPE SEVERAL HITS WENT UNDETECTED
									NEXT DREDGES # 7 AND 8 IN THE SAME AREA
									PRODUCED NODULE SAMPLES
26	RETRIEVE	0645	1130	2766	2745	~~20°49'N~~		157.1	VARIOMETER RETRIEVED. 39.3 HOURS OF RECORD
J	VARIOMETER					20°24'N	67°08'W		WERE OBTAINED. UNIT WAS OFFSCALE BECAUSE
U									OF DC BIAS HOWEVER THERE WAS ABOUT AN HOUR
L									CORRELATED ACTIVITY. SHIPBOARD TESTS SHOWED
Y									THAT EXCEPT FOR THE DC BIAS THE INSTRUMENT
									HAD PERFORMED SATISFACTORILY.
26	DREDGE	0645	1130	2786	2745	20°29'N	67°08'W	157.1	THERE WERE SEVERAL LARGE PIECES OF
J	#7								ROCK AND WHAT APPEAR TO BE NODULES
U									ON THE INSTRUMENT PACKAGE. THESE HAVE
L									BEEN PLACED AND CALLED DREDGE #7
Y									
26	BOTTOM	~~1400~~	~~1800~~					157.2	IT IS IN TWO CONTAINERS
J	MAGNE-	1400	1800	2743	2780	20°34'N	67°10'W		A TEST LOWERING WAS MADE OF THE
U	TOMETER								BOTTOM MAGGIE TO 500' USING HYDROPHONE
L									CABLE WITH THE ELECTRONICS ON BOARD. ~~THE MAGGIE~~
Y									TUNED TO 1925 C/S WHICH CHECKED PERFECTLY
									WITH CHARTS
26									
J	CAMERA	2340	0830	2680	2657	20°49'N	66°55'W	158	WIRE AZ 100° WIRE ANGLE 015° 50 HITS 46 PIX
U	# 119			1ST	LAST				ALL PICTURES WERE LUMPY MUD BOTTOM
L				HIT	HIT				SEVERAL SHOWED ANIMAL TRACKS
Y									
27									
27	DREDGE	0400	0830	2584	2645	20°49'N	66°55'W	158.1	USED WIRE M. 4 HYDRO DREDGE ON
J	#8								HYDRO WIRE. MUD; SOFT ROCK,
U		HIT AT 0620			2582 FMS				PEBBLES AND AT LOOKS LIKE NODULES
L									
Y									~~IN TWO CRATES~~

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
27 J U L Y	BOTTOM MAGNETOMETER	1600	1930	2782	2780	20°29N	67°05W	158.2	ATTEMPTED LOWERING BOTTOM MAGGIE ON AMERIGRAPH FOR TEST AT 1000 FMS FAILED DUE TO SMALL FLOODING IN ELECTRONICS PACKAGE. FLOODING DUE TO LEAKY MARSH MARINE FITTING
27 J U L Y	BOTTOM MAGNETOMETER	2330	0430	2766	2781	20°24N	67°14W	158.3	TESTED MAGGIE ON AMERGRAPH CABLE AT 200 FMS SYSTEM APPEARED TO OSCILL ATE HELMHOLTZ COIL SHEARED OFF UPON RAISING
28									
28 J V L Y	BOTTOM MAGNETOMETER	2300	0047	3061	3066	—	—	158.4	TESTED THE MAGGIE UNDERWAY OVER THE SIDE USING SHIPBOARD FISH AND COIL AND BOTTOM MAGGIE ELECTRONICS SUCCESS
29 J U L Y	BOTTOM MAGNETOMETER	0939	1218	2952	2915	20°47N	65°38W	158.5	TESTED BOTTOM MAGGIE OFFSTERN USING BOTTOM MAGGIE SENSING COIL AND 500' OF ~~ARC~~ ARMORED MAGGIE CABLE. TEST SUCCESSFUL
29 J U L Y	BOTTOM MAGNETOMETER	1730	2400	2836	2864	20°52N	65°50W	158.6	TESTED BOTTOM MAGGIE IN ITS FINAL CONFIGURATION AT 1000 FMS ON THE AMERGRAPH CABLE. TEST SUCCESSFUL NO SIGN OF OSCILLATION
30 J U L Y	BOTTOM MAGGIE MAGNETOMETER	0115	0515	2882	2853			158.7	BOTTOM MAGNETOMETER PLANTED AND BUOYED OFF FROM BOTTOM TO TOP ① SENSING COIL ② 500' ARMORED CABLE ③ ELECTRONICS ④ 200' NYLON ⑤ 10' CHAIN ⑥ 500 LB CLUMP ⑦ 20' CHAIN ⑧ 300 LB CLAMP ⑨ 20' CHAIN ⑩ 6134 METERS NYLON ⑪ BUOY AGAIN THE EQUIPMENT WAS PUT OVER USING THE CHAIN HOIST TO GET THE GEAR OVER THE SIDE AND A DUAL MY LINE THRU A CARGO SHIV. TO TAKE THE STRAIN AND LOWER

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
30	CAMERA	~~2245~~	0315	2933	2970	20°16.5'N	66 10.5'	159	WIRE AZ 090° WIRE ANGLE 35°
J	120			1ST	LAST				50 HITS 38 PIX PICTURES SHOW LUMPY
U				HIT	HIT				MUD. SEVERAL SHOW PEBBLES OR NODULES
L									STROBE LAMP APPEARS TO HAVE BEEN
Y									DUMPED IN THE MUD CAUSING SHADOWS
31	BOTTOM	0645	1135	2856	2852			159.1	RETRIEVED BOTTOM MAGGIE. GOT
J	MAGGIE								APPROXIMATELY 4 HOURS OF GOOD DATA
U									BATTERIES FAILED AFTER 4 HOURS
F.L									
Y									
1	BOTTOM	02:30	07 30	2678	2852			159.2	BOTTOM MAGNETOMETER PLANTED AND
A	MAGGIE								BUOYED OFF
U									
G									
2	BOTTOM	0700	1130	2467	2878			159.3	RETRIEVED MAGNETOMETER GOT APPROXIMATELY
4	MAGGIE								8 HOURS OF VERY GOOD DATA AFTER WHICH
U									THE BATTERYS FAILED
G									
	NOTE ALL 70 CASES OF VOLE BLOCKS WERE USED BY 0100 AUG 2								

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CRUISE N° 2

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TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
6	1	2000				18°22'N	65°33'W	160	UNDERWAY WATER SAMPLE - 4l
A	MILLIPORE					18°27.2'N	65°33.7'W		FOR SUSPENDED SEDIMENT
U	FILTER								(FOLGER)
G									
5	2	2400				18°52.8'N	65°46.8'W	160.1	UNDERWAY WATER SAMPLE - 6l
A	MILLIPORE								FOR SUSPENDED SEDIMENT
U	FILTER								(FOLGER)
G									
6	2A	0430				19°01.2'N	64°55.5'W	160.2	UNDERWAY WATER SAMPLE - 4l
A	MILLIPORE								
U	FILTER								
G									
6	3	0330				19°13.5'N	64°48.8'W	160.3	UNDERWAY WATER SAMPLE - 8l
A	MILLIPORE								
U	FILTER								
G									
6	4	0930				19°46.5'N	63°48.5'W	160.4	UNDERWAY WATER SAMPLE - 5l
A	MILLIPORE								
U	FILTER								
G									
6	5	1215				20°12.2'N	63°32.0'W	160.5	UNDERWAY WATER SAMPLE - 6l
A	MILLIPORE								
U	FILTER								
G									
						20°53.8'N	63°33.7'W	160.6	
6	6	1700				20°59.3'N	63°34.0'W		STATION WATER SAMPLE - 7l
A	MILLIPORE								
U	FILTER								
G									

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long W	LOG	REMARKS
6	CORE	1800				20°54.3'N	63°33.7'W	160	
A	136								
U									
G									
6	T. GRAD	1800				20°54.3'N	63°33.7'W	160	
A	86								
U									
G									
6	CAMERA	1726	1832			20°54.3'N	63°33.7'W	160	
A	121								
U									
G									
6	1-1	1657				20°54'N	63°33.5'W	160	SURFACE - ½ METER
A	PLANKTON								SUCCESSFUL
U									
G									
6	6A	1900				20°54.8'N	63°34.8'W	160.7	UNDERWAY WATER SAMPLE - 6 l
A	MILLIPORE								
U	FILTER								
G									
7	7	0330				19°55.3'N	63°02.0'W	161	UNDERWAY WATER SAMPLE - 6 l
A	MILLIPORE								
U	FILTER								
G									
7	8	0800				20°19.9'N	63°05.2'W	161.1	UNDERWAY WATER SAMPLE - 8 l
A	MILLIPORE								
U	FILTER								
G									

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7	9	1200				20°58.5'N	63°08.5'W	161.2	UNDERWAY WATER SAMPLE
A	MILLIPORE								"
U	FILTER								
G									
7	9A	1200				21°09.2'N	63°08.5'W	161.3	UNDERWAY WATER SAMPLE
A	MILLIPORE								
U	FILTER								
G									
7	10	1600				21°41'N	63°07.5'W	161.4	UNDERWAY WATER SAMPLE
A	MILLIPORE								
U	FILTER								
G									
7	11	2000				22°21'N	63°10'W	161.5	
A	MILLIPORE								
U	FILTER								
G									
7	PLANKTON					22°21.2'N	63°09.8'W	161.6	
A	2-1	2015							
U									
G									
9	CAMERA	2142	2244	3050	3050	22°21.9'N	63°10'W	161	30 HITS - 2 USABLE FRAMES
A	122								SOFT, LIGHT COLORED LUTITE. NUMEROUS ELONGATE,
U									SINUOUS MOUNDS. FEW DEPRESSIONS.
G									WHEN CAMERA SURFACE LIGHT WAS WORKING
									INTERMITTANTLY
8	CORE	0205		3050		22°23'N	63°11'W	162	LENGTH 1159 cm: LUTITE, BROWN, SOFT, BURROW
A	137								MOTTLED CONTAINING NUMEROUS SILT LAYERS,
U									GRAY, SOME SHOWING GRADING, EACH APPROX
G									5 cm THICK PENETRATION 1189 cm

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
8	T-GRAD	0205		3050		22°23'N	63°11'W	162	GOOD - 3 PROBES
A	87								PASS THRU ON WATER PROBE BROKE
U									
G									
8	11 A	0400				22°24.8'N	63°12'W	162	UNDERWAY WATER SAMPLE
A	MILLIPORE								
U	FILTER								
G									
8	12	1615				20°45.8'N	62°51.7'W	162.1	
A	MILLIPORE								
U	FILTER								
G									
8	LSM	1634	1849			20°46'N	62°53'W	162	
A	1								
U	NEPH.								
G									
8	PLANKTON	1759				20°46.2'N	62°52.9'W	162	
A									
U	3-1								
G									
8	PLANKTON	1958				20°45.6'N	62°54.6'W	162.2	
A									
U	3-2								
G									
8	CORE	2051		2862		20°45.5'N	62°55.8'W	163	LENGTH 1126cm, PENETRATION 850 cm. "RED CLAY" BURROW
A	138								MOTTLED 0-118 cm AND 128-554cm. 118-128cm SILT,
U									BROWN, FIRM, GRADED. 554-1126 cm PROBABLY
G									FLOW-IN.

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
8	T-GRAD	2051		2862		20°45.5'N	62°55.2'W	163	FAILURE - BREAK IN WATER PROBE CIRCUIT
A	22								
U									
G									
8	Ra 1	2045		2700		20°45.5'N	62°55.2'W	163	
A	(WH RBL 1)								
U									
G									
8	Ra 2	2120				20°45.2'N	62°56'W	163.1	
A	SURFACE								
U									
G									
9	13					20°23.5'N	62°50'W	163	UNDERWAY WATER SAMPLE
A	MILLIPORE	0236							
U	FILTER								
G									
9	14	0207				20°53.5'N	62°09.4'W	163.2	UNDERWAY WATER SAMPLE
A	MILLIPORE								
U	FILTER								
G									
9	15					21°24.6'N	61°58.2'W	163.3	UNDERWAY WATER SAMPLE
A	MILLIPORE	1134							
U	FILTER								
G									
9	15A	1134				21°24.6'N	61°58.2'W	163.4	
A									
U									
G									

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Research Vessel ROBERT D. CONRAD
CRUISE N° 2
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
9	16	1644				22°21½'N	64°52.3'W	163.5	
A	MILLIPORE								
U	FILTER								
G									
10	17	0245				24°09.2'N	64°32.5'W	164	
A	MILLIPORE								
U	FILTER								
G									
10	17 A	0245				24°09.2'N	64°32.5'W	164.1	
A									
U									
G									
M	CAMERA	0430	0522	3092	3100	24°13'N	64°39'W	164	31 HITS — NO USABLE EXPOSURES
A	123								CAMERA LIGHT FAILED TO OPERATE
U									
G									
10	CORE	0602		3092		24°13'N	64°39.2'W	164	LENGTH 1141 cm. PENETRATION 945 cm.
A	139								0–1141 cm ALTERNATING LAYERS LIGHT BROWN, BURROWED,
U									LUTITE AND BROWNISH-GRAY LUTITE WITH FGW
G									IN ANY BURROWS. LATTER MAY REPRESENT TURBIDITES.
									733–741 cm CLAYEY SILT. 790–791 cm VERY FINE SAND
10	T-GRAB	0602		3092		24°13'N	64°39.2'W	164	GOOD — 3 PROBES
A	89								
'									
10	RC 3	0555				24°13'N	64°39.3'W	164	
A	(WT BBL 2)								
U									
G									

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Research Vessel ROBERT D. CONRAD
CRUISE N° 3
CRUISE LEG—From SAN JUAN To NEW YORK
TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
10	Rn 4	0945				24°17.2'N	61°32'W	164.2	SURFACE SAMPLE
A									
U									
G									
10	PLANKTON	0530				24°13'N	61°39.2'W	164	
A	SURFACE								
U	4-1								
G									
10	PLANKTON	0750				24°12.2'N	61°40'W	164	
A	VERTICAL								
U	4-1								
G									
10	18							164.3	
A	MILLIPORE	1356				24°11.2'N	60°52'W		UNDERWAY WATER SAMPLE
U	FILTER								
G									
10	19							164.4	
A	MILLIPORE	2000				25°20'N	59°40'W		UNDERWAY WATER SAMPLE
U	FILTER								
G									
11	20	0109						165	
A	MILLIPORE								
U	FILTER								
G									
11	MILLIPORE	0414						165.1	
A	FILTER								
U	21								
G									

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Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK
TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
11	21A	0415						165.2	
A	MILLIPORE								
U	FILTER								
G									
11	22	0850						165.3	
A	MILLIPORE								
U	FILTER								
G									
11	23	1455						165.4	
A	MILLIPORE								
U	FILTER								
G									
11	CAMERA	1111	1128	2984	2992	24°53.2'N	57°51.9'W	165	10 HITS — 1 USABLE EXPOSURE
A	124								SOFT, LIGHT COLORED LUTITE. NUMEROUS ELONGATE SINUOUS MOUNDS. DEPRESSIONS.
U									WHEN CAMERA SURFACED MUD COMPLETELY
G									COVERED CAMERA LENS
11	CORE	1214		2992		24°53.1'N	57°52'W	165	LENGTH 1155 cm. PENETRATION 703 cm.
A	140								0-1155 cm "RED CLAY", SLIGHT AMOUNT BURROW MOTTLING,
U									MICRONODULES MnO_x.
G									CORER FELL OVER, PIPE BENT 703 cm ABOVE
									CUTTING EDGE.
11	T-GRAD	1214		2992		24°52.1'N	57°52'W	165	GOOD — 2 PROBES PENETRATED
A	90								
U									
G									
12	24	0035				25°19.5'N	56°42.1'W	166	
A	MILLIPORE								
U	FILTER								
G									

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CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat N	POSITION Long W	LOG	REMARKS
12	CAMERA	0034	0130	3278	3279	25°14.4'N	56°45.2'W	166	30 HITS - 2 USABLE FRAMES
A	125								SOFT, LIGHT COLORED LUTITE. NUMEROUS TRACKS,
U									MOUNDS, DEPRESSIONS.
G									CAMERA SURFACED WITH MUD ON LENS.
12	PLANKTON	0120				25°14.7'N	56°45.3'W	166	SURFACE
A	5-1								
U									
G									
12	PLANKTON	0227				25°14.2'N	56°45.6'W	166.1	SURFACE
A	5-2								
U									
G									
12	CORE	0438		3278		25°15.6'N	56°47.9'W	166	1116 CM LENGTH. PENETRATION 1249 CM
A	141								ALTERNATING LAYERS OF BROWNISH-GRAY AND
U									GRAY LUTITE. BURROWING INDISTINCT. COARSE
G									FRACTION NEGLIGIBLE. HYDROTROILITE? OCCURS
									961 - 1116 CM.
12	T-GRAD	0438		3278		[redacted]		166	
A	91					25°15.6'N	56°47.9'W		3 PROBES PENETRATED BUT ONLY ONE
U									PROBE WORKED.
G									
12	MILLIPORE	1000				25°46'N	56°42.8'W	166.2	
A	FILTER								
U	25								
G									
12	MILLIPORE	1800				25°37.2'N	55°30.4'W	166.3	
A	FILTER								
U	26								
G									

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat N	POSITION Long W	LOG	REMARKS
13	MILLIPORE	0036				26°29.9'N	55°18.8'W	167	
A	FILTER								
U	27								
G									
13	MILLIPORE	0100				26°33.5'N	55°21.9'W	167.1	
A	FILTER								
U	27A								
G									
13	MILLIPORE	1000				27°49'N	56°27.8'W	169.2	
A	FILTER					[redacted]			
U	28								
G									
13	PLANKTON	1049				27°48.2'N	56°28'W	167	SURFACE
A	6-1								
U									
G									
13	PLANKTON	1253				27°44.7'N	56°29.3'W	169.3	VERTICAL
A	6-2								
U									
G									
13	CORE	1116		2806		27°47.2'N	56°28.3'W	1167	LENGTH 1076 cm. PENETRATION 745 cm
A	142								0-275 cm BROWN LUTITE. LITTLE BURROWING. MICRONODULE
U									MnO_x RARE. 275-546 cm BROWN LUTITE.
G									BURROW MOTTLED. MICRONODULES MnO_x ABUNDANT.
									546-1076 cm FLOW-IN
13	T-GRAD	1116		2806		27°47.2'N	56°28.3'W	167	GOOD - 2 PROBES
A	92								
U									
G									

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Research Vessel ROBERT D. CONRAD — TIME ZONE _____

