

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK to PANAMA

1

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		STN. LOG	REMARKS
		Start	End	Start	End	Lat. N	Long. W		
4	Surface	0952		0820		30°36'	73°03'		
JAN	Water		111		1270	38°22'	72°57'		
68	Sample								
	1								
6	Millipore	0515				32°49'	72°20'		Rough Seas - Filtered 4 liters
JAN	Sample #1								
68									
6	Surface	1110				30°15'N	72°33'W		
JAN	Water		122			32°33'N	73°49'W		
68	Sample								
	2								
7	TORAD	0947	114	1812	1812	31°11'	75°04'	1	4 PROBES IN MUD. PRESSURE TRACE OK. PROBE CAL FAILED TO MOVE
JAN	1A	HIT	103	1808					SO NO MUD OR WATER TEMPS. NO CONDUCTIVITY MEAS MADE ON
68									CORE. ALL EQUIPMENT OK
7	CAMERA	1147	135	1812		31°11'	75°04'	1	13 Hits - Pictures
JAN	1								
68									
7	NEPHELO	1147	135	1812		31°11'	75°04'	1	
JAN	METER								
68	1								
7	VERTICAL	1156	1212			31°11'	75°04'	1	Good Size Sample
JAN	PLANKTON								
68	TOW 1								

Charles C. Winchell
Chief Scientist

**Columbia University
in the City of New York**

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

#1

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		STN. LOG	REMARKS
		Start	End	Start	End	Lat. N	Long. W		
4	Surface	0952		0820		38°36'	73°03'		
JAN	Water		1117		1270	38°22'	72°57'		
68	Sample								
	1								
6	Millipore	0815				32°49'	72°20'	—	Rough Seas - Filtered 4 liters
JAN	Sample #1								
68									
6	Surface	1110				32°15'N	72°33'W	—	
JAN	Water		1225			32°33'N	72°49'W		
68	Sample								
	2								
7	TGCAD	0947	1144	1812	1812	31°11'	75°04'	1	4 PROBES IN MVD. PRESSURE TRACE OK. PROBE CAL. FAILED TO MOVE
JAN	1A	HIT	1053	1808					SO NO MVD OR WATER TEMPS. NO CONDUCTIVITY MEAS MADE ON
68									CORE. ALL EQUIPMENT OK
7	CAMERA	1147	1358	1812		31°11'	75°04'	1	12 Hits - Pictures
JAN	1								
68									
7	NEPHILO	1147	1358	1812		31°11'	75°04'	1	
JAN	METEOR								
68	1								
7	VERTICAL	1156	1212			31°11'	75°04'	1	Good Size Sample
JAN	PLANKTON								
68	TOW 1								

Charles C. Winchell
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

1

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat. N	Long. W		
7	Millipore	0430				30° 11'	77° 04'		Water was rough with visible amounts of brown sea weed - Filtered 4 liters of sea water
JAN	Sample #2								
'68									
7	Core	0947	1144	1212	1212	31° 11'	75° 04'	1	Depth of penetration at 1325 cm, base of core band penetrated. Total length 1246 cm, good core 1246 cm no flow in. Clay, medium gray (V5) to brownish gray (5YR 7/1), moderately compacted, structureless, burrowing, string to absent, carbonate content low, coarse fraction < 2%. Slightly undulating slope.
JAN	1	HIT	1053	1208					
'68									
7-8	Soundings	2307	0020			30° 37' N	76° 12.6' W		Channel 7, A on fast traverse, B on slow traverse
JAN									3 1/2 seconds penetration, No refractions
'68									SMT #8 Depth = 2000 fms
8	Surface	0806				30° 30' S	77° 23' W		Filled two tanks with wet lab pump to 175 gal each
JAN	Water		0728			30° 19.3' N	77° 36' W		
'68	Sample 3								
8	Millipore	0650				30° 22'	77° 21'	2	Filtered 4 liters - no clogging of filter
JAN	Sample #3								
'68									
8	Core	0621	0702	498	492	30° 22'	77° 21'	2	DEPTH OF PENETRATION UNKNOWN. TOTAL LENGTH 1014 cm; TRUE LENGTH 1004 cm. NO FLOW IN. FORAMINIFERAL OOLITE. PALE YELLOWISH BROWN (10-66 cm); IRON-MANGANESE CRUST, DARK YELLOWISH BROWN (66-68 cm); FORAMINIFERAL CRUST 1022. PREDOMINANTLY VERY PALE ORANGE (68-1064 cm). GENERALLY POORLY COMPACTED. GENTLE SLOPE. NEAR EDGE OF CLAYE PLATEAU.
JAN	2	HIT	0642	494					
'68									
8	Soundings	1900	2030	2943	78° 40'	29° 43'	78° 40'	-	DEPTH SET 60 FT
	3								NORMAL INCIDENCE, SHORT BEAM ON A2-BODY ON A1 MINED LONG
									BEAM ON B2 - REC FROM PLUNGER ON B1 3000 FT - TRAVERSE SH#14

Charles C. Woodruff
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To Palisades

#2

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat N	Long. W		
	SOUNDING	1714	1730	2051		29°51'	78°35'	-	NORMAL INCIDENCE. SHORT REL ON R2-BOUY ON R1. FIXED LONG
JAN 68	#3			2051		29°44'	78°39'		REL ON R2-REC BOUY PLAYBACK ON R1. BOTH ON FAST TRAVERSE
									SHT #13
9	SOUNDING	0737				29°45'	79°33.3'	-	CHANNEL 11. DEPTH SET 60 FT. TIME 3 HOURS
JAN 68	4A								SLOW TRAVERSE
									SHEET #19 420 FMS
9	SOUNDING	0754				28°44'	79°39.5'	-	CHANNEL 8. DEPTH SET 60'. TIME 3 HOURS
JAN 68	4								FAST TRAVERSE
									SHEET #19 420 FMS
9	SOUNDING	1378				28°23.8'	79°58'	-	CHANNEL 1 DEPTH SET 60' TIME 3 HOURS FAST TRAVERSE
JAN 68	5								SHEET #21
10	CORE	1031		352		26°53.1'	79°36.8'	3	NO CORE OR TRIGGER WEIGHT CORE. CORE WENT OUT OF CORE PIPE
JAN 68	3A	CHECK 1236	1259	CHECK 303	303				ON THE WAY UP. NO NOTATION WIRE TO JUDGE PENETRATION BUT MILKY
		HIT	1246	303					WATER DRAINED OUT OF PIPE SHOWING THAT SEDIMENT ENTERED THE
									PIPE ORIGINALLY. PENETRATION UNKNOWN. GUTTEN NEARLY FLAT
10	CORREHEAD					NOTE		3	TRIGGER WIRE TOO SHORT
JAN 68	CAMERA 1A			372	382	STATION #3			TRIGGER WIRE PULLED OUT AT PIPE - TRIGGER WIRE TOO SHORT
	GUTTEN	0826				IN GULF STREAM		3	20 HITS 12 USABLE SHOTS
	CAMERA 2					START 0824			
	NEPHELOMETER					26°47.2'N, 79°36.5'W			VERY STRONG NEPHELOMETER LAYER. APPROX 80 FMS FROM GUTTEN
	CAMERA 2					FINISH 1354			
						27°08.6'N, 79°40.5'W			

Charles C. Whitcomb
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To HAWAII

3

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	MILLAGE	0850				26°49'51"N	29°36'51"W		
JAN	SAMPLE								
68	# 4								
11	SURFACE	1135	1152			26°57'51"N	79°38'13"W		
JAN	TOW #1								
68									
11	INTERMEDIATE	1110	1150			26°57'51"N	79°38'13"W		4 BARRELS - 3 TAKEN AT 100 FMS, 1 AT 105 FMS
JAN	SAMPLE								TELLTALE SLIDES FOR ONE OF THOSE TAKEN AT 100 FMS
68	1								INDICATED EARLY TRIGGERING
10	SURFACE	1508	1555			27°03'N	79°38'W		1 TANK FILLED TO 175 GAL BY WET LBR PUMP
JAN	WATER								
68	SAMPLE								
	4								
11	SOUNDING	0119		211		26°07'N	79°34'3"W		SSQ-41 PHONE DEPTH = 60 FT, TIME 3 HOURS
JAN	# 6		0224			211 26°02'6"N	79°38'1"W		FAST TRAVERSE PROE A+B, SHEET #33
68									GOOD REFRACTIONS
	SOUNDING	2245							SSQ-41 WENT DEAD SHORTLY AFTER LAUNCHING
	# 7A		2253			24°20'1"N	80°21'8"W		36
									SHEET
11	SOUNDING	2253				24°20'1"N	80°21'8"W		SSQ-41; 3 HRS; 60 FT PHONE; NORMAL INCIDENCE ON
JAN	7		0003			24°24'2"N	80°27'8"W		CANALS 1A 2B BOY ON 1A 2B
68									36

Charles C. Winnick
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	SYNOUDY	0443		256		24°33'N	81°05'W		SSQ-41 - WENT DEAD SHORTLY AFTER LAUNCHING
JAN	#								HIGH NOISE LEVELS
68	8A								
12									
12	SYNOUDY	0537		62		24°32'N	81°11'W		SSQ-41, 60FT PHONE, 3HE LAB, PROFILE SHEET
JAN	#		0729	2	62	24°30'N	81°23'W		#19. REFRACTIONS
68	8								
12	SYNOUDY	1202		121		24°19'S	81°47'W		SSQ-41 - WENT DEAD SHORTLY AFTER LAUNCHING
JAN	#		1215						
68	9A								
12	SURFACE	0755				24°30'N	81°27'W		EACH OF TWO TANKS FILLED TO 175 GAL
JAN	WATER		0915			23°46'N 82°56'W			WITH WET LAB PUMP
68	SAMPLE					24°28'N	81°43'W		
	#5								
13	SURFACE	0755				23°43'N	82°45'SW		EACH OF TWO TANKS FILLED TO 175 GAL
JAN	WATER		0915			23°46'N	82°56'W		WITH WET LAB PUMPS
68	SAMPLE								
	#6								
13	MILLPore	2205				23°52'S	83°43'W		ROUGH SEAS AND HIGH WINDS
JAN	Sample								
68	#5								
13	Surface	2342				23°48'N		4	EXTREMELY ABUNDANT PLANKTON - REAS VERY
JAN	Tow #2		0000			23°41'3W			AGITATED - ALMOST FULL MOONLIGHT
68									

Charles C. Winchick
Chief Scientist

Columbia University
in the City of New York

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	VERTICAL	0033							PLANKTON NOT NEARLY AS ABUNDANT AS IN
JAN 768	TOW #2		0044			23°46'N	83°40'8"W	4	SURFACE TOW BUT SUCCESSION TOW ALSO
						23°48'S	83°41'S	4	
						23°48'S	83°41'S	4	
						23°48'S	83°41'S	4	
						23°48'S	83°41'S	4	Depth of penetration 305 cm. Total length
	1B								
	TURAD	2306	0012	1120		23°48'S	83°41'S	4	2 PROBES IN MVD. FILM RECORD BARELY USEABLE: THE
	1	HIT	2336	1062					TURAD GOT KNOCKED ABOUT AND THE ALIGNMENT OF THE OPTICAL
									SYSTEM WAS CHANGED & LOBSCARD; CASING LEAKED. LOST ONE
									PROBE
13-14	CORE	2306	0011	1120	~950	23°48'S		4	Depth of penetration: 305 cm. Total length: 112.8 cm. True
JAN 58	3	HIT	2335	~1060			83°41'S		length 247 cm. Foraminiferal marl, pale yellowish
									brown & light gray to medium yellowish gray, moderately
									compacted, moderately burrowed. Coarse fraction 10-20%
									Steep slope on side of deep canyon.
14	SURFACE	0755				23°55'N	84°02'W		EACH OF TWO TOWS HUNG TO 175 GEL WITH
JAN 68	WATER		0915						WET LAB RAMP
	SAMPLE					23°05'N	84°11'W		
	#7								

Charles C. Lindbergh
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG—From New York To Panama

TIME ZONE +5

Charles C. Winters
Chief Scientist

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To Panama

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14-15	PARTICULATE	2307	0113	1811	1810	24°30'N	85°14'W	5	BARREL #3 CLOSED CORRECT DEPTH
JAN	MATTER	HIT	0009	1811					
68	SAMPLE #1								
14-15	TURBID	2302	0108	1811	1810	24°30'N	85°14'W	5	4 PROBES IN MUD (GOOD FILM RETIRED DOTS FAINT)
JAN	2	HIT	0009	1811					ONE PROBE BENT CONDUCTIVITY MEASURED
68									(ASIN) LEAKED AGAIN.
15	SOUNDING	0243		1815		24°32'N	85°13.5'W		SSQ-41 60 ft DEPTH, 3HR OPERATION
JAN	#6		0353	1815		TO			EAST TRAW (BOTH PROFILES) 7MILES
68	7					24°35'S	85°36.3'W		NO REFRACTIONS?
15	Millipore	1851				25°59'N	84°49.6'W		Filtered 4 liters - no clogging
JAN	Sample #7								
68									
15	Surface	1954				25°57.2'N	84°51.7'W	6	Rich sample
JAN	Sample #4		2005						
68									
15	Vertical	2024				25°56.8'N	84°52.2'W	6	Good sample
JAN	Sample #4		2035						
68									
15	CORE	1944	2118	1330-1350	21105	25°56.8'N	84°52.2'W	6	Penetration 850? cm, pipe fell over. Total length 536cm
JAN	5	HIT	2008	1707	1707				True length 500 cm. Cutting edge badly bent. Foram.
68				steep slope results in					mael dark yellowish brown to brownish gray (0-162cm) +
				inaccurate PDR readings					dark yellowish brown (148-500cm); clay, brownish gray (162-448)
									steep slope.

Charles C. Whitaker
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG—From New York To Panama

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15 JAN 68	SURFACE WATER SAMPLE #8	0800	0920			24°59'N	85°42'W		FILLED 2 TANKS WITH WET LAB PUMP TO 170 GAL EACH
						25°06'N	85°50'SW		
						25°56'N	84°32'W	6	
						25°48'N	84°52'W	6	
						25°56'N	84°52'W	6	
15 JAN 68	TRAD 3A	1444 Hit	2118 2022	1025 Hit	? 1573	25°56'N 25°56'N	84°52'W 84°52'W	6	4 PROBES IN MUD. LOST FIRST PROBE & HOLDER. FILM BLANK.
16 JAN 68	Surface Sample #8	1641				26°32'N	87°47'W	7	Filled 4 HERS - calm seas
16 JAN 68	Surface Sample #5	1715	1730			26°31'N	87°41'W	7	Good Tow

Charles W. Whitcomb
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	Vertical	1855				26°30'S	87°47'W	7	Caught brilliantly luminescent jelly fish
JAN	Sample #5		1909						
68									
16	CORE	1755	2014	1464	1476	26°30'S	87°47'W	7	PENETRATION 896 cm. TOTAL LENGTH 1023 cm. TRUE LENGTH 726 cm.
JAN	6	HIT	1915	1474					CORE EXTRUDED 9 cm. BY GAS PRESSURE. CLAY, REDDISH
68									BROWN (0-35 cm), GRAYISH RED (35-54 cm) and BROWNISH GRAY
									to MEDIUM DARK GRAY (54-726 cm). COARSE FRACTION < 5%
									and FREQUENTLY s/s: FORAMS, QUARTZ SAND, PYRITE VERY GENTLE SLOPE
16	TORAD	1755	2013	1463	1476	26°30'S	87°47'W	7	4 PROBES IN MUD. ALL PROBES RECOVERED. ON FILM 3 PROBES
JAN	3	HIT	1915	1474					DISAPPEAR UPON HIT, REAPPEAR NEAR SURFACE.
68									PROBES (CHECK OUT AT SURFACE. PRESSURE TRACE DIDN'T
									WORK. NO THREE GOOD NO (HIT) MEASUREMENTS . ONE
									GOOD PROBE IN MUD ON FILM. (COND MEASURED)
16	PROTRUDER	1755	2013						GARREL #2 CLOSED AT PROPER DEPTH (5 FMS ABOVE
JAN	WATER	HIT	1915	1463	1476			7	CORED) LOCK ON TOP OF GARREL W/O FALL INTO
68	GARREL #2			HIT	1474	26°30'S	87°47'W		STRONG AFTER PROTRUDER RECOIL WIRE
16	DIESEL	1755	2013	1463	1476	26°30'S	87°47'W	7	2 BARRELS (1/2 SAMPLE) COLLECTED AND PUMPED INTO
JAN	WATER								TANK. TELLTALE SWIRLS INDICATE BARRELS WERE CLOSED
68	SAMPLE #1								AT 1100 FMS AS PLANNED.
	(OPS-1)								
16	BOTTOM	1702	2040	1463	1476	26°30'S	87°47'W	7	10 HITS — 25 GOOD SHOTS
JAN	CAMERA								
68	(TRIPOD)								
	#6								
16	NEPHEL-	1702	2040	1463	1476	26°30'S	87°47'W	7	TIME & PRESSURE TRACE O.K. (FIRST LOWERING IN
JAN	OMETER								OCEAN) BUT CAMERA NOT ORIENTED PROPERLY
68	#3C								THUS NO INDICATION OF NEPHALOID LAYER
	(TRIPOD)								

Charles C. Whitcomb
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	CURRENT	002	2140	1463	1476	26°30.5' N	87°47' W	7	PANAMA F. STRIP WORKED PERFECTLY; COMPASS
JAN	METER								AND VANES ALL LEGIBLE
68	#								
	/								
16	COR.	1755	2014	1464	1476	26°30.5' N	87°47' W	7	FILM DID NOT DEVELOP—SHUT OFF SWITCH
JAN	WOOD								ON DEEP SPool PROBABLY (RUBBER BAND
68	CAMERA								SUPPLIED OFF)
	#								
	2A								
16	IKMWT	2100				26°39' N	87°47' W	7	ISAGOS KID net towed for 2 hours 18 min at
JAN	#1		2308			TO			5.5K covering distance of 11 nautical miles
68	S.T. 115					26°35' N	87°56' SW		
	#1								
17	SURFACE	1230				27°45' N	89°35' SW		1 TANK FILLED TO 200 GAL BY NET LAB
JAN	WATER		1315			TO			PUMP
68	SAMPLE					27°43' N	89°42' W		
	#9								
18	VERTICAL	1147				27°08' S	91°33' W	8	VERY LITTLE PLANKTON CAUGHT
JAN	TOW #6		1201						
68									
18	WILKINSON	1234				27°08' S	91°33' W	8	FILTERED 4 Liters with clogging
JAN	SAMPLE								
68	#9								
	WILKINSON	2100							
	CORE	1105	1154	1028	~960	27°08' S	91°33' W	8	PENETRATION 740cm. TOTAL LENGTH 973. TRAC LENGTH 760.
	7	HIT	1124		~1043				CORE EXTRUDED ~3cm BY GAS PRESSURE. (LAY, DARK YELLOWISH
				Depth	1043 ^{ft}				BROWN (0-49cm), MEDIUM BROWNISH GRAY (49-124cm), MEDIUM DARK
				1134)					GRAY (124-138cm) 736-~720), SAND (138-276) STEEP SLOPE

Charles C. Whitcomb
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° C-12

CRUISE LEG—From New York To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		TOO STN	REMARKS
		Start	End	Start	End	Lat/V	Long. W		
17	BOTTEN	1105	1154			27°08.5'	91°33'	8	15 HITS - 2 USABLE SHOTS - CAMERA RONS OK ON SURFACE
JAN	CAMERA								REASON FOR LOST SHOTS NOT YET EXPLAINABLE
68	# 7								
18	CORE HEAD	1105	1154			27°08.5'	91°33'	8	FILM ADVANCED, BUT NO IMAGES; SUSPECT PROBLEM? GROUND PROPT
JAN	CAMERA								CASING TO CASING - INSTALLED NEW GROUND WIRE
68	# 2A								
18	T GRAD	1105	1154	1028	960	27°08.5'	91°33'	8	3 PROBES IN MUD, TWO LOST, ONE ON FILT (FOR WT & TIME) NO SOUND PERS
JAN	# 4	HIT	1123	HIT	1030				
68									
18	SOUNDING	1852	1942	1160	1400	26°19'	91°44'		SSQ41; 3 HRS; 60 FT; 8 mi; 2 KT SALT DOME AREAS;
JAN	# 10					TO			FASTEST REFRACTIONS 2.3 KM/SEC
68						26°12.3'	91°72'		
18	SOUNDING	1946	2100			26°12'	91°72'		SSQ41; 3 HRS; 60 FT; 7 mi 6.5 KT; SALT DOME AREAS
JAN	# 11					26°03'	91°51'		FASTEST REFRACTIONS ARRIVAL 2.3 KM/SEC
68									
18	SOUNDING	2104	2223			26°02'	91°51'		SSQ41; 3 HRS; 60 FT; 9 mi; 6.5 KT SALT DOME AREA
	# 12					25°54'	91°55'		FASTEST REFRACTIONS 2.3 KM/SEC
	SOUNDING	2227	2341			25°54'	91°55'		SSQ41; 3 HRS; 60 FT; 8 mi; 6.5 KT; SALT DOME AREA
W	# 13					25°46'	91°58'		
8									

Charles P. ...
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
19	Surface	0933				25°11'N	93°01'W	9	LARGE PLANKTON CATCH — COULD NOT TAKE
JAN 68	Tow #6		0950						VERTICAL TOW THIS STATION — PLANKTON CATCH
									INOPERATIVE — WORKING ON ACCUMULATOR
19	IKMWT	1330				25°12'N	93°06'W	9	Upon retrieving IKMWT at 1335
JAN 68	#2					25°16'S	93°17'W		the brick broke and the IKMWT, suspended by
									spring bar was lost, shifted 1900 ft
									swivel broke within jacket.
19	CORE	0946	1237	1906	1908	25°11'N	93°01'W	9	PENETRATES TO BASE OF HEAD, 1315 cm. TOTAL LENGTH
JAN 68	8	HIT	1110	1907					162 cm. TRUE LENGTH ~1138 cm. MARL, VARIEGATED COLORS
									(0-150 cm); CLAY, BETWEEN MEDIUM DARK GRAY + BROWNISH
									GRAY WITH NUMEROUS LAMINATIONS OF SLIGHTLY MORE
									SANDY SEDIMENT. COARSE FRACTION, <5%. FLAT
19	CURRENT			1906	1908	25°11'N	93°02'W	9	65 PICTURES; INDICATE APPROX. N.E. DIRECTION OF
JAN 68	METER								CURRENT — NEAR HORIZONTAL POSITION OF BOTH
	#2								LIGHT & HEAVY PENDULUMS INDICATE POSSIBLE HIGH
	(TRIPOD)								VELOCITY OF CURRENT
19	BOTTOM			1906	1908	25°11'N	93°02'W	9	16 SHOTS OF BOTTOM — 6 HITS
JAN 68	CAMERA								
	#8								
	(TRIPOD)								
19	NEPHLO-			1906	1908	25°11'N	93°02'W	9	FAILED TO ACTIVATE LIGHT SOURCE
JAN 68	OMETER								
	3D								
19	Core Head	0946	1237			25°11'N	93°01'W		Core Head BURIED IN MUD
JAN 68	CAMERA								
	2 C								

Charles P. Woodcock
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 5-12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat. N	Long. W		
19	MILLPORE	0910				25°11.6'	93°	9	
JAN	SAMPLE #10								
68									
19	MILLPORE								
JAN	SAMPLE #11								
68									
19	T GRAD	0946	1237	1907	1908	25°11.6'	93°01'	9	3 PROBS IN MUD, ONE ON FILM (PROBE #2). COND. MEAS.
JAN	S	HIT	H10	HIT	1907				
68									
19	DEEP WATER	0946	1237	1907	1908	25°11.6'	93°01'	9	TWO BARRELS AT 1000 FM, TELL TALE SLIDES PERFECT.
JAN	SAMPLE #1	HIT	H10	HIT	1907				2ND HALF OPS-1
68	OPS-1								
19	DEEP	0946	1237	1907	1908	25°11.6'	93°01'	9	TELL TALE SLIDE #39 INDICATES BARREL CLOSED NEAR
JAN	MASTER	HIT	H10	HIT	1907				SURFACE. SAMPLE DISCARDED
68	#39								
	TURAD	2320	0110	1735		25°47'	94°14'	10	4 PR. IN MUD, 4 ON FILM. COND. MEAS.
	6	HIT	0006	HIT	1740				
	HIT	2319	0110	1735	1740	25°47'N	94°13'S	10	TELL-TALE SLIDE INDICATES BARREL CLOSED 3/4 OF
	TR	HIT	0006	HIT	1740				WAY DOWN. SAMPLE PROCESSED. THIS WAS
	MPK								BARREL #12
	3B								

Charles C. Winchell
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES
5/21

CRUISE N° _____

CRUISE LEG—From New York To London

TIME ZONE 46

Charles P. Whitham
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From PERMUT To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
19-20	(OCE)	2319	0110	1735	1740	25°47'N	94°13'8"W	10	PENETRATES TO BASE OF HEAD, 1315cm. TOTAL LENGTH
JAN	9	MT	0006	1740					1192cm. TRUE LENGTH ~1154cm. Marl, dark
68									YELLOWISH BROWN (0-41cm); CLAY, MODERATE YELLOWISH
									BROWN (41-19.5cm) + MEDIUM DARK GRAY (NW) TO BROWN-
									SH GRAY (NE) VERY GENTLY ROLLING - 15 FMS RELIEF
19-20	(CURRENT)	2205	0135	1735	1740	25°47'N	94°13'8"W	10	NW CURRENT AT HIGH VELOCITY (58 PICTURES)
JAN	METER								
68	#3								
	(TRIPOD)								
19-20	BOTTOM	2205	0135	1735	1740	25°47'N	94°13'8"W	10	6 SHOTS OK.
JAN	CAMERA								
68	#9								
19-20	NEPHEL-	2205	0135	1735	1740	25°47'N	94°13'8"W	10	HEAVY NEPHELOID LAYER 250 FMS OFF
JAN	METER								BOTTOM.
68	#3								
19-20	COR. HEAD	2319	0110	1735	1740	25°47'N	94°13'8"W	10	(CORE BURIED - NO SHOTS)
JAN	CAMERA								
68	CK # 20								
	SOUND BODY	2046	2149	1825	1795	25°39'N	93°58'8"W	10	SSQ-41, 60 FT, 3 HRS, 8 MILES
	#14								
						25°42'N	94°04'W		
20 JAN	SOUND BODY	0209	0344	1745	1825	25°45'N	94°13'6"W	10	SSQ-41, 60 FT, 3 HRS, 9 MILES
68	#15								
						25°36'N	94°14'20"W		

Charles C. Melville
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
20 JAN 68	SURFACE 16	1545	1717	1930		23°54'N	91°54'W	11	SQ-41, 60 FT, 3 HRS, 9 MINS
20 JAN 68	SURFACE SAMPLE 10	1045	1135			24°37'N	91°32'W		2 TANKS @ 175 GAL COLLECTED FROM NET LATE PUMP.
						24°35'N	91°36'W		
20 JAN 68	PART. MATTER 30								
20 JAN 68	TGRAD 7	2150	2339	1519	1630	23°23'N	95°32'W	11	4 PROBES IN MUD, 4 ON FILM. WT IN MUD. COLD WGRAS.
20 JAN 68	CORE 10	2150	2339	1567	1669	23°23'N	95°32'W	11	PENETRATES TO BASE OF HEAD, 1365 cm TRUE LENGTH. 1073 PLUS APPARENTLY GOOD CORE (1087-1099 cm) BELOW FLOW-IN. TOTAL LENGTH: 1099 cm CLAY, RANGING FROM DARK YELLOWISH BROWN TO GRAYISH RED + MODERATE BROWNISH GRAY, + ASH RICH CLAY (982-999 cm) HILLY; ABOUT 150 cm RELIEF. TAT LOOK FILLED SLOWLY; MAY HAVE BEEN SAME LOCATION OF FILTER.
20 JAN 68	MULTIPLE Sample #12	2141				23°24'N	95°32'W		
20 JAN 68	Surface Tow #8	2237	2245			23°23'N	95°32'W		MANY LUMINESCENT VERRUCOSAE CAPTURED. GOT DOWN SAMPLING TOW DUE TO SLOWING OF NET IN REVERSED TOWS IN THIS AREA.