CRUISE N° 8

CRUISE LEG From SAN JUAN To NEW YORK

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
13	CAMERA	1019	1115	2800	2806	27°48.2'N	56°28'W	167	30 HITS - 26 USABLE. BROWN MUD ON CAMERA WHEN SURFACED. SCATTERED MnO_x NODULES. NUMEROUS MOUNDS & DEPRESSIONS. OCCASIONAL TRACKS. SEA ANEMONE? FRAME 19.
A	126								
U									
G									
14	MILLIPORE	0037				29°23.2'N	57°53.5'W	168	
A	FILTER								
U	29								
G									
14	MILLIPORE	0039				29°23.2'N	57°53.5'W	168.1	
A	FILTER								
U	29A								
G									
14	LSM	0037	0335			29°23'N	57°54.8'W	168	
A	2								
U									
G									
14	PLANKTON	0208				29°23'N	57°54.8'W	168	SURFACE
A	7-1								
U									
G									
14	MILLIPORE								
A	FILTER	0845				30°02.5'N	58°44.9'W	169.2	
U	30								
G									
14	MILLIPORE	2000				30°51.8'N	59°23'W	168.3	
A	FILTER								
U	31								
G									

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CRUISE LEG—From SAN JUAN To NEW YORK

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
14	CAMERA	1603	1646	2878		30°52'N	59°23.7'W	168	30 HITS - 27 USABLE EXPOSURES. LIGHT COLORED
A	127								LUTITE WITH NUMEROUS SCATTERED Mn_xO_x NODULES.
U									NUMEROUS MOUNDS, TRACKS, DEPRESSIONS. ANIMAL IN
G									TWO FRAMES. RIPPLES & SCOUR MARKS
14	CORE	1933		2972		30°51.9'N	59°23.2'W	168	LENGTH 1341 cm. PENETRATION 823 cm.
A	143								LUTITE, BROWN, MANGANIFEROUS. NODULES
U									MANGANESE AT TOP. POSSIBLE FLOW-IN
G									BELOW 800 cm.
14	T-GRAD	1933		2972		30°51.9'N	59°23.2'W	168	GOOD - TWO PROBES PENETRATED
A	93								
U									
G									
14	Ra 5	1900				30°51.9'N	59°23.4'W	168	SAMPLE DEPTH 5000 METERS
A	(wt BBL 3)					30°51.4'N			
U									
G									
14	PLANKTON	1925				30°51.9'N	59°23.2'W	168½	SURFACE
A	8-1								
U									
G									
15	MILLIPORE	0110				31°16.9'N	59°43.7'W	169	
A	FILTER								
U	32								
G									
15	MILLIPORE	0110				31°16.9'N	59°43.3'W	169.1	
A	FILTER								
U	32A								
G									

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
15	MILLIPORE	0935				32°24.5'N	60°51.5'W	169.4	
A	FILTER								
U	33								
G									
15	MILLIPORE	1534				33°02.7'N	61°25.4'W	169.3	
A	FILTER								
U	34								
G									
15	CORE	1904		2848		33°06.2'N	61°19.1'W	169	LENGTH 1295 cm - PENETRATION 1403 cm
A	144								ALTERNATING LAYERS LIGHT BROWN, GRAYISH-BROWN,
U									AND REDDISH-BROWN SILTY LUTITE. BURROW
G									MOTTLES. SEVERAL THIN LAYERS SILT.
									MICRO NODULES MnOx SCATTERED THROUGHOUT
15	T-GRAD	1904		2848		33°06.2'N	61°19.1'W	169	GOOD - 3 PROBES
A	94								NO. 2 PROBE SHORTED
U									
G									
15	CAMERA	1600	1633	2462	2442	33°07.5'N	61°24'W	169	SOFT LIGHT-COLORED LUTITE. NUMEROUS
A	128								TRACKS, MOUNDS, AND DEPRESSIONS
U									
G									
15	Ra 6	1845				33°06.3'N	61°18.1'W	169	SAMPLE DEPTH 2000 METERS
A	(WT. BBL 4)								
U									
G									
16	MILLIPORE	0410				33°29'N	62°22'W	170	
A	FILTER								
U	35								
G									

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TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
16	MILLIPORE	0410				33°29'N	62°22'W	170.1	
A	FILTER								
U	35 A								
G									
16	PLANKTON	1100				33°35'N	62°23.4'W	170	SURFACE
A	9-1								
U									
G									
16	CORE	1139		1460		33°34.8'	62°23'W	170	675 cm PENETRATION. LENGTH 593 cm. FLOW-IN 482 cm
A	145								MUIR SEAMOUNT. 0-585 cm TAN TO BROWN
U									FORAMINIFERAL OOZE, BURROW MOTTLED.
G									585-593 cm FRAGMENTED MIXTURE MnO_x, SILT-SIZE $CaCO_3$, AND QUARTZ AND GLASS?
16	T-GRAV	1139		1460		33°31.8'N	62°23'W	170	2 PROBE PENETRATION. ONE PROBE
A	95								SHORTED WHEN WIRE CUT.
U									
G									
16	CAMERA	0942	1046	~1620	1509	33°36'N	62°24'W	170	25 USABLE EXPOSURES. SOFT LUTITE TO LEDGES
A	129								AND FRAGMENTS OF ROCK. SOME Mn
U									COATING. BRITTLE STARS, TRACKS, MOUNDS,
G									PLANT-LIKE ANIMALS. RIPPLES
16	DREDGE	1458	1720	~1050	900	33°32.8'N	62°24.5'W	170	3 PIECES OF CORAL. HALF-DOZEN ROCK
A	9								FRAGMENTS - SEVERAL SHOWING FRESH FRACTURES.
U									ROCK COMPOSED ANGULAR FRAGMENTS BASALT?
G									WHICH IS OXIDIZED, CEMENTED WITH $CaCO_3$
									Mn_xO_x COATING ON SURFACE
17	MILLIPORE	0050				33°52.9'N	62°41.8'W	171	
A	FILTER								
U	36								
G									

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Research Vessel ROBERT D. CONRAD
CRUISE N° _____
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
17	MILLIPORE	1544				34°40'N	63°15.6'W	171.1	
A	FILTER								
U	37								
G									
17	MILLIPORE	2017				34°31.7'N	63°58'W	191.2	
A	FILTER								
U	38								
G									
17	PLANKTON	0126				33°53'W	62°42'W	171	SURFACE
A	10-1								
U									
G									
17	CORE	0036		1421		33°52.8'N	62°41.9'W	17	LENGTH 143 cm PENETRATION ~ 137cm
A	146								0-132 cm PALE ORANGE, SLIGHTLY SILTY, FORAMINIFERAL
U									LUTITE. COCCOLITHS & SPONGE SPICULES AT TOP
G									FORAM CONTENT INCREASES WITH DEPTH.
									132-143 cm INDURATED ARENITE
17	T-GRAD	0036		1421		33°52.8'N	62°41.9'W	171	ONE PROBE PENETRATION ONLY
A	96								
U									
G									
17	CAMERA		[illegible]					171	30 HITS - 23 USABLE. SEDIMENT VARIES FROM
A	130	0147	0240	1362	1464	33°53.3'N	62°42.2'W		SOFT LUTITE TO ROCK LEDGES & FRAGMENTS.
U									SPINY HOLOTHURIAN, BRITTLE STARS, TRACKS
G									MOUNDS, DEPRESSIONS, RIPPLES
17	DREDGE	0350	0537	1535	1220	33°54.4'N	62°43.3'W	171	EMPTY
A	10								
U									
G									

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Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
18	MILLIPORE	0208				34°58.8'N	64°40.1'W	172	
A	FILTER								
U	39								
G									
18	MILLIPORE	0248				34°59.3'N	64°42.4'W	172.1	
A	FILTER								
U	39A								
G									
18	MILLIPORE	0900				35°31.3'N	65°43.2'W	172.2	
A	FILTER								
U	40								
G									
18	MILLIPORE	1526				36°11.8'N	66°46.3'W	172.3	
A	FILTER								
U	41								
G									
18	MILLIPORE	2000				36°23.8'N	67°00.4'W	172.4	
A	FILTER								
U	42								
G									
18	PLANKTON	0100				34°57.8'N	64°36'W		SURFACE
A	11-1								
U									
G									
18	PLANKTON	1606				36°12.3'N	66°45.8'W		SURFACE
A	12-1								
U									
G									

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CRUISE N° 8
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TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long. W	LOG	REMARKS
18	LSM	0032	0310			34°58'N	64°37'W	172	
A	3								
U									
G									
18	LSM	1529	1755			36°12.6'N	66°45'W	173	
A	4								
U									
G									
19	MILLIPORE	00	15					173	
A	FILTER								
U	43								
G									
19	Ra 7	1200				36°39.2'N	67°53.2'W	173	SAMPLE DEPTH 4400 METERS
A	(WT. BBL 5)								
U									
G									
19	Ra 8	1300				36°39.4'N	67°52.2'W	173.1	SAMPLE DEPTH 3100 METERS
A	(WT. BBL 6)								
U									
G									
19	Ra 9	1500				36°40'N	67°51'W	173.2	SAMPLE DEPTH 700 METERS
A	(WT. BBL 7)								
U									
G									
19	PLANKTON	1840				36°41.8'N	67°54'W	173	SURFACE
A	13-1								
U									
G									

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LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
19	CORE	0408		1800		36°41.8'N	67°56.8'W	173	LENGTH 65 cm PENETRATION ~ 32 cm.
A	147								MANGANESE NODULES MIXED WITH
U									ABOUT 10% FORAMINIFERAL SAND
G									
									CARYN SEA MOUNT
19	T-GRAD	0408		1800		36°41.8'N	67°56.8'W	173	FAILURE — CORER FAILED TO
A	99								PENETRATE SUFFICIENTLY
U									
G									
19	CAMERA	0548	0635	~1920	2178	36°42'N	67°56'W	173	30 HITS — 30 USABLE EXPOSURES
A	131								LEDGES OF (Mn COATED?) ROCK, Mn COATED
U									GRAVEL. NUMEROUS SEA LILIES, FISH,
G									STAR FISH
									CARYN SEA MOUNT
19	DREDGE	0745	0905		1760	36°41.4'N	67°55'W	173	EMPTY
A	11								
U									
G									
19	MILLIPORE	0326				36°41.8'N	67°57.2'W	173.3	
A	FILTER								
U	44								
G									
19	MILLIPORE	1126				36°39'N	67°53.5'W	173.4	
A	FILTER								
U	44A								
G									
19	DREDGE	1655	1835	2208	~1970	36°41.9'N	67°54.9'W	173	TWO BOXES OF MANGANESE COATED FRAGMENTS
A	12								OF ROCK, CLAY, & CARBONATE. LARGEST
U									FRAGMENT > 1 FT.
G									

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
19	CAMERA	2006	2103	2345	2610	36°48.7'N	69°52.4'W	174	30 HITS - 30 USABLE EXPOSURES
A	132								LEDGES OF ROCK, ROCK FRAGMENTS, GRAVEL,
U									SOME MANGANESE COATING. OCCASIONAL PATCH
G									FINE SEDIMENT. SEA LILIES, BRITTLE
									STARS CARYN SEAMOUNT
20	CORE	0009		1770		36°43.7'N	69°56'W	174	LENGTH 35 cm. PENETRATION A FEW INCHES
A	148								0-20 cm MANGANESE NODULES WITH 5-10% COARSE
U									FORAM SAND. 20-35 cm ANGULAR FRAGMENTS
G									OF LIMESTONE? SHOWING FRESH FRACTURES
									CUTTING EDGE DEMOLISHED. CARYN SEAMOUNT
20	[redacted]								FAILURE - INSUFFICIENT PENETRATION
A	[redacted]								
U	T-GRAD	0009		1770		36°43.7'N	69°56'W	174	
G	98								
20	MILLIPORE	0405				36°55'N	68°27.8'W	174	
A	FILTER								
U	45								
G									
20	MILLIPORE	0800				37°13.7'N	69°12'W	174.1	
A	FILTER								
U	46								
G									
20	MILLIPORE	0930				37°23'N	69°28.4'W	174.2	
A	FILTER								
U	47								
G									
20	MILLIPORE	1030				37°26.7'N	69°37'W	174.3	
A	FILTER								
U	48								
G									

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE _____

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20	MILLIPORE	1126				37°29'N	69°48.2'W	174.4	
A	FILTER								
U	49								
G									
20	MILLIPORE	1230				37°31.5'N	70°02.1'W	174.5	
A	FILTER								
U	50								
G									
20	MILLIPORE	1402				37°35.5'N	70°14.1'W	174.6	
A	FILTER								
U	51								
G									
20	MILLIPORE	1800				37°44.5'N	70°38.6'W	174.7	
A	FILTER								
U	52								
G									
20	MILLIPORE	2200				38°02.1'N	71°29.2'W	174.8	
A	FILTER								
U	53								
G									
20	Ra 10	1240				37°31.5'N	70°02.1'W	174	UNDERWAY SAMPLE
A									
U									
G									
20	LSM	1336	1557			37°35.2'N	70°13.9'W	174	
A	5								
U									
G									

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20	PLANKTON	1515				37°35.5'N	70°14.1'W	174	SURFACE TOW
A	14-1								
U									
G									
21	PLANKTON	1105				38°39.1'N	72°29'W	175	SURFACE TOW
A	15-1								
U									
G									
21	PLANKTON	1148				38°39.1'N	72°29'W	175.1	VERTICAL TOW
A	15-2								
U									
G									
21	LSM	0953	1129			38°39.1'N	72°29'W	175	
A	6								
U									
G									
21	MILLIPORE	0241				38°20.8'N	72°19'W	175	
A	FILTER								
U	54								
G									
21	MILLIPORE	0955				38°39.1'N	72°29'W	175.2	
A	FILTER								
U	55								
G									
21	MILLIPORE	1318				38°44'N	72°39'W	176.3	
A	FILTER								
U	56								
G									

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CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK
TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long W	LOG	REMARKS
21	MILLIPORE	15	41			38°58.7'N	73°02'W	175.4	
A	FILTER								
U	57								
G									
21	MILLIPORE	18	35			39°20.2'N	73°14'W	175.6	
A	FILTER								
U	58								
G									
21	MILLIPORE	21	30			39°42.0'N	73°25.5'W	175.6	
A	FILTER								
U	59								
G									
22	MILLIPORE	00	30			40°02.5'N	73°36.0'W	175.7	
A	FILTER								
U	60								
G									
22	MILLIPORE	03	30			40°21.2'N	73°46.0'W	175.8	
A	FILTER								
U	61								
G									
22	MILLIPORE	04	42					175.9	CHANNEL INSIDE AMBROSE LIGHTSHIP
A	FILTER								
U	62								
G									

Chief Scientist

Camera Information copied from this list into RC8 Camera Log A. Bond 68

CONRAD - 8 - CAMERA

San Juan - San Juan

	camera no.	Date	Lat	Lona	LOCATION	TIME Quev First	TIME Surf Last	P.D.R. First	P.D.R. Last	HITS No.	HITS Good	CORE No.	CORRELATIVE DATA
San Juan to Capetown	1	14-XI-63	18°45'N	66°18' W	S. Slope of Puerto Rican Trench	1840	1945	1125	1114	15	15	1	Plankton #1
						1904	1927						
	2	2-XII-63	11°12'N	48°05'W	W. End of S. Scarp of Vema Fracture Zone	1004	1315	± 2440		29	28	2	T-grad #1
						1107	1223						
	3	4-XII-63	10°48'N	43°12'W						30	29		T-grad #3
	4	6-XII-63	05°08'N	42°24'W	A Rise in the Demerra Abyssal Plain	1501	1604+	2460	2465	20	17	6	T-grad #5
	5	8-XII-63	02°16.5' N	38°14' 38°19'W		1015	1247			23	0		
						1048	1206						
	6	10-XII-63	00°00'	35°36'W	CEARA Abyssal Plain (OFF Brazil)	1322	1533	2410	2408	25	21	8	
						1354	1557						
	7	10-XII-63	03°31'S	33°18'W	Abyssal Edge of Continental Rise south end of Ceara Abyssal Plain	1822	2015	2085	2060	36	36	9	
						1853	1950						
	8	11-XII-63	06°26.5'S	30°59'W	Continental Rise S.E of Fernando Noronha Island (off Brazil)	1915	2200	2730	2745	38	28	10	T-grad #9
						1951	2112						
	9	13-XII-63	11°16'S	27°07'W	Abyssal Hills S. of Pernambuco Abyssal Plain (Off Brazil)	0934	1215	2925	2945	19	16	11	T-grad #10
						?	1132						
	10	14-XII-63	14°11'S	24°52.5'W	Abyssal Hills S.E of Pernamerca Abyssal Plain	1712	2023	2915	2920	40	33	13	T-grad #12 Plankton #5
						1810	1924						
	11	15-XII-63	16°33'S	22°49.5'W	Abyssal Hills ~ 500mi. NE of TRINDADE & Martin Vaz Islands	1540	1745	2560		25	21	14	Chloro #1
						1621	1712						
	12	16-XII-63	19°20.5'S	20°32'W	~ 300mi ENE of Trindade Island	1440	1705	2536	2530	29	20	15	T-grad #14
						1515	1627						
	13	17-XII-63	22°56'S	17°24'W	Abyssal Hills between Trindade Island & Mid Atlantic Ridge	1938	2225	2800	2800	23	21	—	
						2043	2146						
	14	18-XII-63	23°21'S	16°31.5W		0455	0725	2340	2380	Wire	Broke	16	T-grad #15
						0531	0625						
	15	18-XII-63	23°50'S	15°35.5'W	Western Foothills of Mid Atlantic Ridge	1340	1625	2090	2255	29	24	17	T-grad #16 PhytoPlankton #1
						1426	1529						
	16	18-XII-63	24°04'S	15°07'W	Western Slope of Mid Atlantic Ridge	1940	2135	2050	2030?	26	26	18	T-grad #17
						2018	2109						
	17	19-XII-63	24°16'S	14°39'W	Western slope - Mid-Atlantic	0110	0305	1940	1941	28	28	19	T-grad 18 PhytoP #2A Plankton #6-1
						0140	0234						
	18	19-XII-63	24°31'S	14°15'W	Western slope of Mid-Atlantic Ridge	0625	0825			28	28	20	T-grad 19 PhytoP #2B Plankton #6-2
						0700	0751						
	19	19-XII-63	24°45'S	13°45'W	" " " "	1147	1310	1005	1035	28	26	21	T-grad 20
						1215	1257						
	20	19-XII-63	24°58'S	13°16'W	Eastern Slope Mid-Atlantic Ridge	1625	1801	1480	1365	23	22	22	T-grad 21
						1650	1732						
	21	19-XII-63	25°09'S	12°46'W	" " " "	2110	2258	1730	1812	26	25	23	T-grad 22
						2145	2230						
	22	20-XII-63	25°23'S	12°14'W	" " " "	0247	0442	2185	2190	27	24	24	T-grad 23
						0323	0414						
	23	20-XII-63	25°40'S	11°36.5'W	Abyssal Hills Eastern slope of Mid Atlantic Edge	0858	1045	2075	2052	27	19	25	T-grad 24
						0926	1017						
	24	20-XII-63	25°56.5'S	11°06'W	Mountainous Range E. of Mid Atlantic Ridge	1416	1613	2238	2163	27	13	26	T-grad 25
						1445	1528						
	25	20-XII-63	26°14'S	10°36.5'W	Southern extension of Guinea Ridge	1955	2137	1970		22	18	27	T-grad 26 Plankton #7 Chloro #2
						2019	2108						
	26	21-XII-63	26°34.5S	09°26'W	Mountainous Range E of Mid Atlantic Ridge	0432	0637	2158	2175	28	27	28	T-grad 27
						0510	0555						
	27	21-XII-63	27°01.5'S	08°18.5'W	Between Mid Atlantic Ridge & Southerly Extension of Guinea Ridge	1355	1500	2085	2085	15	15	29	T-grad 28
						1437	1458						