Charles C. Woodcock
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To Panama

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20	1041-1	2327				23°32'S	95°31'W	11	11 HITS - 12 GOOD BOTTOM HITS
JAN	1041-7		2342						RETRACTED
68									
20	1041-1	2376	0008	1567	1669	23°23'S	95°32'W	11	5 HITS - 12 GOOD BOTTOM HITS
JAN	1041-7								
68	40								
	(1041-7)								
20	1041-1	2176	0011	1567	1669	23°23'S	95°32'W	11	30 FRAMES LEBLIE (OTHERS OBSERVED BY AND CLOUDS) N.E. DIR. HIGH VEL.
JAN	1041-7								
68	#4								
	(1041-7)								
20	1041-1	2176	0011	1567	1669	23°23'S	95°32'W	11	FILM DID NOT ADVANCE (SUP-CLUTCH ON TAKE-UP SPool SECOND LOCK, SA SPRING WAS TIGHTENED)
JAN	1041-7								
68	#4A								
	(1041-7)								
21	SURFACE	0400				22°50'N	96°21'W		FILLED TWO TANKS TO 175 GAL EACH WITH NET LAB PUMP
JAN	WATER	0925							
68	SAMPLE					20°35'N	96°30'W		
	#11								
21	SURFACE	1733		42		22°17'N	97°36'W		SSA-41 60/L FINE DEPTH, 2HR LIFE < 9m
JAN	#		1835		26				ALL SUN SPOTS SHORT DEPTH HIGH
68	17					22°16'N	97°35'W		VELOCITY REPORTED PARALLEL (IN AIR)
									SHOT IN VICINITY OF APENQUE WEL
21	SURFACE	1859		27		22°16'N	97°34'W		SSA 41 60/L FINE DEPTH, 2HR LIFE, " 9m
JAN	#		2002		40				IN ATTEMPT TO REVERSE SB # 17
68	18					22°16'N	97°27'W		

Charles C. Whittaker
Chief Scientist

Columbia University
in the City of New York

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY

PALISADES
STN

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21-22 JAN 68	SONUS/01 # 19	1322	0048			20°22'N	77°01'SW	11	SSQ-41; 60ft PHONE DEPTH; 342 LBS; ~9mi ON CONTINENTAL RISE EAST OF TAMPICO, MEXICO
						20°23'N	96°51'SW		
22 JAN 68	TUBED 8	1145 HIT	1356 1247	1629 HIT	1640	22°34'	95°32'S	12	4 PROBES IN AILD; 4 ON FILM. 1ST PROBE IN AILD. COAD. MEAS. GOOD FILM. SOME EVIDENCE OF CORE HEAD MOVEMENT WHILE IN AILD—PERHAPS NOT ENOUGH CABLE LET OUT AFTER HIT.
22 JAN 68	Millipore Sample #13	1105				20°33'N	95°32'SW	12	FILTERED 4 LITERS W/ NO CLOGGING
22 JAN 68	SURFACE TOW #9	1221	1235			20°33'N	95°32'S	12	GOOD SIZE SAMPLE WITH NO CLOGGING OF NET—INCREASED TIME TO 14 MIN.
22 JAN 68	VERTICAL TOW #8	1306	1315			20°33'N	95°32'S	12	ALGAL PHYTOPLANKTON IN SAMPLE
22 JAN 68	JET NET #1	1433	1509			20°33'N	95°30'W	12	A GREAT DEAL OF PHYTOPLANKTON CAPTURED ALONG WITH THE ZOOPLANKTON.
						20°35'N	95°23'W		
22 JAN 68	CORE 11	1144 HIT	1356 1247	1634 1640	1641	22°33'N	95°32'S	12	PENETRATES TO BASE OF HEAD, 1315cm. TOTAL LENGTH 1057cm. TRUE LENGTH 1057cm. CLAY, DARK YELLOWISH BROWN (0-51cm), MODERATE YELLOWISH BROWN (51-130)+ SHADED OF GRAY + BROWN (130-528, 539-666, 577-989 + 994-1057cm) Ash 528-539, 666-677 + 989-994cm. VERY GENTLE SLOPE.

Chief Scientist

Charles C. Whitworth

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES
STN

Research Vessel ROBERT D. CONRAD

CRUISE N° _____

CRUISE LEG From NEW YORK To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
22	NEPHEL-	1118	1333	1634	1641	20°33'30"N	95°32'50"W	12	HEAVY NEPHALOID LAYER 300 FMS FROM BOTTOM
JAN	OMETER								
68	#4								
	(TRIPOD)								
22	BOTTOM	1118	1333	1634	1641	20°33'30"N	95°32'50"W	12	RAN OUT OF FILM TOO EARLY
JAN	CAMERA								
68	#10A								
22	CURRENT	1118	1333	1634	1641	20°33'30"N	95°32'50"W		50 FRAMES SHOW N.E. CURRENT DIRECTION
JAN	METER								AT HIGH VELOCITY
68	#5								
22	DEEP WATER	1144	1336	1634	1641	20°33'30"N	95°32'50"W	12	2 SAMPLES TAKEN # 12, 13 FIRST HALF D'S-2
JAN	SAMPLE	HIT	1247	HIT	1640				TELLTALE SLIDES INDICATE BATHYLM CLOSED AT CORRECT DEPTH
68	#2 D'S-2								
22	PARTICULATE	1144	1336	1634	1641	20°33'30"N	95°32'50"W	12	PARAL 6 CLOSED AT CORRECT DEPTH FOR 10
JAN	MATRIX	HIT	1247	HIT	1640				INDICATED BY SLIDE PM-3
68	SAMPLE #3								
22	SOUNDING	2142		1994		20°49'N	94°58'W	13	SSQ-41, 60 FT PHONE, 3HR LEE VERY
JAN	#		2321		1995				QUIET 'CONDITIONS' REFLECTIONS TO 9.6 SEC
68	20					20°51'N	93°55'W		REFRACTIONS FROM ALSO FROM THAT APPROXIMATE
									DEPTH. ~ 11 MI
22	SOUNDING	2337		1995		20°50'N	93°54'W	13	SSQ-41, 60 FOOT PHONE, 3HR LEE SAME CONDITIONS
JAN	#		0127		1996				AS IN S.G. # 20 APPROX 13 MI
68	21					20°55'N	93°39'W		

Charles C. Whitcomb

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
23 JAN 68	CORE 12	0245 HIT	0514 0356	1996 1995	~1995	22°54'N	93°37'8"W	13	PENETRATION: 1280 cm, TOTAL LENGTH: 1127 cm, TRUE LENGTH IS BETWEEN 1090 + 1127 cm. FORAMINIFERAL MARL (0-36 & 104-142 cm) + ASH-RICH CLAY (465-501 cm). REST OF CORE CONSISTS OF BROWNISH GRAY CLAY. COARSE FRACTION REPRESENTS 1 to 30%. BOTTOM TOPOGRAPHY: FLAT
23 JAN 68	TERAD 9	0245 HIT	0514 0356	1996 1995	1995	"	"	13	4 PROBES IN MVD. 4 ON FILM. 1 ONOMENS.
23 JAN 68	DPS-2 (SECOND HALE)	0340				22°54'N	93°37'8"W	13	TWO BARRELS TAKEN AT 1500 FMS. TELL TALL SLIDES #14, 15 INDICATE CAUSE AT PROPER DEPTH. CONTENTS ADDED TO TANK CONTAINING DPS-2 (1ST HALET COLLECTED 22 JAN)
23 JAN 68	RN-1A	0340				22°54'N	93°37'8"W	13	THREE NISKIN BOTTLES - FAILURE OF MESSENGER TO CLOSE TOP ONE - HENCE NO SAMPLES RETRIEVED
23 JAN 68	SURFACE WATER SAMPLE #12	1110 1200				23°30'S	93°02'W to 23°36'N 92°56'W	13	FILLED ONE TANK TO 195 GAL WITH WET LAB PUMP
23 JAN 68	CURRENT METER #5	0200	0536	1996	1995	22°54'N	93°37'8"W	13	46 FRAMES SHOW HIGH VELOCITY N.W. CURRENT
23 JAN 68	CORE 11 cm CAMERA #2E	0245	0514	1996	1995	22°54'N	93°37'8"W	13	CAMERA FLOODED, NO FILM TRANSPORTED. SUSPECT MIM FITTING AND O-RINGS AND HAVE REPAIRED BOTH

Charles A. Woodcock
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To Palmar

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
JAN 23 1968	BOTTOM	0200	0536	1996	1995	22°54'N	73°39'8"W	13	6 HITS, 23 USABLE SHOTS
	CANNON								
	#10								
JAN 23 1968	NEMERO	0200	0536	1996	1995	22°54'N	73°39'8"W	13	A NEPHALOID LAYER 350 FMS OFF BOTTOM MEDIUM STRENGTH
	METER								
	#5								
JAN 23 1968	CANNON	24	514	1996	1995	22°54'N	73°39'8"W	13	SLIDE PH-4 SHOWN. CANNON CLOSED AT BOTTOM
	HIT	HIT	0356	HIT	1995				
	#4								
JAN 24 1968	MULTIPROBE	0838				24°12'N	89°48'W	14	FILTERED 4 LITERS IN CUBIC METER
	WATER #15								
JAN 24 1968	SURFACE	0920				24°12'N	89°48'W	14	HIGH WINDS SPENT BOTH TOWS FOR 54 MIN. T
	TOW #11		0935						SAME AMOUNT WIND SO IN ABOVE 22 KNOTS
JAN 24 1968	VERTICAL	1149				24°12'N	89°48'W		HIGH WINDS AND LARGE SWELLS CAUSED A WIRE
	TOW #10		1205						ANGLE OF 30° TO THE TOW. TOW RETURNED
									W. IN WIRELESS LINE CAUSE TURNING OF WIRE
									CONNECTION BUT ONLY ONE WIRE WAS RECOVERED
									WIRE RECOVERED IN 2 TOWS
JAN 24 1968	TORAD	0905	1218	1902		24°12'N	89°48'W	14	4 PROBES IN MUD; 3 ON FIRM; 2 DEFT. (LONG METERS)
	10	HIT	1054	HIT	1900				

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN.	REMARKS
		Start	End	Start	End	Lat.	Long.		
24 JAN 68	CORE 13	0915 HIT	1218 1054	1902 1900		24°42'N	89°48'W	14	PENETRATION: 1207 CM. TOTAL LENGTH 1186. TRUE LENGTH: BETWEEN 1137 and 1186 cm. FORAMINIFERAL MARL, DARK YELLOWISH BROWN (0-13 cm); MARL, PALE YELLOWISH BROWN (14-36 cm); CLAY, BROWNISH GRAY to MEDIUM DARK GRAY (36-49 cm + 76 (1137 to 1186 cm)) 1st FORAMINIFERAL CLAY (49-76 cm). BOTTOM TOPOGRAPHY IS FLAT.
24 JAN 68	PARTICULATE MATTER SAMPLE #5	0915 HIT	1218 1054			24°42'N	89°48'W	14	BARREL CLOSED AT BOTTOM AS INDICATED BY SLIDE PM-5
24 JAN 68	RN-1					24°42'N	89°48'W	14	FOUR NISKIN BOTTLES - PROPERLY CLOSED BY MESSENGER
24 JAN 68	INTERMEDIATE WATER SAMPLE #2					24°42'N	89°48'W	14	ONE BARREL LOWERED AND RAISED 2 TIMES TO 100 FMS AND EMPTIED EACH TIME—THEN A SECOND BARREL PUT ON AND BOTH CLOSED BY MESSENGER AT 95 & 105 FMS. BECAUSE TELL TALE SLIDE HOUSING ADJUSTED FOR GALL TO LEGGERS' GALL IF CLOSED AT DEEPER DEPTH
24 JAN 68	SURFACE WATER SAMPLE #13	1310 1400				24°42'N	89°48'W		ONE TAKE FILLED TO LEGGERS' GALL WITH WET LAB PUMP
24 JAN 68	Bottom Camera #12	0842	1354	1902 1900		24°42'N	89°48'W	14	15 HITS — 9 GOOD SHOTS MANY OTHERS OBSCURED BY MUD CLOUDS
24 JAN 68	CURRENT METER #6	0842	1354	1902 1900		24°42'N	89°48'W	14	32 FRAMES SHOW S.E. CURRENT, HIGH VELOCITY

Charles F. Windrich
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To Panama

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24 JAN 68	NEDHEL OMEGA #6A	0542	1354	1102	1900	23°42'N	89°48'W	14	FILM DID NOT TRANSPORT; ADHESIVE RUBBER STRIP ON INSIDE OF FILM COVER STUCK TO FILM JAMMING ADVANCE SPOOL.
24 JAN 68	SOMBRAY #	2137	2230	70		23°48'N	88°54'S	14	SSQ-41; 600F PHONE; 3HR LIFE; 7m, CAMPECHE BANK
			2230	66		23°43'N	88°50'W		
24 JAN 68	SOMBRAY #	2240		66		23°47'N	88°49'W	14	SSQ-41; 600F PHONE; 3HR LIFE; 8m, CAMPECHE BANK
			0000	93		23°51'N	88°45'S		
25 JAN 68	SOMBRAY #	0645				24°0'N	88°24'W	15	SSQ-41 600F PHONE; 3HR LIFE; 4m; BUILT UP HILL AND MOUNT
			0717			24°52'N	88°23'W	15	SSQ-41 600F PHONE; 3HR LIFE; 7m, LOWER SLOPE OF CAMPECHE BANK
			0810	1250		24°51'N	88°20'W		
				1815		25°02'S	87°45'W	15	SSQ-41 600F PHONE; 3HR LIFE; 7m, NEAR BASE OF CAMPECHE ESCARPMENT SOME TROPICAL CLIMATE NEAR END OF RAILROAD
						24°58'8"	87°38'5"		

Charles A. Schuchman
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

PALISADES
STATION

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
25	MILLIPED	1520				25°05'S	87°33'2"W	15	FILTERED 4 LITERS
JAN	SAMPLE #16								
68									
25	SURFACE	1558				25°05'S	87°33'2"	15	OBTAINED LARGE SAMPLE - DURATION OF TOW
JAN	TOW #12		1615						17 MIN.
68									
25	VERTICAL	1636				25°05'S	87°33'2"W	15	(CORRECTION OF INSIDE TO OUTSIDE FLOW METER
JAN	TOW #11		1654						VERY GOOD INSIDE > 14% OUTSIDE READING
68									
25	SURFACE	1225				25°06'7"N	87°53'W		TWO TANKS FILLED TO 165 GAL EACH WITH
JAN	WATER		1345						WET LAB PUMP
68	SAMPLE #14					25°02'N	87°04'W		
25	PARTICULATE					25°00'S	87°33'2"	15	BARREL CLOSED AT BOTTOM AS INDICATED
JAN	MATTER								BY SLIDE PM-6
68	SAMPLE #6								
25	TRAD	1539	1727	1808	1806	25°00'S	87°33'2"	15	2 PROBES IN MD. NONE ON FILM.
JAN	11A	HIT	1633	HIT	1808				
68									
25	CORE	1541	1727	1808	1806	25°00'S	87°33'2"	15	PENETRATION: 577cm, TOTAL LENGTH: 483cm, TRUE LENGTH:
JAN	14	HIT	1633	1808					BETWEEN 430 & 483cm. CLAY, DARK GRAY to BROWNISH GRAY
68									GENERALLY, BUT DARK YELLOWISH BROWN in TOP 50cm.
									ABUNDANT LAMINATIONS OF VERY SANDY CLAY. FLAT

Charles P. Woodcock

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
25	Barro	1524	1830	1808	1806	25°30'S	87°32'W	15	5 HRS, 3 USABLE FEET
JAN	Campana								
68	#13								
25	Near Barro	1524	1800	1808	1806	25°30'S	87°32'W	15	MEDIUM HEAVY NORMANIC LAYERS THE WAY TO THE BOTTOM
JAN	METER								
68	#6								
25	CORAL	1524	1800	1808	1806	25°30'S	87°32'W	15	62 FEETES SHOW N.W. CORAL AT LIGHT VELOCITY
JAN	METER								
68	#9								
25	CORAL HEAD	1541	1727	1808	1806	25°30'S	87°32'W	15	2 SHOTS OF CORALS ALONG
JAN	CAMPA								
68	#2								
26	SURFACE	0805				23°50'N	85°32'W		TWO TANKS FILLED TO 175 GAL EACH WITH WET LAB PUMP
JAN	WATER		0925						
68	SAMPLE					23°32'N	85°38'W		
	#15								
26	TORAD	1502	1545	1600		23°13'N	85°37'S	16	1 PROBE IN SAND, 1 ON TLM. (CAND MEAS. AS BEST POSSIBLE)
JAN	II	1516		1620					
68									
26	MILWAUKEE	1500				23°13'N	85°37'S	16	FILTS 252 1 LITERS
JAN	SAMPLE 17								
68									

Charles Schuchman
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

PALISADES
STATION 1

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	VERTICAL	1535				23°13'N	85°27'SW	16	NE WIRE STATION—ONLY CORE TAKEN DUE TO
JAN	TOW #12		1546						STRONG CURRENTS ONLY 100 M. AT THE TOW
68									WOULD NOT TAKE SURFACE TOW
26	SONDUBOY	1154		540		23°18'N	85°32'W	16	SSQ-41* 600T PHONE; 3HR LIFE; 12 MILES
JAN	#		1307						ON NE EXTENSION OF CAMPECHE ESCARPMENT(?)
68	26					23°14'N	85°30'W		ONE VERY WEAK REFRACTION
	21								
26	CORE	1502	1544	640	1000	23°13'N	85°27'S	16	SEDIMENT ON PIPE TO 85cm BUT PENETRATION PROBABLY
JAN	15	HIT	1516	628					GREATER. CUTTING EDGE & PIPE BENT. TOTAL LENGTH 309cm.
68									TAKE LENGTH UNCERTAIN. PROBABLY ~309cm. DIFFICULT TO
									EXTRUDE. FORAMINIFERAL OOZE WITH VERY ABUNDANT
									CORAL FRAGMENTS & CRINOID STEMS(?). STEEP SLOPE, ~60°
27	TILGORE	1200				22°58'2"N	85°32'2"W	16	
JAN	SMALL B							17	
68									
27	VERTICAL	0259				22°58'5"	85°33'2"W	16	70% CORRELATION BETWEEN FLOWMETERS
JAN	TOW #13		0313			22°58'5"		17	
68									
27	CORE	0322	0334	1124	1118	22°57'40"	85°34'W	17	PENETRATION: ~585cm. TOTAL LENGTH: 432cm. TRUE LENGTH:
JAN	16	HIT	0347	1122					~432cm. FORAMINIFERAL OOZE, PALE ORANGE (0-289+308-348cm).
68									FORAMINIFERAL MARL OOZE, PALE REDDISH BROWN to MODERATE
									YELLOWISH BROWN (289-308cm); FORAMINIFERAL CHALK (ABUNDANT
									COCCOLITHS), VERY LIGHT GRAY (348-432cm). BOTTOM NEARLY FLAT.
27	Bottom	0321	0517	1124	1118	22°57'40"	85°34'W	17	6 HITS, 13 GOOD FRAMES
JAN	CAMERA								
68	#14								

Charles C. Conrad
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27 JAN 68	NEPHELE OMETER #7	0321	0517	1124	1118	22°57'40" N	85°34'00" W	17	MEDIUM STRONG CEPHALOID LAYER FROM SURFACE TO BOTTOM
								9p	
27 JAN 68	CURRENT MEYER #9	0321	0517	1124	1118	22°57'40" N	85°34'00" W	17	5.3 FRAMES SHOW N. OR N.E. CURRENT AT HIGH VELOCITY
27 JAN 68	SURFACE WATER SAMPLE #16	0805	0925			22°00'50" N	86°00'00" W		2 TANKS FILLED TO 175 GAL EACH WITH WET LAB PUMP
						22°02'N	86°15'W		
27 JAN 68	1 GRAD 12	0222	0324	1125		22°57'40" N	85°34'00" W	17	2 PROBES IN MUD; 1 (#2) ON FILM. LONG MEAS IN SANDY CORE.
		HIT	0247	HIT	1122				
27 JAN 68	PORTULAC HIT	2101	2205	1017					
		HIT	2129	HIT	1013	21°03'50" N	85°48'50" W	18	GOOD SLIDE
1	1 GRAD 13	2101	2205	1017		21°03'50" N	85°48'50" W	18	1 MAYBE 2 PROBES IN MUD; 1 ON FILM. LONG MEAS AS WELL AS POSSIBLE.
2		HIT	2129	HIT	1013				
3									
27 JAN 68	Bottom CAMERA #15A	2145	0002	1124	1112	21°02'50" N	85°48'50" W	18	DID NOT HIT BOTTOM

Charles C. Van Dine
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27	MULLIGRE	2055				21°35' S	85°33' S	18	Filtered 4 L. 17.5
JAN	SAMPLE #19								
68									
27	VERTICAL	2140				21°35' S	85°33' S	18	Filtered 4 L. 17.5
JAN	TOW #14		2149						
68									
27	SURFACE	2157				21°35' S	85°33' S	18	
JAN	TOW #13		2213						
68									
	NEPHEL-	2145	0002	1124	1112	21°35' S	85°33' S	18	THIN NEPHELOID LAYER APPROX 250 FMS OFF
	OMETER								BOTTOM (TRIPOD) DID NOT HIT BOTTOM
	#8								
	CURRENT	2145	1102	1124	1112	21°35' S	85°33' S	18	NO PICTURES; DID NOT HIT BOTTOM
	METER								
	#9A								
	CORE	2101	2205	1033	994	21°35' S	85°33' S	18	PENETRATION UNKNOWN TOTAL LENGTH ~899cm TRUE LENGTH ~899cm
	17	HIT	2139	1013					CORE GREATLY DISTORTED BY EXTRUSION CORE PIPE WAS
									INCLINED + POUNDED ON, GRADUALLY SHAKING CORE OUT PTEROPOD
									FORAMINIFERAL OOZE* PALE YELLOWISH BROWN TO GRAYISH
									ORANGE. BOTTOM GENTLY ROLLING, BASE of 100m HILL
28	P	1015	12:54	696	688	21°35' S	85°33' S	19	* SEDIMENT PARTIALLY CEMENTED BELOW 250cm
JAN	METER	HIT	12:24	690					
1968	#8								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	TORAD	1015		696		20°34'N	86°15'W	19	4 PROBES IN MUD; SOME ON GARBLED FILM; CORE METERS
JAN	19	HIT	1223	HIT	690				MOVED IN MUD. CORE MEAS.
68									
28	MILLINER	0952				20°34'N	86°15'W	19	FILTERED 4 LITERS - NO CLOGGING
JAN	SAMPLE #20								
68									
28	SURFACE	1010				20°34'N	86°15'W	19	GOOD TOW BUT SOME WIND TENDRILS OF
JAN	TOW #14		1025						FLUORESCENTS
68									
28	VERTICAL	1130				20°44'N	86°15'W	19	GOOD SAMPLE
JAN	TOW #15		1140						
68									
28	JET NET	1406				20°46'N	86°23'W	19	LAUNCHED AND RETRIEVED AT FULL SPEED
JAN	#2		1438						(45-100K) AFTER STATION #19 -
68						20°46'N	86°23'W		
	CORE	1015	1254	626	688	20°24'N	86°15'W	19	PENETRATED TO BASE OF HEAD, 1315 cms. TOTAL LENGTH: 1056cm
28	18	HIT	1234	690					TRUE LENGTH: BETWEEN 1014 AND 56 cm. FORAMINIFERAL
JAN									MARL, YELLOWISH ORANGE, MODERATE YELLOWISH BROWN +
68									LIGHT GRAY; and FORAMINIFERAL OOZE, PALE ORANGE (136-150cm)
									COARSE FRACTION MAINLY FORAMS + PTEROPODS. HILLY, 40m RELIEF
28	Bottom			26	696	20°43'N	86°15'W	19	5 HITS, 9 GOOD SLICES
JAN	CANISTER								
68	#15								