CONRAD - 8
camera

camera no.	date	lat.	long.	Location	Time over First	Time over Last	P.D.R First	P.D.R Last	HITS No.	HITS GOOD	CORE NO.	correlative data
28	21-XII-63	27°20'S	07°19'W	Ridges parrallel to and West of Walvis Ridge	2255 2332	0107 0015	2295	2200	29	3	30	T-grad 29 Phyto P. #3 Plankton 8
29	23-XII-63	29°04.5'S	02°26.5'W	Ridges parrelleling and west of Walvis Ridge	0923 0957	1148 1046	2452	2449	27	23	31	T-grad 30
30	24-XII-63	30°26'S	02°18'E	ATop Easternmost of Walvis Ridges	1340 1408	1530 1456	1902	1871	28	26	32	T-grad 31 Plankton 10
31	26-XII-63	31°30'S	08°15'E	16 miles N.W. of Verna Seamount Peak	1520 1559	1730 1640	1800	1716	28	23	33	T-grad #32 Plankton #11
32				Cape Town to Freemantle					magnetic switch broke	0		
33	8-I-64	38°30'S	26°05'E	Aqulhas Plateau	1720 1754	1905 1839	1540	1562	27 neg.	9 missing	35	T-grad #34 Plankton # 14
34	9-I-64	40°26'S	28°55'E	SE slope Aqulhas Plateau	1455 1534	1705 1640	2190	2205	27 neg	3 missing	36	T-grad #35 Plankton #15
35	10-I-64	41°09'S	33°13'E	Aqulhas Basin	1540 1534	1748 1640	2625	2540	29	2	37	T-grad #36 Plankton 16
36	11-I-64	41°53'S	37°49'E	600 miles N. Prince Edward Islands S. Indian Ocean	1450 1520	1635 1550	1870	1880	15	6	38	T-grad # 37 [illegible]
37	12-I-64	42°53'S	42°21'E	600 mi. ENE Prince Edward Islands Indian Ocean	1738 1810	1910 1830	2317	2324	0	0 Trigger line fouled	39	T-grad #38 Plankton #17
38	13-I-64	43°47'S	46°12'E	~370 mi. NW of Les Isles de Crozet - Indian Ocean	1314 1339	1442 1417	1372	1372	29	23	40	T-grad #39 Plankton #18
39	15-I-64	45°41'S	54°54'E	~250 mi. NE of Les Iles de Crozet					12	12	42	T-grad 41 Plankton #19
40	16-I-64	48°41'S	57°22'E	300 mi E of Les Illes de Crozet	1540	1743	2315	2319	0 no film received	0	43	[illegible] Plankton #20
41	17-I-64	51°04'S	60°18'E	Indian Antartic Basin	1435 1519	1650 1611	2560	2570	29	28	44	T-grad #42 Plankton #21
42	18-I-64	53°02'S	62°33'E	~600 mi E. of Heard Island S. Indian Ocean	1625 1708	1910 1817			27	21	45	T-grad 43
43	19-I-64	55°20'S	65°28'E	~400 mi SW of Heard Island	1356 1419	1535 1459	1500	1510	29	29	46	T-grad 44 Plankton #22
44	20-I-64	55°03'S	71°47'E	~200 mi SE of Heard Island S Indian Ocean	1515 1545	1710 1627	1890	1880	29	31	47	T-grad 45 Plankton #23
45	21-I-64	53°16'S	76°55'E	~60 mi ESE of Heard Is. South Indian Ocean	1440 1457	1545 1535	590	597	27	24	48	T-grad 46 Plankton 24
46	22-I-64	51°04'S	81°33'E	~250 mi NE Heard Island S. Indian Ocean	1435 1534	1710 1620	2098	2100	28	26	49	T-grad 47 Plankton 25
47	26-I-64	44°46'	92°25'E	Mid Indian Ocean Ridge	1041 1127	1238 1213	1700	1740	21	23	50	T-grad 48
48	26-I-64	44°02'S	93°53'E	Mid Indian Ocean Ridge	2057 2129	2300 2208	1500	1520	26	26	51	T-grad 49
49	28-I-64	41°06'S	101°25'E	western Australian Basin	1305 1340	1530 1425	2351	2350	29	30	52	T-grad 50 Plankton 26
50	29-I-64	39°23'S	104°22'E	Western Australian Basin	1115 1157	1340 1233	2362	2362	29	27	53	T-grad 51 Plankton 27
51	30-I-64	37°35'S	107°27'E	Western Australian Basin	1343 1423	1545 1459	2280	2280	29	0?	54	T-grad 52 Plankton #28
				FREEMANTLE TO CHRISTCHURCH								
52	31-I-64	35°49'S	109°57'E	Western Australian Basin	1049 1137?	1340 1223?	2892	2894	29	12	55	T-grad 53 Plankton #29
53	1-II-64	33°40'S	112°40'E	South West Australian Basin	1110 1142	1310 1232	1640	1635	29	24	56	T-grad 54 Plankton #30 Sed #2

CONRAD 8 — Camera

	camera no	Date	Lat.	Long.	LOCATION	TIME over first	TIME sure last	P.D.R. First	P.D.R. Last	HITS No.	HITS Good.	CORE No	CORRELATIVE Data	
	54	7-II-64	35°07'S	115°24'E	Continental shelf off Cape Naturaliste, S.W Australia	1825 1636	1918 1915	108	110	20	20	57		
	55	8-II-64	35°24'S	116°36'E	Continental Shelf of S.W. Australia	0733 0736	0805 0755	110	120	16	15	58		
	56	9-II-64	36°45'S	130°54'E	Great Australian Bight	2045 2144	2245 2222	2845	2845	29	28	60	T-grad #55	Plankton 31
	57	12-II-64	46°32'S	125°34'E	Eastern End of Australian Basin	1442	1728	2128	2128	3	1	61	T-grad #56	
	58	14-II-64	51°05'S	129°58'E	South East Indian Rise	1345 1411	1452 1435	1855?	1855?	15	14	63	T-grad #58	Plankton #32
	59	15-II-64	51°30'S	135°51'E	South East Indian Rise	1408 1434	1550 1516	1780	1725	29	29	64	T-grad #59	Plankton #33
	60	16-II-64	51°32'S	142°13'E	~600 mi West of South Tasmanian Ridge (central)	1530 1600	1745 1654	1955	1957	32	32	65	Tgrad #60	Plankton #34
	61	17-II-64	51°33'S	147°51'E	Just West of Central South Tasmanian Ridge	1510	1730		~2170	1	1	66	T-grad #61	Plankton #35
	62	18-II-64	5[illegible]°08'S	152°56'E	Just East of Tasmanian Ridge	1358 1444	1645 1540	2340	2340	28	10	67	T-grad #62	Plankton #36
	63	20-II-64	53°29'S	155°37'E	S. End of Tasman Basin	1220	1450	2450	2460	29	12	69		
	64	22-II-64	58°03'S	155°47'E	Intersection of South Tasmanian Ridge and S.W. Auckland Rise	0200 0233	0330 0254	1770	1775	18	19	70		
	65	23-II-64	56°00'S	158°46'E	~180 mi S. of Macquarie Island S. Pacific	1625 1651	1808 1729	1805	1810	29	26	73		Plankton #37
	66	24-II-64	54°48'S	159°10E	5 mi of Mac Quarie Is. S.W. Auckland Rise	1507 1607	1830 1634	2882	2905	15	16	74	T-grad #64	Plankton #38
	67	25-II-64	53°54'S	164°43'E	Slope at edge of New Zealand Plateau	1535 1553	1707 1627	1150	1140	29	30	75		Plankton #39
	68	26-II-64	52°35'S	169°21'E		1337 1339	1420 1412	92	92	27	31	—		
	69	[illegible]												
	69	4-III-64	42°34'S	173°45'E	Landward Extremity of Kermadec Trench, N.Z.	2232 2256	2343 2334	720		28	no Film 0			Plankton #42
					Wellington to Panama									
	70	18-III-64	44°47'S	175°46'W	~30 mi S.E of Chatham Island Off N.Z.	1848 1905	2025 1943	950	950	27	27	78		Sediment #4
	71	19-III-64	46°19'S	172°51'W	S Pacific Basin	1253 1336	1520 1416	2635	2650	21	22	79		
	72	22-III-64	46°56'S	154°15'W	S. Pacific Basin	1318 1440	1620 1525	3378		27	23	82		Plankton 45
	73	25-III-64	43°25'S	141°17'W	S Pacific Basin	1600				0	0 wash trouble	84		Plankton 46
	74	26-III-64	42°31'S	137°17'W	S Pacific Basin					0	0 wire trouble		C14-F4	
	75	29-III-64	39°28'S	125°30'W	S Pacific Basin	1310 1431	1540 1458	2450	2420	15	13	87		
	76	30-III-64	38°00'S	121°55'W	S Pacific Basin	1308 1353	1540 1429	2475	2470	27	no film 0	88	T-grad-6	Plankton 48
	77	31-III-64	36°25'S	118°06'W	S Pacific Basin	1255 1432	1555 1504	2073	2086	29	33	89		
	78	1-IV-64	34°52'S	114°48'W	Easter Island Rise	1305 1333	1425 1405	1750	1760	29	29	90		Plankton 50

conrad 8 camera

camera no.	date	lat.	long	location	TIME over first	TIME surf last	P.D.R. first	P.D.R. last	HITS wo.	HITS good	CORE wo.	Correlative data
79	1-IV-64	33°25'S	111°54'W	Easter Island Rise	1250 1340	1430 1413	1460		24	23	91	T-grad 70 Plankton 51
80	3-IV-64	31°33'S	108°30'W	Easter Island Rise	1325 1359	1449 1427	1750	1750	27	23	92	T-grad 71 Plankton 52
81	4-IV-64	29°22'S	105°14'W	Easter Island Rise	1308 1354	1515 1423	1690	1690	27	25	93	T-grad 72 Plankton 53
82	5-IV-64	27°17'S	102°05'W	Easter Island Rise - Mountains	1320 1348	1437 1417	1650	1650	27	24	94	Plankton 54 (162)
83	6-IV-64	25°37'S	99°08'W	Eastside of Easter Island Rise	1245 1259	1358 1328	260	260	29	27		Bottom Trawl #2 Plankton 56
84	7-IV-64	22°38'S	97°11'W	Peruvian Basin	1334 1412	1523 1447	2080	2100	27	24	95	
85	8-IV-64	19°45'S	95°37'W	Peruvian Basin	1305 1341	1500 1409	1787	1785	27	27	96	Plankton #57
86	9-IV-64	16°50'S	94°07'W	Peruvian Basin	1305 1355	1521 1424	1560	1560	28	26	97	T-grad #73 Plankton #58
87	10-IV-64	13°28'S	92°35'W	Peruvian Basin	1435 1510	1607 1539	2060	2060	27	25	98	Plankton #59
88	11-IV-64	10°37'S	91°19'W	Peruvian Basin	1255 1332	1425 1401	2070		28	27	99	T-grad 75 Plankton #60
89	12-IV-64	07°49'S	90°02'W	Peruvian Basin	1334 1412	1510 1441	2180	2210	27	26	100	T-grad 76 Plankton #61
90	13-IV-64	04°46'S	88°34'W	Peruvian Basin	1320 1415	1600 1447	2107	2108	28	20	101	T-grad 77 Plankton 62
91	14-IV-64	01°25'S	86°51'W	Carnegie Ridge off Ecuador	1527	1628	1178		0	0	102	T-grad 78 Plankton 63
92	15-IV-64	01°16'N	85°10'W	Albatross Plateau	1320	1600	1630		20	21	103	Plankton 64
93	16-IV-64	03°39'N	82°56'W		1340	1425			0	0		Plankton 65
94	22-IV-64	11°02'N	78°30'W	Columbian Basin	1335 1418	1500 1433	1861	1863	12	0	104	Tgrad 79 Plankton 66
95	23-IV-64	13°12'N	76°55'W	Columbian Basin	1349 1442	1610 1515	2103		28	26	105	T-grad 80 Plankton 67
96	24-IV-64	14°00'N	74°53'W	Columbian Basin	1404 1441	1602 1514			30	29	106	T - 81 P - 68
97	25-IV-64	14°33'N	72°34'W	Beata Ridge - Caribbean	1340 1420	1530 1506	1722	1717	27	25	107	T-82 P. 69
98	26-IV-64	14°41 N	70°47'W	Fault Scarp Flanking Beata Ridge	2150 2236	2350 2231	1970	1893	30	30	108	T-83 P
99	27-IV-64	14°48N	70°54'W	On top of Fault Scarp Flanking Beata Ridge	1505 1544	1640 1614	1882	1889	30	26	110	P ± 70
100	27-IV-64	14°42'N	70°52'W	Fault Scarp Flanking Beata Ridge	1925 2002	2105 2035	2000		30	30	111	
101	29-IV-64	16°50' N	68°40'W	North Venezuelan Basin	1302	1605	2502		30	11	113	T-85 P 72
102	14-V-64	20°20'N	65°30.0'W		1220		3210		27	0		
103	15-V-64	20°00.1'N	66°20'W		1105				0	0		
104	15-V-64	20°00.9'N	66°20'W						50	50		
105	17-V-64	19°59.6'	66°27.5'W						68	66		

CONRAD - 8 - Camera

	Camera No	Date	Lat	Long	Location	Time Over First	Time Surf Last	P.D.R. First	P.D.R. Last	HITS No.	HITS Good	CORE No.		CORRELATIVE DATA
·	106	20-V-64	19°59.9'N	66°16'W	Puerto Rican Trench					60	59	~~144~~		P.
·	107	21-V-64	19°12'N	66°17'W	Puerto Rican Trench					42	39	~~145~~		
·	108	22-V-64	19°09'N	66°14'W						44	42			
·	109	23-V-64	19°10'N	66°17.5'W						34	34			
·	110	4-VI-64	20°07'N	65°06'W		1308	1658	3600?	3500	60	27			
·	111	5-VI-64	Few 10ths of mile North of Station 110			1800	2148	3280	3202	60	57			
·	112	6-VI-64	Few 10th of mile South of Station 110			2155	0630	3930	3600	60	56			
·	113	11-VI-64	19°28'N	65°25.7'W	S. side of Puerto Rican Trench	2335	0310	2875	2885	2-3	0			
·	114	20-VI-64	19°55.2'	66°40.5'	Puerto Rican	2050 2212	0021 2304	3760	3710	40	39			
·	115	22-VI-64	20°00.5'N	66°04'W		0932 1038	1235 1124	3550	3490	40	31	130		
·	116	21-VII-64	20°10'N	65°32'W		2225	0430	3370	3635	2	2			
·	117	23-VII-64	22°13'N	66°43'W		2022	0050	2928	2920	40	40			
·	118	25-VII-64	20°49.5N	66°55'W		0036	0410	2715	2523	40	47			
·	119	26-VII-64	20°45'N	66°5?'W		2340	0330	2660	2657	58	44	Dredge #8		
·	120	30-VII-64	20°16.5N	66°10.5W		2245	0315	2933	2970	50	38			
·	121	6-VIII-64	20°54.3N	63°33.7'W	outer ridge P.R. Trench	1600		2940	2831	51	31	136		
·	122	8-VIII-64	22°21.9N	68°10'W	Nares Abyssal Plain	1726 2010	1832 0005	3050	3050	13	2	137		
·	123	10-VIII-64	24°13'N	61°39'W	" " "	2142 0320 0430	2242 0430 0528	3098	3100	31	0	139		
·	124	11-VIII-64	24°53.2'N	57°51.7'W	Abyssal Hills Province	1020		2984	2992	10	1	140		
·	125	12-VIII-64	25°14.6'N	56°45.2'W	" " "	1111 2319	1128	3278	3279	11	2	141		
·	126	13-VIII-64	27°48.2'N	56°28'W	" " S.E Bermuda	0034 0930	0130	~2800	2806	35	28	142		
·	127	17-VIII-64	30°52'N	59°23.7W	Bermuda Rise South of Sohm Abyssal Plain	1017 1428	1115	2878		29	29	143		
·	128	15-VIII-64	33°07.5	61°24'W	Bermuda Rise	1603 1455	1646			13	11	144		
·	129	16-VIII-64	33°36'N	62°24'W	Muir Seamount	1600 0913 0942	1633 1116 1046	2467 ~1620	2442 1509	33	28	145		Dredge #9
·	130	17-VIII-64	33°53.3N	62°42.2'W	" "	0113 0147	0340 0240	1362	1464	26	26	146		Dredge #10
·	131	19-VIII-64	36°42'N	67°56'W	CARYN Sea Mount	0500 0548	0635	~1920	2178	32	31	147		Dredge #11
·	132	19-VIII-64	36°41.7'N	67°52.4'W	Caryn Seamount	2006	2220 2103	2345	2610	30	30	148		Dredge #12