Charles C. Branch

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To PANAMA

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	NORWICH					20°41'N	86°15'W	19	
JAN	110100L								HEAVY NEPHALOID LAYER APPROX 350 FMS OFF
68	#1								BOTTOM
28	CORAL					20°41'N	86°15'W	19	
JAN	110100L								FILM DID NOT DEVELOP BATHOTHERMOS THERMOMETER
68	#10A								
28	SUNNY	0735	0915			20°39'S	85°55'W		RECOVER TWO TUBES FILLED TO 175 G/L WITH
JAN	110100L								WATER SAMPLE
68	#17					20°41'N	86°09'W		
28	PARTIAL	2047	2156	1000	650	20°26'N	86°08'W	20	CORAL - SWIDE
JAN	110100L	HIT	2118	HIT	~880				
68	#19								
28	TERAY	2047	2156	1010		20°26'N	86°08'W	20	PROBES NOT IN RUD (JAN) LONG ENOUGH TO SHOW ON FILM
JAN	15A	HIT	2118	HIT	860				
68									
28	CORAL	2047	2156	1000	650	20°26'N	86°08'W	20	PENETRATION UNKNOWN TOTAL LENGTH ~211 cm BUT
JAN	19	HIT	2118	~880					ALTERED SOMEWHAT BY EXTENSION TRUE LENGTH ~211 cm
68									FORAMINIFERAL Ooze, PALE ORANGE TO PALE YELLOWISH BROWN
									CORE TAKEN ON A STEEP SLOPE

Charles C. Lamont
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

28TH - +6
29TH - +5
TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	MILWAUKEE	2024		2026	86°38'W				
JAN	SAMPLE #21								
68									
28	SURFACE	2130		2026	86°38'W				NET LOST NICO PRESS FITTINGS PULLED
JAN	TOW #15A		2146						THROUGH 14
68									
29	SURFACE	0825		19°48'N	87°W				2 TANKS FILLED TO 175 GAL EACH
JAN	WATER		0945						WITH NET LAB PUMP
68	SAMPLE #18			19°45'N	87°07'W				
29	TIRAD	1920	2150	2417		19°47'N	86°26'W	21	4 PROBES IN MUD; 3 ON FILM. LONG MUDS
JAN	15	HIT	2028	HIT	2414				
68									
29	CORE	1920	2150	2417	2418	19°47'N	86°26'W	21	PENETRATION: 1237cm. TOTAL LENGTH: 1024. TRUE LENGTH:
JAN	20	HIT	2028	2416					~1018cm. COMPLEX CORE CONSISTING OF MARL, FORAMIFERAL
68									MARL, FORAMINIFERAL OOZE and ASH-RICH FORAMINIFERAL
									MARL (643-676). CONTAINS MANY COLOR CHANGES, PREDOMINATELY
									SHADES OF YELLOWISH BROWN + LIGHT OLIVE GRAY. BOTTOM FLAT.
29	Bottom	1745	2230	2417	2418	19°47'N	86°26'W	21	5 HITS, 9 PICTURES
JAN	Core #16								
68									
29	NEARBY	1745	2230	2417	2418	19°47'N	86°26'W		MEDIUM MUD ON THE WAY TO BOTTOM
JAN	Core #10								
68									

Charles C. Worthington
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From NEW YORK To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
29	Surface	1745	2230	2417	2418	9° 7' N	86° 26' W	21	14 FRAMES SHOT. N.E. CURRENT NOT ABLE TO DETERMINE VELOCITY
	Tow #10								
29	Surface	1920	2150	2417	2418	9° 7' N	86° 26' W	21	SLIDE PHOTO INDICATES CLOSURE AT PROPER DEPTH. SLIDE INADEQUATELY SPATTERED WHILE PROCESSING SAMPLES
	Tow #10								
29	Surface	2157				9° 7' N	86° 26' W	21	LAST 1/2 TOW. TOW #15
	Tow #15		2213						
29	Surface	2220	2231			18° 2' N	86° 26' W	21	LAST TOW
	Tow #17								
30	Surface	1820	1940			18° 2' N	85° 39' W	21	EACH OF 2 TANKS FILLED TO 175 GAL BY WET LAB PUMP
	Tow #18					18° 2' N	85° 58' W		
29	Surface	1857						22	SSA 91, 3HR LIFE, COFT PHOTO. SHORT LIVED REFRACTIONS
	Tow #18								

Charles C. ...
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
30	VERTICAL	1803	1811			18°41'S	84°12'	22	ALMOST CONSTANT USE OF MAIN ENGINES ON
JAN	TOW								STATION PREVENTED ME FROM TAKING A
68	#17								SURFACE TOW
30	MILLIPORE	1540				18°41'S	84°13'W	22	FILTERED 4 LITERS, NO CLUSTRING
JAN	SAMPLE								
68	#23								
30	Bottom	1540	1600	620	1400	18°41'S	84°13'W	22	18 HITS, 16 GOOD SHOTS
JAN	CAMERA								
68	#17								
30	CORE	1602	1802	620	1205	18°41'S	84°13'W	22	PENETRATION: 935cm. TOTAL LENGTH 1001cm. TRUE LENGTH
JAN	21	HIT	1731	1118					UNCERTAIN BUT 2750cm. FORAM-PTEROPOD MARL, FORAM Ooze,
68									SANDY FORAM Ooze + FORAM CHALK, PREDOMINATELY SHADES
									OF YELLOWISH BROWN + LIGHT GRAY. ROCK FRAGMENTS UP
									TO 3cm LONG ARE ABUNDANT 552-600cm. BOTTOM FLAT.
30	THRAD	1602	1802	620	1205	18°41'S	84°13'W	22	3 PR. IN MUD, 3 ON FILM, + WT. (LOW MEAS.)
JAN	16	HR	1721	1118					
68									
31	PARTICULATE					18°22'N	83°15'W	23	
JAN	MATTER								
JAN	SAMPLE								
	#11								
31	SURFACE	0810	0920			18°20'S	83°14'W		EACH ON TWO THIN FILMS TO 175 GAL WITH
JAN	WATER								WET LAB PUMP
68	SAMPLE #20					18°16'N	83°05'W		
	SAMPLE #20								

Charles C. Conrad
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN.	REMARKS
		Start	End	Start	End	Lat.	Long.		
31	CORE	0343	0614	2828	2730	18°23'N	83°35'W	23	PENETRATION: 1253 cm. TOTAL LENGTH: 1119. TRUE LENGTH: 1096 cm.
JAN	22	HIT	0443	2828					INTER-LAYERED FORAM MARL, FORAM COZE + MARL; FREEDOM-
68									INATELY SHADES of YELLOWISH BROWN and LIGHT OLIVE
									GRAY; MODERATELY COMPACTED GENERALLY, BUT "SOOPY" 464-590 cm.
									COARSE FRACTION MAINLY FORAMS + PTEROPODS. FLAT BASIN IN MOUNTAINS.
31	TORAD	0343	0614	2828		18°23'N	83°35'W	23	(4) HILL PROPOSE IN MUD & ON FILM. WOULD BE LOG 22 SEEMS
	17	HIT	0443	HIT	2828				TO BE NO GRADIENT & NO AT WATER TO MUD. (OAR WAYS)
31	Bottom	0308	0731	2828	2730	18°23'N	83°35'W	23	5 HITS, 45 SINGS OF FIRST HIT, THON FROM
JAN	Camera								RAN OUT
68	#18								
31	NEPHEC	0308	0731	2828	2730	18°23'N	83°35'W	23	THIN W/TYPE TILL THE CITY TO BOTTOM
JAN	OMETER								
68	#11								
31	CURRENT	0308	0731	2828	2730	18°23'N	83°35'W	23	57 FRAMES SHOW S.E. CURRENT
JAN	METER								AT LOW VELOCITY
68	#11								
11	SEISMOLOGY	11027		579		16°47'N	79°30'W	24	SSQ-41; 60 FT PHONE; 3HR LIFE; NICARAGUA
FROM	#		11198		579				RISE; EXCELLENT PROFILE (AT LEAST 3 REFRACTIONS)
68	28					16°43'N	79°31'W		
	29								
	DET NOT	11121	11112						
11	SEISMOLOGY	11153		580		16°42'N	79°31'W	24	SSQ-41 60 FT PHONE; 3HR LIFE; NICARAGUA RISE
FROM	#		1304		700				MUCH WEAKER REFRACTIONS THAN ON S.E. #28
68	24					16°38'N	79°21'W		
	30								

Charles C. Lamont
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From NEW YORK To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1	JET	1547	1622			16°15'N	77°12'W		
68	NET								
68	#3					16°10'N	77°10'W		
1	JET	1952	2029			15°31'N	77°01'W		SECOND JET NET TAKEN SHORTLY AFTER DARK
68	NET								TO CORRELATE WITH JN #3 JN #4 TAKEN
68	#4					15°26'N	76°57'W		SOON AFTER RISING AND MERGING OF TWO AISLS
									ON 12K/5 PAIR @ 1903
1	MILLPORE	2113				15°25'N	77°31'W	24	FITTED 4 LINES NO CLOSING
68	SAMPLE								
68	#24								
1	VERTICAL	2211				15°16'N	77°04'W	24	
68	TOW #19								
68									
1	SURFACE	2320				15°16'N	77°04'W	24	
68	TOW #17		2340						
68									
1-2	CORE	2401	0219	1214	1214	15°16'N	77°04'W	24	PENETRATION ~ 743 cm. TOTAL LENGTH: 1085 cm. TRUE LENGTH: ~ 1057 cm.
68	#3	0111	2351	1214					INTERLAYERED FORAMINIFERAL MARL, PREDOMINATELY
68									PALE YELLOWISH BROWN TO OLIVE GRAY; 4 FORAMINIFERAL CORE,
									PREDOMINATELY LIGHT OLIVE GRAY CORE CONTAINS MANY
									SLIGHT CHANGES IN COLOR. BOTTOM FLAT.
1-2	Bottom	2124	0052	1214	1214	15°16'N	77°04'W	24	7 HITS, 17 SHOTS OF BOTTOM
68	CORDED								
68	#19								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 2

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1-2	NEPHELE	2124	0052			15°16'N	79°04'W	24	MEDIUM LAYER 1261 FMS OFF BOTTOM
FEB	OMETER								
68	#12								
1-2	CURRENT	2124	0052			15°16'N	79°04'W	24	NO SINGLE DIRECTION CLEARLY DISCERNABLE
FEB	11/10/72								
68	#12								
1-2	DEEPWATER	2230	2335	1214	1214	15°16'N	79°04'W	24	SLIDES 17, 18, 19, 20
FEB	SAMPLE #3								DEPTH 17, 19 AT 965 FMS; 18, 20 AT 975 FMS
68	DPS-3								SLIDES 17, 18 NO RECORD; 19, 20 GOOD
1-2	INTERMEDIATE	0115	0145	1214	1214	15°16'N	79°04'W	24	SLIDES 21, 22, 23, 24
FEB	SAMPLE #3								DEPTH 21 AT 105 FMS; 22, 23, 24 AT 95 FMS
	INS-3								ALL GOOD
1-2	PART CULMIN	2201	0219	1214	1214	15°16'N	79°04'W	24	PARREL NEVER CLOSED
FEB	MATCH SAMPLE	HIT	2351	1214					
1768	#12A								
	PARREL	2124	0052	1214	1214	15°16'N	79°04'W	24	MUP FOUND IN BOTTLE 2.2 IN WATER WHY?
									— POSSIBLY BECAUSE THE BOTTLE WAS LAM ON THE
									BOTTOM DURING THE CURRENT MEASUREMENTS. CCW.
1-2	TURAD	2201	0220	1215		15°16'N	79°04'W	24	4PR IN MUD; NONE ON FILM. BATTERIES DEAD.
FEB	18A	HIT	2351	HIT	1215				
68									

Charles C. Winchikoff
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From New York To Palisades

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
32	TRIPOD					11°33'N	78°27'W	25	END REEL AT 1000 REACHED BOTTOM
FEB	T CRAB								
	1A								
1 FEB	CORE	2315	0047	1983	1984	11°33'N	78°27'W	25	RETRACTED 380 cm. FINE SAND 100-100 cm. FINE SAND
2	#24	HIT	0002	1984					340 cm. FINE SAND. MIDDLE (IMMEDIATELY BELOW 100 cm.)
									(LOW BROWNISH GRAY SAND GRAY AND MEDIUM DARK GRAY (40-200 cm.)
									(LOW DARK GRAY (200-300 cm.) COARSE FRACTION CONSISTS PREDOMINANTLY
									OF FORAMS AND FINE QUARTZ SAND. FLAT
1 FEB	MULLOPE	2232				11°33'N	78°27'W	25	RETRACTED 4 LITERS
2	SAMPLE								
	#25								
2 FEB	SURFACE	2349				11°33'N	78°27'W	25	OBTAINED LARGE SAMPLE
2	TOWN		0006						
	#18								
3	VERTICLE	0031				11°33'N	78°27'W	25	
FEB	TOWN #		0041						
	20								
2	CARTON	2315	0047	1983	1984	11°33'N	78°27'W	25	600m SLICE
FEB	MATTER	HIT	0002	1984					
68	SAMPLE								
	#12								
3	SURFACE	0655				11°33'N	78°27'W		ONE TOWN FINE TO 170 Gm
FEB	WATER		0740						
68	SAMPLE					11°33'N	78°27'W	1	

Charles C. Condit
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From NEW YORK To PANAMA

TIME ZONE -5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3 FEB	WABUWY 132	1025	1153			11°55'N 78°41'W			SSD-W 342 LIT 60 FT DEPTH AND CUM TROUBLES DURING RUN
	31					11°45'N 78°51'W			BODY DIED OUT PREMATURELY
3 FEB	RTICULATE SAMPLE 13					10°43'N 79°03'W		26	
3 FEB 68	Button CANNON #20	2224 0220	1183 1184	1183 1184	1183 1184	11°53'N 78°27'W		25	5 HITS 12 PICKUPS
3 FEB 68	NEPHLO- METER #13	2238 0220	1183 1184	1183 1184	1183 1184	11°53'N 78°27'W		25	THIN LAYER ALL THE WAY TO A FADE-OUT BEFORE HIT A RESULT OF DYING NETH LIGHT SOURCE.
3 FEB 68	CURRENT METER #13	2238 0220	1183 1184	1183 1184	1183 1184	11°53'N 78°27'W		25	N. W. CURRENT SHOWN AT HIGH VELOCITY IN 52 FRAMES
3 FEB 68	MILLIPORE SAMPLE #26	1300				10°43'N 79°03'W		26	
3 FEB 68	VERTICAL TOW #21	1333	1344			10°43'N 79°03'W		26	

OUT OF ORDER

Charles R. Conrad
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From NEW YORK To PANAMA

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA.	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	SURFACE	1402				10°43'N	79°03'8"	26	
FEB	TOW #19		1415						
68									
3	CORE	1325	1502	1882	1884	10°43'N	79°03'8"	26	PENETRATION: 525 cm. TOTAL LENGTH: 291cm TRUE LENGTH: ~289cm.
FEB	25	HIT	1413	1884					CLAY, SHADES OF REDDISH BROWN (0-19cm); and CLAY,
68									INTERLAYERED MEDIUM OLIVE GRAY + OLIVE GRAY (19-289cm);
									MODERATELY COMPACTED; BURROWED. COARSE FRACTION
									CONSISTS ALMOST EXCLUSIVELY OF FORAMS. VIRTUALLY FLAT.
3	Bottom	1306	1542	1882	1884	10°43'N	79°03'8"	26	5 HITS, 11 SHOTS OF BOTTOM
FEB	CAMERA								
68	#21								
3	NEEDLE	1306	1542	1882	1884	10°43'N	79°03'8"	26	MEDIUM METER ALL WAY DOWN TO
FEB	METER								BOTTOM. LIGHT CAME UP DEAD AGAIN.
68	#14								
3	CAMERA	1306	1542	1882	1884	10°43'N	79°03'8"	26	FILM DID NOT ADVANCE
FEB	METER								
68	#14A								
3	SONDUBOT	1555							SSQ-41, 60FT, 3MRS, 9MI COLANGIAN BASIN
	#		1722						
	32								
	SONDUBOT	1733	1747						SSQ-41, 60FT, 3MRS, 9MI, COLANGIAN BASIN
FEB	#	1733							DROT DIED PREMATURELY
	32								
68	33								

Charles L. Murchison

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY

CRUISE N° 12

CRUISE LEG—From New York To Panama

PALISADES

TIME ZONE 45

Cheryl A. Williams
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

42

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From PANAMA To MANzanillo

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
9	SOUNDING	1132		36		3°21'N	79°38'W		SSD-41; 60m PIRNUS; 3HR LIFE PANAMA
FEB	#		1224		42				SHELF, SOUTH. NO REEFACTIONS ON TAPE
68	35					3°14'N	79°40'W		
9	SOUNDING	1933				7°57'N	79°26'W		SSD-41; 60m PIRNUS; 3HR LIFE; PANAMA SHELF,
FEB	#		2033						SOUTH; MAY BE VERY WEAK REEFACTIONS; ON TAPE
68	36					7°52'N	79°25'W		
10	MILLIPORE	1233				6°58'N	81°08'W		FILTERED 4 LITERS
FEB	SAMPLE								
68	#27								
10	SURFACE	1403				6°57'N	81°10'W	27	LARGE SAMPLE
FEB	TOW		1418						
68	#20								
10	VERTICAL	1425				6°57'N	81°10'W	27	LARGE SAMPLE
FEB	TOW		1434						
68	#22								
10	JET	1555				6°58'N	81°17'W		SAMPLE MOSTLY PHYTOPLANKTON
FEB	NET		1624						
68	#5					6°57'N	81°22'W		
10	CORE	1323	1426	807	873	6°57'N	81°10'W	27	PENETRATION: 1079cm. TOTAL LENGTH: 981cm TRUE LENGTH:
FEB	26	HIT	1358	870					UNCERTAIN. CORE EXTRUDED ITSELF 2cm BY GAS PRESSURE.
68									CLAY, OLIVE GRAY TO GRAYISH OLIVE GREEN, VERY HOMOGENEOUS.
									CARBONATE CONTENT EXTREMELY LOW. HILLY, VIOID TO RELIEF.

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 100

CRUISE LEG—From BALBOA CZ To MANZANILLO

W W S W

TIME ZONE +5

Date	STATION and No.	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
	BOTTOM CAMERA #22	1241	1520	840	873	6°58.0	81°08.0	27	6 HITS, 5 SHOTS; EVIDENCE OF STARBUCK
	NEPUEL OMETER #15	1241	1520	840	873	6°58.0	81°08.0	27	MEDIUM-HEAVY LAYER. SEE FMS OFF BOTTOM
	CURRENT METER #14	1241	1520	840	873	6°58.0	81°08.0	27	NIL VELOCITY ON WESTERLY CURRENT
	JET NET #6	2109	2144			6°56'N 82°03'W To 6°35' 32°13'W.			
10	BAROMETER 53 MATTHEW 8 2/4	1323	1426	840	873	6°57	81°10'		GOOD READER. BUT SAMPLE
	SONOBUOY # 37	1726	0822			7°37.2N 83°22.5W To 7°40N 83°18W			SEE 91 LOG. PHONE. 3rd WIND. (LOS RING) NO RESTRUCTIONS

[Signature]
Chief Scientist

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From BALBOA To EMMANUEL

44

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STM	REMARKS
		Start	End	Start	End	Lat.	Long.		
11 FEB 68	MILLIPOR SAMPLE #28	1035				7°45'N	83°58'W	28	Filtered 4 liters - no clogging
11 FEB 68	SURFACE TOW #21	1100	1115			7°45'N	83°58'W	28	Caught small fish as well as usual plankton
11 FEB 68	VERTICAL TOW #23	1128	1138			7°45'N	83°58'W	28	
11 FEB 68	CORE 27	1008 Hit: 1100	1138	914 904	893	7°45'N	83°58'W	28	PENETRATION: 983cm TOTAL LENGTH: 1581cm. TRUE LENGTH: UNCERTAIN, > 830, < 983cm. CLAY, OLIVE GRAY (SY ^{3/4}) EXCEPT FOR THIN DISTURBED LAYER (59-63cm) WHICH IS DARK YELLOWISH BROWN + DARK GREENISH GRAY; OTHERWISE HOMOGENEOUS. CORE EXTRUDED ITSELF 2cm BY GAS PRESSURE. BOTTOM HILLY, NO CUR. RELIEF.
11 FEB 68	BOTTOM CAMERA #23	0950	1205	914	893	7°45'N	83°58'W	28	5000 5000 5000
11 FEB 68	NADIR - OMATHIC #16	0150	1205	914	893	7°45'N	83°58'W	28	HEAVY NADIRALGON LAYER 550 fms. off bottom
11 FEB 68	CURRENT METER #15	0950	1205	914	893	7°45'N	83°58'W	28	SE CURRENT @ 13.7 cm/sec

Charles C. Johnson
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From BALBOA To MANZANILLO

TIME ZONE +5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
	11 PARTICULATE					8°43'N	83°58'W	28	GOLD SLIDE; BARREL ONLY PARTIALLY CONTAINED
	FEB. MATTER								DUE TO MUD
	68 15								
	11 MILLIPORE	2330				8°33'N	85°29'W	29	
	68 SAMPLE								
	68 #29								
	SUBSALINE	2355				8°33'N	85°29'W	29	
	TOW		0010						
	#22								
	HEAD	0027				8°33'N	85°29'W	29	
			0037						
	11-12 CORE	2348	0040	~820	681	8°33'N	85°29'W	29	PENETRATION UNKNOWN BUT SLIGHT. TOTAL LENGTH: 48cm +
	FEB 28	HIT	0013	735					SOME SEDIMENT COLLECTED IN A BUCKET. TRUE LENGTH: 48cm.
	68								FORAMINIFERA: RICH ASH, BETWEEN VERY DARK YELLOWISH
									BROWN + OLIVE GRAY; HOMOGENEOUS; WELL COMPACTED. SCORIA
									FRAGMENTS UP TO DIAMETER OF PIPE. STEEP SLOPE OF SEAMOUNT
	11-12 PARTICULATE	2348	0014			8°33'N	85°29'W	29	GOLD SLIDE
	FEB. MATTER								
	68 16								
	11-12 GRAB					8°33'N	85°29'W	29	ABOUT 40 MIN ROUND TRIP; A TAPERED BARREL
	FEB SAMPLER								
	68 #								
	1								

Charles P. Woodcock
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES
STN

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From BALBOA To MANZANILLO

TIME ZONE TS

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	GPAB	20100	20130	762		8°32'N	85°29'W	29	40 MIN RAYND TRIP; TURN SAMPLE
FEB	SAMPLER								TWO 35 LB WTS IN SAMPLER RECOVERY
68	#								TIME 33 MIN
	2								
11-12	BOTTOM	2215	0134			8°33'N	85°29'W	29	SHOTS 16 SHOTS
FEB	CAMERA								
14	#								
	24								
11-12	NEPHELYME	2215	0134			8°33'N	85°29'W	29	RAN OUT. BECKM DUE TO MANUVERING TO LOCATE
FEB	#								DURING SITE
68	17A								
	CURRENT	2215	0134			8°33'N	85°29'W	29	SE CURRENT 8.9 cm/sec
11-12	METER								
	#								
	16								
12	SOUNDING	1505	1511			9°7'N	87°30'51'W		SSQ-91 AIRGUN FAILED SHORTLY AFTER
FEB	#								LAUNCHING
68	37A								
	38A								
	SOUNDING	1535	1630	1721	1735	9°8'2"N	87°34'2"W		SSQ-91; 60 FT PHONE; 3 HR LIFE; 7 MILES;
FEB	#								TWO (2) RECORDED - WENT TO MESSAGE
68	37 38					9°20'3"N	87°40'W		
12	SOUNDING	1717	1830	1715	1729	9°22'2"N	87°45'7"W		SSQ 91, 60 ft PHONE, 3 hr life, 7 miles
FEB	#								PASSED OVER SOUNDING NO RECORDINGS
68	36 39					9°25'N	87°33'31'W		

Charles C. Winick
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

47

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From BALBOA To MANZANILLO

TIME ZONE -5

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	CANSEA	1940	2236	1754	1759	9°26'S	88°15'S	30	5 HITS, 11 SHOTS
FEB	2								
68	25								
12	NEPHEC	1940	2236	1754	1759	9°26'S	88°15'S	30	MEDIUM-HEAVY LAYER 300 FMS OFF BOTTOM
FEB	DMETER								
18	17								
12	CURRENT	1940	2236	1754	1759	9°26'S	88°15'S	30	NORTHERLY CURRENT AT 10.7 CM/SEC.
FEB	METER								
68	12								
12	CORE	2003	2134	1754	1759	9°26'S	88°15'S	30	PENETRATION: 1295cm TOTAL LENGTH: 1049cm TRAIL LENGTH: ~1049cm
FEB	29	HIT	2074	1754					CLAY, VERY DARK GREENISH GRAY TO ^{DARK} GREENISH GRAY; GENERALLY
68									HOMOGENEOUS, WELL BURROWED + MODERATELY COMPACTED. A LAYER
									OF GLASS SHARDS, LIGHT BROWNISH GRAY, OCCURS BETWEEN 510 + 519cm
									COARSE FRACTION OF CLAY <5% BOTTOM GENTLY UNDULATING.
12	MILLIPORE	2015				9°26'S	88°15'S	30	FILLED 4 LITERS - NO CLOGGING
FEB	SAMPLE								
68	#30								
12	SURFACE	2028				9°26'S	88°15'S	30	SAMPLE CONTAINED DAM. LUMINESCENT
FEB	TWO		2052						ORGANISMS
68	#23								
12	SURFACE	2107				9°26'S	88°15'S	30	
FEB	TWO		2116						
68	#15								

Charles C. Woodcock
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG—Fro

CRUISE LEG—From Boa To Manzanillo

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOC	REMARKS
		Start	End	Start	End	Lat.	Long.		
12 FEB 68	X-BT	2137				9°06.5N	88°31.5W	30	
2	PARTICULATE WATER W/B #					9°06.5N	88°31.5W	30	LONG SPOON LAST REMAINING THERMAL TRIP MECHANISM BROKEN
17	GRAB SAMPLE #	2125	2207	1755		9°06.5N	88°31.5W	30	1 HR. 42 MIN. AROUND TRIP. SMALL SAMPLE ~.1 LB. TWO 25 LB. WTS. RECOVERY TIME 1.8 MIN.
3	GRAB SAMPLE #	2127		1755		9°06.5N	88°31.5W	30	TWO 25 LB. WTS. WITH STROBE AND RADIO LOST.
13 FEB 68	ENCLOSURE #	0940	1106	1912	2003	9°51'N to 9°51'N	89°55'W to 90°03'W	30	SSQ-41 60FT. DEPTH, 3HR LIFE, GUTAMALA PASS GOOD REPRODUCTION
13 FEB 68	JET NET #7	1555	1630			10°14'N to 10°16'N	90°50'W to 90°55'W	31	SAMPLE MOSTLY PHYTOPLANKTON
13 FEB 68	CORE 30	1934	2109	1987	1988	10°55.5N	91°15.5W	31	PENETRATION: ~1380cm TOTAL LENGTH 959cm TRUE LENGTH 959cm CLAY, RANGING FROM OLIVE BLACK TO DARK GREENISH GRAY; MODERATELY COMPACTED; MODERATELY TO STRONGLY BURROWED. ASH LIGHT OLIVE GRAY OCCURS 343, 348cm. VERY GENTLE SLOPE

Charles C. Windward
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY.
PALISADES

CRUISE N° 11
CRUISE LEG—From BALBOA To MANZANILLO

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	BOTTOM	1851	2151	1987	1983	10°25'SW	91°15'SW	31	5 HTS, 31 NEGATIVES
EB	CAMERA								
68	#26								
14	NEPHEL	1851	2151	1987	1983	10°25'SW	91°15'SW	31	VERY THIN LAYER 150 FMS OFF BOTTOM
EB	COUNTER								
68	#18								
14	CURRENT	1851	2151	1987	1983	10°25'SW	91°15'SW	31	N.E. CURRENT AT 14 CM/SEC.
EB	METER								
68	#16								
13	MILLIPORE	1841				10°25'SW	91°15'S	31	HEAVIER CONCENTRATION OF PHYTOPLANKTON
EB	SAMPLE								THAN USUAL
68	#31								
13	X-BT	1921				10°25'SW	91°15'SW	31	
EB									
68									
	INTERFACE	1929				10°25'SW	91°15'SW	31	VERY LARGE SAMPLE OBTAINED - FILLED
	End		1945						THREE PINT. JARS
						10°25'SW	91°15'SW	31	

Charles E. Johnson
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From BALBOA To MANZANILLO

50
TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
13	JET	2306				10°27'N	91°18'W		LARGE SAMPLE
FEB	NET		2338						
68	#8					10°29'N	91°22'W		
13	TRAD	1934	2109	1979		9°		31	AND PROBES NOT ON FILM. WT ON FILM SUGGESTS HEAD DRAGGED
FEB	TRB	HT	2011	HT	1988	10°55'S	91°55'W		IN AND. TRAD BUMPED ABOUT. AND REF IS INTERMITTENT
68									BATTERIES LEAKING. LOGS NOT MEASURED.
13	PARTICULATE					10°55'S	91°55'W	31	
FEB	MATTER								
68	WBL #18								
14	JET	0249				10°22'N	91°51'W		VERY SMALL SAMPLE COMPARED TO
FEB	NET		0323						ON #8
68	#9					10°21'S	91°51'W		
13	CHOR	2222	2217	1980		10°55'S	91°55'W	31	1 HR 52 MIN RETURN. TWO 25 LB. WTS VERY SMALL
FEB	SAMPLE								SAMPLE OF ORGANIC DEBRIS RECOVERED 15 MIN.
68	#4								
13	GRAPH	2023		1980		10°25'S	91°45'W	31	LOST
FEB	SAMPLE								
68	#5A								
14	JET	1219				10°09'N	92°39'W		THIRD SMALL SAMPLE
FEB	NET		1259						
68	#10					10°15'N	92°41'W		

Charles C. Wernicke
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

57

Research Vessel ROBERT D. CONRAD

CRUISE N° 11

CRUISE LEG—From PANAMA To MANZANILLO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14 FEB 68	MILLIPORE SAMPLE # 32	2010				12°59'N	92°38'50"W	32	FILTERED ONLY SLICES OF SEA WATER HEAVY CONCENTRATIONS OF PHYTOPLANKTON
14 FEB 68	SURFACE TOW # 25	2036	2052			12°59'N	92°38'50"W	32	
14 FEB 68	VERTICAL TOW # 27	2108	2117			12°59'N	92°38'50"W	32	
14 FEB 68	X-BT	2138				12°59'N	92°38'50"W	32	
14 FEB 68	CORE 31	2036 HIT	2234 2125	2132 2145	2144	12°59'N	92°38'50"W	32	WATER BARREL MESSENGER RELAY FAILED TO OPERATE PROPERLY, HENCE CORE WAS NOT ARMED. PENETRATION: UNCERTAIN, APPARENTLY CORING DEVICE FELL OVER. TOTAL LENGTH: 20cm. TRUE LENGTH: ~20cm. SEDIMENT HIGHLY DISTURBED. ASH, LIGHT OLIVE GRAY (0-11cm) & CLAY (11-20cm) HILLY, 60 fms RELIEF IN CORE 31. SEE CORE 31. SAME EFFECTS ON FILM AS 18B. CORE NOT MEAS. THE CASING IS LIVE WITH +9V FROM THE SILVER CELLS.
14 FEB 68	TIRAO 18C	2036 HIT	2235 2125	2134 HIT	2155 2145	12°59'8"N	92°38'5"W	32	
15 FEB 68	TIRAO 18D	2332 HIT	0113 0007	2155 HIT	2155	12°59'8"N	92°38'5"W	32	ON CORE 32 SAME FILM EFFECTS AS 18B. MID-REF DISAPPEARS WHEN PROBES ARE PLUGGED IN & RE APPEARS WHEN THEY ARE PULLED OUT. COND NOT MEAS.

Charles C. Whitcomb

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

52

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From PANAMA To MANZANILLO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		TOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
14-15	CORE	2332	0113	2149	2155	12°37'80"	92°38'50"	32	PENETRATION: ~453cm TOTAL LENGTH: 662 TRUE LENGTH: BETWEEN 464-478cm. INTERLAYERED CLAY, OLIVE BLACK TO DARK OLIVE GRAY + THIN ASH LAYERS. THE CLAY IS OFTEN VERY ASH-RICH (UP TO 50%) AS BETWEEN 186-196cm. HILLY, 60 fms RELIEF. THE ASH OCCURS BETWEEN 34-35, 45-48, 131-132, 393-404, 474-478cm.
FEB	32	HIF	0007	2155					5 HITS, 42 GOOD SHOTS, INCLUDING A FISH, APPROX. 2' 0" LONG.
68									
14-15	Bottom	2021	2316	2149	2155	12°37'80"	92°38'50"	32	
FEB	CAMERA								
68	#27								
14-15	NEPHEL-	2021	2318	2149	2155	12°37'80"	92°38'50"	32	POSSIBLE VERY THIN LAYER ALL THE WAY DOWN.
FEB	OMETER								
68	#19								
14-15	CURRENT	2021	2318	2147	2155	12°37'80"	92°38'50"	32	N.E. CURRENT WITH ALMOST NIL VEL.
FEB	METER								
68	#19								
15	MILLIGORE	1535				11°50'N	93°57'W	33	FILTERED FILTERS - HEAVY CONCENTRATION OF PHYTOPLANKTON
FEB	SAMPLE								
68	#33								
15	VERTICAL	1557				11°50'N	93°57'W	33	
FEB	TOW		1606						
68	#28								
15	SURFACE	1607				11°50'N	93°57'W	33	SHORTENED DURATION OF TOW BUT CAPTURED A LARGE PLANKTON SAMPLE IN SPITE OF THIS
FEB	TOW		1620						
68	#28								

Charles C. Winckler

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

53

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From PANAMA To MANZANILLO

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15 FEB 68	Y-BT	1631				14°50'N	93°57'W	33	
15 FEB 68	CORE					14°50'N	93°57'W	33	PENETRATION: UNCERTAIN. CORING DEVICE HIT TWICE: ONCE BEFORE IT HAD BEEN ARMED, + ONCE AFTER IT HAD BEEN RAISED; A MESSENGER SENT, + LOWERED AGAIN. TOTAL LENGTH: 1147cm. TRUE LENGTH: 31-29cm or 58cm. 21-79cm REPEATED BELOW FORAMINIFERAL CLAY CORE, OLIVE BLACK (21-65); ASH (65-79cm).
15 FEB 68	33	HIT	~1640						
15 FEB 68	BOTTOM	1540	1650			14°50'N	93°57'W	33	5 HITS, 14 GOOD SHOTS
15 FEB 68	CAMERA								
15 FEB 68	*28								
15 FEB 68	NEPHEL-	1540	1650			14°50'N	93°57'W	33	FILM UNEXPOSED; COVER LEFT ON DURING LOWERING.
15 FEB 68	OMETER								
15 FEB 68	*20A								
15 FEB 68	CURRENT	1540	1650			14°50'N	93°57'W	33	NW CURRENT AT 33cm/sec VELOCITY
15 FEB 68	METER								
15 FEB 68	*20								
14 FEB 68	PARTIC-	2332				12°59'N	92°33'SW	32	GOOD SLIDE
14 FEB 68	ULATE								
14 FEB 68	MATTER								
14 FEB 68	ATER BL								
15 FEB 68	PARTIC-					14°50'N	93°57'W	33	DID NOT TRIP
15 FEB 68	ULATE	HIT	~1610						
15 FEB 68	MATTER								
15 FEB 68	W.B.L. 20A								

Charles C. Winchell
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY

PALISADES

TIME ZONE +6

CRUISE LEG - From		To		SOUNDING		POSITION		LOG	REMARKS
Date	STATION and N°	Start	End	Start	End	Lat.	Long.		
5	SONOBUOY	1900	2009	133		15°03'N 91°04'W	15°03'N 91°04'W	N33	SSQ-41; 60 FT PHONE, 3HR LIFE. NOISY, BOAT DIED OUT PREMATURELY, APPROX 3 REELECTED ARRIVAL - TENUANTEPEC, GULF OF CONTINENTAL SHELF 8MI.
16	SONOBUOY	2046	2156	133		15°15'N 91°09'W	15°15'N 91°09'W	N33	SSQ-41 60 FT PHONE; 3HR LIFE; NOISY BOAT DIED PREMATURELY, ABOUT 3 REELECTED ARRIVAL GULF OF TENUANTEPEC - CONTINENTAL SHELF 8MI.
16	SONOBUOY	2254	0006	131		15°30'N 91°16'SW	15°30'N 91°16'SW	N33	SSQ-41 60 FT PHONE; 3HR LIFE; NOISY, DIED PREMATURELY - APPARENTLY THE BOAT LIFE CONTROL HAS BEEN DISABLED ON THIS DATE. NO BUOYS, GOOD REFLECTIONS; CONTINENTAL SHELF GULF OF TENUANTEPEC 7MI.
5	SONOBUOY	0103	0215	80		15°45'N 91°24'W	15°45'N 91°24'W	N33	SSQ-41, 60 FT PHONE; 3HR LIFE. GULF OF TENUANTEPEC 8MI.
5	SONOBUOY	0316	0425	32		15°51'N 91°33'W	15°51'N 91°33'W	N33	SSQ-41 60 FT PHONE; 3HR LIFE; 7MI.

Charles C. Warriner
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N°

CRUISE LEG—From ALBANY 02 To MANZANILLO

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	CORE	1139	1208	117	120	15°43'N	95°03'W	34	
FEB	34	HIT	1149	119					FORAMINIFERAL CLAY, OLIVE BLACK and DARK OLIVE GRAY (0-10cm);
68									1142.5-503cm); FORAMINIFERAL CLAY OOZE, OLIVE BLACK (110-114cm);
									CLAY, OLIVE BLACK to OLIVE GRAY (198-425 + 503-630); VERY
									SANDY CLAY, DARK OLIVE GRAY (630-BOTTOM). NEARLY FLAT.
16	PARTICULATE					15°43'N	95°03'W	34	DID NOT TRIP
FEB	MATTER								
68	WATER BL.								
	208								
16	PHILLIPORE					15°43'N	95°03'W	34	FILTERED 4 LITERS - HEAVY CONC. OF
FEB	SAMPLE								PHYTOPLANKTON
68	#34								
16	VERTICAL					15°43'N	95°03'W	34	
FEB	TOW								
68	#29								
16	SURFACE					15°43'N	95°03'W	34	
FEB	TOW								
68	#27								
16	X-BT	1241				15°43'N	95°03'W	34	
FEB									
68									
16	TGRAD	1139	1208	115		15°43'N	95°03'W	34	LIGHT TUBE BENT OFF AIM - PROBE GUL NOT ILLUMINATED
FEB	18E	HIT	1149	HIT	119				PRESS GUL BATTERY LIT ENOUGH TO SHOW ON FILM.
68									

Charles C. Whitworth
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From BALBOA CZ To MANZANILLO

56
TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
16 FEB 68	BOTTOM CAMERA #29	1118	1236	110	106	15°43'N	95°03'W	34	5 HITS; NO GOOD NEG; TOO MUCH MUD STIRRED UP, POSSIBLY BY TRIPOD DRAG
16 FEB 68	NEPHEL-OMETER #20	1118	1236	110	106	15°43'N	95°03'W	34	POSSIBLE MEDIUM LAYER, BUT EXTREME SHALLOONNESS (110 FMS) MAKES INTERPRETION DIFFICULT
16 FEB 68	CURRENT METER #21	1118	1236	110	106	15°43'N	95°03'W	34	WESTERNLY DIRECTION AT 22 CM/SEC (MAX)
16 FEB 68	BOTTOM CAMERA #30	2209 0135	2665	2709		15°17'S	96°12'W	35	5 HITS, 26 SHOTS; ABUNDANT WEEDS ON BOTTOM
16 FEB 68	NEPHEL-OMETER #21	2209 0135	2665	2709		15°17'S	96°12'W	35	MEDIUM LAYER ALL THE WAY DOWN!
	CURRENT METER #22	2209 0135	2665	2709		15°17'S	96°12'W	35	N.E. CURRENT @ 8.2 CM/SEC.
16 FEB 68	CORE 35	2222 HIT	0037	2665	2709	15°17'S	96°12'W	35	PENETRATION: ~889 CM TOTAL LENGTH 1022 CM TRUE LENGTH ~915 CM CLAY, OLIVE BLACK; HOMOGENEOUS EXCEPT FOR VERY SLIGHT GRADATIONAL COLOR CHANGES. THIN ASH LAMINATIONS OCCUR BETWEEN 715+716+759-760. SLOPE OF TRENCH

Charles C. Wunsch
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

TIME ZONE +6

CRUISE LEG—From BALEBA C2 To MANIZANILLO

[illegible]

Charles A. Blanchard
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 111

CRUISE LEG From BALBOA CZ To MANZANILLO

TIME ZONE -6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17	MILLIPORE	1503				11°31'30"	97°40'W	36	FILTERED ONLY 3 LITERS OF SEAWATER. HEAVY CONC. OF PHYTOPLANKTON.
FEB	SAMPLE								
68	#36								
17	X BT	1508				11°31'30"	97°40'W	36	
FEB									
68									
17	SURFACE	1506				11°31'30"	97°40'W	36	
FEB	TOW		1550						
68	#29								
17	CORE	1539	1655	1812	1804	11°31'30"	97°40'W	36	PENETRATION: 1217cm. TOTAL LENGTH: 1023cm TRUE LENGTH: 7817cm. CLAY, DARK OLIVE GRAY + OLIVE BLACK (0-368cm); CLAY, DARK GREENISH GRAY + VERY DARK GREENISH GRAY (368- 440, 458-466, 466-812, 812-1023); ASH, LIGHT OLIVE GRAY, EXTREMELY WELL COMPACTED (440-458, 812-817) SLIDE, SIDE & SCANNED
FEB	36	HIT	1603	1797					
68									
17	PARTICULATE					11°31'30"	97°40'W	136	
EB	WATER BL.								
68	31								
17	BOTTOM	1515	1830	1812	1804	11°31'30"	97°40'W	36	5 HITS. 3 ALIQUOTS
FEB	CAMERA								
68	#30								
17	NEPHEL-	1515	1830	1812	1804	11°31'30"	97°40'W	36	MEDIUM LAYER ALL WAY DOWN
FEB	OMETER								
68	#22								

Charles C. Windchill
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 211

CRUISE LEG—From BOLBOA C2 To MANZANILLO

59
TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17	CURRENT	1515	1630	1612	1804	14° 30' N	97° 20' W	36	S.W. CURRENT @ 9.5 cm/sec. VER.
FEB	METER								
68	#23								
17	TORAD	1529	1655	1740		14° 30' N	97° 20' W	36	3 PROBES RUN. ONE PROBE ON FILM, 4 IN AILD
68	19	HIT	1603	HIT	1789				WTEMP OK. (CON) MEAS.
	RAB	1722	1725	1800		14° 30' N	97° 20' W	36	RETURN 1 HR. 25 MIN. RECOVERY TIME 1 HR. 23 MIN.
	WPLE								TWO 36 LB WTS. HAUL - EMPTY
	5								
	RAB	1604	1728	1800		14° 30' N	97° 20' W	36	RETURN 1 HR. 30 MIN. RECOVERY TIME 1 HR. 42 MIN.
	WPLE								TWO 36 LB WTS. HAUL - EMPTY
	6								
18	CORE	1109	1242	1330	1400	14° 37' N	99° 38' W	37	PENETRATION: UNKNOWN. TOTAL LENGTH: 10CM. TRUE LENGTH: 10CM
FEB	37	HIT	1149	1500					AS THE CORE PIPES WERE BROUGHT TO THE SURFACE ALL BUT THE
68									COARSE MATERIAL WAS WASHED OUT. THE TRIGGER WEIGHT CORE
									CONSISTS OF 19CM OF MIDDLE-RICH CLAY BUT NONE OF THIS WAS IN
									SLOPE, SIDE OF A SEAMOUNT.
									THE CORE PIPE CORE CONSISTS OF FRAGMENTS OF A MANGANESE-RICH CRUST
18	PARTICULATE					14° 37' N	99° 38' W	37	
FEB	MATTER								
68	WATER BL								
	22A								
18	TORAD	1109	1242	1330		14° 37' N	99° 38' W	37	FILM CONFUSED. NO (CON) MEAS. PIPE DRAWN ON
FEB	20A	HIT	1149	HIT	1500				BOTTOM.
68									

Charles A. W. W. W.
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From Palma To MANZANILLO

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 FEB 68	SURFACE	1155				11°27' 99°38' L		37	CONTAINED LARGE PLANKTON SAMPLE
	TOW		1208						
	#30								
18 FEB 68	X BT	1206				11°27' 99°38' L		37	
18 FEB 68	MILLIPORE	1344				11°27' 99°38' L		37	FILTERED 4 LITERS HEAVY CONC OF PHYTOPLANKTON
	SAMPLE								
	#37								
18 FEB 68	BOTTOM	1059	1333	1330	1400	11°27' 99°38' L		37	5 HITS; 3 NETS; BOTTOM V. D. (MAYBE); ROCKY (TRIPID PROBABLY TUMBLED A BIT)
	CAMERA								
	#31								
18 FEB 68	NEPHEL-	1059	1333	1330	1400	11°27' 99°38' L		37	MEDIUM LARGE SILT-TYPE MUD, DOWN
	OMETER								
	#23								
18 FEB 68	CURRENT	1059	1333	1330	1400	11°27' 99°38' L		37	FILM ROL OUT OVERNIGHT ON DECK AS GLASS WASHED AWAY, RETAINING PLUG ON CAMERA (WAS DE-DESIGNED PLUG)
	METER								
	#24A								
19 FEB 68	JET	0146				11°31' 101°21' W			
	NET		0220						
	#11					11°36' 101°26' W			

Chief Scientist

41

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STM	REMARKS
		Start	End	Start	End	Lat.	Long.		
19 FEB 68	CORE 38	0934	1109	~1750	1754	11°55'N	102°45'S	38	PENETRATION UNCERTAIN. TOTAL LENGTH ~10cm. TRUE LENGTH ~10cm. ALL BUT VERY COARSE SAND AND GRAVEL WERE WASHED OUT OF THE CORE PIPE AS IT WAS BROUGHT TO THE SURFACE. CONSISTS PREDOMINATELY OF TALHYLYTE GRANULES, ^{↑ FIBBLES} RIMMED WITH MODERATE YELLOWISH BROWN PALAGONITE. BASALT, UP TO 7cm ACROSS, IS RARE.
19 FEB 68	PARTICULATE MATTER WATER BARREL 220					11°55'N	102°45'S	38	
19 FEB 68	MILLIPORE SAMPLE #38	0912				11°55'N	102°45'S	38	FILTERED 4 LITERS - NO CLOGGING - PHYTOPLANKTON NOT AS ABUNDANT AS IN PREVIOUS SAMPLES
19 FEB 68	SURFACE TOW #31	0946	1000			11°55'N	102°45'S	38	
19 FEB 68	X-DT	0950				11°55'N	102°45'S	38	
19 FEB 68	VERTICAL TOW #30	1030	1040			11°55'N	102°45'S	38	
	20B	HIT	1012	HIT	→	11°55'N	102°45'S		NO COVE TO MEASURE CONDUCTIVITY; FILM UNCLEAR

Charles A. Winkler
Chief Scientist

42

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE LEG—From BALBOA CZ To MANIZANILLO

TIME ZONE 77

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
19	SET	1515				15°01'N	103°09'SW		
FEB	NET		1545						
'68	#12					15°03'N	103°11'W		
19	GRAB	1122	1144	1716		14°55'N	102°35'SW	38	RETURN TRIP 1 HR. 24 MIN. RE. VERY TIME
FEB	SAMPLE								55 MIN. 35 LB WEIGHTS. SAMPLE 3-4
'68	#7								VERY SMALL (< 1 CM) FRAGMENTS (MAY BE VOLCANIC?)
19	GRAB	1124	1146	1717		14°55'N	102°45'SW	38	RETURN 1 HR. 24 MIN. RE. VERY TIME
FEB	SAMPLE								42 MIN. 35 LB WTS. SAMPLE - EMPTY.
'68	#8								
19	Bottom	0908	1148	1750	1754	14°55'N	102°35'SW	38	5 HITS, 6 SHOTS; TRIGGER WEIGHT APPARENTLY
FEB	CAMERA								WRAPPED AROUND FRAME
'68	#32								AFTER 1ST. HIT -
									CAMERA RAN ALL WAY
									TO SURFACE
	NEPHEL-	0908	1148	1750	1754	14°55'N	102°45'SW	38	NO PERCEPTIBLE LAYER
19	OMETER								
FEB	#24								
'68	#3								
19	CURRENT	0908	1148	1750	1754	14°55'N	102°45'SW	38	S.W. CURRENT AT 10.8 cm/sec
FEB	METER								
'68	#24								
30	CORE	1324	1541	2540	2544	17°30'N	103°10'W	39	PENETRATION: 1094 CM TOTAL LENGTH: 1073 CM TRUE LENGTH: ~1023 CM
FEB	39	HIT	1416	2544					CLAY, VERY DARK YELLOWISH BROWN TO BETWEEN DUSKY
'68									YELLOWISH BROWN + OLIVE BLACK CONTAINING ABUNDANT THIN
									LAYERS + LAMINATIONS OF VERY SANDY CLAY, DARK BROWNISH GRAY

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES
STATION

63

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From BALBOA To MANZANILLO

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20	PARTICULATE	1324	1541	2540	2544	17° 30'	103° 10'	28	BARREL APPEARS TO HAVE TRIPPED AT WEIGH-UP
FEB	MATTER/WATER							39	POINT (2500 m) BUT LID DID NOT CLOSE COMPLETELY
69	BARREL								LID LATCHED ON TRIP BARREL PROCESSED ANYHOW
	23								
20	MATTER	1300				17° 30'	103° 10'	39	FILTERED 4 LITERS - NO CLIPPING
FEB	SAMPLE								
68	# 39								
20	SAMPLE	1321				17° 30'	103° 10'	39	RELATIVELY SMALL SAMPLE AREA APPEARED
ED	TOW		1340						NOT TO BE PRODUCTIVE
68	# 32								
20	X BT	1342				17° 30'	103° 10'	39	
ED									
68									
20	MATTER	1402				17° 30'	103° 10'	39	
ED	TOW		1411						
68	# 31								
20	GRAB	1412	1425	2543		17° 30'	103° 10'	39	RETURN TIME 2 HR 23 MIN RECOVERY TIME
	SAMPLE								28 MIN (V.) 76 LB WEIGHTS SAMPLE
									11 M. H. 2.0 M. 1.0 M.
20	GRAB	1415	1417	2543		17° 30'	103° 10'	39	RETURN TIME 2 HR 12 MIN RECOVERY TIME 27 MIN
FEB	SAMPLE								ABOUT 10 MIN DELAY FOR SATELLITE FIX TWO 50 LB WTS.
68	# 10								WATER 2.3 1 SMALL H. 2.0 M. 1.0 M.