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CONRAD 8# SAN JUAN CAPETOWN

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL
18	18	12	63	1	1336	-23	50.2	-15	34.3			4572.2	17			16				15			
					1645	-23	51.2	-15	35.3			4573.6											
19	18	12	63	1	1930	-24	39	-15	8.3			4601.3	18			17				16			
					2145	-24	4.6	-15	9.1			4602.3											
20	19	12	63	1	104	-24	19.0	-14	38.8			4633.5	19			18		6-1	2A	17			
					321	-24	19.7	-14	39.5			4634.4											
21	19	12	63	1	615	-24	32.0	-14	13.6			4661.0	20			19		6-2	2B	18			
					835	-24	32.7	-14	14.4			4662.0											
22	19	12	63	1	1140	-24	46.3	-13	45.7			4691.3	21			20				19			
					1200	-24	46.4	-13	45.8			4691.6											
					1316	-24	46.4	-13	45.9			4691.7											
23	19	12	63	1	1615	-24	59.2	-13	16.8			4721.0	22			21				20			
					1804	-24	59.3	-13	17.0			4721.2											
24	19	12	63	1	2100	-25	11.0	-12	47.6			4750.3	23			22				21			
					2309	-25	11.1	-12	47.9			4750.6											
25	~~20~~ 21	~~12~~	63	1	240	-25	24.0	-12	13.7			4784.1	24			23				22			
					436	-25	24.2	-12	14.0			4784.5											
					457	-25	24.5	-12	14.1			4784.8											
26	20	~~21~~ 12	63	1	834	-25	39.6	-11	43.5			4817.0	25			24				23			
					1104	-25	44.9	-11	34.8			4825.8											
27	20	~~21~~ 12	63	1	1413	-25	58.0	-11	7.4			4853.7	26			25				24			
					1630	-25	00.0	-11	8.3			4855.9											
28	20	~~21~~ 12	63	1	1945	-26	13.7	-10	35.6			4888.3	27			26		7		25		2	
					2215	-26	13.4	-10	33.2			4890.5											
29	21	12	63	1	430	-26	35.2	-9	25.3			4955.1	28			27				26			
					658	-26	35.2	-9	25.4			4955.2											
30	21	12	63	1	1354	-26	59.6	-8	14.6			5023.9	29			28				27			
					1703	-26	59.6	-8	14.7			5023.0											
31	~~21~~ 22	12	63	1-0	2244	-27	19.6	-7	18.7			5076.7	30			29		8	3	28			
					216	-27	20.5	-7	19.3			5077.8											
32	22	12	63	0	~~1514~~ 1514	-28	7.7	-5	10.0			5201.6						9					
					1722	-28	8.5	-5	10.5			5202.5											
33	23	12	63	0	930	-29	6.7	-2	21.6			5361.6	31			30				29			
					1212	-29	6.5	-2	22.4			5362.3											
34	24	12	63	0	1330	-30	23.1	2	19.6			5619.1	32			31		10		30			
					1639	-30	23.6	2	19.8			5619.6											

CONRAD 8 SAN JUAN - CAPETOWN

STA	D	M	Y	TZ	TIME	LAT		LONG	FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL	GoTe
35	26	12	63	-1	1518	-31	30.5	8 16.7			6038.4	33			32				31				
					1748	-31	30.5	8 17.2			6038.5												
36	26	12	63	-1	1920	-31	38.9	8 23.2			6048.7						11 (2 samples)		32		~~1~~		1
					2000	-31	39.0	8 23.3			6048.8												
					2112	-31	38.9	8 23.6			6049.1												
37	27	12	63	-1	1530	-32	37.4	11 40.0			6229.3	34			33		12						
					1934	-32	38.5	11 39.8			6230.4												
					2012	-32	38.3	11 39.8			6230.6												
38	28	12	63	-1	0105	-33	32.3	16 32.3			6481.7						13						
					0306	-33	31.1	16 32.2			6482.9												
CAPE TOWN - FREMANTLE																							
	D 2 steps before station - unit recorded ←																						
39	8	1	64	-3	1650	-38	28.2	26 5.8			5526.9	35			34		14		33				
					2022	-38	29.7	26 5.5			5527.9												
40	9	1	64	-2	1452	-40	13.7	28 47.1			6691.0	36			35		15		34				
					1730	-40	14.6	28 51.2			6694.3												
41	10	1	64	-2	1540	-41	20.1	33 13.0			6909.1	37			36		16		35				
					1907	-41	17.9	33 13.5			6911.3												
42	11	1	64	-2	1436	-41	52.1	37 48.0			7120.3	38			37				36				
					1905	-41	53.4	37 49.6			7122.1												
43	12	1	64	-3	1638	-42	54.9	42 19.3			7332.9	39			38		17		37				
					2025	-42	52.9	42 20.8			7335.2												
44	13	1	64	-3	1310	-43	46.5	46 10.8			7510.9	40			39		18		38				
					1510	-43	46.0	46 14.2			7513.4												
45	14	1	64	-3	1424	-43	40.5	51 14.5			7732.1	41			40								
					1618	-43	42.0	51 13.8			7733.7												
46	15	1	64	-4	1354	-45	41.5	54 48.2			7954.0	42			41		19		39				
					1635	-45	40.0	54 51.7			7956.9												
47	16	1	64	-4	1524	-48	41.2	57 20.9			8167.7	43					20		40				
					1900	-48	42.5	57 25.5			8171.0												
48	17	1	64	-4	1420	-51	3.5	60 17.7			8352.0	44			42		21		41				
					1825	-51	5.0	60 14.4			8354.6												
49	18	1	64	-4	1620	-53	2.8	62 33.3			8501	~~45~~							42				
					1930	-53	1.8	62 34.9			8501.5				43								
50	19	1	64	-4	1346	-55	21.0	65 32.3			8682.6	46			44		22		43				
					1615	-55	20.4	65 33.5			8683.5												

CONRAD 8 ~~SAN JUAN~~ CAPETOWN - FREMANTLE

Sta	D M Y	TZ	TIME	LAT	LONG	FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL
51	20 1 64	-5	1506	-55 1.5	71 45.9			2898.3	47			45	* no no. 1 found [illegible]	23		44			
			1640	-55 3.3	71 46.5			2900.6											
52	21 1 64	-5	1433	-53 16.3	76 54.5			3110.3	48			46		24		45			
			1618	-53 17.4	76 56.0			3111.7											
53	22 1 64	-5	1424	-51 3.8	81 33.0			3327.8	49			47		25		46			
			1935	-51 4.7	81 40.5			3332.6											
54	26 1 64	-6	1030	-44 46.9	92 22.5			3990.3	50			48				47			
			1318	-44 45.2	92 25.0			3992.8											
55	26 1 64	-6	2045	-44 1.5	93 52.7			4069.2	51			49				48			
			2325	-44 1.5	93 55.6			4071.3											
56	28 1 64	-7	1300	-41 6.5	101 25.4			4446.6	52			50		26		49			
			1747	-41 3.8	101 27.5			4449.7											
57	29 1 64	-7	1110	-39 23.0	104 23.0			4617.4	53			51		27		50			
			1620	-39 24.3	104 22.6			4618.7											
58	30 1 64	-7	1340	-37 35.4	107 26.6			4812.9	54			52		28		51			
			1727	-37 38.0	107 30.2			4816.7											
59	31 1 64	-7	1043	-35 49.8	109 57.0			4976.6	55			53		29		52			
			1512	-35 48.2	109 57.0			4978.2											
60	1 2 64	-8	1103	-33 40.0	112 38.9			5162.9	56			54		30		53			
			1510	-33 40.0	112 38.9			5162.9											
~~CAPETOWN~~ FREMANTLE — CHRISTCHURCH																			
61	7 2 64	-8	1830	-35 7.0	115 22.4			250.7	57				2			54			
			1930	-35 6.2	115 23.0			251.6											
62	8 2 64	-8	730	-35 24.5	116 36.0			321.2	58							55			
			820	-35 24.6	116 37.0			322.1											
63	8 2 64	-8	1622	-35 28.7	117 50.5			390.9	59										
			1725	-35 28.3	117 51.2			391.6											
64	9 2 64	-8	2116	-36 45.	120 54.				60			55		31		56			
			2337																
65	11 2 64	-8	1822	-43 27.	124 00								3						
			1855																
66	12 2 64	-8	1442	-46 3.3	125 35.7			1314.4	61			56				57			
			1900	-46 32.3	125 33.7			1316.1											
67	13 2 64	-8	1430	-49 20.0	127 6.8			1498.4	62			57							
			1800	-49 18.0	127 6.9			1500.4											

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CONRAD 8 FREMANTLE – CHRISTCHURCH

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL
68	14	2	64	-8	1236	-51	4.0	129	58.3			1673.3	63			58		32		58			
					1524	-51	5.5	129	54.3			1676.3											
69	15	2	64	-9	1400	-51	29.8	135	51.0			1902.4	64			59		33		59			
					1615	-51	30.5	135	51.7			1903.2											
70	16	2	64	-9	1530	-51	31.5	142	14.1			2141.2	65			60		34		60			
					1812	-51	34.1	142	14.3			2143.8											
71	17	2	64	-10	1440	-51	33.4	147	51.3			2353.3	66			61		35		61			
					1800	-51	35.0	147	56.8			2357.1											
72	18	2	64	-10	1352	-51	15.2	152	53.7			2543.3	67			62		36 (2 samples)		62			
					1849	-51	10.8	152	56.1			2547.9											
73	19	2	64	-11	1200	-50	34.5	155	35.0			2659.1	68			63				63			
					1753	-50	36.5	155	39.3			2662.5											
74	20	2	64	-11	1454	-53	28.5	155	36.0			2834.5	69										
					1757	-53	30.8	155	38.5			2837.3											
75	22	2	64	-11	1445	-58	2.5	155	47.8			3141.4	70							64			
					358	-58	4.7	155	51.0			3144.2											
76	22	2	64	-11	528	-58	2.0	155	43.4			3151.0	71										
					740	-58	3.5	155	47.0			3153.4											
77	22	2	64	-11	825	-58	3.5	155	38.2			3158.0	72										
					1425	-58	6.0	155	46.5			3163.1											
78	23	2	64	-11	1617	-56	0.3	158	46.8			3348.6	73					37		65			
					1900	-56	1.5	158	50.0			3350.8											
					2105	-56	2.2	158	45.7			3353.3											
79	24	2	64	-11	500	-54	45.5	159	4.0			3428.0						38					
					1100	-54	47.5	159	4.0			3429.0											
80	24	2	64	-11	1500	-54	46.9	159	13.9			3454.6	74			64				66			
					1900	-54	52.0	159	15.9			3459.8											
81	25	2	64	-11	1529	-53	53.5	164	42.9			3664.7	75					39		67			
					1750	-53	54.5	164	45.6			3666.6											
82	26	2	64	-12	1330	-52	34.5	169	19.8			3849.5								68			
					1630	-52	29.2	169	21.0			3854.8											
	28	2	64	-12	900	-46	1.4	174	16.1			4287.9											
					1105	-45	58.8	174	17.1			4290.6											

CONRAD 8 CHRISTCHURCH - AUCKLAND

STA	D M Y	TZ	TIME	LAT	LONG.	FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL		
83	4/5 3 64	-12	2220	-34-42 34.5	173 42.8			78.5	76					42 (2 samples)		69					
			0048	-42 33.8	173 44.3			80.8													
//	// //	//		AUCKLAND - WELLINGTON		//	//	//	///	/	/	/	/	/	/	/	/	/	/	/	/
84	10 3 64	-12	950	-37 3.6	177 36.2			156.7	77			66		43							
			1133	-37 5.3	177 37.8			158.8													
~~83~~	10 3 64	12	1025	-40 13.0	-179 4.5			406.9													
			1040	-40 13.2	-179 4.6			407.1													
//	// // //	///		WELLINGTON - PANAMA		//	//	//	/	/	/	/	/	/	/	/	/	/	/	/	/
85	18 3 64	-12	1820	-44 45.5	-175 46.0			467.9	79				4			70					
			2100	-44 47.3	-175 45.0			469.8													
	* CROSSED INTERNATIONAL DATE LINE							*													
86	18 3 64	-12	1244	-46 19.5	-172 51.0			622.6	79							71					
			1344	-46 21.5	-172 51.5			624.6					Cesium 14								
87	20 3 64	11	1540	-48 17.0	-162 50.0			1062.6	80				1	44							
			2002	-48 18.5	-162 53.5			1065.3													
88	21 3 64	11	1326	-47 53.5	-158 41.0			1236.9	81												
			1650	-47 59.0	-158 45.0			1243.0													
89	22 3 64	10	1305	-46 55.0	-154 13.0			1437.8	82			67		45		72					
			1628	-46 57.5	-154 15.5			1440.8													
90	23 3 64	10	1340	-45 52.5	-149 46.5			1637.3	83			68	Carbon 14 2								
			1827	-45 54.5	-149 43.0			1640.5													
91	25 3 64	10	1325	-43 24.5	-141 15.5			2045.1						46							
			1615	-43 25.5	-141 15.0			2046.1													
92	25 3 64	10	1655	-43 22.5	-141 20.0			2051.5	84												
			1945	-43 24.0	-141 16.5			2054.5													
93	26 3 64	9	1533	-42 31.0	-137 19.0			2236.6					Carbon 14 3, 4			{73}° {74}°?					
			1839	-42 28.5	-137 16.0			2240.0													
94	27 3 64	9	1440	-41 32.5	-133 14.0			2428.3	85				Carbon 14 5								
			1857	-41 34.0	-133 10.5			2431.3													
95	28 3 64	9	1340	-40 32.0	-129 22.5			2614.2	86				Carbon 14 6	47							
			1648	-40 34.0	-129 23.0			2616.2													
96	29 3 64	9	1300	-39 15.0	-125 34.0			2809.0	87				~~Carbon 14~~			75					
			1540	-39 16.0	-125 33.0			2810.3													
97	30 3 64	8	1300	-37 59.0	-121 55.0			2997.2	88					48		76					
			1548	-38 0.5	-121 55.0			2998.7													

CONRAD 8 WELLINGTON – PANAMA

STA	D	m	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL	GO TR
98	31	3	64	8	1350	-36	24.0	-118	6.0			3205.0	89					49		77				
					1555	-36	22.0	-118	5.5			3207.1												
99	1	4	64	8	1300	-34	53.0	-114	37.5			3398.1	90			no number:		50		78				
					1710	-34	53.0	-114	39.0			3399.4				0								
100	2	4	64	7	1242	-33	24.5	-111	56.5			3560.4	91			70		51		79				
					1500	-33	25.0	-111	52.0			3564.2						(2 samples)						
101	3	4	64	7	1318	-31	33.5	-108	30.0			3767.9	92			71		52		80				
					1510	-31	32.0	-108	33.0			3770.8												
102	4	4	64	7	1300	-29	23.0	-105	14.5			3985.1	93			72		53		81				
					1520	-29	22.0	-105	18.0			3988.3						(2 samples)						
103	5	4	64	7	1310	-27	14.5	-102	7.0			4198.1	94					54		82				
					1700	-27	16.0	-102	2.5			4202.1						8						
104	6	4	64	7	1220	-25	37.5	-99	5.5			4389.0						55		83				2
					1530	-25	39.0	-99	0.5			4393.7						(2 samples)						
105	7	4	64	6	1330	-22	39.0	-97	9.5			4602.0	95					56		84				
					1603	-22	38.0	-97	11.5			4604.1												
106	8	4	64	6	1300	-19	46.0	-95	35.0			4798.7	96					57		85				
					1500	-19	44.5	-95	38.0			4801.8												
107	9	4	64	6	1256	-16	50.5	-94	7.0			4996.5	97			73		58		86				
					1522	-16	49.5	-94	8.5			4998.3						(2 samples)						
108	10	4	64	6	1425	-13	30.0	-92	34.0			5217.7	98			74		59		87				
					1650	-13	27.5	-92	38.0			5222.3						(2 samples)						
109	11	4	64	6	1250	-10	38.0	-91	18.0			5409.0	99			75		60		88				
					1715	-10	36.0	-91	22.0			5413.4						(2 samples)						
110	12	4	64	6	1325	-7	42.5	-90	0.0			5604.9	100			76		61		89				
					1607	-7	40.0	-90	4.5			5610.0												
111	13	4	64	6	1315	-4	47.0	-88	33.0			5805.4	101			77		62		90				
					1610	-4	45.5	-88	34.5			5807.6						(2 samples)						
112	14	4	64	6	1525	-1	26.0	-86	49.0			6033.2	102			78		63		91				
					1715	-1	24.5	-86	52.0			6036.6												
113	15	4	64	6	1324	1	14.0	-85	10.0			6225.2	103					64		92				
					1534	1	16.5	-85	10.5			6227.7												
114	16	4	64	5	1330	3	42.5	-82	54.5			6427.0						65		93				
						3	44.5	-82	59.0			6431.9												

CONRAD 8 PANAMA to SAN JUAN

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CNL
115	22	4	64	5	1316	11	2.0	-78	28.5			135.0	104			79		66		94			
					1720	11	1.5	-78	32.5			138.9											
116	23	4	64	5	1345	13	12.5	-76	54.0			302.7	105			80		67		95			
					1746	13	9.5	-76	57.5			307.3											
117	24	4	64	5	1355	13	56.5	-74	53.0			437.4	106			81		68		96			
					1758	14	2.5	-74	54.0			443.5											
118	25	4	64	5	1336	14	32.0	-72	33.0			585.2	107			82		69		97			
					1600	14	35.0	-72	35.5			589.0						(2 samples)					
					1730	14	40.0	-72	34.0			594.2											
119	26	4	64	5	~~2145~~ 2145	14	44.0	-70	46.5			812.3	108			83		70 1st sample		~~98~~ 98			
	27	4	64	4	100	14	40.0	-70	49.5			815.4											
120	27	4	64	4	136	14	39.5	-70	49.0			816.1	109										
					519	14	37.5	-70	52.0			819.6											
121	27	4	64	4	1422	14	40.0	-70	50.5			885.8	110					2nd Sample		99			
					1707	14	40.0	-70	56.0			891.1											
122	27	4	64	4	1830	14	44.7	-70	53.0			899.5	111										
					1930	14	42.0	-70	53.0			902.2						3rd Sample		100			
					2117	14	41.0	-70	51.0			904.3											
123	28	4	64	4	1344	16	14.0	-70	20.3			1044.7	112			84		71					
					1617	16	14.3	-70	19.5			1045.3											
124	29	4	64	4	1300	16	50.0	-68	40.0			1235.4	113			85		72		101			
					1638	16	52.0	-68	40.0			1237.4											
11	11		SAN		JUAN	to		SAN	JUAN	*	FROM SCIENTIFIC LOG	*	1	11	11	11	11	11	11	11	11	11	11
125	14	5	64		1220	20°	21'	-65°	30.0											102			
126	15	5	64		1405	20	00.0	-66	20°											103			
127	15	5	64		2112 2157	20	00.9	-66	20											104			
128	17	5	64		203 2319	59.6		-66	27.5											105			
129	20	5	64		0933 1334	59.9		-66	16				114							106			
130	21	5	64		1730	19	12	-66	17											107			
													115										

CONRAD 8 SAN JUAN to SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	CK	L	T	W	P	PP	IC	KD	D	CHL	
131	22 5 64	0450	19 09	-66 14				116							108				
		0830																	
		0955																	
132	23 5 64	~~2200~~	19 10	-65 13				117							109				
		1208																	
133	23 5 64	1338	19 11.5	-65 14				118											
		1607																	
134	24 5 64	1349	20 18.2	-65 27.7				119											
		1640																	
135	25 5 64	2236	20 11.5	-65 23.5				120											
		0230																	
136	25 5 64	1821	19 06.5	-66 09.3				121											
		2255																	
137	25 5 64	2303	19 05.9	-66 11.4				122											
		0240																	
138	27 5 64	0810	20 07.1	-65 07.9				123											
		1135																	
139	2 6 64	0637	20 05.8	-65 06.6				124											
		1200																	
140	4 6 64	0740	20 07.5	-65 07				125							110				
		1135																	
141	5 6 64	2316	20 07	-65 06				126							111				
		0325																	
142	6 6 64	1235	20 06.8	-65 06.5											112		1		
		2033																	
143	7 6 64	1715	19 30.5	-65 15.8				127									"		
		2030																	
144	11 6 64	2028	19 28.6	-65 25.7				128							113				
		2316																	
145	15 6 64	1845	20 05.3	-65 04.8													2		
		2215																	
146	18 6 64	1007																	STD. 1
147	19 6 64	1400																	2
		1500																	
148	20 6 64	2050	19 55.2	-66 40.5											114		3		
		~~0200~~																	
		0815																	