Charles C. Whitcomb
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG—From BALBOA To MANZANILLO

TIME ZONE +6

Charles P. Whelan
Chief Scientist

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG ³ From MANZANILLO To HONOLULU

65

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
23 FEB 68	CORE 40	2031	2241	2529	2545	19°19'50"N	105°52'55"W	40	PENETRATION: 1150 cm. TOTAL LENGTH: 1160 cm. TRUE LENGTH: 1086 cm. CUTTING EDGE "EJECTED" BY GAS PRESSURE WHEN SCREWS REMOVED. CLAY, DUSKY YELLOWISH BROWN GRADING TO BETWEEN DUSKY YELLOWISH BROWN + OLIVE BLACK, CONTAINING ABUNDANT LAMINATIONS OF SAND + VERY SANDY CLAY. GENTLE SLOPE IN TRENCH.
23 FEB 68	CORE CAMERA			2529	2545	19°19'50"N	105°52'55"W	40	COMPASS OCCULDED BY MUD SWIRLS
23 FEB 68									The Orientation Station is placed in the Core EXACTLY OPPOSITE THE Core CAMERA COMPASS ARM
23 FEB 68	Bottom CAMERA #34			2529	2545	19°19'50"N	105°52'55"W	40	5 HITS, 7 GOOD NEGS.
23 FEB 68	WATER METER #26			2529	2545	19°19'50"N	105°52'55"W	40	NO DEFINABLE LAYER N 25.5 TRA.
23 FEB 68	25.5								
23 FEB 68	CURRENT METER #26	2033	2231			19°19'50"N	105°52'55"W	40	W.B. 5 Fm. Above Core Head, Down Current and Slight Gang
23 FEB 68	25.5								CM 25.5 TRA. W. W. B. 5 Fm. Above Core Head CURRENT @ N 10. W. LOG 21
23 FEB 68	WATER BARREL #24	2033	2231			19°19'50"N	105°52'55"W	40	W.B. 5 Fm. Above Core Head, Down Current and Slight Gang
23 FEB 68	MILLIPORE SAMPLE #40					19°19'50"N	105°52'55"W		FILTERED 4 LITERS - NO CLOGGING

FD with
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From MANZANILLO To HONOLULU

66

TIME ZONE +6

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23	X-BT-13	2032				19°19'S	105°32'W	40	
FEB									
68									
23	SURFACE	2041				19°19'S	105°50'W	40	
FEB	TOW		2056						
68	#33								
23	VERTICAL	2112				19°19'S	105°52'W	40	LANTERN FISH CAUGHT IN TOW - ALIVE
FEB	TOW		2120						
68	#33								
23	JET	2345				19°19'N	105°55'S		VERY GOOD SAMPLE - LARGE - MUCH PLANTON
FEB	NCT		2415			to			MANY LANTERN FISH.
68	#13					19°20'N	105°39'W		
23	TORAD	2031	2241	2530		19°19'S	105°52'W	40	4 PROBES IN HLD, 2 ON FILM - OTHERS OFF SCALE
FEB	21	HIT	2121	HIT	2532				HIGH THERM GRADIENT - CORE HLD MOVED IN
68									HLD AGAIN. LONG WREAS.
24	CORE	0928	1105	2040	2046	20°07'N	106°18'S	41	PENETRATION: 732 cm. TOTAL LENGTH 955 cm. TRUE LENGTH ~ 600 cm.
FEB	41	HIT	1005	2053					SANDY CLAY, DARK YELLOWISH BROWN (0-96 cm); SAND, MEDIUM DARK
68									GRAY (96-118 cm + 201-223 cm plus abundant laminations); SANDY CLAY,
									OLIVE BLACK (118-201 cm) + CLAY, OLIVE BLACK (223-~600 cm). COARSE
									FRACTION CONSISTS PREDOMINATELY OF FINE SAND. SLOPE NEAR TRENCH BOTTOM
24	MIL ROPE	0853				20°07'N	106°18'S	41	FILTERED 3 LITERS - FILTRATION SLOWED
FEB	SAMPLE								(CONTINUED) AFTER 2.5 HRS
68	#41								

W. H. H. H.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From MANZANILLO To HONOLULU

67
TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24	X-ST-14	0915				20°07'N	106°18'5W	41	
FEB									
68									
24	SURFACE	0936				20°07'N	106°18'5W	41	
FEB	TOW		0950						
68	#34								
24	VERTICAL	1000				20°07'N	106°18'5W	41	
FEB	TOW		1014						
68	#33								
24	NET	1238				20°14'5N	106°12'W	41.1	
FEB	NET		1312						
68	#14					20°18'N	106°08'6W		
24	WATER	09:32				20°07'N	106°18'5W	41	WATER BBL TRIGGERED A SHORT TIME BEFORE HIT
FEB	BARREL	HIT	10:05		2053				water not processed
68	25A								
24	GEOCHEM	12:20				20°13'N	106°13'2W	41	SURF. WATER SPL., APPROX. 350 gal.
FEB	28		13:24			20°13'N	106°13'2W		PUMPED UNDER WAY FORTH and Ra ISOTOPES
68						20°20'N	106°06'8W		
24	TERRAD	13120	11:5	2030		20°07'N	106°18'5W	41	1. 12000 W. FILM: PROBES UNPLUGGED FROM TERRAD
68	22A		11:05	HIT	2053				END NOT MEATS

V. J. [Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANIZAVILLO To HONOLULU

68

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24	CORE	0418	1106	2030	2053	20°21'N	106°18'S	41	17 FATHOMS
FEB	CANNON								COMPASS OBSERVED BY
68	#4								1700, PLUS BIG BEND IN PIPE
24	BOTTOM	0854	1136	2030	2053	20°21'N	106°18'S	41	5 HITS, 19 SHOTS
FEB	CANNON								
68	#35								
24	NEARBY	0854	1136	2030	2053	20°21'N	106°18'S	41	NO DEFINITE LAYER
FEB	CANNON								
68	#206								
24	CURRENT	0854	1136	2030	2053	20°21'N	106°18'S	41	REMARKS CURRENT @ 7.2 cm/sec. VEL.
FEB	METER								SOUTH
68	#206								
24	NET	2303				20°21'N	106°15'S	41	GOOD SAMPLE - PICKUPED, SQUID,
FEB	NET		2333						LANTERN FISH, REEL CAPTURED
68	#15					20°21'N	106°15'S		
25	MILLPORE	1241				20°58'N	108°19'W	42	FILTERED 1 LITER - NO CLOCCUS
FEB	SAMPLE								
68	#42								
25	X-BT-15	1313				20°58'N	108°19'W	42	
FEB									
68									

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANIZANILLO To HONOLULU

69

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
25	SURFACE	1330				20°38'N	108°49'W	42	
FEB	TOW		1345						
68	#35								
25	VERTICAL	1353				20°38'N	108°49'W	42	
FEB	TOW		1403						
68	#34								
25	GEOCHEM.	1323				20°38'N	108°49'W	42	4 WATER BARRELS FOR THORIUM & RADIUM
FEB	29	HIT	1326		100 fms				ISOTOPES 100 Fms. deep
68	(INS-4)	1339							All 100 fms slides OK
		HIT	1342		100 fms				slides 25, 26, 27 and 28
		1403			102 1/2				
		HIT	1406		97 1/2				
25	GRAB	1317	1430	1400		20°38'N	108°49'W	42	RETURN TIME: 1 HR. 13 MIN. RECOVERY TIME
FEB	SAMPLE								12 MIN. SAMPLER WTS: 35 LB. SAMPLE: 1/4 LB
68	#11								SMALL FRAGMENTS (MAY BE VOLCANIC?) EMBEDDED
									IN CLAY
25	GRAB	1326	1433	1408		20°38'N	108°49'W	42	RETURN TIME: 1 HR. 7 MIN. RECOVERY TIME: 15 MIN
FEB	SAMPLE								SAMPLER WTS: 36 LB. SAMPLE: 1 1/4 LB. SMALL
68	#12								FRAGMENTS EMBEDDED IN CLAY
25	CORE	1314	1538	1450	1515	20°38'N	108°49'W	42	PENETRATION: 99.5 cm. TOTAL LENGTH: 891 cm. TRUE LENGTH: 881 cm.
ER	42	HIT	1443	1530					CLAY, OLIVE GRAY, DARK OLIVE GRAY & DARK GREENISH GRAY; SLIGHTLY
68									BURROWED, MODERATELY TO WELL COMPACTED; LAMINATIONS MARKED
									BY SLIGHT COLOR CHANGES COMMON. SOME TACHYLYTE FRAGMENTS
									REMOVED FROM BASE OF CORE FOR DATING. VERY HILLY, 30-60 cm RELIEF
25	CORE	1314	1538	1450	1515	20°38'N	108°49'W	42	ST ROBE DID NOT FIRE
EB	HAND								
68	CRATER								
	#5A								

T. Newton

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STD	REMARKS
		Start	End	Start	End	Lat.	Long.		
25	Bottom	1244	1532	1450	1515	20°58'N	108°29'W	42	5 HITS, 11 SHOTS, ROCKY BOTTOM
FEB	CANON								
68	#36								
25	NAVIG	1244	1532	1450	1515	20°58'N	108°29'W	42	NO DISCREPANCIES
FEB	CANON								
68	#21								
25	CANON	1244	1532	1450	1515	20°58'N	108°29'W	42	MINOR CURRENT @ 13.5 cm/sec. EAST
FEB	CANON								
68	#21								
25	JET	1609				20°58'N	108°51'W	42.1	
FEB	NET		1640						
68	#16					20°58'N	108°37'W		
	TORAD	1314	1538	1440		20°58'N	108°29'W	42	4 PROBES IN MUD, 1 ON FILM. ONE PASS THROUGH BATH, MAYBE TWO (CORE HEAD MOVED IN MUD DUE TO PRECAUTIONS. COME AWAY).
	22	HIT	1443	HIT	1530			EVEN	
24	SUBOY	1711						—	Channel 3 R.T. (REVERSED) ON EAST TRAVEL 4.4 MILES, N. REFLECTION ON SHELF
FEB	46		1800						
68	47								
26	CORE	0957	1119	1788	1789	20°59'N	111°09'W	43	PENETRATION: 1339cm. TOTAL LENGTH: 1004cm. TRUE LENGTH: 1004cm.
FEB	43	HIT	1027	1789					CLAY, INTERLAYED + INTERLAMINATED CLAYS RANGING FROM DUSKY YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
68									COARSE FRACTION ≤ 1% CARBONATE MINERAL, 40 FINE RELIEF.

J. D. [Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 47

CRUISE LEG—From MANZANILLO To HONOLULU

71

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	MILWAUKEE	0915				20°59'S	111°59'W	43	PICTURED T. ...
FEB	...								
68	#13								
	XBT 16	0938				20°59'S	111°59'W	43	
26	SOUNDING	1001				20°59'S	111°59'W	43	
FEB	TOW		1015						
68	#36								
26	VERTICAL	1025				20°59'S	111°59'W	43	
FEB	TOW		1035						
68	#35								
26	JCT	1229				20°59'S	112°02'SW	43.1	
FEB	NET		1302						
68	#17					20°59'S	112°07'W		
26	RADON	09:30				20°59'S	111°59'W	43	RADON SAMPLE 1000 FMS.
FEB	CHECK	max. hit	09:57						taken to check behavior of counter
68									
26	GRAB	1125	1150	1127		20°59'S	111°59'W	43	RETURN TIME 1HR 15 MIN. RECOVERY TIME 8 MIN. 36 LB. WTS. SAMPLES ONE
FEB	SAMPLE								FRAGMENT 3x2.5x1.5 cm.
68	#16								
26	GRAB	1120	1155	1121		20°59'S	111°59'W	43	RETURN TIME 1HR 15 MIN. RECOVERY TIME 14 MIN. 30 LB. WTS. EMPTY
FEB	SAMPLE								
68	#14								

W. B. ...
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 411

CRUISE LEG—From MANZANILLO To HONOLULU

72

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	CREE HEAD	1910	1910	1788	1789	20°39'S	111°59'W	43	HARD BURIED IN MUD; NO PLATES
FEB	CAMERA	0957	1119						
68	#513								
26	Bottom	0923	1145	1788	1789	20°39'S	111°59'W	43	5 HITS, 3 GOOD SHOTS
FEB	CAMERA								
68	#37								
26	CURRENT	0923	1145	1788	1789	20°39'S	111°59'W	43	NO CURRENT @ 7.5 cm/sec. S.E.
FEB	METER								
68	#28								
26	MEDIAL	0923	1145	1788	1789	20°39'S	111°59'W	43	NO DISCERNABLE READING OF LA/ER
FEB	CAMERA								
68	#28								
26	TERRAD	0957	1119	1787		20°39'S	111°59'W	43	4 PR IN MID, 3 ON FILM, OTHERS AT SCALE. MOVES IN MID AGAIN DESPITE PRECAUTIONS COMMENTS.
FEB	23	HIT	1027	HIT	1790				
68									
26	CREE HEAD	1924	2120	1946	1946	21°02'W	113°15'W	44	STROBE DID NOT FIRE
FEB	CAMERA								
68	#56								
26	Bottom	1910	2150	1946	1946	21°02'W	113°15'W	44	5 HITS, 8 SHOTS (STROBE ON-PRG)
FEB	CAMERA								
68	#36								

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

73

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG SND	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	NEPHEL	1910	2150	1946	1946	21°22'N	113°15'W	44	NO DECIDUOUS LAYER
28	CHLOROPHYLL								
28	# 29								
	29								
26	CURRENT	1910	2150	1946	1946	21°22'N	113°15'W	44	NEST CURRENT @ 22m/sec
28	NEPHEL								
28	# 29								
	29								
26	CORE	1924	2120	1946	1946	21°22'N	113°15'W	44	PENETRATION: 1244 cm. TOTAL LENGTH: 1256 cm. TRUE LENGTH: 1140 cm. CLAY, PREDOMINATELY DARK YELLOWISH BROWN TO VERY DARK YELLOWISH BROWN BUT CONTAINS LAYERS & LAMINATIONS OF DUSKY YELLOWISH BROWN, MODERATE BROWN PALE YELLOWISH BROWN COARSE FRACTION <1%. BOTTOM HILLY ^{RELIEF} 40 cm.
28	44	HIT	2019	1960					
28									
26	MULLIGAN	1907				21°22'N	113°15'W	44	FILTERED 7 LITERS - NO COLLECTING
28	SAMPLE								
28	# 44								
	X-01-37	1921				21°22'N	113°15'W	44	
26	Surface	1953				21°22'N	113°15'W	44	
28	Tow		2008						
28	# 37								
26	Vertical	2025				21°22'N	113°15'W	44	
28	Tow		2034						
28	# 36								
	GRAB	2001		1945		21°22'N	113°15'W	44	SAMPLER LAUNCH AIR RETURNED TO PROPSIT
3	SAMPLE								SIDE OF SHIP ABOUT 2 MINUTES LATER. UPON RETRIEVAL
8	# 154								TRIGGER RELEASE MISSING RECOVERED 12 MIN

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From MANZANILLA To HUANCHILLO

74

TIME ZONE -7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
	GRAB	2010	2145	1745		21°32'N	113°15'W	44	RETURN TIME 1 HR 35 MIN. RECOVERY TIME 17 MIN.
	SAMPLE								THIS IS A WTS. SAMPLE HALL: 7 LBS. LARGE
	#15								MAN. MODULES.
26	GRAB	2042	2217	1745		21°32'N	113°15'W	44	RETURN TIME 1 HR 35 MIN. RECOVERY TIME
	SAMPLE								22 MIN. 35 LB. WTS. SAMPLE HALL: 6 LBS.
	#16								MAN. MODULES.
26	TURAD	1924	2136	1940		21°32'N	113°15'W	44	3 DR IN MLD, 2 ON FILM. SAME LONG-HEAD
	24	Hr	2019	Hr	1960				MOVEMENT PROBLEM AGAIN. COND. WTS.
	68								
27	GEOCHEM.	07:30		1710		21°31'S	114°18'W		Surface water sample pumped under way for
	30		08:35		1700				Th and Ra
	68 (SWS23)					21°01'N	115°0'W		350 gall (approx.)
27	CORE	0911	1103	1465	1344	21°00'S	115°0'W	45	PENETRATION UNKNOWN. TOTAL LENGTH: 2100M. TRUE LENGTH: 2100M.
	45	HIT	7(11140)	7(11140)					ALL BUT COARSE MATERIAL WASHED OUT OF CORE PIPES FOR
	68								RECORD MISREAD 4200 LBS OF WIRE LET OUT AFTER HIT.
									CORE CONSISTS OF BROWNISH BLACK MANGANESE NODULES &
									SIDE OF SEAMOUNT
									MODULE FRAGMENTS. TRIGGER CORE: 9cm of YELLOWISH BROWN FORAM CLAY
27	MILLIPORE	0844				21°00'S	115°0'W	45	FILTERED ONLY 3 LITERS - FILTERED
	SAMPLE								SLUDGES AFTER 2.5.
	#45								
27	SURFACE	0911				21°00'S	115°0'W	45	
	T.W.		1127						
	#38								

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From MANZANILLO To MANZANILLO

75

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27	VERTICAL	0949				21°00'S	115°0'W	45	
FEB	TOW		0957						
68	#37								
27	JCT	1249				21°N	115°15'W	45.1	
FEB	NET		1320						
68	#18					21°N	115°18'W		
27	GAAR	0732	1040	1430		21°00'S	115°W	95	RETURN TIME 1 HR. 8 MIN. RECOVERY TIME
FEB	SAMPLE								7 MIN. TWD 36 LB. WTS. SAMPLE HAUL:
68	#17								3.6 LBS. MN NODULES.
27	GAAR	0737	1045	1430		21°00'S	115°W	45	RETURN TIME: 1 HR. 8 MIN. RECOVERY TIME
FEB	SAMPLE								11 MIN. TWD 36 LB. WTS. SAMPLE HAUL: EMPTY
68	#18								
27	TGRAD	0911	1103	1720		21°00'S	115°W	45	NO PR IN MUD. COULD NOT MEAS
FEB	25A	HIT ??		HIT	1410				
960									
27	CORE	0911	1103	1720	1410	21°00'S	115°W	45	CAMERA REMOVED ON DECK TO AVOID DAMAGE
FEB	CAMERA								WHILE REMOVING CAMERA CASE JAMMED IN.
68	#50								CORE-HEAD
27	Bottom	0822	1115	1720	1410	21°00'S	115°W	45	1 HIT: TRIPOD HUNG UP ON BOTTOM
FEB	CAMERA								1 PICTURE LARGE ROCKS
68	#39								

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

76

TIME ZONE +7

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	NEPHEL-	0822	1115	1720	1440	21°05'S	145°W	45	NO READABLE LAYER
8	OMETER								
8	#30								
7	CURRENT	0822	1115	1720	1440	21°05'S	145°W	45	NO CURRENT @ 22 cm/sec. S.E.
8	METER								
8	#30								
									23 rd FEBRUARY - CLOCKS + 8 2D
8	CORE	0916	1115	2172	2138	20°32'N	118°13'W	46	PENETRATION: 1067 cm. TOTAL LENGTH: 932 cm. TRUE LENGTH:
8	46	HIT	0958	2175					822 cm. CLAY, PREDOMINATELY MODERATE BROWN BUT
8									DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
									BETWEEN 477+512 cm; GENERALLY HOMOGENEOUS; MODERATELY
									COMPACTED + BURROWED. HILLY, GENERALLY 20 cm. RELIEF
28	CORE	0920	1105	2170	2175	20°32'N	118°28'W	46	33 SHOTS 245° TO STRIKE
80	HEAD								
68	CAMERA								
	#5								
28	Bottom	0837	1137	2170	2175	20°32'N	118°28'W	46	5 HITS, 19 SHOTS
78	CAMERA								MANGANESE NODULES EVIDENT
58	#40								
28	NEPHEL-	0837	1137	2170	2175	20°32'N	118°28'W	46	NO READABLE LAYER
80	OMETER								
68	#31								
						20°32'N	118°28'W		
28	CURRENT	0837	1137	2170	2175			46	S.W. CURRENT @ 12 cm/sec. 1 vein
80	METER								
68	#31								

Martha

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

77

TIME ZONE +8

[illegible]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° VII

CRUISE LEG—From MAUZAVALLO To HONOLULU

78

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	JCT	1244				20°38'S	118°31'W		
28	NET		1314						
28	#11					20°26'6" S	118°27'W		
	TORAD	0916	1115	2176		19°51'S	119°52'S	46	4 PR IN MUD; 4 ON FILM. WT OK. PRI 2 & 3 AT SAME SPOT
	25	HIT	0958	HIT	2175				ON FILM AFTER HIT. SLIGHT UNDULATIONS. CORO MEAS.
	CORE	1934	2125	2255	2247	19°51'S	119°52'S	47	STRING ORIENTATION @ 240°
	HEAD								
	CAMERA								
	#6								
	Bottom	1910	2152	2255	2247	19°51'S	119°52'S	47	5 HITS, 16 SIKTS SHOW MANGANESE
	CAMERA								MODULES
	#41								
	NEPHEL-	1910	2152	2255	2247	19°51'S	119°52'S	47	NO READABLE LAYER
	OMETER								
	#32								
	CURRENT	1910	2152	2255	2247	19°51'S	119°52'S	47	FILM DID NOT ADVANCE
	METER								
	#32A								
28	CORE	1934	2125	2255	2247	19°51'S	119°52'S	47	PENETRATION: 1104cm. TOTAL LENGTH 967cm. TRUE LENGTH:
28	47	HIT	2015	2255					>858cm. CLAY, PREDOMINATELY MODERATE BROWN GRADING
28									TO DISKY BROWN BELOW ~400cm; GENERALLY HOMOGENEOUS;
									MODERATELY COMPACTED; CARBONATE CONTENT NIL HILLY

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 21

CRUISE N° 211
CRUISE LEG—From MANZANILLO To HONOLULU

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	PH	19:40		2256		17°51'SW	117°52'30"W	17	55 gals water barrel, 5 fms down in head. Slide OK.
IL	20	19:41	20:15		2257				
LS		19:42	21:15						
1	GRAB	19:44	21:25			17°51'SW	117°52'30"W	17	RETURN TIME 2 HR 1 MIN. RECOVERY TIME 15 MIN. TWD 35 LB. WTS. SAMPLE MARK: 5 LBS MN MODULES.
LL	SAMPLE								
LS	#42								
1	GRAB	19:48	21:15			17°51'SW	117°52'30"W	17	RETURN TIME 1 HR. 43 MIN. RECOVERY TIME 20 MIN. TWD 35 LB. WTS. SAMPLE MARK: 5 MN LB. MN MODULES.
LL	SAMPLE								
LS	#43								
1	GRAB	19:56	21:40			17°51'SW	117°52'30"W	17	RETURN TIME 1 HR. 54 MIN. RECOVERY TIME 25 MIN. TWD 35 LB. WTS. SAMPLE MARK: 4 LB S. MN MODULES.
LL	SAMPLE								
LS	#44								
18	MILLIGRE	19:57				17°51'SW	117°52'30"W	17	ENTERED 4 LITERS
LL	SAMPLE								
LS	#47								
18	SURFACE	19:52				17°51'SW	117°52'30"W	17	
EO	TOW		20:08						
LS	#40								
18	VERTICAL	20:18				17°51'S	117°52'30"W	17	
EO	TOW		20:28						
LS	#39								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

80

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANIZANILLO To HONOLULU

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	JCT	2250				19°19'N	119°31'W		
FEB	NCT		2320				+0		
68	20					19°26'S	120°21'W		
28	TREAO	1934	2125	2257		19°31'S	119°32'S	147	4 PR IN MUD — NOTHING ON FILM BUT PRESSURE
FEB	26A	HIT	2015	HIT	2255				TRACE. (UND. NOT METS.
68									
29	P.M. 27	1406		2180		18°31'S	122°05'W	48	55 gall. Bbl. for partic matter 5 fms. above
IL		hit	1449		2132				core head.
68		surf	1555						slide OK
29	GC 31	24306		2180		18°31'S	122°05'W	48	2 water bbls. at 1000 fms for TH-Ra
IL	(DPS 4)	man	1420						slides # 29 and 30 all OK. these are the
68		stop	1425						first 2 bbls. (next 2 next sta.)
		st. down	1432						
		hit	1449		2132				
29	CORE	1348	1603	2174	2035	18°34'S	122°05'W	48	PENETRATION: UNKNOWN BUT APPARENTLY SLIGHT TOTAL LENGTH:
FEB	48	HIT	1447	2045					~15cm. TRUE LENGTH ~15cm. CORING DEVICE FELL OVER.
68									CORE CONSISTS ALMOST EXCLUSIVELY OF MANGANESE NODULES,
									FROM FINE GRAIN TO PEBBLE SIZE + FRAGMENTS OF LARGE NODULES
									OR OF A CRUST. TACHYLYTE + PALAGONITE ARE COMMON. MOUNTAINOUS.
29	GRAB	1415				18°34'S	122°05'W	48	TWD 26 LB. WTS. LIST.
FEB	SAMPLE								
68	#25A								
29	GRAB	1425	1625			18°32'S	122°05'W	48	RETURN TIME 1HR 40 MIN. RECOVERY TIME
FEB	SAMPLE								15 MIN. SAMPLER WTS. 36 LB. SAMPLE MATH
68	25								1/4 LB. MIN NODULES

J.D. Arthur
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

81

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27	DATA	1435	1513			18°34'S	122°05'W	48	RETURN TIME 1 HR. 38 MIN. RECOVERY
	FEB SAMPLE								TIME 20 MIN TOW 36 LB. WTS. SAMPLE
28	76								HAUL 3 3/4 LB. MIN MODULES.
29	WILLIAMS	1321				18°34'S	122°05'W	48	FILTERED 4 LITERS - NO CLOGGING
	FEB SAMPLE								
28	#40								
29	SURFACE	1409				18°34'S	122°05'W	48	
	FEB TOW		1426						
28	41								
29	VERTICAL	1440				18°34'S	122°05'W	48	
	FEB TOW		1449						
28	40								
27	CORE	1348	1603	2174	2035	18°34'S	122°05'W	48	BOTH CAMERA + STROBE JAMMED IN HEAD;
	FEB HEAD								HEAD BADLY BOUNCED AROUND ON BOTTOM
28	CAMERA								HEAD DENTED & FILM BENT. THUS CAMERA REMOVED
	#7A								ON DECK, REWIND FILM, TO CASE CASE REMOVAL
29	BOTTOM	1321	1709	2174	2035	18°34'S	122°05'W	48	5 HITS, 15 SHOTS SHOW MANGANESE NODS.
	FEB CAMERA								
28	#42								
29	NIDHEL	1321	1709	2174	2035	18°34'S	122°05'W	48	NO READABLE LAYER
	FEB METER								
28	#33								