CONRAD 8 SAN JUAN ⊵ SAN JUAN

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	CHL		D
149	21	6	64		0040	19	55	-66	40														STD	
					0200																		3#	
~~150~~																								
150	21	6	64		1105	21	21	-66	38			~~[illegible]~~	129											
					1500																			
151	22	6	64		0932	20	0.5	-66	04											115			4#	
					1235																			
152	22	6	64		1500	20	0.5	-66	10				130											
					1800																			
153	23	6	64		1000	19	36	-65	04															4
					1500																			
154	25	6	64		1330	20	09	-65	04									SHUTTER					5#	
					1642													SAMPLER 1#						
155	26	6	64		1830	20	39	-65	09									2#					6#	5
					0830																			
156	28	6	64		1422	20	09	-65	06															6
					2000																			
157	4	7	64		1255	16	14.5	-62	53.5				131											
					1402																			

CONRAD 8 SAN JUAN ⊵ SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Rad)	P	D	K	MILLIPORE FILTER	THORNDIKE	BRAINCON	SOUND VEL. m.	SURFACE CURRENT m.		N
158	6 7 64	0800	15 21.9	-61 03.9				132												(CSM)
		0810													1					
		1000														1 (Lowering)				
		1100																		
		1645																		
		1730															1			
		1900																		
		2000																1		
	7 7 64	0325																		
		1500									3									
											4									
		1800									4									
		2100									5									
		2235																	T.D.S.	
		0020																	8	
159	7 7 64	0300														1 (Lowering)				
		0700														1 (2nd)				
		0830																		
		0920															2			
		0922																	Surface	
		1000																	Drogue 1	
		1045									6									
		1700									7									
		2045									8									
		2100									9									
		1040													2					
		1207																		
		1900																	T,D,S,	
		0423																	8m	
160	8 7 64	1032	15 05	-61 14.0				133												
		1100									10									
		1800									11									
		1900									12									
		2200									13									

CONRAD 8 SAN JUAN to SAN JUAN

STA	D M Y	T7	TIME	LAT	|	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	MILLIPORE FILTER	THORNDIKE	BRAINCON	SOUND VEL. M.	SURFACE CURRENT M.		N (LSM)
160	8 7 64		1138 1242	15 05		-61 14													3			
			1242 1310	↓		↓													3a			
			1329 1522														3					
			1415																		SURFACE DROGUE 2	
			1504																	2		
			1600 2000																		T.D.S. 9	
			2028 1200															~~8~~ 2 (lowering 1st)				
			1200 0800															2 (lowering 2nd)				
			0843 0940																4			
			0940 1028																5			
161	9 7 64		0430 0700 1000 1130 1300										14 15 16 17 18									
FOUND LATER - HAD TO ADD HERE! →		2350 2400		15 14		-61 00				134												
			1655 1612 1542																		DROGUE SET OUT 1, 2, 3	
162	11 7 64		1440 1630	15 05		~~[illegible]~~ -61 21															T.D.S. 10	
163			1220 2010	14 56		-61 18															T.D.S. 11	
164	12 7 64		0315 0445	14 17.7		-60 54.9															T.D.S. 12	
			0330 1900	↓		↓														3		
			0503 0644														4					

CONRAD 8 SAN JUAN - SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	MILLIPORE FILTER	THERMO-DIKE	BRAINCON (lowering)	SQUAND UEL. M.	SURFACE CUR. M.		N (KSM)
164	12 7 64	0740	14 17.7'	-60 54.9												3 (lowering 1#)				
		1115																		
		1100																	SURFACE DROGUE 3#	
		1730															6# 2 DOWN 1 UP			
		1419																		
		1445																	T.D.S. 13	
		1645																		
165	12-13 7 64	0130									21									
		0500									22									
		0700									23									
		0700									24									
		1000									25									
		1300									26									
		1300									27									
		1600									28									
		1830									29									
		1900									30									
	14 7 64	1530	18 55	-62 13.5							31									
166	15 7 64	1130	18 22	-64 15.5														4		
		2130																		
		1115													5					
		1325																		
		1030									32									
		1305																		
		1345													6				SURFACE DROGUE 4	
		1820																		
		1830															7			
		2049																		
		2100																	T.D.S. 14	
		2225																		
167	21 7 64	0624	20 07	-65 11													incomplete			
		0714																		
		1005	20 07	-65 20													8			
		1130																		
		2225	20 10	-65 32					116											
		0430																		
168	22 7 64	1845	20 57	-65 42																
		2100																		

CONRAD 8 SAN JUAN ⊆ SAN JUAN

STA	D M Y	TZ TIME	LAT.	LONG.	FMS	METERS	MILES	C	T	W (12a)	P	D	K	MILL FILTER	THORN-DIKE	BRAID-COU	SOUND VEL M	SURFACE CUR. M.	NO (SM)
169	23 7 64	(12)2017	22 13	66 43				117											
		0050																	
170	24 7 64	1607	21 19	-67 08															MAG.
		1900																	BAROMETER
171	25 7 64	0036	20 49.5	-66 55				118											
		0410																	
172	26 7 64	0645	20 29.	-67 08								7							RETRIEVED
		1130																	BAROMETER
		1400	20 34	-67 10															BOTTOM
		1800																	MAGNETO-
		2340	20 49	-66 59				119											METER
		0330																	
173	27 7 64	0440	20 49	-66 59								8							
		0830																	
[redacted]		1600	20 29	-67 08															BOTTOM
		1930																	MAGNETO-
		2330	20 34	-67 08															METER
		0430																	
174	28 7 64	2300	↓	↓															
		0047																	
175	29 7 64	0939	20 47	-65 38															
		1218																	
		1730	20 53	-65 50															
		2400																	
176	30 7 64	0115	(?)	[redacted] unreadable															
		0515																	
		2245	20 16.5	-66 10.5				120											
		0315																	
177	31 7 64	0645	↓	↓															
		1135																	
178	1 8 64	0230	↓	↓															
		0730																	
179	2 8 64	0700	↓	↓															
		1130																	

CONRAD 8 SAN JUAN to NEW YORK

STA	D	M	Y	TZ	TIME	LAT		LONG	FMS	METERS	MILES	C	T	W (Rq)	P	D	K	(N) KSM	MILLIPORE FILTER
	5	8	64		2000	18	27.0	-65	33.7										1
	5	8	64		2400	18	52.8	-65	06.										2
	6	8	64		0130	19	01.8	-64	55.5										2A
	6	8	64		0330	19	13.5	-64	41.8										3
					0930	19	46.5	-63	48.4										4
					1215	20	12.2	-63	38.										5
					1700	20	53.8	-63	33.2										6
180					1800	20	54.3	-63	33.7			136	86		1-1		121		
					1900	20	54.8	-63	34.8										6A
	7	8	64		0380	19	55.3	-63	08.										7
					0800	20	19.9	-63	05.2										8
					1200	20	58.5	-63	08.5										9
					1300	21	09.2	-63	08.5										9A
					1600	21	41	-63	07.5										10
					2000	22	21	-63	10										11
181	7	8	64		2015	22	21.2	-63	09.8						2-1				
					2142 2244	22	21.9	-63	10								122		
	8	8	64		0205	22	23	-63	11			137	87						
					0400	22	24.5	-63	12										11A
					1615	20	45.8	-62	51.7										12
182	8	8	64		1634 1849	20	46.2	-62	52.9						3-1			1	
					1958	20	45.6	-62	54.6						3-2				
					2051	20	45.5	-62	55.8			138	88						
					2045	20	45.5	-62	55.8					1					
					2120	20	45.5	-62	56.0					2					

CONRAD 8 SAN JUAN to NEW YORK

STA	D M Y TZ	TIME	LAT	LONG	EMS	METERS	MILES	C	T	W (Ro)	P	D	IK	(N) LSM	MILLIPORE FILTER
	9 8 64	0234	20 23.5	-62 50											13
		0807	20 53.5	-62 09.4											14
		1134	21 24.6	-61 58.2											15
TAKEN UNDERWAY		1134	21 24.6	-61 58.2											15A
		1644	22 21.4	-61 52.3											16
	10 8 64	0245	24 09.2	-61 37.5											17
		0245	24 09.2	-61 37.5											17A
4		0430	24 13	-61 39									123		
		0528													
183		0602	24 13	-61 39.3				139	89						
		0530	b	b							4-1				
		0555								3					
		0945	24 19.7	-61 32						4					
		0750	24 12.7	-61 40							VERTICAL 4-1				
		1356	24 41.3	-60 52											18
		2000	25 18.7	-59 49.											19
TAKEN UNDERWAY	11 8 64	0109													20
		0414													21
		0415													21A
		0820													22
		1455													23
184		1111	24 53.2	-57 51.9									124		
		1128													
		1214	24 53.1	-57 50.				140	90						
	12 8 64	0035	25 14.5	-56 45.1											24
185		0034	25 14.6	-56 45.2									125		
		0130													
		0120	25 14.7	-56 45.3							5-1				
		0227	25 14.8	-56 45.6							5-2				
		0458	25 15.6	-56 47.9				141	91						

CONRAD 8 SAD SQUAD 8 NEW YORK

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	N (LSM)	MILLIPORE FILTER
TAKEN UNDERWAY	12 8 64	1000	25 46	-56 42.8											25
		1806	25 37.2	-55 30.4											26
	13 8 64	0036	26 29.7	-55 18.8											27
		0100	26 33.5	-55 21.9											27A
		1000	27 49.	-56 27.8											28
186	13 8 64	1049	27 48.2	-56 28.							6-1				
		1253	27 44.7	-56 29.3							6-2				
		1116	27 47.2	-56 28.3				142	92						
		1017	27 48.2	-56 28									126		
		1115													
	14 8 64	0037	29 23.2	-57 53.5											29
		0057	29 23.2	-57 53.5											29A
187	14 8 64	0037	29 23	-57 54.8							7-1			2	
		0335													
		0845	30 02.5	-58 44.7											30
		2000	30 51.8	-59 23											31
188	14 8 64	1603	30 52	-59 23.7									127		
		1646													
189	14 8 64	1900	30 51.4	-59 23.4				143	93	5	8-1				
		1933	30 51.7	-59 23.2											
	15 8 64	0110	31 16.7	-59 43.8											32 & 32A
		0932	32 24.5	-60 51.5											33
		1534	33 07.7	-61 25.4											34
190	15 8 64	1600	33 07.5	-61 24									128		
		1633													
191	15 8 64	1845	33 06.3	-61 18.1				144	94	6					
		1904	33 06.2	-61 17.1											
	16 8 64	0410	33 29	-62 32											35 & 35A
192	16 8 64	0942	33 36	-62 24									129		
		1046													
193	16 8 64	1100	33 35	-62 23.4				145	95		9-1				
		1139	33 34.8	-62 23.											

CONRAD 8 SAN JUAN to NEW YORK

STA	D	M	Y	TZ	TIME	LAT	LONG.	FMS	METERS	MILES	C	T	W (20)	?	D	K	N (LSM)	MILLIPORE FILTER
194	16	8	64		1455	33 32.8	-62 21.5								9			
					1720													
	17	8	64		0055	33 53.9	-62 41.8											36
					1544	34 00	-63 15.6											37
					2017	34 31.7	-63 58											38
~~195~~	~~17~~	~~8~~	~~64~~		~~0250~~													
					~~0336~~													
195	17	8	64		0036	33 52.8	-62 41.7				146	96		10-1	10	130		
					0537	33 54.4	-62 43.3											
	18	8	64		0205	34 58.8	-64 40											39
					0948	34 59.3	-64 42.4											39A
					0900	35 31.3	-65 43.2											40
					1526	36 11.8	-66 46.3											41
					2000	36 23.8	-67 00.4											42
196	18	8	64		0032	34 57.8	-64 36							11-1			3	
					0310	34 58	-64 37											
197	18	8	64		1529	36 12.3	-66 45.8							12-1			4	
					1755	36 12.6	-66 45											
	19	8	64		0015													43
					0326	36 41.8	-67 57.2											44
198	19	8	64		0408	36 41.8	-67 56.8				147	97				131		
					0635	36 42	-67 56											
199	19	8	64		0745	36 41.4	-67 55								11			
					0905													
					1126	36 39	-67 53.5											44A
200	19	8	64		1200	36 39.2	-67 53.2						7					
					1300	36 39.4	-67 52.2						8					
201	19	8	64		1500	36 40	-67 51						9		12			
					1840	36 41.8	-67 54							13-1				
~~202~~	19	8	64		2006	36 41.7	-67 52.4									132		
					2103													
203	20	8	64		0009	36 43.7	-67 56				148	98						
					0405	36 55	-68 27.8											45

CONRAD 8 SAN JUAN to NEW YORK

STA	D	M	Y	TZ	TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (RA)	P	D	K	N (LSM)	MILL. FILTER
	20	8	64		0800	37 13.7	-69 12											46
					0930	37 23	-69 28.4											47
					1030	37 26	-69 37											48
					1126	37 29	-69 48.2											49
					1230	37 31.5	-70 02.1											50
204	20	8	64		1240	37 31.5	-70 02.1						10	14-1			5	
					1557	37 35.2	-70 13.9											
					1402	~~37 44.5~~ 37 35.5	-70 14.1											51
					1800	~~38 02.1~~ 37 44.5	-70 38.6											52
					2000	38 02.1	-71 29.2											53
	21	8	64		0211	38 20.0	-72 .9											54
					0955	38 39.1	-72 29											55
205	21	8	64		0953	38 39.1	-72 29							15-1			6	
					1148	38 29.1	-72 29							15-2				
					1318	38 44	-72 39											56
					1541	38 58.7	-73 02											57
					1835	39 20.2	-73 14											58
					2130	39 42.0	-73 25.5											59
	22	8	64		0030	40 02.5	-73 36.0											60
					0330	40 21.2	-73 46.0											61
					0442													62

CONRAD & SAN JUAN ± SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	MILLIPERE FILTER	THORNDIKE	BRANCOM	SOUND. VEL. #1.	SURFACE CURRENT #1.		N
158	6 7 64	0800	15 21 9	-61 03.9				132												(USN)
		0830																		
		0850													1					
		1000														1 (towing)				
		1100																		
		1645																		
		1730															1			
		1900																		
		2000																1		
	7 7 64	0325																		
		1500									3									
		1800									4									
		2100									5									
		2235																	T.D.S. 8	
		0020																		
159	7 7 64	0300														1 (towing)				
		0700																		
		0820															2 X 2			
		0920																		
		0922																		
		1000																	Surface Magnet 1	
		1045									6									
		1700									7									
		2045									8									
		2100									9									
		1040													2					
		1207																		
		1900																	T.D.S. 8a	
		0423																		
160	8 7 64	1032	15 05	-61 14.0				133												
		1100									10									
		1800									11									
		1900									12									
		2200									13									

Columbia University
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LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK

TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat.	POSITION Long.	LOG	REMARKS
20	PLANKTON	1515				37°35.5'N	70°14.1'W	174	SURFACE TOW
A	14-1								
U									
G									
21	PLANKTON	1105				38°39.1'N	72°29'W	175	SURFACE TOW
A	15-1								
U									
G									
21	PLANKTON	1148				38°39.1'N	72°29'W	175.1	VERTICAL TOW
A	15-2								
U									
G									
21	LSM	0953	1129			38°39.1'N	72°29'W	175	
A	6								
U									
G									
21	MILLIPORE	0241				38°20.8'N	72°19'W	175	
A	FILTER								
U	54								
G									
21	MILLIPORE	0955				38°39.1'N	72°29'W	175.2	
A	FILTER								
U	55								
G									
21	MILLIPORE	1318				38°44'N	72°39'W	176.3	
A	FILTER								
U	56								
G									

Charles I. Fray
Chief Scientist

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PALISADES

Research Vessel ROBERT D. CONRAD
CRUISE N° 8
CRUISE LEG—From SAN JUAN To NEW YORK
TIME ZONE

Date	STATION and N°	TIME Start	TIME End	SOUNDING Start	SOUNDING End	POSITION Lat. N	POSITION Long W	LOG	REMARKS
21	MILLIPORE	15	41			38°58.7'N	73°02'W	175.4	
A	FILTER								
U	57								
G									
21	MILLIPORE	18	35			39°20.2'N	73°14'W	175.6	
A	FILTER								
U	58								
G									
21	MILLIPORE	21	30			39°42.0'N	73°25.5'W	175.6	
A	FILTER								
U	59								
G									
22	MILLIPORE	00	30			40°02.5'N	73°36.0'W	175.7	
A	FILTER								
U	60								
G									
22	MILLIPORE	03	30			40°21.2'N	73°46.0'W	175.8	
A	FILTER								
U	61								
G									
22	MILLIPORE	04	42					175.9	CHANNEL INSIDE AMBROSE LIGHTSHIP
A	FILTER								
U	62								
G									

Chief Scientist

Camera Information copied from this list into RC8 Camera Log A. Bond 68

CONRAD - 8 - CAMERA

San Juan - San Juan

	camera no.	Date	Lat	Lona	LOCATION	TIME Quev First	TIME Surf Last	P.D.R. First	P.D.R. Last	HITS No.	HITS Good	CORE No.	CORRELATIVE DATA
San Juan to Capetown	1	14-XI-63	18°45'N	66°18' W	S. Slope of Puerto Rican Trench	1840	1945	1125	1114	15	15	1	Plankton #1
						1904	1927						
	2	2-XII-63	11°12'N	48°05'W	W. End of S. Scarp of Vema Fracture Zone	1004	1315	± 2440		29	28	2	T-grad #1
						1107	1223						
	3	4-XII-63	10°48'N	43°12'W						30	29		T-grad #3
	4	6-XII-63	05°08'N	42°24'W	A Rise in the Demerra Abyssal Plain	1501	1604+	2460	2465	20	17	6	T-grad #5
	5	8-XII-63	02°16.5' N	38°14' 38°19'W		1015	1247			23	0		
						1048	1206						
	6	10-XII-63	00°00'	35°36'W	CEARA Abyssal Plain (OFF Brazil)	1322	1533	2410	2408	25	21	8	
						1354	1557						
	7	10-XII-63	03°31'S	33°18'W	Abyssal Edge of Continental Rise south end of Ceara Abyssal Plain	1822	2015	2085	2060	36	36	9	
						1853	1950						
	8	11-XII-63	06°26.5'S	30°59'W	Continental Rise S.E of Fernando Noronha Island (off Brazil)	1915	2200	2730	2745	38	28	10	T-grad #9
						1951	2112						
	9	13-XII-63	11°16'S	27°07'W	Abyssal Hills S. of Pernambuco Abyssal Plain (Off Brazil)	0934	1215	2925	2945	19	16	11	T-grad #10
						?	1132						
	10	14-XII-63	14°11'S	24°52.5'W	Abyssal Hills S.E of Pernamerca Abyssal Plain	1712	2023	2915	2920	40	33	13	T-grad #12 Plankton #5
						1810	1924						
	11	15-XII-63	16°33'S	22°49.5'W	Abyssal Hills ~ 500mi. NE of TRINDADE & Martin Vaz Islands	1540	1745	2560		25	21	14	Chloro #1
						1621	1712						
	12	16-XII-63	19°20.5'S	20°32'W	~ 300mi ENE of Trindade Island	1440	1705	2536	2530	29	20	15	T-grad #14
						1515	1627						
	13	17-XII-63	22°56'S	17°24'W	Abyssal Hills between Trindade Island & Mid Atlantic Ridge	1938	2225	2800	2800	23	21	—	
						2043	2146						
	14	18-XII-63	23°21'S	16°31.5W		0455	0725	2340	2380	Wire	Broke	16	T-grad #15
						0531	0625						
	15	18-XII-63	23°50'S	15°35.5'W	Western Foothills of Mid Atlantic Ridge	1340	1625	2090	2255	29	24	17	T-grad #16 PhytoPlankton #1
						1426	1529						
	16	18-XII-63	24°04'S	15°07'W	Western Slope of Mid Atlantic Ridge	1940	2135	2050	2030?	26	26	18	T-grad #17
						2018	2109						
	17	19-XII-63	24°16'S	14°39'W	Western slope - Mid-Atlantic	0110	0305	1940	1941	28	28	19	T-grad 18 PhytoP #2A Plankton #6-1
						0140	0234						
	18	19-XII-63	24°31'S	14°15'W	Western slope of Mid-Atlantic Ridge	0625	0825			28	28	20	T-grad 19 PhytoP #2B Plankton #6-2
						0700	0751						
	19	19-XII-63	24°45'S	13°45'W	" " " "	1147	1310	1005	1035	28	26	21	T-grad 20
						1215	1257						
	20	19-XII-63	24°58'S	13°16'W	Eastern Slope Mid-Atlantic Ridge	1625	1801	1480	1365	23	22	22	T-grad 21
						1650	1732						
	21	19-XII-63	25°09'S	12°46'W	" " " "	2110	2258	1730	1812	26	25	23	T-grad 22
						2145	2230						
	22	20-XII-63	25°23'S	12°14'W	" " " "	0247	0442	2185	2190	27	24	24	T-grad 23
						0323	0414						
	23	20-XII-63	25°40'S	11°36.5'W	Abyssal Hills Eastern slope of Mid Atlantic Edge	0858	1045	2075	2052	27	19	25	T-grad 24
						0926	1017						
	24	20-XII-63	25°56.5'S	11°06'W	Mountainous Range E. of Mid Atlantic Ridge	1416	1613	2238	2163	27	13	26	T-grad 25
						1445	1528						
	25	20-XII-63	26°14'S	10°36.5'W	Southern extension of Guinea Ridge	1955	2137	1970		22	18	27	T-grad 26 Plankton #7 Chloro #2
						2019	2108						
	26	21-XII-63	26°34.5S	09°26'W	Mountainous Range E of Mid Atlantic Ridge	0432	0637	2158	2175	28	27	28	T-grad 27
						0510	0555						
	27	21-XII-63	27°01.5'S	08°18.5'W	Between Mid Atlantic Ridge & Southerly Extension of Guinea Ridge	1355	1500	2085	2085	15	15	29	T-grad 28
						1437	1458						

CONRAD - 8
camera

camera no.	date	lat.	long.	Location	Time over First	Time over Last	P.D.R First	P.D.R Last	HITS No.	HITS GOOD	CORE NO.	correlative data
28	21-XII-63	27°20'S	07°19'W	Ridges parrallel to and West of Walvis Ridge	2255 2332	0107 0015	2295	2200	29	3	30	T-grad 29 Phyto P. #3 Plankton 8
29	23-XII-63	29°04.5'S	02°26.5'W	Ridges parrelleling and west of Walvis Ridge	0923 0957	1148 1046	2452	2449	27	23	31	T-grad 30
30	24-XII-63	30°26'S	02°18'E	ATop Easternmost of Walvis Ridges	1340 1408	1530 1456	1902	1871	28	26	32	T-grad 31 Plankton 10
31	26-XII-63	31°30'S	08°15'E	16 miles N.W. of Verna Seamount Peak	1520 1559	1730 1640	1800	1716	28	23	33	T-grad #32 Plankton #11
32				Cape Town to Freemantle					magnetic switch broke	0		
33	8-I-64	38°30'S	26°05'E	Aqulhas Plateau	1720 1754	1905 1839	1540	1562	27 neg.	9 missing	35	T-grad #34 Plankton # 14
34	9-I-64	40°26'S	28°55'E	SE slope Aqulhas Plateau	1455 1534	1705 1640	2190	2205	27 neg	3 missing	36	T-grad #35 Plankton #15
35	10-I-64	41°09'S	33°13'E	Aqulhas Basin	1540 1534	1748 1640	2625	2540	29	2	37	T-grad #36 Plankton 16
36	11-I-64	41°53'S	37°49'E	600 miles N. Prince Edward Islands S. Indian Ocean	1450 1520	1635 1550	1870	1880	15	6	38	T-grad # 37 [illegible]
37	12-I-64	42°53'S	42°21'E	600 mi. ENE Prince Edward Islands Indian Ocean	1738 1810	1910 1830	2317	2324	0	0 Trigger line fouled	39	T-grad #38 Plankton #17
38	13-I-64	43°47'S	46°12'E	~370 mi. NW of Les Isles de Crozet - Indian Ocean	1314 1339	1442 1417	1372	1372	29	23	40	T-grad #39 Plankton #18
39	15-I-64	45°41'S	54°54'E	~250 mi. NE of Les Iles de Crozet					12	12	42	T-grad 41 Plankton #19
40	16-I-64	48°41'S	57°22'E	300 mi E of Les Illes de Crozet	1540	1743	2315	2319	0 no film received	0	43	[illegible] Plankton #20
41	17-I-64	51°04'S	60°18'E	Indian Antartic Basin	1435 1519	1650 1611	2560	2570	29	28	44	T-grad #42 Plankton #21
42	18-I-64	53°02'S	62°33'E	~600 mi E. of Heard Island S. Indian Ocean	1625 1708	1910 1817			27	21	45	T-grad 43
43	19-I-64	55°20'S	65°28'E	~400 mi SW of Heard Island	1356 1419	1535 1459	1500	1510	29	29	46	T-grad 44 Plankton #22
44	20-I-64	55°03'S	71°47'E	~200 mi SE of Heard Island S Indian Ocean	1515 1545	1710 1627	1890	1880	29	31	47	T-grad 45 Plankton #23
45	21-I-64	53°16'S	76°55'E	~60 mi ESE of Heard Is. South Indian Ocean	1440 1457	1545 1535	590	597	27	24	48	T-grad 46 Plankton 24
46	22-I-64	51°04'S	81°33'E	~250 mi NE Heard Island S. Indian Ocean	1435 1534	1710 1620	2098	2100	28	26	49	T-grad 47 Plankton 25
47	26-I-64	44°46'	92°25'E	Mid Indian Ocean Ridge	1041 1127	1238 1213	1700	1740	21	23	50	T-grad 48
48	26-I-64	44°02'S	93°53'E	Mid Indian Ocean Ridge	2057 2129	2300 2208	1500	1520	26	26	51	T-grad 49
49	28-I-64	41°06'S	101°25'E	western Australian Basin	1305 1340	1530 1425	2351	2350	29	30	52	T-grad 50 Plankton 26
50	29-I-64	39°23'S	104°22'E	Western Australian Basin	1115 1157	1340 1233	2362	2362	29	27	53	T-grad 51 Plankton 27
51	30-I-64	37°35'S	107°27'E	Western Australian Basin	1343 1423	1545 1459	2280	2280	29	0?	54	T-grad 52 Plankton #28
				FREEMANTLE TO CHRISTCHURCH								
52	31-I-64	35°49'S	109°57'E	Western Australian Basin	1049 1137?	1340 1223?	2892	2894	29	12	55	T-grad 53 Plankton #29
53	1-II-64	33°40'S	112°40'E	South West Australian Basin	1110 1142	1310 1232	1640	1635	29	24	56	T-grad 54 Plankton #30 Sed #2

CONRAD 8 — Camera

	camera no	Date	Lat.	Long.	LOCATION	TIME over first	TIME sure last	P.D.R. First	P.D.R. Last	HITS No.	HITS Good.	CORE No	CORRELATIVE Data	
	54	7-II-64	35°07'S	115°24'E	Continental shelf off Cape Naturaliste, S.W Australia	1825 1636	1918 1915	108	110	20	20	57		
	55	8-II-64	35°24'S	116°36'E	Continental Shelf of S.W. Australia	0733 0736	0805 0755	110	120	16	15	58		
	56	9-II-64	36°45'S	130°54'E	Great Australian Bight	2045 2144	2245 2222	2845	2845	29	28	60	T-grad #55	Plankton 31
	57	12-II-64	46°32'S	125°34'E	Eastern End of Australian Basin	1442	1728	2128	2128	3	1	61	T-grad #56	
	58	14-II-64	51°05'S	129°58'E	South East Indian Rise	1345 1411	1452 1435	1855?	1855?	15	14	63	T-grad #58	Plankton #32
	59	15-II-64	51°30'S	135°51'E	South East Indian Rise	1408 1434	1550 1516	1780	1725	29	29	64	T-grad #59	Plankton #33
	60	16-II-64	51°32'S	142°13'E	~600 mi West of South Tasmanian Ridge (central)	1530 1600	1745 1654	1955	1957	32	32	65	Tgrad #60	Plankton #34
	61	17-II-64	51°33'S	147°51'E	Just West of Central South Tasmanian Ridge	1510	1730		~2170	1	1	66	T-grad #61	Plankton #35
	62	18-II-64	5[illegible]°08'S	152°56'E	Just East of Tasmanian Ridge	1358 1444	1645 1540	2340	2340	28	10	67	T-grad #62	Plankton #36
	63	20-II-64	53°29'S	155°37'E	S. End of Tasman Basin	1220	1450	2450	2460	29	12	69		
	64	22-II-64	58°03'S	155°47'E	Intersection of South Tasmanian Ridge and S.W. Auckland Rise	0200 0233	0330 0254	1770	1775	18	19	70		
	65	23-II-64	56°00'S	158°46'E	~180 mi S. of Macquarie Island S. Pacific	1625 1651	1808 1729	1805	1810	29	26	73		Plankton #37
	66	24-II-64	54°48'S	159°10E	5 mi of Mac Quarie Is. S.W. Auckland Rise	1507 1607	1830 1634	2882	2905	15	16	74	T-grad #64	Plankton #38
	67	25-II-64	53°54'S	164°43'E	Slope at edge of New Zealand Plateau	1535 1553	1707 1627	1150	1140	29	30	75		Plankton #39
	68	26-II-64	52°35'S	169°21'E		1337 1339	1420 1412	92	92	27	31	—		
	69	[illegible]												
	69	4-III-64	42°34'S	173°45'E	Landward Extremity of Kermadec Trench, N.Z.	2232 2256	2343 2334	720		28	no Film 0			Plankton #42
					Wellington to Panama									
	70	18-III-64	44°47'S	175°46'W	~30 mi S.E of Chatham Island Off N.Z.	1848 1905	2025 1943	950	950	27	27	78		Sediment #4
	71	19-III-64	46°19'S	172°51'W	S Pacific Basin	1253 1336	1520 1416	2635	2650	21	22	79		
	72	22-III-64	46°56'S	154°15'W	S. Pacific Basin	1318 1440	1620 1525	3378		27	23	82		Plankton 45
	73	25-III-64	43°25'S	141°17'W	S Pacific Basin	1600				0	0 wash trouble	84		Plankton 46
	74	26-III-64	42°31'S	137°17'W	S Pacific Basin					0	0 wire trouble		C14-F4	
	75	29-III-64	39°28'S	125°30'W	S Pacific Basin	1310 1431	1540 1458	2450	2420	15	13	87		
	76	30-III-64	38°00'S	121°55'W	S Pacific Basin	1308 1353	1540 1429	2475	2470	27	no film 0	88	T-grad-6	Plankton 48
	77	31-III-64	36°25'S	118°06'W	S Pacific Basin	1255 1432	1555 1504	2073	2086	29	33	89		
	78	1-IV-64	34°52'S	114°48'W	Easter Island Rise	1305 1333	1425 1405	1750	1760	29	29	90		Plankton 50

conrad 8 camera

camera no.	date	lat.	long	location	TIME over first	TIME surf last	P.D.R. first	P.D.R. last	HITS wo.	HITS good	CORE wo.	Correlative data
79	1-IV-64	33°25'S	111°54'W	Easter Island Rise	1250 1340	1430 1413	1460		24	23	91	T-grad 70 Plankton 51
80	3-IV-64	31°33'S	108°30'W	Easter Island Rise	1325 1359	1449 1427	1750	1750	27	23	92	T-grad 71 Plankton 52
81	4-IV-64	29°22'S	105°14'W	Easter Island Rise	1308 1354	1515 1423	1690	1690	27	25	93	T-grad 72 Plankton 53
82	5-IV-64	27°17'S	102°05'W	Easter Island Rise - Mountains	1320 1348	1437 1417	1650	1650	27	24	94	Plankton 54 (162)
83	6-IV-64	25°37'S	99°08'W	Eastside of Easter Island Rise	1245 1259	1358 1328	260	260	29	27		Bottom Trawl #2 Plankton 56
84	7-IV-64	22°38'S	97°11'W	Peruvian Basin	1334 1412	1523 1447	2080	2100	27	24	95	
85	8-IV-64	19°45'S	95°37'W	Peruvian Basin	1305 1341	1500 1409	1787	1785	27	27	96	Plankton #57
86	9-IV-64	16°50'S	94°07'W	Peruvian Basin	1305 1355	1521 1424	1560	1560	28	26	97	T-grad #73 Plankton #58
87	10-IV-64	13°28'S	92°35'W	Peruvian Basin	1435 1510	1607 1539	2060	2060	27	25	98	Plankton #59
88	11-IV-64	10°37'S	91°19'W	Peruvian Basin	1255 1332	1425 1401	2070		28	27	99	T-grad 75 Plankton #60
89	12-IV-64	07°49'S	90°02'W	Peruvian Basin	1334 1412	1510 1441	2180	2210	27	26	100	T-grad 76 Plankton #61
90	13-IV-64	04°46'S	88°34'W	Peruvian Basin	1320 1415	1600 1447	2107	2108	28	20	101	T-grad 77 Plankton 62
91	14-IV-64	01°25'S	86°51'W	Carnegie Ridge off Ecuador	1527	1628	1178		0	0	102	T-grad 78 Plankton 63
92	15-IV-64	01°16'N	85°10'W	Albatross Plateau	1320	1600	1630		20	21	103	Plankton 64
93	16-IV-64	03°39'N	82°56'W		1340	1425			0	0		Plankton 65
94	22-IV-64	11°02'N	78°30'W	Columbian Basin	1335 1418	1500 1433	1861	1863	12	0	104	Tgrad 79 Plankton 66
95	23-IV-64	13°12'N	76°55'W	Columbian Basin	1349 1442	1610 1515	2103		28	26	105	T-grad 80 Plankton 67
96	24-IV-64	14°00'N	74°53'W	Columbian Basin	1404 1441	1602 1514			30	29	106	T - 81 P - 68
97	25-IV-64	14°33'N	72°34'W	Beata Ridge - Caribbean	1340 1420	1530 1506	1722	1717	27	25	107	T-82 P. 69
98	26-IV-64	14°41 N	70°47'W	Fault Scarp Flanking Beata Ridge	2150 2236	2350 2231	1970	1893	30	30	108	T-83 P
99	27-IV-64	14°48N	70°54'W	On top of Fault Scarp Flanking Beata Ridge	1505 1544	1640 1614	1882	1889	30	26	110	P ± 70
100	27-IV-64	14°42'N	70°52'W	Fault Scarp Flanking Beata Ridge	1925 2002	2105 2035	2000		30	30	111	
101	29-IV-64	16°50' N	68°40'W	North Venezuelan Basin	1302	1605	2502		30	11	113	T-85 P 72
102	14-V-64	20°20'N	65°30.0'W		1220		3210		27	0		
103	15-V-64	20°00.1'N	66°20'W		1105				0	0		
104	15-V-64	20°00.9'N	66°20'W						50	50		
105	17-V-64	19°59.6'	66°27.5'W						68	66		

CONRAD - 8 - Camera

	Camera No	Date	Lat	Long	Location	Time Over First	Time Surf Last	P.D.R. First	P.D.R. Last	HITS No.	HITS Good	CORE No.		CORRELATIVE DATA
·	106	20-V-64	19°59.9'N	66°16'W	Puerto Rican Trench					60	59	~~144~~		P.
·	107	21-V-64	19°12'N	66°17'W	Puerto Rican Trench					42	39	~~145~~		
·	108	22-V-64	19°09'N	66°14'W						44	42			
·	109	23-V-64	19°10'N	66°17.5'W						34	34			
·	110	4-VI-64	20°07'N	65°06'W		1308	1658	3600?	3500	60	27			
·	111	5-VI-64	Few 10ths of mile North of Station 110			1800	2148	3280	3202	60	57			
·	112	6-VI-64	Few 10th of mile South of Station 110			2155	0630	3930	3600	60	56			
·	113	11-VI-64	19°28'N	65°25.7'W	S. side of Puerto Rican Trench	2335	0310	2875	2885	2-3	0			
·	114	20-VI-64	19°55.2'	66°40.5'	Puerto Rican	2050 2212	0021 2304	3760	3710	40	39			
·	115	22-VI-64	20°00.5'N	66°04'W		0932 1038	1235 1124	3550	3490	40	31	130		
·	116	21-VII-64	20°10'N	65°32'W		2225	0430	3370	3635	2	2			
·	117	23-VII-64	22°13'N	66°43'W		2022	0050	2928	2920	40	40			
·	118	25-VII-64	20°49.5N	66°55'W		0036	0410	2715	2523	40	47			
·	119	26-VII-64	20°45'N	66°5?'W		2340	0330	2660	2657	58	44	Dredge #8		
·	120	30-VII-64	20°16.5N	66°10.5W		2245	0315	2933	2970	50	38			
·	121	6-VIII-64	20°54.3N	63°33.7'W	outer ridge P.R. Trench	1600		2940	2831	51	31	136		
·	122	8-VIII-64	22°21.9N	68°10'W	Nares Abyssal Plain	1726 2010	1832 0005	3050	3050	13	2	137		
·	123	10-VIII-64	24°13'N	61°39'W	" " "	2142 0320 0430	2242 0430 0528	3098	3100	31	0	139		
·	124	11-VIII-64	24°53.2'N	57°51.7'W	Abyssal Hills Province	1020		2984	2992	10	1	140		
·	125	12-VIII-64	25°14.6'N	56°45.2'W	" " "	1111 2319	1128	3278	3279	11	2	141		
·	126	13-VIII-64	27°48.2'N	56°28'W	" " S.E Bermuda	0034 0930	0130	~2800	2806	35	28	142		
·	127	17-VIII-64	30°52'N	59°23.7W	Bermuda Rise South of Sohm Abyssal Plain	1017 1428	1115	2878		29	29	143		
·	128	15-VIII-64	33°07.5	61°24'W	Bermuda Rise	1603 1455	1646			13	11	144		
·	129	16-VIII-64	33°36'N	62°24'W	Muir Seamount	1600 0913 0942	1633 1116 1046	2467 ~1620	2442 1509	33	28	145		Dredge #9
·	130	17-VIII-64	33°53.3N	62°42.2'W	" "	0113 0147	0340 0240	1362	1464	26	26	146		Dredge #10
·	131	19-VIII-64	36°42'N	67°56'W	CARYN Sea Mount	0500 0548	0635	~1920	2178	32	31	147		Dredge #11
·	132	19-VIII-64	36°41.7'N	67°52.4'W	Caryn Seamount	2006	2220 2103	2345	2610	30	30	148		Dredge #12