W. C. C. C.
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

82

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
29 FEB 68	CURRENT METER #32	1321	1709	2174	2035	18°31'S	122°05'W	48	NO CURRENT @ 12 cm/sec S.E.
9	TORAD	1348	1603	2192		18°31'S	122°05'W	48	HIT ROCKS — NO PENETRATION, NO HULL SCRAPING
3	26B	HIT	1447	HIT	2045				
1-3-68									
PM 128		0950		2303		17°09'N	124°36'W	49	Water bbl. 5 fms. above core heard
II		hit	1038		2300				slide OK
68		surf	1155						
1-3-68									
GC31		0950		2303		17°09'N	124°36'W	49	second half of water sample from 1000 fms depth
DP34		surf	1003 1/2						slide at 31 & 32 all OK for Th-Ra
68		stop 1000	1008						
		down	1016						
		hit	1028		2300				
		surf	1125						
1	CORE	0935	1210	2303	2307	17°09'N	124°36'W	49	PENETRATION: 1153cm, TOTAL LENGTH 130cm, TRUE LENGTH ~100cm
MAR 49	HIT	1038		2304					PREDOMINATELY CLAY, MODERATE BROWN ABOVE 993cm, +
68									MODERATE YELLOWISH BROWN BELOW. A CLAY LAYER CONTAIN-
									ING 50% MANGANESE MICRO-NODULES, DARK YELLOWISH BROWN
									OCCURS BETWEEN 511 & 523cm. HILLY, GENERALLY <40 fms RELIEF
1	GRAB	2147	1137	1327		17°09'N	124°36'W	41	RETURN TIME 1HR 50 MIN, RECOVERY TIME
MAR SAMPLE									1. min. TWD 30 LB WTS. SAMPLE 1141'
68	LT								5 1/4 LBS. MIN NODULES
1	GRAB	1157	1148	1327		17°09'N	124°36'W	41	RETURN TIME 1HR 51 MIN, RECOVERY TIME
MAR SAMPLE									TIME 27 MIN. TWD 36 LB WTS. 5
68	" 28								HAUL 3 1/4 LBS. MIN NODULES

[Signature]
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY,
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 411

CRUISE LEG—From MANZANILLO To HONOLULU

83

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1	CRAB	1207	1158	2327		17°09'N	121°36'W	47	RETURN TIME 1 HR. 51 MIN. RECOVERY TIME
MAR	SAMPLE								25 MIN. TOW 35 LB. WTS. SPINER HAUKE
68	427								1 3/4 LB. MIN. HADAL'S.
1	TURAN	0435	1210	2305		17°09'N	121°36'W	49	INSUFFICIENT LIGHT ON CALVADOMETERS BECAUSE LIGHT
MAR	260	417	1038	417	2304				TRIBE, LIGHT ADJUSTED PROPERLY, HADAL'S WERE SHOCK.
68									IT IS NOT VERY ADJUSTABLE - SHOULD BE DESIGNED TO
1									BE BOTH STRONG AND ADJUSTABLE. THIS TROUBLE
1	MILLIPORE	0910				17°09'N	121°36'W	49	HADAL'S OBTAINED BEFORE.
MAR	SAMPLE								FILTERED 4 LITERS
68	44								
1	SURFACE	0956				17°09'N	121°36'W	49	
MAR	TOW		1011						
68	42								
1	SURFACE	1022				17°09'N	121°36'W	49	
MAR	TOW		1038						
68	43								
1	VERTICAL	1046				17°09'N	121°36'W	49	
MAR	TOW		1056						
68	41								
1	JET	1341				17°05'N	121°42'W	49.1	
MAR	NET		1410						
68	21					17°02'N	121°19'W		

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

84

TIME ZONE 18

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
I	PM	1944		2357				50	Partly mottled brown 50 fms above seabed
II	10A	1944		2329					did not trap
CF		surf	2021						
I	CORE	1933	2143	2357	2336	16°35'N	125°35'W	50	PENETRATION 717 cm TOTAL LENGTH 736 cm TRUE LENGTH 670 cm
MAR	50	HIT	2021	2329					CLAY, RANGING BETWEEN DARK YELLOWISH BROWN + VERY
68									DARK YELLOWISH BROWN WITH PATCHES, APPARENTLY ASSOCIATED
									WITH BURROWING, OF GRAYISH ORANGE; SOFT TO MODERATELY
									COMPACTED; COARSE FRACTION ≤ 1%; CARBONATE LOW TO NIL. HILLY, 30 fms
I	MILLIPORE	1903				16°35'N	125°35'W	50	FILTERED 4 LITERS
MAR	SAMPLE								
68	50								
I	SURFACE	1948				16°35'N	125°35'W	50	
MAR	TOW		2004						
68	44								
I	VERTICAL	2020				16°35'N	125°35'W	50	
MAR	TOW		2029						
68	42								
I	JET	2327				16°34'N	125°36'W	50.1	
MAR	NET		2358						
68	22					16°31'N	125°40'W		
I	GRAB	1155	2150	2351		16°35'N	125°35'W	50	RETURN TIME 1 HR. 55 MIN. RECOVERY TIME
MAR	SAMPLE								28 MIN. 1.13 30 LB. WTS. SAMPLE HAIL
68	30								2 1/4 LB. MO. NOODLES

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

85

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1	GRAB	2006	2200	2359		16°35'N	125°35'W	50	RETURN TIME 1 HR. 54 MIN. RECOVERY
MAR	SAMPLE								TIME 32 MIN. TWO 36 LB. WTS. SAMPLE
68	31								HAUL 3 LBS. MN. NODULES.
1	GRAB	2016	2207	2359		16°35'N	125°35'W	50	RETURN TIME 1 HR. 52 MIN. RECOVERY
MAR	SAMPLE								TIME 34 MIN. TWO 36 LB. WTS.
68	32								SAMPLE HAUL. 2 1/2 LB. MN. NODULES.
1	TRAP	1933	2143	2358		16°35'N	125°35'W	50	2 PRIN. MUD. LONG ON FILM. NOT ENOUGH LIGHT.
MAR	260	Hrt	2021	Hrt	2329				
68									
1	CORE	1933	2143	2358	2329	16°35'N	125°35'W	50	BIG BEAD - NO ORIENTATION
MAR	HEAD								(75 SHOTS)
68	CAMERA								
	#3								
1	BOTTOM	1908	2156	2358	2329	16°35'N	125°35'W	50	5 HITS, 20 SHOTS
MAR	CAMERA								
68	#44								
1	CURRENT	1908	2156	2358	2329	16°35'N	125°35'W	50	WIND (W) 6.7 km/sec. VEL.
MAR	METER								N.E.
68	#34								
1	NEPHEL	1906	2156	2358	2329	16°35'N	125°35'W	50	NO READABLE LAYER
MAR	OMETER								
68	#35A								

M. A. Smith
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

86

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
2	BOTTOM	1340	1718	2440	2496	15°08'S	127°41'W	51	5 HITS, 4 GOOD SHOTS
MAR	CAMERA								
68	#45								
2	NIPHEL	1340	1718	2440	2496	15°08'S	127°41'W	51	NO READABLE LAYER
MAR	CAMERA								
68	#35								
2	CURRENT	1340	1718	2440	2496	15°08'S	127°41'W	51	S.W. CURRENT @ NIL. VELOCITY
MAR	METER								
68	#35								
29	GRE	0935	1210	2303	2300	17°09'S		49	210° TO STRONG 130 SHOTS
FEB	HOID					17°09'N	121°36'W		
68	CAMERA								
	#7								
29	BOTTOM	0907	1208	2303	2300	17°09'N	121°36'W	49	5 HITS, 13 SHOTS SHOW MANGANESE NOBS.
FEB	CAMERA								
68	#43								
29	NIPHEL	0907	1208	2303	2300	17°09'N	121°36'W	49	NO READABLE LAYER
FEB	CAMERA								
68	#34								
29	CURRENT	0907	1208	2303	2300	17°09'N	121°36'W	49	CURRENT @ 6.8 m/sec.
FEB	METER								N.E.
68	#33								

Mathew

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

87

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG 51	REMARKS
		Start	End	Start	End	Lat.	Long.		
2 MAR 68	LORE 51	1409 HIT	1643 1520	2440 2480		13°08'50" S	127°41' W	51	PENETRATION: 8.54 cm TOTAL LENGTH: 852 cm TRUE LENGTH: 828 cm CLAY, PREDOMINATELY ^{VERY} DARK YELLOWISH BROWN WITH PATCHES & ZONES OF GRAYISH ORANGE TO DARK YELLOWISH BROWN. THESE APPARENTLY REPRESENT HIGHLY BURRAWED LAMINATIONS. COARSE FRACTION <5% CARBONATE MTL HILLY
2 MAR 68	PM 29B	14:35 hit surf		2420 2480		13°08'50" S	127°41' W	51	Barrel retrieved about 100 fms above bottom. Water was run
2 MAR 68	RACON 3	14:10 hit surf		2440 2480		13°08'50" S	127°41' W	51	Mushin bottle 1: hooked to tripod 2: 5 fms above tripod water slightly 3: 15 " " " 4: 30 " " " Bottles 2, 3 & 4 tripped when tension went off wire
2 MAR 68	GRAB SAMPLE 33	1428 hit	1638	2463		13°08'50" S	127°41' W	51	RETURN TIME 2 HRS. RECOVERY TIME 23 MIN TWO 36 LB WTS. SAMPLE HAUL: 4 3/4 LB. MN NODULES
2 MAR 68	GRAB SAMPLE 34	1448 hit	1647	2463		13°08'50" S	127°41' W	51	RETURN TIME 1 HR 59 MIN. RECOVERY TIME 25 MIN. TWO 36 LB WTS. SAMPLE HAUL: 3 1/2 LB. MN NODULES.
2 MAR 68	GRAB SAMPLE 35	1458 hit	1655	2463		13°08'50" S	127°41' W	51	RETURN TIME 1 HR. 51 MIN. RECOVERY TIME 35 MIN. TWO 36 LB WTS. SAMPLE HAUL: 2.8 LBS. MN NODULES
2 MAR 68	MILIPARE 51	1343				13°08'50" S	127°41' W	51	

DD Arthur
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

88

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To Honolulu

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
2	Surf. Sec	1440				16°38'S	127°41'W	51	
MAR	Tow		1445						
68	45								
2	VERTICAL	1514				16°38'S	127°41'W	51	
MAR	Tow		1522						
68	43								
2	NET	1914				16°35'S	127°37'W	51.1	
MAR	NET		1944						
68	23					16°32'S	127°52'W		
2	TBRAD	1409	1643	2440		13°19'N	129°55'W	51	2 PR IN MUD; 1 ON FILM. LIGHT STILL DIM. LONG WINDS.
	26	1444	1520	2480					
3	CORE	0433	1202	2605	2647	13°19'N	129°55'W	52	
MAR	HEAD								
68	CAMERA								
	# 9								
3	BOTTOM	0900	1215	2605	2647	13°19'N	129°55'W	52	5 HITS. 17 SHOTS SHOW LARGE MANGANESE NODULES
MAR	CAMERA								
68	# 46								
3	NEPHEL	0900	1215	2605	2647	13°19'N	129°55'W	52	NO READABLE LAYER
MAR	OMETER								
68	# 36								

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

89

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
3 MAR 68	CURRENT METER #36	0900	1215	2605	2647	13°49'N	129°55'S	52	nil (2) NIL - VEL. N.W.
3 MAR 68	CORE 52	0933	1202	2605	2647	13°49'N	129°55'S	52	PENETRATION: 1203-15 cm. TOTAL LENGTH: 801 cm. TRUE LENGTH: 801 cm. CLAY, VERY DARK YELLOWISH BROWN TO DARK YELLOWISH BROWN WITH LAYERS + LAMINATIONS OF GRAYISH ORANGE + DARK GRAYISH ORANGE BETWEEN: 136+404, 412+441, 520+550, 610+630 + 450+660 cm. BURROWED, MODERATELY COMPACTED; CARBONATE NIL. HILLY, 20-30% RELIEF
3 MAR 68	PM 29C. TLE 68	0945	10.31	2605	2610	13°49'N	129°55'S	52	interrupted about 230 fms above bottom / from (bottom) water was run
3 MAR 68	GRAB SAMPLE 36	1004	1212	2612		13°49'N	129°55'S	52	RETURN TIME 1 HR. 8 MIN. RECOVERY TIME 37 MIN. TWO 36 LB WTS. SAMPLE HAZEL 6 LBS. MN NODULES. ONE LARGE DEEP SEA PRAWN.
3 MAR 68	GRAB SAMPLE 37	1014	1221	2612		13°49'N	129°55'S	52	RETURN TIME 1 HR. 7 MIN. RECOVERY TIME 37 MIN. TWO 36 LB WTS. SAMPLE HAZEL 5 1/4 LBS. MN NODULES.
3 MAR 68	GRAB SAMPLE 38	1024	1228	2612		13°49'N	129°55'S	52	RETURN TIME 1 HR 4 MIN. RECOVERY TIME 40 MIN. TWO 36 LB WTS. SAMPLE HAZEL 1 1/2 LBS. MN NODULES.
3 MAY 68	TERRAD 27	0933	1202	2612		13°49'N	129°55'S	52	3 PR IN MUD; 3 ON FILM. NO OK. COULD MEAS SOME UNLATION, DIFFERENT FROM BEFORE.

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

90

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	MILLIPORE	0853				13°51'N	129°54'W	52	
MAR	SAMPLE								
68	52								
3	SURFACE	0952				13°49'N	129°55'50"W	52	
MAR	TOW		10009						
68	46								
3	VERTICAL	1023				13°49'N	129°55'50"W	52	
MAR	TOW		1022						
68	44								
3	SET	1422				13°42'N	130°06'W	52-1	
MAR	NET		1449						
68	24					13°39'N	130°10'50"W		
3	BOTTOM	1422	2211	2643	2710	13°23'N	130°42'W	53	5 HITS, 12 SHOTS SHOW LARGE MANGANESE NODULES
MAR	CANISTER								
68	#47								
3	NEPHE-	1622	2211	2643	2710	13°23'N	130°42'W	53	NO READABLE MAYER
MAR	OMETER								
68	#37								
3	CURRENT	1622	2211	2643	2710	13°23'N	130°42'W	53	CURRENT @ NIL. VELOCITY N.W.
MAR	METER								
68	#37								

Dr. [Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

91

TIME ZONE +8

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	CORE					13°23'N	130°42'W	53	
MAR	HEAD								
68	CAMERA	1829	2145	2693	2710				FIDING CAM CAME LOOSE + FEEL OFF
	#10A								
3	GEOCHEM.	1800		2700		13°23'N	130°42'W	53	2 water bbls, 200 fms day, first half of sample for Th and Ra
III	32	mess	19:04						
GP	(INS5)	Lt	19 05 1/2						
		surf	19:10						
3	PM	1900		2700		13°23'N	130°42'W	53	slit OK barrel 5 fms above core head
III	29	hit	20:09		2715				
GP		surf	21:37						
3	CORE	1829	2145	2693	2710	13°23'N	130°42'W	53	PENETRATION: 1065 ± 30 cm, TOTAL LENGTH: 1093 cm, TRUE LENGTH: 1093 cm
MAR	53	HIT	2009	2715					CLAY, DARK YELLOWISH BROWN TO PALE YELLOWISH BROWN (0-343 cm)
68									DARK YELLOWISH ORANGE (343-376 cm), + VERY DARK YELLOWISH BROWN TO MODERATE BROWN (376-1000), MARL, PALE ORANGE, CONTAINING ABUNDANT COCCOLITHS IN ITS FINE FRACTION (1000-1093) HULLY 20-50% RELIEF
3	MILLIPORE	1814				13°23'N	130°42'W	53	
MAR	SAMPLE								
68	53								
3	SURFACE	1906				13°23'N	130°42'W	53	
MAR	SAMPLE		1921						
68	47								
3	VERTICAL	2152				13°23'N	130°42'W	53	
MAR	SAMPLE		2202						
68	45								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

92

TIME ZONE +8 + 9

Date	STATION and N°	TIME		SOUNDING		POSITION		STW LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	GRAB	1947	2220	2650		13°23'N	130°42'W	53	RETURN TIME 2HR 13 MIN. RECOVERY TIME
MAR	SAMPLE								35 MIN. TWD 36 LB. WTS. SAMPLE HAUL!
68	29								2.2 LBS MN MODULES.
3	GRAB	1957	2210	2650		13°23'N	130°42'W	53	RETURN TIME 2HR 13 MIN. RECOVERY TIME
MAR	SAMPLE								1HR 25 MIN. ABOUT 1 1/2 HR DELAY FOR CORE PIPE
68	40								BEFORE DEPARTING FOR RETRIEVAL. STROBE STOPPED
									FLASHING; SAMPLER LOCATED IN TOTAL DARKNESS.
									TWD 36 LB WTS. SAMPLE: 6 LBS. MN MODULES.
3	GRAB	2007	2215	2650		13°23'N	130°42'W	53	RETURN TIME 2HR 13 MIN. RECOVERY
MAR	SAMPLE								TIME 2HR 30 MIN. STROBE STOPPED FLASHING;
68	41								RETRIEVED IN TOTAL DARKNESS. TWD 36 LB.
									WTS. SAMPLE HAUL: 1.8 LB. MN MODULES.
3	TRAD	1819	2145	2700		13°23'N	130°42'W	53	3 PR IN MID, 2 OR 3 ON FLM (UNCLEAR) LONG
MAR	28	HIT	2004	HIT	2715				WEAS.
68									
4	PM	1440		2440		13°10'S	132°33'W	54	barrel tipped near surf. not run
III	30A	hit	15:29		2673				slide = 30A
68		surf	16:53						
4	GC 37	S.D.	14:22	2440		13°10'S	132°33'W	54	2nd half of spl, 200 fms deep
III	(N55)	mess	14:23						slide 35 & 36
68		hit	14:26						
		surf	14:31						
4	MILL PORE	1320				13°10'S	132°33'W	54	
MAR	SAMPLE								
68	54								

M. C. C. C.
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To Honolulu

93

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		STM LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
4	SURFACE	1421				12°12'S	132°33'W	54	
MAR	TOW		1442						
68	48								
4	VERTICAL	1454				12°12'S	132°33'W	54	
MAR	TOW		1703						
68	46								
4	CORE	1404	1702	2430	2696	12°12'S	132°33'W	54	PENETRATION 435cm TOTAL LENGTH 604cm TRUE LENGTH ~500cm
MAR	54	HIT	1529	2673					CLAY, DARK YELLOWISH BROWN TO MODERATE YELLOWISH
68									BROWN (0-64cm); CHALK, VERY PALE ORANGE (64-~500cm).
									COARSE FRACTION VARIABLE BUT GENERALLY <5%; MAINLY
									RADIOLARIA. CARBONATE CONTENT OF CLAY NIL. SIDE OF SEAMOUNT.
4	GRAB	1444	1648	2500		12°12'S	132°33'W	54	RETURN TIME 2 HRS. 4 MIN. RECOVERY
MAR	SAMPLE								TIME 23 MIN. TWD 36 LB WTS.
68	42								SAMPLE HAIL: 2.1 LBS MN NODULES.
4	GRAB	1454	1700	2500		12°12'S	132°33'W	54	RETURN TIME 2 HRS. 6 MIN. RECOVERY
MAR	SAMPLE								TIME 18 MIN. TWD 36 LB WTS. SAMPLE
68	43								HAIL 6.25 LBS MN NODULES.
4	GRAB	1504	1710	2500		12°12'S	132°33'W	54	RETURN TIME 2 HRS. 6 MIN. RECOVERY
MAR	SAMPLE								TIME 41 MIN. TWD 36 LB WTS. SAMPLE
68	44								HAIL ~.5 LB WITH 2 NODULES (3cm) AND
									A SMALL QUANTITY OF NODULES <.5cm.
									EMBEDDED IN SEDIMENT.
4	CORE	1404	1702	2430	2693	12°12'S	132°33'W	54	120 SHOTS 315° TO STRING
MAR	HEAD								
68	CAMERA								
	#10								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG From MANZANILLO To HONOLULU

94

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		STW LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
MAR 4	BOTTOM			2430	2696	12°10'S	132°33'W	54	5 HITS, 10 SHOTS
68	CANNON								
	# 46								
MAR 4	NEPHEC-			2430	2696	12°10'S	132°33'W	54	NO READABLE LAYER
68	CANNON								
	# 36								
MAR 4	CURRENT			2430	2696	12°10'S	132°33'W	54	E. 1/2 (W) NIL VEL.
68	MOTOR								
	# 38								
MAR 4	CORE					133°5'W	133°02'W	55	LOGG. NEXT PAGE
68	55								
MAR 4	MILLER	2039				133°5'W	133°02'W	55	
68	SAMPLE								
	55								
MAR 4	VERTICAL	2115				133°5'W	133°02'W	55	
68	TOW		2128						
	47								
MAR 4	SURFACE	2156				133°5'W	133°02'W	55	
68	TOW		2211						
	49								

J. Smith
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

95

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		STW LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
4-5	CORE	2144	0036	2597	2653	11°55'S	133°02'W	55	PENETRATION: 962 230cm. TOTAL LENGTH: 117.5 cm TRUE LENGTH: 114.5 cm
MAR	55	HIT	2233	2614					EITHER PENETRATION DETERMINED INCORRECTLY OR MORE
68									FLOW-IN THAN ESTIMATED. CLAY, DARK YELLOWISH BROWN TO
									DARK GRAYISH ORANGE (0-457cm); CLAY, DARK YELLOWISH BROWN TO
									MODERATE BROWN (457-990cm); MARL, DARK GRAYISH ORANGE + PALE ORANGE (990-1145cm)
4-5	GRAB	2257	2100	2590		11°55'S	133°02'W	55	RETURN TIME 2 HRS 3 MIN. RECOVERY
MAR	SAMPLE								TIME 24 MIN. END 36 LB. NETS. SAMPLE
68	45								HAUL: 1.9 LB. MAR. 1130-1145
4-5	GRAB	2322	2108	2592		11°55'S	133°02'W	55	RETURN TIME 2 HRS 6 MIN. RECOVERY
MAR	SAMPLE								TIME 34 MIN. END 36 LB. NETS.
68	46								SAMPLE HAUL: 1.6 LB. MAR. 1130-1145
4-5	GRAB	2312	2118	2590		11°55'S	133°02'W	55	RETURN TIME 2 HRS 8 MIN. RECOVERY
MAR	SAMPLE								TIME 47 MIN. END 36 LB. NETS.
68	47								SAMPLE HAUL: Empty
4-5	TBRAD	2144	0026	2549		11°55'S	133°02'W		
MAR	29	HIT	2233	HIT 2614				55	3 PR IN MID; 2 ON FILM. SOME UNUSUAL COND
68									WEAR
4	CORE	2144	0026	2597	2653	11°55'S	133°02'W	55	155 SUCTS 300° TO SPRING
MAR	HAND								
68	CAMERA								
	#11								
4	BOTTOM	2047	0019	2597	2653	11°55'S	133°02'W	55	5 HITS 11 SUCTS. 1st 100 ft. 2nd 200 ft.
MAR	CAMERA								
6	#49								

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG From MAUI To HONOLULU

96
TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG 47N	REMARKS
		Start	End	Start	End	Lat.	Long.		
44	NEEDLE	2047	0016	2597	2653	11°55'S	133°02'W	55	NO READABLE LAYER
	MAR. METER								
	68 #39								
4	CURRENT	2047	0016	2597	2653	11°55'S	133°02'W	55	S.E. @ 12 cm/sec
	MAR. METER								
	68 #39								
5	CORE	1016	1240	2600	2577	11°55'S	133°02'W	56	NO STRONG
	MAR. HEAD					11°16'S	134°05'W		
	68 GAMMA								
	#12A								
5	BUTTON	0846	1243	2600	2577	11°55'S	133°02'W	56	5 HPS, 3 SHOTS (STRONG RE- CYCLING SOUND)
	MAR. CAMERA					11°16'S	134°05'W		
	68 #50								
5	NEEDLE	0846	1243	2600	2577	11°55'S	133°02'W	56	NO READABLE LAYER
	MAR. METER					11°16'S	134°05'W		
	68 #40								
5	CURRENT	0846	1243	2600	2577	11°16'S	134°05'W	56	S.W. @ 9.5 cm/sec. VEL.
	MAR. METER								
	68 #40								
5	BUTTON	0857				11°16'S	134°05'W	56	
	MAR. SAMPLE								
	68 56								

March
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANIZONILLO To HONOLULU

97

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	VERTICAL	0918				11°16.5'N	134°05.5'W	56	
MAR	TOW		0926						
68	98								
5	SURFACE	0946				11°16.5'N	134°05.5'W	56	
MAR	TOW		1002						
68	50								
5	CORE	1016	1240	~2600	~2577	11°16.5'N	134°05.5'W	56	PENETRATION 988100. TOTAL LENGTH: 989 CM. TRUE LENGTH: ~970 CM.
MAR	56	HIT	1104	~2550					CLAY, DARK YELLOWISH BROWN (0-7cm), DARK GRAYISH ORANGE
68									(7-153cm), DARK YELLOWISH BROWN (153-195), DUSKY BROWN (195-230)
									* MODERATE BROWN (330-970); CONTACTS GRADATIONAL; MODERATELY
									COMPACTED; CARBONATE CONTENT NIL. HILLY, 20-60 F., RELIEF
5	F.M.	1025		~2640		11°16.5'N	134°05.5'W	56	Bbl. propped, close to bottom / 5 m of
68	308	hit	1104	~2580					under 2 m
5	GRAB	1215	1222	2610		11°16.5'N	134°05.5'W	56	RETURN TIME 2 HR. 7 MIN. RECOVERY TIME
MAR	SAMPLE								17 MIN. TUB 36 LB. WTS. SAMPLE MARK
68	48								5 LB. MIN. ALLOWES.
5	GRAB	1226	1233	2610		11°16.5'N	134°05.5'W	56	RETURN TIME 2 HR. 7 MIN. RECOVERY TIME
MAR	SAMPLE								20 MIN. TUB 36 LB. WTS. SAMPLE MARK
68	49								2 LB. MIN. ALLOWES.
5	GRAB	1236	1243	2610		11°16.5'N	134°05.5'W	56	RETURN TIME 2 HR. 7 MIN. RECOVERY TIME
MAR	SAMPLE								30 MIN. TUB 36 LB. WTS. SAMPLE MARK
68	50								5 LB. MIN. ALLOWES.

Conrad
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

98

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	TOBAD	1016	1240	32610		11°16'S	131°25'W	56	TOBAD WASN'T TURNED ON (!?)
MAR	30A	HIT	1104	HIT	2580				
68									
5	GC 33	13:56				11°18'S	131°25'W	UNDER	2 x 175 gals of surf water pumped under
III	(SWS 24)		14:55			11°14'N	134°11'W	WAY	way for Th - Ra
68									
						11°03'S	134°20'W		
5	Core	1642	1903	2551	2445	11°02'N	134°32'W	57	NO STRIDE
MAR	HEAD								
68	CORRECTION								
	#128								
5	Bottom	1616	1945	2551	2445	11°02'N	134°32'W	57	5 SHOTS, 15 SHOTS
MAR	CORRECTION								
68	#54								
5	NADIR	1616	1945	2551	2445	11°02'N	134°32'W	57	NO READABLE LAYER
MAR	CORRECTION								
68	#41								
5	CURRENT	1616	1945	2551	2445	11°02'N	134°32'W	57	E. W . @ NIL. VEL.
MAR	METER								
68	#41								
5	CORE	1642	1903	2551	2585	11°02'N	134°32'W	57	PENETRATION: 59.5 ± 20 cm. TOTAL LENGTH: 759 cm. TRUE LENGTH ~ 730 cm.
MAR	57	HIT	1737	2588					CLAY, MODERATE YELLOWISH BROWN, PALE YELLOWISH BROWN +
68									MODERATE BROWN (0-66 cm); MARL PALE ORANGE + VERY PALE ORANGE.
									BOTTOM PRE-PLISTOCENE (DISCOASTERS RARE). HILLY, GENERALLY 40-60 cm.

J. D. Smith
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

99

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	P.M.	16 50		2545		11°02'N	134°32'W	57	Barite matter barrel 5 from above
DI	30	hit	17 37		2588				core head slide on
68		surf	18 03						(83 feet above bottom)
5	GRAB	16 57	17 06	2545		11°02'N	134°32'W	57	RETURN TIME 2 HRS 8 MIN. RECOVERY TIME
MAR	SAMPLE								20 MIN. TWO 36 LB. WTS. SAMPLE MADE.
68	51								1 1/4 LBS. MIN. NODULES AND SEDIMENT
5	GRAB	17 08	17 14	2545		11°02'N	134°32'W	57	RETURN TIME 2 HRS 7 MIN. RECOVERY
MAR	SAMPLE								TIME 20 MIN. TWO 36 LB. WTS. SAMPLE
68	52								MADE 1 1/4 LBS. NODULES IN SEDIMENT
5	GRAB	17 18	17 20	2545		11°02'N	134°32'W	57	RETURN TIME 2 HR. 2 MIN. RECOVERY TIME
MAR	SAMPLE								30 MIN. TWO 36 LB. WTS. SAMPLE MADE.
68	53								1.2 LBS. MIN. NODULES.
	TRAD	16 42	19 20	2545		11°02'N	134°32'W	57	2 PRIN. AND, 1 ON FILM, LONG MEAS.
MAR	30	hit	17 36	hit	2588				
68									
5	PULLING					11°02'N	134°32'W	57	
MAR	SAMPLE								
68	54								
5	SURFACE	17 22				11°02'N	134°32'W	57	
MAR	T.W.		17 26						
68	51								

Robert D. Conrad
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG From Manzanillo To Honolulu

100

TIME ZONE +2

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	VERTICAL	1910				11°02'N	134°32'W	57	
MAR	TOW		1919						
8	49								
6	MIXTURE	1040				9°33'N	136°22'W	58	
MAR	SAMPLE								
68	57								
6	VERTICAL	1117				9°50'N	136°23'W	50	
MAR	TOW		1126						
68	52								
6	SURFACE	1212				9°50'N	136°23'W	58	
MAR	TOW		1217						
68	52								
6	CORE	1308	1558	2570	2568	9°50'N	136°23'W	58	PENETRATION: 675 ± 20 cm TOTAL LENGTH: 796 cm TRUE LENGTH: 670 cm
MAR	58	HIT	1409	2565					CLAY RANGING FROM PALE YELLOWISH BROWN TO DUSKY YELLOWISH
68									BROWN (0-84 cm); CLAY, MODERATE BROWN (84-242 cm); + MARL, RANGING
									FROM PALE ORANGE TO MODERATE BROWN (242-670 cm) MARL CONTAINS
									ABUNDANT COCCOLITHS + RARE DISCOASTERS (PRE-PLISTOCENE) HULLY, RALPH
6	GRAB	1440	1545	2565		9°50'N	136°23'W	58	RETURN TIME 2 HR. 5 MIN. RECOVERY TIME
MAR	SAMPLE								1 HR. 23 MIN. TOW 36 LB. WTS. SAMPLE
68	54								HAUL: 2 1/2 LBS. MN NODULES
6	GRAB	1355	1557	2565		9°50'N	136°23'W	58	RETURN TIME 2 HR 7 MIN. RECOVERY TIME
MAR	SAMPLE								1 HR. 28 MIN. TOW 36 LB. WTS. SAMPLE
68	55								4.6 LBS MN NODULES.

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° VII

CRUISE LEG—From Matizavillo To Donolville

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
6 MAR 19	GRAB SAMPLE 56	1400	1606	2565		9°50'N	136°23'W	58	RETURN TIME 2 HR 5 MIN. RECOVERY TIME 1 HR. 33 MIN. 2-36 LB WTS. SAMPLE - 3.75 LBS. MIN NODULES.
6 MAR 68	PM 31A					9°50'N	136°23'W	58	Water not processed /leaking barrel + prot. idg
6 MAR 68	CORE HEAD CAMERA #120	1307	1556	2570	2566	9°50'N	136°23'W	56	CAMERA - STROBE NOT SYNCING
6 MAR 68	CAMERA #152	1153	1523	2570	2561	9°50'N	136°23'W	56	5 HTS, 12 SHOTS
6 MAR 68	NEPHELE COMETER #41	1153	1523	2570	2566	9°50'N	136°23'W	56	NO READABLE LAYER
6 MAR 68	CURRENT METER #42	1153	1523	2570	2566	9°50'N	136°23'W	56	N.E. WIND 10 NIK. VEL.

Maths

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG From MANZANILLO To HONOLULU

102

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
	TIRAD	1308	1558	2474		7°50'N	136°23'W	58	2 PR IN MID 2 ON FILM 12.5 MTS.
	31	HIT	1408	HIT	2565				
	CORE	0550	0745	2462	2430	7°57'N	137°21'W	59	PENETRATION DISCOM. TOTAL LENGTH 84 CM. TRUE LENGTH ~84 CM.
	59	HIT	0634	2477			01'W		CORE HIGHLY DISTURBED PISTON OF CORING DEVICE
									PULLED CORE INTO A NUMBER OF SECTIONS + SCATTERED
									THEM THROUGH THE 2 CORE PIPES PREDOMINATELY SAND
									+ PEBBLE SIZE TACHYLYTE + PALAGONITE FRAGMENTS. HILLY
	7 MILLIPORE	0540				7°50'N	137°39'W	59	
	MAR SAMPLE								
	59								
	7 VERTICAL	0600				8°59'N	137°21'W	59	
	MAR TOW		0640						
	51								
	7 SURFACE	0640				8°59'N	137°41'W	59	
	MAR TOW		0700						
	53								
	7 CORE	1524	1804	2650	2640	8°21'N	138°27'W	60	CORE HEAD BURIED — NO ORIENTATION
	MAR HEAD								
	66 CAMERA								
	#12								
	7 Bottom	1454	1819	2650	2640	8°21'N	138°27'W	60	2.9 MTS * 5 MTS
	MAR Camera								
	66 #53								* VERY SOFT SEDIMENT — MUCH MUD IN MTD CLOUDS.

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XXX

CRUISE LEG—From Maizantillo To Honolulu

103

TIME ZONE 2

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	NEPHEI -	1454	1619	2650	2640	8°21'N	138°47'W	60	NO READABLE LAYER
11/11/68	METER #42								
7	CORE	1454	1619	2650	2640	8°21'N	138°47'W	60	S.W. 10 7.4 cm/sec. VEL.
11/11/68	METER #43								
7	CORE	1524	1808	2650	2640	8°21'N	138°47'W	60	PENETRATION: 1168 cm, TOTAL LENGTH: 1123 cm, TANG. LENGTH: 1123 cm, CLAY, RANGING BETWEEN PALE YELLOWISH BROWN, DARK YELLOWISH BROWN + GRAYISH ORANGE (0-482 cm); CLAY, DARK BROWNISH GRAY WITH BURROWED LAMINATIONS OF GRAYISH ORANGE. CARBONATE CONTENT NIL. BROAD HILLY, 100 fms.
11/11/68	60	H.T.	1639	2635					first half of water sample, 1500 fms, for Th-Ra
7	G-C 35	1552		2623		8°21'N	138°47'W	60	slides # 37 & 38
11/11/68	(DP56)	16:03							Note: G-C 34 (DP55) is a composite, 200 gall spl. made out of 4 barrels of centrifuged water
		16:10	at 1500 fms						3 pr in min, 2 on 5 min. (no more)
		16:39		2635					
		17:49							
	TORAD	1819	1808	2616		8°21'N	138°47'W	60	
	32	H.T.	1640	H.T.	2635				
	MILLIGRE	1450				8°21'N	138°47'W	60	
	SAMPLE								
	60								
	VERTICAL	518				8°21'N	138°47'W	60	
	TOW		1527						
	22								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° VII

CRUISE LEG—From MANZANILLO To HONOLULU

104

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	SURFACE	1800				8°21'N	138°47'W	60	
Nov	Tow		1815						
66	54								
7	GRAB	1614	1825	1623		8°21'N	138°47'W	61	RETURN TIME 2 HR 11 MIN. RECOVERY TIME 25 MIN. TWO 36 LB. WTS. SAMPLE Haul: 14 LBS. MANY NODULES.
MAR	SAMPLE								
68	57								
7	GRAB	1824	1834	2023		8°21'N	138°47'W	61	RETURN TIME 2 HRS. 10 MIN RECOVERY TIME 28 MIN. TWO 36 LB WTS. SAMPLE Haul: TWO SMALL NODULES 42 cm.
MAR	SAMPLE								
68	58								
7	GRAB	1835	1842	2023		8°21'N	138°47'W	60	RETURN TIME 2 HR 8 MIN RECOVERY TIME 36 MIN. TWO 36 LB. WTS. SAMPLE: TWO VERY SMALL NODULES ~ 1 cm. AND .5 cm.
MAR	SAMPLE								
68	59								
8	CORE	0643	0945	~2730	~2740	7°20.5'N	140°28.8'W	61	PENETRATION: 1570 ± 30 cm. TOTAL LENGTH 1537 cm. TRUE LENGTH 1537 cm.
MAR	61	HIT	0800	2754					CLAY, RANGING BETWEEN MODERATE YELLOWISH BROWN, DARK YELLOWISH BROWN + MODERATE BROWN (0-268 cm); CLAY, BROWNISH GRAY (268-358 cm); CLAY, GRAYISH ORANGE (358-470 cm); and CLAY, GRAY, 50 cm. RECOVERED
68									GRADING WITH DEPTH TO RADICULARIAN CLAY, BROWNISH GRAY (470-1537 cm)
8	VERTICAL	0957				7°20.5'N	140°28.8'W	61	
MAR	Tow		1007						
68	53								
8	SURFACE	1118				7°20.5'N	140°28.8'W	61	
MAR	Tow		1033						
68	55								

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

105

TIME ZONE 49

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
8 MAR 68	MILLER SAMPLE 61	1114				12°20.5N	140°28.3W	61	
8 MAR 68	AGE 35 III (OPS 6) 68	0701	09:26	2740		12°20.5N	140°28.3W	61	2nd half of 1500 fms sample for Th-Rd shits 39x40, both O.K.
	GRAB SAMPLE 61	0920	1040	2739		12°20.5N	140°28.8W	61	RETURN TIME 2 HR. 23 MIN. RECOVERY TIME 27 min. TWD 36 LB WTS. SAMPLE HAD ONE VERY SMALL MOLLUSK SHELL AND A SMALL 34 PER FISH
	GRAB SAMPLE 61	0931	1047	2739		12°20.5N	140°28.8W	61	RETURN TIME 2 HR 17 MIN. RECOVERY TIME 40 min. TWD 36 LB WTS. SAMPLE HAD 1 Empty
	GRAB SAMPLE 62A	0940		2739		12°20.5N	140°28.8W	61	LOST NR RADIO SIGNAL - SAMPLER DID NOT SURFACE.
	TORAD 33	0643 Hit	1020 0900	2739 Hit 2754		12°20.5N	140°28.8W	61	3 PR IN MID; LOW FIRM. LOW MEANS
	CORE HEAD CUTTER A #12	0643	1020	2739	2754	12°20.5N	140°28.8W	61	170° TO STRING 53 SHOTS

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 211

CRUISE LEG—From MANIZANILLO To HONOLULU

TIME ZONE 49

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	SHIPS, 32 SHOTS
16	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	NO READABLE MYEC
17	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	N.W. to 9.3 cm/sec.
18	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
19	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
20	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
21	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
22	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
23	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
24	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
25	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
26	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
27	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
28	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
29	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
30	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
31	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
32	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
33	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
34	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
35	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
36	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
37	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
38	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
39	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
40	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
41	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
42	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
43	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
44	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
45	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
46	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
47	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
48	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
49	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
50	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
51	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	
52	1000	0634	1011	2739	2754	7°20'S	111°30'W	61	

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANIZANILLO To HONOLULU

107.

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
4	CORE	1910	2054	2630	2703	6°11'N	111°22'S	62	NO ORIENTATION
	HEAD								
	CAMERA								
	#14								
5	BOTTOM	1836	2246	2630	2703	6°11'N	111°22'S	62	5 HITS, 27 SHOTS
	CAMERA								
	#55								
6	NEPHEL-	1836	2246	2630	2703	6°11'N	111°22'S	62	NO READABLE LAYER
	OMETER								
	#43								
7	CURRENT	1836	2246	2630	2703	6°11'N	111°22'S	62	5. @ 4.75 cm/sec.
	METER								
	#45								
8	CORE	0829	1109	2630	2635	5°58'N	112°39'W	63	NO SYNC.
	HEAD								
	CAMERA								
	#15A								
9	BOTTOM	0827	1126	2630	2635	5°58'N	112°39'W	63	5 HITS, 21 SHOTS
	CAMERA								
	#56								
9	NEPHEL-	0827	1126	2630	2635	5°58'N	112°39'W	63	NO READABLE LAYER.
	OMETER								
	#44								

Newton
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To NO 110600 11

108

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	CURRENT	0827	1126	2630	2635	5°58'N	112°39'W	63	S. @ 7.1 cm/sec.
MAR 68	METER #46								
9	MILLIPORE	0816				5°58'N	112°39'W	63	
MAR 68	SAMPLE 63								
9	VERTICAL					5°58'N	112°39'W	63	NET LOST
MAR 68	TOW 55A								
9	SURFACE	0927				5°58'N	112°39'W	63	
MAR 68	TOW 57		0942						
9	PM 31	0850		2630		5°58'N	112°39'W	63	barrel tripped 109 1/2 feet above bottom
MAR 68	hit surf	0939		2630					(5 fms above core head)
		1100							slide 31 is OK.
9	CORE	0829	1109	2630	2635	5°58'N	112°39'W	63	PENETRATION: 1370 ± 40 cm TOTAL LENGTH: 1805 cm TRUE LENGTH: 1563 cm
MAR 68	63	HIT	0938	2630					RADIOLARIAN CLAY, EXTREMELY MOTTLED APPEARANCE
									DUE TO BURROWING, RANGES IN COLOR BETWEEN SHADES
									OF MODERATE BROWN + YELLOWISH BROWN WITH THIN LAYERS
									+ LAMINATIONS OF GRAYISH ORANGE. GENTLY UNDULATING SURFACE
9	GRAB	0930	1142	2640		5°58'N	112°39'W	63	RETURN TIME 2 HR. 12 MIN. RECOVERY TIME 2.7 MIN.
MAR 68	SAMPLE 62	7							TOW 36 LB WTS. SAMPLE Haul: Empty

J. D. ...
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From MAAIZANILLO To HONOLULU

109

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
7 MAR 62	GABR SAMPLE 63	0744	1148	1640		5°58'N	142°39'W	63	RETURN TIME 2 HR. 4 MIN. RECOVERY TIME 35 MIN. TOLD 36 LB. WTS. SAMPLE HAUL Empty.
9 MAR 62	TEAD 34	0829	1109	2628		5°58'N	142°39'W	63	3 PRIN MID; 2 ON FILM. (LOW WETS)
		1109	0938	2630		5°58'N	142°39'W		
9 MAR 62	Core HEAD CAMERA 153	1924	2151	2571	?	5°42'N	143°10'W	64	NO STROBE SYNC.
9 MAR 62	Bottom Camera #56 #57	1915	2227	2571	?	5°42'N	143°10'W	64	5 MIN. 15 SHOTS - SOFT MUD - CHURNING MUD CLOUDS - OBSERVE MANY SHOTS 1- LUMINOUS 'CAT-TAIL' FISH
9 MAR 62	NEAR CAMERA #45	1915	2227	2571	?	5°42'N	143°10'W	64	NO READABLE LAYER
9 MAR 62	CURRENT METER #47	1915	2257	2571	?	5°42'N	143°10'W	64	W. @ 7.5 cm/sec.

[Signature]
Chief Scientist

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLA To HONOLULU

110

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
9	MANZANILLA	1955				5°32'N	143°10'W	64	
MAR	SAMPLE								
68	64								
9	SURFACE	1945				5°32'N	143°10'W	64	
MAR	TOW		2000						
68	58								
9	VERTICAL	2200				5°32'N	143°10'W	64	
MAR	TOW		2208						
68	55								
9	CORE	1934	2151	2571	?	5°32'N	143°10'W	64	PENETRATION 1400 cm. TOTAL LENGTH 1743 cm. TRUE LENGTH 1470 cm.
MAR	64	HIT	2033	2582					CLAY, PRE DOMINATELY DARK YELLOWISH BROWN (0-40 cm);
68									RADIOLARIAN CLAY, VERY PALE ORANGE TO VERY DARK YELLOWISH
									BROWN (408-1165 cm); CHALK, PINKISH GRAY (1165-1350 cm); + MARL,
									PALE ORANGE (1350-1470 cm). ON ONE OF RARE HILLS 40 cm RELIEF.
10	RADON	12:00		2592		4°39'N	144°58'W	65	Murbin bottles at 7, 32, 72 and 182 feet from
11	PROFILE	13:03							bottom
68	#4	13:17							first bottle was attached to the tripod
		15:16							
10	MANZANILLA	1238				4°39'N	144°58'W	65	
MAR	SAMPLE								
68	65								
10	VERTICAL	1100				4°39'N	144°58'W	65	
MAR	TOW		11:09						
68	56								

Deaith
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANIZANILLO To HONOLULU

111

TIME ZONE +9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	SURFACE	1140				4°39'N	144°38'W	165	
MAR	TOW		1155						
68	57								
10	CORE	1145	1417	2597	2587	4°39'N	144°38'W	165	PENETRATION: 2482.5cm TOTAL LENGTH: 2463cm TRUE LENGTH: 2425cm
MAR	65	HIT	1304	2588					PREDOMINATELY CLAY + RADIOLARIAN CLAY RANGING IN COLOR
68									FROM DUSKY YELLOWISH BROWN TO BROWNISH GRAY WITH
									ABUNDANT THIN LAYERS, LAMINATIONS + BURROW FILLINGS OF
									PALE ORANGE; MODERATELY COMPACTED; MOTTLED. ^{GENTLY UNDEULATING} 4.10cm RELIEF.
10	TRAD	1145	1417	2596		4°39'N	144°38'W	165	4 PR IN MUD; 1 ON FILM. COND MATS.
MAR	35	HIT	1304	Hm 2588					
68									
10	CORE	1145	1417	2596	2588	4°39'N	144°38'W	165	21 SHOTS; COMPASS BURIED, NO ORIENTATION
MAR	HEAD								
68	CAMERA								
	#15								
10	BOTTOM	1143	1518	2596	2588	4°39'N	144°38'W	165	42 SHOTS, 5 HITS
MAR	CAMERA								SOFT MUD - AND - TWO FISHES
68	#58								
10	NEPHEL	1143	1518	2596	2588	4°39'N	144°38'W	165	NO READABLE LAYER
MAR	METER								
68	#46								
10	CURRENT	1143	1518	2596	2588	4°39'N	144°38'W	165	N.W. CURRENT 10 N/L. VEL.
MAR	METER								
68	#48								

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

112

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
11	CORE	1522	1701	2530	2539	2°36'N	118°28'W	66	PENETRATION: 2240 cm. TOTAL LENGTH: 2819 cm. TRUE LENGTH: 2601 cm.
MAR	66	HIT	1557	2528					FORAMINIFERAL MARL + FORAMINIFERAL CLAY, SHADES OF
68									YELLOWISH BROWN + PALE ORANGE (0-357 cm), RADIOCLARIN
									MARL + RADIOCLARIN CLAY, PREDOMINATELY YELLOWISH BROWNS
									ABOVE 1600 cm + PALE ORANGE BELOW GENTLE HILLS, #30 fms
11	MILLIPORE	1305				2°36'N	118°11'W		
MAR	SAMPLE								
68	66								
11	VERTICAL	1327				2°36'N	118°12'W	66	
MAR	TOW		1336						
68	57								
11	SURFACE	1418				2°36'N	118°12'W	66	
MAR	TOW		1432						
68	60								
11	JOT	1951				2°46'N	118°11'50" E		100 fm wire out
MAR	NET		2021			+			
68	24					2°52'N	118°18'50" W		
11	JOT	2038				2°54'N	118°19'00" W		150 fm wire out
MAR	NET		2109			+			
68	11					2°58'N	118°21'W		
11	GC 36	07:23				3°01'N	118°27'W	UNDER	Surface water sample for Th-Ra
68	(SWS25)		08:45			+		WAY	
						3°16'N	118°28'50" W		

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

113

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10 MAR 66	CORE 67	0934 HIT	1133 1019	2495 2540	2560	3°13'S (CORE HIT)	118°28'S	67	PENETRATION 4400 - TOTAL LENGTH 631 - TRUE LENGTH 622 cm FORAMINIFERAL MARL, PALE ORANGE TO DARK YELLOWISH BROWN (0-930 cm); RADICULARIAN CLAY, VERY DARK YELLOWISH BROWN TO MEDIUM GRAY (930-4280 cm) WITH MANGANESE NODULES VERY ABUNDANT 412-4280 cm; SANDY CLAY, GRAYISH ORANGE (4280-6220 cm). F. ZONE
11 MAR 66	SHALLOW 67	0950				3°13'S	118°28'S		
11 MAR 66	SHALLOW 58	0929				3°13'S	118°28'S	67	
12 MAR 66	SURFACE 61	0950	1014			3°13'S	118°28'S	67	
11 MAR 66	Bottom # 59	1304	1652	2530	2539	3°35'S 3°35'S	118°28'S 118°28'S	66	10 HITS, 15 SHOTS (with no coupling)
11 MAR 66	NEAR # 47	1304	1652	2530	2539	3°35'S 3°35'S	118°28'S 118°28'S	66	NO READABLE LOG
11 MAR 66	CORE # 49	1304	1652	2530	2539	3°35'S	118°28'S	66	W. R. ALL - 1166

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° MANZANILLO HONOLULU

CRUISE LEG—From _____ To _____

114.

+10

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat	Long.		
12 MAR 68	GRAB SAMPLE 64	1245	1451	2535		3°13'S	148°30'W	67	RETURN TIME 2 HR 7 MIN. RECOVERY TIME 17 MIN. TWD 36 LB WTS. SAMPLE HAUL: 2 1/4 LBS. MIN NODULES.
12 MAR 68	GRAB SAMPLE 65	1255	1505	2555		3°13'S	148°30'W	67	RETURN TIME 2 HR 10 MIN. RECOVERY TIME 25 MIN. TWD 36 LB WTS. SAMPLE HAUL: 6 1/2 LBS. MIN NODULES.
12 MAR 68	GRAB SAMPLE 66	1305	1527	2555		3°13'S	148°30'W	67	RETURN TIME 2 HR 2 MIN. RECOVERY TIME 25 MIN. TWD 36 LB WTS. SAMPLE HAUL 2.8 LBS. MIN NODULES.
12 MAR 68	CORE HOD CANON #16	0934	1133	2495	2560	3°13'S	148°28'S	67	34 SHOTS; NO CORRELATION - DIP DEPT AND DIRECTION (3RD. MAX)
12 MAR 68	BOTTOM CANON #60	1139	1441	2495	2560	3°13'S	148°30'W	67	10 SHOTS, 1/2 SHOTS; MANY MIN. NODULES
12 MAR 68	MEASURE CORRECTION #146	1139	1441	2495	2560	3°13'S	148°30'W	67	NO READABLE LOG
12 MAR 68	CORRECTION METER #50	1139	1441	2495	2560	3°13'S	148°30'W	67	N. P. 7.5 cm/sec.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

115

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
13	PM	1843						68	barrel did not trip
TU	32A	HIT	1933		22400	6°33'N	148°58'W		slide # 32A
68									
13	CORE	1833	2047	2200	2452	6°33'N	148°58'W	69	PENETRATION: 890 cm TOTAL LENGTH: 963 cm TRUE LENGTH: 883 cm
MAR	68	HIT	1933	22400					FORAMINIFERAL MARL OOZE TO RADIOLARIAN MARL, PALE
68									ORANGE TO DARK YELLOWISH BROWN, ^(10-19 cm) RADIOLARIAN MARL,
									MODERATE YELLOWISH BROWN, BROWNISH GRAY + PALE ORANGE
									(124-830), MARL, PINKISH GRAY (830-883), LOWER SLOPES OF SEAMOUNT.
13	MILLIPORAL	1936				6°33'N	149°01'W		
MAR	SAMPLE								
68	68								
13	VERTICAL	1821				6°33'N	148°58'W	68	
MAR	TOW		1836						
68	59								
13	SURFACE	1849				6°33'N	148°58'W	68	
MAR	TOW		1906						
68	62								
13	GRAB	1918	2115	2385		6°33'N	148°58'W	69	RETURN TIME 1HR 57MIN. RECOVERY TIME
MAR	SAMPLE								17 MIN. TWD 36 LB. WTS. SAMPLE HAUL:
68	67								7 LBS. NODULES AND MN COATED ROCKS.
13	GRAB	1928	2127	2385		6°33'N	148°58'W	68	RETURN TIME 1HR. 59MIN. RECOVERY TIME
MAR	SAMPLE								22 MIN. TWD 36 LB. WTS. SAMPLE HAUL
68	68								2 LBS. NODULES AND MN COATED ROCKS.