LITHOGRAPHED IN U.S.A. ADDISON-WESLEY PRINTING CORP. CAMBRIDGE, MASS. A-W DaCapo 20V

CONRAD 8# SAN JUAN CAPETOWN

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL
18	18	12	63	1	1336	-23	50.2	-15	34.3			4572.2	17			16				15			
					1645	-23	51.2	-15	35.3			4573.6											
19	18	12	63	1	1930	-24	39	-15	8.3			4601.3	18			17				16			
					2145	-24	4.6	-15	9.1			4602.3											
20	19	12	63	1	104	-24	19.0	-14	38.8			4633.5	19			18		6-1	2A	17			
					321	-24	19.7	-14	39.5			4634.4											
21	19	12	63	1	615	-24	32.0	-14	13.6			4661.0	20			19		6-2	2B	18			
					835	-24	32.7	-14	14.4			4662.0											
22	19	12	63	1	1140	-24	46.3	-13	45.7			4691.3	21			20				19			
					1200	-24	46.4	-13	45.8			4691.6											
					1316	-24	46.4	-13	45.9			4691.7											
23	19	12	63	1	1615	-24	59.2	-13	16.8			4721.0	22			21				20			
					1804	-24	59.3	-13	17.0			4721.2											
24	19	12	63	1	2100	-25	11.0	-12	47.6			4750.3	23			22				21			
					2309	-25	11.1	-12	47.9			4750.6											
25	~~20~~ 21	~~12~~	63	1	240	-25	24.0	-12	13.7			4784.1	24			23				22			
					436	-25	24.2	-12	14.0			4784.5											
					457	-25	24.5	-12	14.1			4784.8											
26	20	~~21~~ 12	63	1	834	-25	39.6	-11	43.5			4817.0	25			24				23			
					1104	-25	44.9	-11	34.8			4825.8											
27	20	~~21~~ 12	63	1	1413	-25	58.0	-11	7.4			4853.7	26			25				24			
					1630	-25	00.0	-11	8.3			4855.9											
28	20	~~21~~ 12	63	1	1945	-26	13.7	-10	35.6			4888.3	27			26		7		25		2	
					2215	-26	13.4	-10	33.2			4890.5											
29	21	12	63	1	430	-26	35.2	-9	25.3			4955.1	28			27				26			
					658	-26	35.2	-9	25.4			4955.2											
30	21	12	63	1	1354	-26	59.6	-8	14.6			5023.9	29			28				27			
					1703	-26	59.6	-8	14.7			5023.0											
31	~~21~~ 22	12	63	1-0	2244	-27	19.6	-7	18.7			5076.7	30			29		8	3	28			
					216	-27	20.5	-7	19.3			5077.8											
32	22	12	63	0	~~1514~~ 1514	-28	7.7	-5	10.0			5201.6						9					
					1722	-28	8.5	-5	10.5			5202.5											
33	23	12	63	0	930	-29	6.7	-2	21.6			5361.6	31			30				29			
					1212	-29	6.5	-2	22.4			5362.3											
34	24	12	63	0	1330	-30	23.1	2	19.6			5619.1	32			31		10		30			
					1639	-30	23.6	2	19.8			5619.6											

CONRAD 8 SAN JUAN - CAPETOWN

STA	D	M	Y	TZ	TIME	LAT		LONG	FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL	GoTe
35	26	12	63	-1	1518	-31	30.5	8 16.7			6038.4	33			32				31				
					1748	-31	30.5	8 17.2			6038.5												
36	26	12	63	-1	1920	-31	38.9	8 23.2			6048.7						11 (2 samples)		32		~~1~~		1
					2000	-31	39.0	8 23.3			6048.8												
					2112	-31	38.9	8 23.6			6049.1												
37	27	12	63	-1	1530	-32	37.4	11 40.0			6229.3	34			33		12						
					1934	-32	38.5	11 39.8			6230.4												
					2012	-32	38.3	11 39.8			6230.6												
38	28	12	63	-1	0105	-33	32.3	16 32.3			6481.7						13						
					0306	-33	31.1	16 32.2			6482.9												
CAPE TOWN - FREMANTLE																							
	D 2 steps before station - unit recorded ←																						
39	8	1	64	-3	1650	-38	28.2	26 5.8			5526.9	35			34		14		33				
					2022	-38	29.7	26 5.5			5527.9												
40	9	1	64	-2	1452	-40	13.7	28 47.1			6691.0	36			35		15		34				
					1730	-40	14.6	28 51.2			6694.3												
41	10	1	64	-2	1540	-41	20.1	33 13.0			6909.1	37			36		16		35				
					1907	-41	17.9	33 13.5			6911.3												
42	11	1	64	-2	1436	-41	52.1	37 48.0			7120.3	38			37				36				
					1905	-41	53.4	37 49.6			7122.1												
43	12	1	64	-3	1638	-42	54.9	42 19.3			7332.9	39			38		17		37				
					2025	-42	52.9	42 20.8			7335.2												
44	13	1	64	-3	1310	-43	46.5	46 10.8			7510.9	40			39		18		38				
					1510	-43	46.0	46 14.2			7513.4												
45	14	1	64	-3	1424	-43	40.5	51 14.5			7732.1	41			40								
					1618	-43	42.0	51 13.8			7733.7												
46	15	1	64	-4	1354	-45	41.5	54 48.2			7954.0	42			41		19		39				
					1635	-45	40.0	54 51.7			7956.9												
47	16	1	64	-4	1524	-48	41.2	57 20.9			8167.7	43					20		40				
					1900	-48	42.5	57 25.5			8171.0												
48	17	1	64	-4	1420	-51	3.5	60 17.7			8352.0	44			42		21		41				
					1825	-51	5.0	60 14.4			8354.6												
49	18	1	64	-4	1620	-53	2.8	62 33.3			8501	~~45~~							42				
					1930	-53	1.8	62 34.9			8501.5				43								
50	19	1	64	-4	1346	-55	21.0	65 32.3			8682.6	46			44		22		43				
					1615	-55	20.4	65 33.5			8683.5												

CONRAD 8 ~~SAN JUAN~~ CAPETOWN - FREMANTLE

Sta	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL
51	20	1	64	-5	1506	-55	1.5	71	45.9			2898.3	47			45	#1 no no. found [illegible]	23		44			
					1640	-55	3.3	71	46.5			2900.6											
52	21	1	64	-5	1433	-53	16.3	76	54.5			3110.3	48			46		24		45			
					1618	-53	17.4	76	56.0			3111.7											
53	22	1	64	-5	1424	-51	3.8	81	33.0			3327.8	49			47		25		46			
					1935	-51	4.7	81	40.5			3332.6											
54	26	1	64	-6	1030	-44	46.9	92	22.5			3990.3	50			48				47			
					1318	-44	45.2	92	25.0			3992.8											
55	26	1	64	-6	2045	-44	1.5	93	52.7			4069.2	51			49				48			
					2325	-44	1.5	93	55.6			4071.3											
56	28	1	64	-7	1300	-41	6.5	101	25.4			4446.6	52			50		26		49			
					1747	-41	3.8	101	27.5			4449.7											
57	29	1	64	-7	1110	-39	23.0	104	23.0			4617.4	53			51		27		50			
					1620	-39	24.3	104	22.6			4618.7											
58	30	1	64	-7	1340	-37	35.4	107	26.6			4812.9	54			52		28		51			
					1727	-37	38.0	107	30.2			4816.7											
59	31	1	64	-7	1043	-35	49.8	109	57.0			4976.6	55			53		29		52			
					1512	-35	48.2	109	57.0			4978.2											
60	1	2	64	-8	1103	-33	40.0	112	38.9			5162.9	56			54		30		53			
					1510	-33	40.0	112	38.9			5162.9											
~~CAPETOWN~~ FREMANTLE — CHRISTCHURCH																							
61	7	2	64	-8	1830	-35	7.0	115	22.4			250.7	57				2			54			
					1930	-35	6.2	115	23.0			251.6											
62	8	2	64	-8	730	-35	24.5	116	36.0			321.2	58							55			
					820	-35	24.6	116	37.0			322.1											
63	8	2	64	-8	1622	-35	28.7	117	50.5			390.9	59										
					1725	-35	28.3	117	51.2			391.6											
64	9	2	64	-8	2116	-36	45.	120	54.				60			55		31		56			
					2337																		
65	11	2	64	-8	1822	-43	27.	124	00								3						
					1855																		
66	12	2	64	-8	1442	-46	3.3	125	35.7			1314.4	61			56				57			
					1900	-46	32.3	125	33.7			1316.1											
67	13	2	64	-8	1430	-49	30.0	127	6.8			1498.4	62			57							
					1800	-49	18.0	127	6.9			1500.4											

CONRAD 8 FREMANTLE – CHRISTCHURCH

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL
68	14	2	64	-8	1236	-51	4.0	129	58.3			1673.3	63			58		32		58			
					1524	-51	5.5	129	54.3			1676.3											
69	15	2	64	-9	1400	-51	29.8	135	51.0			1902.4	64			59		33		59			
					1615	-51	30.5	135	51.7			1903.2											
70	16	2	64	-9	1530	-51	31.5	142	14.1			2141.2	65			60		34		60			
					1812	-51	34.1	142	14.3			2143.8											
71	17	2	64	-10	1440	-51	33.4	147	51.3			2353.3	66			61		35		61			
					1800	-51	35.0	147	56.8			2357.1											
72	18	2	64	-10	1352	-51	15.2	152	53.7			2543.3	67			62		36 (2 samples)		62			
					1849	-51	10.8	152	56.1			2547.9											
73	19	2	64	-11	1200	-50	34.5	155	35.0			2659.1	68			63				63			
					1753	-50	36.5	155	39.3			2662.5											
74	20	2	64	-11	1454	-53	28.5	155	36.0			2834.5	69										
					1757	-53	30.8	155	38.5			2837.3											
75	22	2	64	-11	1445	-58	2.5	155	47.8			3141.4	70							64			
					358	-58	4.7	155	51.0			3144.2											
76	22	2	64	-11	528	-58	2.0	155	43.4			3151.0	71										
					740	-58	3.5	155	47.0			3153.4											
77	22	2	64	-11	825	-58	3.5	155	38.2			3158.0	72										
					1425	-58	6.0	155	46.5			3163.1											
78	23	2	64	-11	1617	-56	0.3	158	46.8			3348.6	73					37		65			
					1900	-56	1.5	158	50.0			3350.8											
					2105	-56	2.2	158	45.7			3353.3											
79	24	2	64	-11	500	-54	45.5	159	4.0			3428.0						38					
					1100	-54	47.5	159	4.0			3429.0											
80	24	2	64	-11	1500	-54	46.9	159	13.9			3454.6	74			64				66			
					1900	-54	52.0	159	15.9			3459.8											
81	25	2	64	-11	1529	-53	53.5	164	42.9			3664.7	75					39		67			
					1750	-53	54.5	164	45.6			3666.6											
82	26	2	64	-12	1330	-52	34.5	169	19.8			3849.5								68			
					1630	-52	29.2	169	21.0			3854.8											
	28	2	64	-12	900	-46	1.4	174	16.1			4287.9											
					1105	-45	58.8	174	17.1			4290.6											

CONRAD 8 CHRISTCHURCH - AUCKLAND

STA	D M Y	TZ	TIME	LAT	LONG.	FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL		
83	4/5 3 64	-12	2220	-34-42 34.5	173 42.8			78.5	76					42 (2 samples)		69					
			0048	-42 33.8	173 44.3			80.8													
//	// //	//		AUCKLAND - WELLINGTON		//	//	//	///	/	/	/	/	/	/	/	/	/	/	/	/
84	10 3 64	-12	950	-37 3.6	177 36.2			156.7	77			66		43							
			1133	-37 5.3	177 37.8			158.8													
~~83~~	10 3 64	12	1025	-40 13.0	-179 4.5			406.9													
			1040	-40 13.2	-179 4.6			407.1													
//	// // //	///		WELLINGTON - PANAMA		//	//	//	/	/	/	/	/	/	/	/	/	/	/	/	/
85	18 3 64	-12	1820	-44 45.5	-175 46.0			467.9	79				4			70					
			2100	-44 47.3	-175 45.0			469.8													
	* CROSSED INTERNATIONAL DATE LINE							*													
86	18 3 64	-12	1244	-46 19.5	-172 51.0			622.6	79							71					
			1344	-46 21.5	-172 51.5			624.6					Cesium 14								
87	20 3 64	11	1540	-48 17.0	-162 50.0			1062.6	80				1	44							
			2002	-48 18.5	-162 53.5			1065.3													
88	21 3 64	11	1326	-47 53.5	-158 41.0			1236.9	81												
			1650	-47 59.0	-158 45.0			1243.0													
89	22 3 64	10	1305	-46 55.0	-154 13.0			1437.8	82			67		45		72					
			1628	-46 57.5	-154 15.5			1440.8													
90	23 3 64	10	1340	-45 52.5	-149 46.5			1637.3	83			68	Carbon 14 2								
			1827	-45 54.5	-149 43.0			1640.5													
91	25 3 64	10	1325	-43 24.5	-141 15.5			2045.1						46							
			1615	-43 25.5	-141 15.0			2046.1													
92	25 3 64	10	1655	-43 22.5	-141 20.0			2051.5	84												
			1945	-43 24.0	-141 16.5			2054.5													
93	26 3 64	9	1533	-42 31.0	-137 19.0			2236.6					Carbon 14 3, 4			{73}° {74}°?					
			1839	-42 28.5	-137 16.0			2240.0													
94	27 3 64	9	1440	-41 32.5	-133 14.0			2428.3	85				Carbon 14 5								
			1857	-41 34.0	-133 10.5			2431.3													
95	28 3 64	9	1340	-40 32.0	-129 22.5			2614.2	86				Carbon 14 6	47							
			1648	-40 34.0	-129 23.0			2616.2													
96	29 3 64	9	1300	-39 15.0	-125 34.0			2809.0	87				~~Carbon 14~~			75					
			1540	-39 16.0	-125 33.0			2810.3													
97	30 3 64	8	1300	-37 59.0	-121 55.0			2997.2	88					48		76					
			1548	-38 0.5	-121 55.0			2998.7													

CONRAD 8 WELLINGTON – PANAMA

STA	D	m	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CHL	GO TR
98	31	3	64	8	1350	-36	24.0	-118	6.0			3205.0	89					49		77				
					1555	-36	22.0	-118	5.5			3207.1												
99	1	4	64	8	1300	-34	53.0	-114	37.5			3398.1	90			no number:		50		78				
					1710	-34	53.0	-114	39.0			3399.4				0								
100	2	4	64	7	1242	-33	24.5	-111	56.5			3560.4	91			70		51		79				
					1500	-33	25.0	-111	52.0			3564.2						(2 samples)						
101	3	4	64	7	1318	-31	33.5	-108	30.0			3767.9	92			71		52		80				
					1510	-31	32.0	-108	33.0			3770.8												
102	4	4	64	7	1300	-29	23.0	-105	14.5			3985.1	93			72		53		81				
					1520	-29	22.0	-105	18.0			3988.3						(2 samples)						
103	5	4	64	7	1310	-27	14.5	-102	7.0			4198.1	94					54		82				
					1700	-27	16.0	-102	2.5			4202.1						8						
104	6	4	64	7	1220	-25	37.5	-99	5.5			4389.0						55		83				2
					1530	-25	39.0	-99	0.5			4393.7						(2 samples)						
105	7	4	64	6	1330	-22	39.0	-97	9.5			4602.0	95					56		84				
					1603	-22	38.0	-97	11.5			4604.1												
106	8	4	64	6	1300	-19	46.0	-95	35.0			4798.7	96					57		85				
					1500	-19	44.5	-95	38.0			4801.8												
107	9	4	64	6	1256	-16	50.5	-94	7.0			4996.5	97			73		58		86				
					1522	-16	49.5	-94	8.5			4998.3						(2 samples)						
108	10	4	64	6	1425	-13	30.0	-92	34.0			5217.7	98			74		59		87				
					1650	-13	27.5	-92	38.0			5222.3						(2 samples)						
109	11	4	64	6	1250	-10	38.0	-91	18.0			5409.0	99			75		60		88				
					1715	-10	36.0	-91	22.0			5413.4						(2 samples)						
110	12	4	64	6	1325	-7	42.5	-90	0.0			5604.9	100			76		61		89				
					1607	-7	40.0	-90	4.5			5610.0												
111	13	4	64	6	1315	-4	47.0	-88	33.0			5805.4	101			77		62		90				
					1610	-4	45.5	-88	34.5			5807.6						(2 samples)						
112	14	4	64	6	1525	-1	26.0	-86	49.0			6033.2	102			78		63		91				
					1715	-1	24.5	-86	52.0			6036.6												
113	15	4	64	6	1324	1	14.0	-85	10.0			6225.2	103					64		92				
					1534	1	16.5	-85	10.5			6227.7												
114	16	4	64	5	1330	3	42.5	-82	54.5			6427.0						65		93				
						3	44.5	-82	59.0			6431.9												

CONRAD 8 PANAMA to SAN JUAN

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	D	CNL
115	22	4	64	5	1316	11	2.0	-78	28.5			135.0	104			79		66		94			
					1720	11	1.5	-78	32.5			138.9											
116	23	4	64	5	1345	13	12.5	-76	54.0			302.7	105			80		67		95			
					1746	13	9.5	-76	57.5			307.3											
117	24	4	64	5	1355	13	56.5	-74	53.0			437.4	106			81		68		96			
					1758	14	2.5	-74	54.0			443.5											
118	25	4	64	5	1336	14	32.0	-72	33.0			585.2	107			82		69		97			
					1600	14	35.0	-72	35.5			589.0						(2 samples)					
					1730	14	40.0	-72	34.0			594.2											
119	26	4	64	5	~~2145~~ 2145	14	44.0	-70	46.5			812.3	108			83		70 1st sample		~~98~~ 98			
	27	4	64	4	100	14	40.0	-70	49.5			815.4											
120	27	4	64	4	136	14	39.5	-70	49.0			816.1	109										
					519	14	37.5	-70	52.0			819.6											
121	27	4	64	4	1422	14	40.0	-70	50.5			885.8	110					2nd Sample		99			
					1707	14	40.0	-70	56.0			891.1											
122	27	4	64	4	1830	14	44.7	-70	53.0			899.5	111										
					1930	14	42.0	-70	53.0			902.2						3rd Sample		100			
					2117	14	41.0	-70	51.0			904.3											
123	28	4	64	4	1344	16	14.0	-70	20.3			1044.7	112			84		71					
					1617	16	14.3	-70	19.5			1045.3											
124	29	4	64	4	1300	16	50.0	-68	40.0			1235.4	113			85		72		101			
					1638	16	52.0	-68	40.0			1237.4											
11	11		SAN		JUAN	to		SAN	JUAN	*	FROM SCIENTIFIC LOG	*	1	11	11	11	11	11	11	11	11	11	11
125	14	5	64		1220	20°	21'	-65°	30.0											102			
126	15	5	64		1405	20	00.0	-66	20°											103			
127	15	5	64		2112 2157	20	00.9	-66	20											104			
128	17	5	64		203 2319	59.6		-66	27.5											105			
129	20	5	64		0933 1334	59.9		-66	16				114							106			
130	21	5	64		1730	19	12	-66	17											107			
													115										

CONRAD 8 SAN JUAN to SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	CK	L	T	W	P	PP	IC	KD	D	CHL	
131	22 5 64	0450	19 09	-66 14				116							108				
		0830																	
		0955																	
132	23 5 64	~~2200~~	19 10	-65 13				117							109				
		1208																	
133	23 5 64	1338	19 11.5	-65 14				118											
		1607																	
134	24 5 64	1349	20 18.2	-65 27.7				119											
		1640																	
135	25 5 64	2236	20 11.5	-65 23.5				120											
		0230																	
136	25 5 64	1821	19 06.5	-66 09.3				121											
		2255																	
137	25 5 64	2303	19 05.9	-66 11.4				122											
		0240																	
138	27 5 64	0810	20 07.1	-65 07.9				123											
		1135																	
139	2 6 64	0637	20 05.8	-65 06.6				124											
		1200																	
140	4 6 64	0740	20 07.5	-65 07				125							110				
		1135																	
141	5 6 64	2316	20 07	-65 06				126							111				
		0325																	
142	6 6 64	1235	20 06.8	-65 06.5											112		1		
		2033																	
143	7 6 64	1715	19 30.5	-65 15.8				127									"		
		2030																	
144	11 6 64	2028	19 28.6	-65 25.7				128							113				
		2316																	
145	15 6 64	1845	20 05.3	-65 04.8													2		
		2215																	
146	18 6 64	1007																	STD. 1
147	19 6 64	1400																	2
		1500																	
148	20 6 64	2050	19 55.2	-66 40.5											114		3		
		~~0200~~																	
		0815																	

CONRAD 8 SAN JUAN ⊵ SAN JUAN

STA	D	M	Y	TZ	TIME	LAT		LONG		FMS	METERS	MILES	C	CK	L	T	W	P	PP	K	KD	CHL		D
149	21	6	64		0040	19	55	-66	40														STD	
					0200																		3#	
~~150~~																								
150	21	6	64		1105	21	21	-66	38			~~[illegible]~~	129											
					1500																			
151	22	6	64		0932	20	0.5	-66	04											115			4#	
					1235																			
152	22	6	64		1500	20	0.5	-66	10				130											
					1800																			
153	23	6	64		1000	19	36	-65	04															4
					1500																			
154	25	6	64		1330	20	09	-65	04									SHUTTER					5#	
					1642													SAMPLER 1#						
155	26	6	64		1830	20	39	-65	09									2#					6#	5
					0830																			
156	28	6	64		1422	20	09	-65	06															6
					2000																			
157	4	7	64		1255	16	14.5	-62	53.5				131											
					1402																			

CONRAD 8 SAN JUAN ⊵ SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Rad)	P	D	K	MILLIPORE FILTER	THORNDIKE	BRAINCON	SOUND VEL. m.	SURFACE CURRENT m.		N
158	6 7 64	0800	15 21.9	-61 03.9				132												(CSM)
		0810													1					
		1000														1 (Lowering)				
		1100																		
		1645																		
		1730															1			
		1900																		
		2000																1		
	7 7 64	0325																		
		1500									3									
											4									
		1800									4									
		2100									5									
		2235																	T.D.S.	
		0020																	8	
159	7 7 64	0300														1 (Lowering)				
		0700														1 (2nd)				
		0830																		
		0920															2			
		0922																	Surface	
		1000																	Drogue 1	
		1045									6									
		1700									7									
		2045									8									
		2100									9									
		1040													2					
		1207																		
		1900																	T,D,S,	
		0423																	8m	
160	8 7 64	1032	15 05	-61 14.0				133												
		1100									10									
		1800									11									
		1900									12									
		2200									13									

CONRAD 8 SAN JUAN to SAN JUAN

STA	D M Y	TZ TIME	LAT		LONG		FMS	METERS	MILES	C	T	W (Ra)	P	D	K	MILLIPORE FILTER	THORNDIKE	BRAINCON	SOUND VEL. M.	SURFACE CURRENT M.		N (LSM)
160	8 7 64	1138	15	05	-61	14													3			
		1242																				
																			3a			
		1242	↓		↓																	
		1310																				
		1329															3					
		1522																				
		1415																			SURFACE DROGUE 2	
		1504																		2		
		1600																			T.D.S. 9	
		2000																				
		2028																~~8~~ 2 (lowering 1#)				
		1200																				
		1200																2 (lowering 2#)				
		0800																				
		0843																	4			
		0940																				
		0940																	5			
		1028																				
161	9 7 64	0430											14									
		0700											15									
		1000											16									
		1130											17									
		1300											18									
FOUND LATER: HAD TO ADD HERE!	→	2350	15	14	-61	00				134												
		2400																				
		1655																			DROQUE SET OUT	
		1612																				
		1542																			1, 2, 3	
162	11 7 64	1440	15	05	~~[illegible]~~ -61	21															T.D.S. 10	
		1630																				
163		1220	14	56	-61	18															T.D.S. 11	
		2010																				
164	12 7 64	0315	14	17.7	-60	54.9															T.D.S. 12	
		0445																				
		0330																		3		
		1900	↓		↓																	
		0503															4					
		0644																				

CONRAD 8 SAN JUAN - SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	MILLIPORE FILTER	THERMO-DIKE	BRAINCON (lowering)	SQUAND UEL. M.	SURFACE CUR. M.		N (KSM)
164	12 7 64	0740	14 17.7'	-60 54.9												3 (lowering 1#)				
		1115																		
		1100																	SURFACE DROGUE 3#	
		1730															6# 2 DOWN 1 UP			
		1419																		
		1445																	T.D.S. 13	
		1645																		
165	12-13 7 64	0130									21									
		0500									22									
		0700									23									
		0700									24									
		1000									25									
		1300									26									
		1300									27									
		1600									28									
		1830									29									
		1900									30									
	14 7 64	1530	18 55	-62 13.5							31									
166	15 7 64	1130	18 22	-64 15.5														4		
		2130																		
		1115													5					
		1325																		
		1030									32									
		1305																		
		1345													6				SURFACE DROGUE 4	
		1820																		
		1830															7			
		2049																		
		2100																	T.D.S. 14	
		2225																		
167	21 7 64	0624	20 07	-65 11													incomplete			
		0714																		
		1005	20 07	-65 20													8			
		1130																		
		2225	20 10	-65 32					116											
		0430																		
168	22 7 64	1845	20 57	-65 42																
		2100																		

CONRAD 8 SAN JUAN ⊆ SAN JUAN

STA	D M Y	TZ TIME	LAT.	LONG.	FMS	METERS	MILES	C	T	W (12a)	P	D	K	MILL FILTER	THORN-DIKE	BRAID-COU	SOUND VEL M	SURFACE CUR. M.	NO (SM)
169	23 7 64	(12)2017	22 13	66 43				117											
		0050																	
170	24 7 64	1607	21 19	-67 08															MAG.
		1900																	BAROMETER
171	25 7 64	0036	20 49.5	-66 55				118											
		0410																	
172	26 7 64	0645	20 29.	-67 08								7							RETRIEVED
		1130																	BAROMETER
		1400	20 34	-67 10															BOTTOM
		1800																	MAGNETO-
		2340	20 49	-66 59				119											METER
		0330																	
173	27 7 64	0440	20 49	-66 59								8							
		0830																	
[redacted]		1600	20 29	-67 08															BOTTOM
		1930																	MAGNETO-
		2330	20 34	-67 08															METER
		0430																	
174	28 7 64	2300	↓	↓															
		0047																	
175	29 7 64	0939	20 47	-65 38															
		1218																	
		1730	20 53	-65 50															
		2400																	
176	30 7 64	0115	(?)	[redacted] unreadable															
		0515																	
		2245	20 16.5	-66 10.5				120											
		0315																	
177	31 7 64	0645	↓	↓															
		1135																	
178	1 8 64	0230	↓	↓															
		0730																	
179	2 8 64	0700	↓	↓															
		1130																	

CONRAD 8 SAN JUAN to NEW YORK

STA	D	M	Y	TZ	TIME	LAT		LONG	FMS	METERS	MILES	C	T	W (Rq)	P	D	K	(N) KSM	MILLIPORE FILTER
	5	8	64		2000	18	27.0	-65	33.7										1
	5	8	64		2400	18	52.8	-65	06.										2
	6	8	64		0130	19	01.8	-64	55.5										2A
	6	8	64		0330	19	13.5	-64	41.8										3
					0930	19	46.5	-63	48.4										4
					1215	20	12.2	-63	38.										5
					1700	20	53.8	-63	33.2										6
180					1800	20	54.3	-63	33.7			136	86		1-1		121		
					1900	20	54.8	-63	34.8										6A
	7	8	64		0380	19	55.3	-63	08.										7
					0800	20	19.9	-63	05.2										8
					1200	20	58.5	-63	08.5										9
					1300	21	09.2	-63	08.5										9A
					1600	21	41	-63	07.5										10
					2000	22	21	-63	10										11
181	7	8	64		2015	22	21.2	-63	09.8						2-1				
					2142 2244	22	21.9	-63	10								122		
	8	8	64		0205	22	23	-63	11			137	87						
					0400	22	24.5	-63	12										11A
					1615	20	45.8	-62	51.7										12
182	8	8	64		1634 1849	20	46.2	-62	52.9						3-1			1	
					1958	20	45.6	-62	54.6						3-2				
					2051	20	45.5	-62	55.8			138	88						
					2045	20	45.5	-62	55.8					1					
					2120	20	45.5	-62	56.0					2					

CONRAD 8 SAN JUAN to NEW YORK

STA	D M Y TZ	TIME	LAT	LONG	EMS	METERS	MILES	C	T	W (Ro)	P	D	IK	(N) LSM	MILLIPORE FILTER
	9 8 64	0234	20 23.5	-62 50											13
		0807	20 53.5	-62 09.4											14
		1134	21 24.6	-61 58.2											15
TAKEN UNDERWAY		1134	21 24.6	-61 58.2											15A
		1644	22 21.4	-61 52.3											16
	10 8 64	0245	24 09.2	-61 37.5											17
		0245	24 09.2	-61 37.5											17A
4		0430	24 13	-61 39									123		
		0528													
183		0602	24 13	-61 39.3				139	89						
		0530	b	b							4-1				
		0555								3					
		0945	24 19.7	-61 32						4					
		0750	24 12.7	-61 40							VERTICAL 4-1				
		1356	24 41.3	-60 52											18
		2000	25 18.7	-59 49.											19
TAKEN UNDERWAY	11 8 64	0109													20
		0414													21
		0415													21A
		0820													22
		1455													23
184		1111	24 53.2	-57 51.9									124		
		1128													
		1214	24 53.1	-57 50.				140	90						
	12 8 64	0035	25 14.5	-56 45.1											24
185		0034	25 14.6	-56 45.2									125		
		0130													
		0120	25 14.7	-56 45.3							5-1				
		0227	25 14.8	-56 45.6							5-2				
		0458	25 15.6	-56 47.9				141	91						

CONRAD 8 SAD SQUAD 8 NEW YORK

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	N (LSM)	MILLIPORE FILTER
TAKEN UNDERWAY	12 8 64	1000	25 46	-56 42.8											25
		1806	25 37.2	-55 30.4											26
	13 8 64	0036	26 29.7	-55 18.8											27
		0100	26 33.5	-55 21.9											27A
		1000	27 49.	-56 27.8											28
186	13 8 64	1049	27 48.2	-56 28.							6-1				
		1253	27 44.7	-56 29.3							6-2				
		1116	27 47.2	-56 28.3				142	92						
		1017	27 48.2	-56 28									126		
		1115													
	14 8 64	0037	29 23.2	-57 53.5											29
		0057	29 23.2	-57 53.5											29A
187	14 8 64	0037	29 23	-57 54.8							7-1			2	
		0335													
		0845	30 02.5	-58 44.7											30
		2000	30 51.8	-59 23											31
188	14 8 64	1603	30 52	-59 23.7									127		
		1646													
189	14 8 64	1900	30 51.4	-59 23.4				143	93	5	8-1				
		1933	30 51.7	-59 23.2											
	15 8 64	0110	31 16.7	-59 43.8											32 & 32A
		0932	32 24.5	-60 51.5											33
		1534	33 07.7	-61 25.4											34
190	15 8 64	1600	33 07.5	-61 24									128		
		1633													
191	15 8 64	1845	33 06.3	-61 18.1				144	94	6					
		1904	33 06.2	-61 17.1											
	16 8 64	0410	33 29	-62 32											35 & 35A
192	16 8 64	0942	33 36	-62 24									129		
		1046													
193	16 8 64	1100	33 35	-62 23.4				145	95		9-1				
		1139	33 34.8	-62 23.											

CONRAD 8 SAN JUAN to NEW YORK

STA	D	M	Y	TZ	TIME	LAT	LONG.	FMS	METERS	MILES	C	T	W (20)	?	D	K	N (LSM)	MILLIPORE FILTER
194	16	8	64		1455	33 32.8	-62 21.5								9			
					1720													
	17	8	64		0055	33 53.9	-62 41.8											36
					1544	34 00	-63 15.6											37
					2017	34 31.7	-63 58											38
~~195~~	~~17~~	~~8~~	~~64~~		~~0250~~													
					~~0336~~													
195	17	8	64		0036	33 52.8	-62 41.7				146	96		10-1	10	130		
					0537	33 54.4	-62 43.3											
	18	8	64		0205	34 58.8	-64 40											39
					0948	34 59.3	-64 42.4											39A
					0900	35 31.3	-65 43.2											40
					1526	36 11.8	-66 46.3											41
					2000	36 23.8	-67 00.4											42
196	18	8	64		0032	34 57.8	-64 36							11-1			3	
					0310	34 58	-64 37											
197	18	8	64		1529	36 12.3	-66 45.8							12-1			4	
					1755	36 12.6	-66 45											
	19	8	64		0015													43
					0326	36 41.8	-67 57.2											44
198	19	8	64		0408	36 41.8	-67 56.8				147	97				131		
					0635	36 42	-67 56											
199	19	8	64		0745	36 41.4	-67 55								11			
					0905													
					1126	36 39	-67 53.5											44A
200	19	8	64		1200	36 39.2	-67 53.2						7					
					1300	36 39.4	-67 52.2						8					
201	19	8	64		1500	36 40	-67 51						9		12			
					1840	36 41.8	-67 54							13-1				
~~202~~	19	8	64		2006	36 41.7	-67 52.4									132		
					2103													
203	20	8	64		0009	36 43.7	-67 56				148	98						
					0405	36 55	-68 27.8											45

CONRAD 8 SAN JUAN to NEW YORK

STA	D	M	Y	TZ	TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (RA)	P	D	K	N (LSM)	MILL. FILTER
	20	8	64		0800	37 13.7	-69 12											46
					0930	37 23	-69 28.4											47
					1030	37 26	-69 37											48
					1126	37 29	-69 48.2											49
					1230	37 31.5	-70 02.1											50
204	20	8	64		1240	37 31.5	-70 02.1						10	14-1			5	
					1557	37 35.2	-70 13.9											
					1402	~~37 44.5~~ 37 35.5	-70 14.1											51
					1800	~~38 02.1~~ 37 44.5	-70 38.6											52
					2000	38 02.1	-71 29.2											53
	21	8	64		0211	38 20.0	-72 .9											54
					0955	38 39.1	-72 29											55
205	21	8	64		0953	38 39.1	-72 29							15-1			6	
					1148	38 29.1	-72 29							15-2				
					1318	38 44	-72 39											56
					1541	38 58.7	-73 02											57
					1835	39 20.2	-73 14											58
					2130	39 42.0	-73 25.5											59
	22	8	64		0030	40 02.5	-73 36.0											60
					0330	40 21.2	-73 46.0											61
					0442													62

CONRAD & SAN JUAN ± SAN JUAN

STA	D M Y	TZ TIME	LAT	LONG	FMS	METERS	MILES	C	T	W (Ra)	P	D	K	MILLIPERE FILTER	THORNDIKE	BRANCOM	SOUND. VEL. #1.	SURFACE CURRENT #1.		N
158	6 7 64	0800	15 21 9	-61 03.9				132												(USN)
		0830																		
		0850													1					
		1000														1 (towing)				
		1100																		
		1645																		
		1730															1			
		1900																		
		2000																1		
	7 7 64	0325																		
		1500									3									
		1800									4									
		2100									5									
		2235																	T.D.S. 8	
		0020																		
159	7 7 64	0300														1 (towing)				
		0700																		
		0820															2 X 2			
		0920																		
		0922																		
		1000																	Surface Magnet 1	
		1045									6									
		1700									7									
		2045									8									
		2100									9									
		1040													2					
		1207																		
		1900																	T.D.S. 8a	
		0423																		
160	8 7 64	1032	15 05	-61 14.0				133												
		1100									10									
		1800									11									
		1900									12									
		2200									13									