T. Condit
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From MANIZAPALLO To HONOLULU

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
13 MAR 68	GAB SAMPLE 67	1938	2132	2385		6°33'N	148°38'W	68	RETURN TIME 1 HR 54 MIN. RECOVERY TIME 27 MIN. TWD 35 LB. WTS. SAMPLE HAIL: 1 1/4 LBS. NODULES AND MN COATED ROCKS.
13 MAR 68	CONE H-10 Cannon #17	1833	2047	2200	2452	6°33'N	148°38'W	69	10° 10° TO STEERING; 56 SHOTS
13 MAR 68	BOTTOM Cannon #61			2200	2452	6°33'N	148°38'W	68	5 HRS, 25 SHOTS SHOW MANY NODULES.
13 MAR 68	NOMEL - DIAMETER #49			2200	2452	6°33'N	148°38'W	68	NO READABLE LAYER
13 MAR 68	CORRENT METER #51			2200	2452	6°33'N	148°38'W	68	N.E @ 12 cm/sec.
14 JUN 68	JLT NCT	1259	1329			8°59'N	159° 159° W TO		150 fms out.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

117

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	CORA	1523	1640	2695	2703	9°13'2"N	149°49'W	69	20° 10 TO STRING, 62 SHOTS
14	HEAD								
68	CAMERA								
	#18								
14	BOTTOM	1440	1802	2695	2703	9°13'2"N	149°49'W	69	7 HITS, 16 SHOTS
14	CAMERA								
68	#62								
14	NEAPLE	1440	1802	2695	2703	9°13'2"N	149°49'W	69	NO READABLE LAYER
14	METER								
68	#50								
14	CURRENT	1440	1802	2695	2703	9°13'2"N	149°49'W	69	N.W. 10 7.5 cm/sec.
14	METER								
68	#52								
14	WELL POINT	1435				9°13'2"N	149°49'W	69	
14	SAMPLE								
68	69								
14	VERTICAL	1458				9°13'2"N	149°49'W	69	
14	TOW		1507						
68	60								
14	SURFACE	1542				9°13'2"N	149°49'W	69	
14	TOW		1558						
68	63								

DeWitt
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

118

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	PM 32B	16:38		2695		9°13'20"N	179°49'W	69	Did not trip
III		hit	17:29	2695					
68		surf	18:35						
14	GC 37	15:42		2695		9°13'20"N	179°49'W	69	4 water samplers, 100 fms depth for Th-Ra
III	(INS 6)	surf	16:35						all trips were heard
68									
14	CORE	1523	1840	2695	2703	9°13'20"N	179°49'W	69	PENETRATION: 116.5m. TOTAL LENGTH: 1366m. TRUE LENGTH: 2130m.
MAR	69	HIT	1729	2695					CLAY, PREDOMINATELY DARK YELLOWISH BROWN (6-372cm);
68									CLAY, DUSKY YELLOWISH BROWN (375-526cm); CLAY, MODERATE
									BROWN (526-930cm); MARL, INTERLAYERED PALE ORANGE + PALE
									YELLOWISH BROWN, DISCOASTERS RARE- PRE-PLEISTOCENE, GENTLY UNDULATING
14	GRAB	1644		2692		9°13'20"N	179°49'W	69	10 ST.
MAR	SAMPLE								
68	70A								
14	GRAB	1654	1708	2692		9°13'20"N	179°49'W	69	RETURN TIME 2 HR 14 MIN. RECOVERY
MAR	SAMPLE								TIME 22 MIN. TWO 36 LB. WTS.
68	70								SAMPLE HAUL: 5 LBS. MN NODULES
14	GRAB	1704	1712	2692		9°13'20"N	179°49'W	69	RETURN TIME 2 HR 8 MIN. RECOVERY
MAR	SAMPLE								TIME 30 MIN. TWO 36 LB. WTS.
68	71								SAMPLE HAUL 2.8 LBS. MN NODULES.
15	GC 38	08:40				11°19'N	150°18'W	UNDER	Surface water sample for Th-Ra
III	(SWS 26)		10:05			To		WAY	
						11°33'N	150°22'W		

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

119

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	JCT	2256				9°35'N	149°56'W		
MAR	NCT		2329				+0		
08	27					9°50.6'N	149°57'30"W		
15	GC 39	1548		2700		12°22.5'N	150°36.7'W	70	1st half of sample 200 fms deep for T6-Ra
08	(DP57)	hit	1714	22800					slide, #41 & 42 OK
68	surf	1825							
15	PM	1548		2700		12°22.5'N	150°36.7'W	70	had 5 fms alumnose core here at
08	32	hit	1714	22800					86 1/2 feet above bottom
68	surf	1825							
15	MILLIPORE	1520				12°22.5'N	150°35.5'W	70	
MAR	SAMPLE								
68	70								
15	VERTICAL	1600				12°22.5'N	150°36.7'W	70	At 10000 TOW
MAR	TOW		1609						
68	61								
15	SURFACE	1641				12°22.5'N	150°36.7'W	70	
MAR	TOW		1636						
68	64								
15	VERTICAL	1904				12°22.5'N	150°36.7'W	70	Wait TOW TO COME BACK WITH TOW TOW 61
MAR	TOW		1913						
68	62								

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From MANZANILLO To HONOLULU

130

TIME ZONE -4/0

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20	CORE	1418	1017			23°11'N	154°37'W	576	
MAR	HEAD			825	840				
68	CORE								
	H-25								
20	MAR	0900				23°13'N	154°37'W	76	
MAR	SAMPLE								
68	76								
	XBT-22	1022							
20	VERTICAL	0915				23°11'N	154°27'W	76	
MAR	TOW		0924						
68	68								
20	SURFACE	0943				23°11'N	154°27'W	76	
MAR	TOW		1000						
68	70								
20	CORE	0928	1017	825	840	23°11'N	154°27'W	76	PENETRATION: 2130cm TOTAL LENGTH: 164cm TRUE LENGTH: ~164cm
MAR	76	HIT	0955	836					CORE EXTREMELY DISTURBED SO THAT TOTAL + TRUE
68									LENGTHS ARE VERY APPROXIMATE. FORAMINIFERAL CORE,
									PALE ORANGE, CONTAINING ABUNDANT BASALTIC ROCK
									SIDE OF SEAMOUNT HAVING 2100m RELIEF.
									FRAGMENTS + NODULES, BOTH FINE GRAIN TO PEBBLE
20	DREDGE	1144	1442			23°09'N	154°28'W	76	VERY APPROXIMATELY 120 lbs OF BASALTIC ROCK FRAGMENTS
MAR	1	ON BOTTOM FROM							CONSISTS OF 15 SPECIMENS RANGING IN SIZE FROM
68	(ROCK)	1230	101348	1446	1334	23°10'N	154°27'W		42X38X30 cm TO 6X3X4cm. THE ROCKS ARE ANGULAR
	(DREDGE)								+ COATED WITH A THIN LAYER OF GRAYISH BLACK MANGANESE
									SIDE OF SEAMOUNT HAVING 2100m RELIEF
									BROWNISH GRAY ON CHIPPED SURFACE; ABUNDANT VESICLES

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

2nd CARBON

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Honolulu To Brisbane

131

TIME ZONE T-10

Date	STATION and N°	TIME		SOUNDING		POSITION		STW LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	DET.	1959				20°45'N	158°17'SW	76.1	OBTAINED SMALL SAMPLE
MAR	NET		2028				to		
68	29					20°42'N	158°20'W		
									SRP
29	MILLIPORE	1004				18°52'N	159°41'W	77	FILTERED 4 LITERS - NO COAGULING
MAR	SAMPLE								
68	77								SRP
29	VERTICAL	1027				18°57'N	159°42'W	77	SMALL SAMPLE
MAR	TOW		1036						
68	69								SRP
29	SURFACE	1058				18°57'N	159°42'W	77	SMALL SAMPLE
MAR	TOW		1112						
68	71								SRP
29	JET	1443				18°55'N	159°43'W	77.1	GOOD SAMPLE BUT SMALL SIZE
MAR	NET		1513				to		
68	30					18°51'N	159°46'W		
									SRP
29	CORE	1043	1257	2543	2564	18°57'N	159°42'W	77	
MAR	HEAD								
68	CAMERA								
	# 26A								
29	BOTTOM	1009	1327	2543	2564	18°57'N	159°42'W	77	5 HITS, 4 SHOTS - OCCULUSING BY MUD CLOUDS
	CAMERA								
	# 70								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

132

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG S.W.	REMARKS
		Start	End	Start	End	Lat.	Long.		
29	NEPHELE	1009	1327	2548	2564	18°37'N	159°42'W	77	NO READABLE LAYER
MAR	OMETER								
68	#58								
29	CURRANT	1009	1327	2548	2564	18°37'N	159°42'W	77	FILM DID NOT ADVANCE
MAR	METER								
68	#57A								
29	ISAACS	1048				18°22'N	160°03'W	77.4	TOWED 5' ON C-216° T.
MAR	K.O.D.		1957			TO			GOOD SAMPLE - LANTERN FISH, GULPER FISH,
68	SAMPLE					18°18'N	160°11'W		2cm SQUID, FISH LARVAE, SHRIMP
	2								SRP
29	CORE	1043	1257	2548	2564	18°57'N	159°43'W	77	PENETRATION: 21300, AT LEAST TO BASE OF HEAD TOTAL
MAR	77	HIT	1135	2558					LENGTH: 1226cm. TRUE LENGTH ~1226cm. CLAY + DIATOMACEOUS
68									CLAY, GENERALLY BETWEEN DARK YELLOWISH BROWN + GRAYISH
									RED BUT A THIN, ASH-RICH, DARK BROWNISH GRAY LAYER
									OCCURS BETWEEN 315 + 331cm TOP 150cm. SOUPY, UNDULATING, 30% REL
30	JET	0142				17°38'N	160°29'W	77.3	SMALL SAMPLE AS EXPECTED IN
MAR	NET		0209			TO			THIS AREA
68	31					17°42'N	160°52'W		
29	Particulate	1043	1257	2548	2564	18°57'N	159°43'W	77	INERTIAL TRIP MECH. Failed To Work. Barrel
MAR	MAR 27								SURFACED OPEN. Probably due to weak
68	34A								core hit. JD
30	GC40	0630	0800			16°59'N	161°25'W		TWO TANKS FILLED TO 135 GALS.
MAR	SWS 27					TO			WITH SURFACE WATER
68						16°58'N	161°29'W		By Tins

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N°

CRUISE LEG—From HONOLULU To BRISBANE

133

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
30	CORE	1049	1302	2971	2959	16°28'30"N	161°43'W	78	PENETRATION: 1340 ± 20cm TOTAL LENGTH: 1466 cm TRUE LENGTH: 1400cm
MAR	78	HIT	1140	2964					CLAY, BETWEEN DARK YELLOWISH BROWN + VERY DARK YELLOW-
68									ISH BROWN, VERY WELL COMPACTED + WITH CRUSTY
									LAMINATION AT TOP; CLAY, MODERATE BROWN, GENERALLY
									HOMOGENEOUS (31-~1200cm). GENTLY UNDULATING, 20% RELIEF
30	MULTICORE	1100				16°30'N	161°41'W	78	FILTERED 4 LITERS - NO CLOGGING
MAR	SAMPLE								
68	78								
									SRP
30	VERTICAL	1050				16°28'30"N	161°43'W	74	GOOD SAMPLE
MAR	TOW		1039						
68	72								SRP
30	SURFACE	1106				16°28'30"N	161°43'W	74	GOOD SAMPLE
MAR	TOW		1122						
68	72								SRP
30	JET	1504				16°23'N	161°45'SW	78.1	VERY SMALL SAMPLE - WILL COMPARE
MAR	NET		1536						WITH SAMPLE TONIGHT
68	22					16°14'N	161°59'W		
									SRP
30	PARTICULAR	1049	1302	2971	2959	16°28'30"N	161°43'W	78	GOOD SAMPLE, SLIDE SCRATCHED DURING
MAR	MATTER	HIT	1140	2964					REMOVAL 1mm thick in 1000cm
68	34								
30	CORE	1049	1302	2971	2959	16°28'30"N	161°43'W	78	240 to 300cm 1.0 SACK
MAR	HEAD								
68	CAMERA								
	#26								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

134

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG S/N	REMARKS
		Start	End	Start	End	Lat.	Long.		
30	BOTTOM	1005	1306	2971	2959	16°28'30"N	161°43'W	76	NO HITS - WIRE BAD AT 3200FMS BROUGHT TRIPOD BACK UP
MAR	CAMERA								
64	# 71A								
30	CURRENT	1005	1306	2971	2959	16°28'30"N	161°43'W	78	
MAR	METER								
64	# 59B								
30	NEPHEL	1005	1306	2971	2959	16°28'30"N	161°43'W	78	NO READABLE LAYER
MAR	GRIFTER								
66	# 59								
30	JET	2334				15°51'N	162°57'30"W	78.2	GOOD SAMPLE - LARGER THAN THIS AFTER NOON'S JET NET (32)
MAR	NET		0004						
68	33					15°59'50"N	162°40'W		
29	GRAB					15°57'N	159°42'W	77	RETURN TIME = RECOVERY TIME =
MAR	SAMPLE								
68	83								
29	GRAB					15°57'N	159°42'W	77	RETURN TIME = RECOVERY TIME =
MAR	SAMPLE								
68	84								
	GRAB					16°28'30"N	161°43'W	78	search during NO SIGNAL BOTH UNITS LOST
	SAMPLE								
	85A								
	85B								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 4 From Honolulu To Brisbane

135.

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		STAY LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
30 MAR 68	TRIPOD	1005	1306	2410	2454	16°28'N	161°43'W	78	WT TRACES OK, PRESS TRALE FOULED. 3200 Fms WIRE NOT SO NEAR BOTTOM. BUT NO HIT - See Tripod K 71-A <u>RTZ</u>
	WT-1								
	TORAD								
29 MAR 68	TORAD					16°28'N 16°28'N	161°43'W 161°43'W	77	CORE HEAD TORAD (CASING) TESTED AFTER NEW PASS-THROUGHS & ALL NEW O-RINGS INSTALLED. CASING LEAKED VERY MUCH. <u>RTZ</u>
	CASING					16°57'N	159°42'W		
	PRESSURE								
	TEST								
30 MAR 68	TORAD					16°28'N	161°43'W	78	SMOOTHED & MILLED ALL METAL TO O-RING SURFACES. CASING LEAKED SLIGHTLY WITHIN USABLE LIMITS. <u>RTZ</u>
	CASING								
	PRESSURE								
	TEST								
31 MAR 68	MILLIPORE	0855				13°30'N	163°30'W	79	FILTERED 4 LITERS - NO CLOGGING
	SAMPLE								
	79								<u>SRP</u>
31 MAR 68	VERTICAL	0923				13°50'N	163°31'W	79	GOOD SIZE SAMPLE
	TOW		0932						
	71								<u>SRP</u>
31 MAR 68	SURFACE	0950				13°50'N	163°31'W	79	INCREASED DURATION OF TOW TO 18 MIN TO COMPENSATE FOR POOR BIOLOGICAL AREA - OBTAINED LARGER SAMPLE THAN PREVIOUSLY
	TOW		1008						<u>SRP</u>
	73								
31 MAR 68	CORE	0938	1308	2923	2889	13°30'N	163°31'W	79	PENETRATION: 725 ± 5 cm. TOTAL LENGTH: 646 cm. CORE LENGTH: 620 cm. SANDY CLAY, MODERATE BROWN TO BETWEEN MODERATE BROWN + DUSKY BROWN (C-4526). RADIOLARIAN Ooze, MODERATE YELLOWISH BROWN (452-523) CLAY. 50 Fms RELIEF. MODERATE BROWN (563-620). ROCK FRAGMENTS IN CUTTING EDGE. HILLY.
	79	HIT	1023	2897					LARGEST FRAGMENT 2m x 1m in separate VIAL
									TO BE SENT TO LAMONT FROM TOKYO. <u>CH. SCHIFF</u>

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

136

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
31	JET	1351				13°27'N	163°33'2"W	79.1	150 fms wire out - OBTAINED SMALL
MAR	NET		1423						SIZE SAMPLE
68	34					13°23'N	163°36'8"W		
31	GC 41	1200	1308		2889	13°50'N	163°31'5"W	79	200 GALS. OF WATER TAKEN IN 4
MAR	INS					13°50'N	163°31'5"W		BARRELS FROM 50 FMS.
68	#7								
									R.M.T.
31	JET	2321				13°32'N	164°33'3"W	79.2	100 fms wire out - SMALL SAMPLE OBTAINED
MAR	NET		2350						
68	35					13°28'N	164°35'8"W		
1	Particulate	1020	1232	2536	2534	10°44'N	165°03'W	80	Burrel Tripped But Gold leaf was peaked
APRIL	Material	HIT	1109	HIT	2535				off glass slide when surfaced. Sample
68	#35A								Not Run.
									R.M.T.
31	Core	0938	1308	2923	2889	13°50'N	163°31'5"W	79	300° TO STEERING 20 SHOTS
MAR	Hand					13°50'N	163°31'5"W		
68	CHAMBER								
	#27								
31	Bottom	0912	1303	2923	2889	13°50'N	163°31'5"W	79	5 HITS, 41 SHOTS (TRIGGER WENT
MAR	CHAMBER								LOST A CHAMBER K. RAN
68	#71								TO SURFACE)
31	NETHER	0912	1303	2923	2889	13°50'N	163°31'5"W	79	NO WIRE
MAR	OMETER								
68	#60								

Chris Schmidt

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 4 From Honolulu To Brisbane.

137

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1	MILLIPORE	0930				10°25'S	165°22'W	90	FILTERED 4 LITERS - ALG CLOGGING
APR	SAMPLE								
68	80								
1	VERTICAL	1007				10°40'N	165°27'W	80	LARGE SAMPLE - CONTAINED SEGMENTED MARINE
APR	TOW		1015						WORM, LARGE SIPHONOPHORE, SMALL (1CM) FISH
68	72								PLUS USUAL PLANKTON
1	SURFACE	1031				10°44'N	165°02'W	80	SMALL SIZE SAMPLE
APR	TOW		1047						
68	74								
1	JET	1439				10°12'N	165°02'W	80	OBTAINED SMALL SAMPLE - 150g. water
APR	NET		1508						
68	36					10°31'N	165°04'2W		
1	CORE	1020	1232	2536	2534	10°44'N	165°02'W	80	PENETRATION 385±10cm. GRAVITY CORE: NO MESSENGER
APR	80	HIT	1109	2535					PLACED ON WATER BARREL TOTAL LENGTH = TRUE LENGTH
68									15cm. CORE HIGHLY DISTURBED CONSISTS OF MARL,
									RANGING BETWEEN PALE YELLOWISH BROWN + MODERATE BROWN FINE
									FRACTION CONTAINS ABUNDANT COCCOLITHS; DISCOASTERS COMMON
1	TORAD	1011	1232	2535		10°44'N	165°02'W	80	1 PR IN MID, NONE ON FILM.
APR	38A	HIT	1109	HIT 2535					
68	80								
1	TORAD	1007	1232	2535	2535	10°41'N	165°02'W	80	GOOD WT / PRESS TRACES
APR	TORAD		1112						
68	WT 3								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 4 From Honolulu To Brisbane.

138

TIME ZONE + 11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG Syn	REMARKS
		Start	End	Start	End	Lat.	Long.		
31 MAR 68	CURRENT METAL #159	0912	1303	2923	2884	13°50'N	163°31'50"W	79	E. @ 22 cm/sec (max.)
1 APR 68	CORE HEAD Camera #78A	1020	1232	2536	2534	10°41'6"N	165°02'7"W	80	Film ran, but no black - DISAPPOINTED ACCIDENTAL TRIGGERING AT 50 FEET
1 APR 68	Bottom Camera #72	0946	1252	2536	2534	10°41'6"N	165°02'7"W	80	5 HITS, 21 SHOTS
1 APR 68	NEPHELE Camera #61	0946	1252	2536	2534	10°41'6"N	165°02'7"W	80	NO WATER
1 APR 68	CURRENT METAL #60A	0946	1252	2536	2534	10°41'6"N	165°02'7"W	80	NO REMAINING NO REMAINING
1 APR 68	NET NET 37	2359				9°09'N	165°02'W TO 9°02'N 165°04'W	80.2	100 ft. haul out - Tow yielded small SIZED SAMPLE
2 APR 68	CORE 81	0957	1247	2655	2648	7°31'21"N	167°59'7"W	81	PENETRATION 180.5510cm TOTAL LENGTH: 1547cm TRUE LENGTH: 1540cm FORAMINIFERAL MARL, GRAYISH ORANGE TO DARK YELLOWISH BROWN (0-46cm); CLAY, MODERATE BROWN TO DUSKY BROWN (46-1540cm) + FORAM CORE, 121-124, 127-129, 130-133cm NEARLY FLAT

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

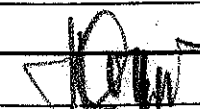
CRUISE LEG ⁴ From Honolulu To Brisbane

139

TIME ZONE

+11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
2	TRIPOD	1011	1530	2650	2648	7°31'20"	161°59'20"	81	GOOD FILM, HIT & PRESS.
APR	TREAD	HIT	1138						
68	WT-4								
2	TREAD	0957	1247	2655		7°31'20"	161°59'20"	81	4 PZ IN MVD, FOUR ON FILM AT HIT. (COND. IN CAS.)
APR	38	HIT	1124	HIT	2647				
68									
3	GC 42A	1011	1530	2650	2648	7°31'20"	161°59'20"	81	An Profile attempted But due to
APR	5A								Tangling of Hydro WIRE, The messenger
68									was stopped before it could trip the
									Nickel Bottles. One bottle on the tripod
									tripped by its trigger wire and was run. RMT
2	PM.	0957	1247	2655	2648	7°31'20"	161°59'20"	81	Gold Loop Again was peeled off slide
APR	35	HIT	1137		2647				But Because of Solid Hit it was
68									Retracted barrel closed on bottom. Sample
									was Run 1 m.
2	Coc	0957	1247	2655	2647	7°31'20"	161°59'20"	81	AMT.
APR	HEAD								No orientation - witness BURET
68	Camera								
	#27B								
2	Bottom	1003	1530	2655	2647	7°31'20"	161°59'20"	81	4 HITS, 16 SLITS.
APR	Camera								CLOUDY PICTURES (WIRE KINKED BADLY)
68	#73								TRIPOD, DESEALED? FILM 35 FPS UP
2	NEOPHET	1003	1530	2655	2647	7°31'20"	161°59'20"	81	
APR	Camera								
68	#62								


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 4 From Honolulu To Brisbane.

140

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOC STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
2	CURRENT	1003	1030	2655	2647	10°31'N	161°59'W	81	TOO MUCH TURBULENCE
APR	METER								ONLY 3 FRAMES
19	#608								SHOW SAME DIRECTION & VELOCITY
									MF
2	MILLIPORE	0910				10°29'N	161°59'W	81	FILTERED 4 LB - NO CLOGGING
APR	SAMPLE								
18	B1								SRP
2	V. CTION	1007				10°31'N	161°59'W	81	RELATIVELY LARGE SAMPLE
APR	TOW		1016						
18	73								SRP
2	SURFACE	1034				10°31'N	161°59'W	81	SMALL SIZE SAMPLE
APR	TOW		1049						
18	75								SRP
3	MILLIPORE	0914				10°30'N	165°02'W	82	FILTERED 4 LITERS - NO CLOGGING
APR	SAMPLE								
18	B2								SRP
2	VERTICAL	0958				10°32'N	165°01'W	82	CLOD SAMPLE - LARGE SIZE
APR	TOW		1007						
18	74								SRP
3	SURFACE	1025				10°32'N	165°01'W	82	CLOD SAMPLE
APR	SAMPLE		1040						
18	76								SRP

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 71

CRUISE LEG—From HONOLULU To BRISBANE

141

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3 APR 68	CORE 82	1011 HIT	1240 1101	2602 2580	2578	1°32'21"N	165°01'W	82	PENETRATION 21255cm. TOTAL LENGTH 1183cm. TRUE LENGTH 1183 cm. FORAMINIFERAL MARL, PALE YELLOWISH BROWN; RADIOLARIAN CLAY + RADIOLARIAN CLAY OOZE, BETWEEN DARK YELLOWISH BROWN + VERY DARK YELLOWISH BROWN (5-1183cm). BOTTOM GENTLY UNDULATING WITH OCCASIONAL HILLS, UP TO 70cm.
1 APR 68	GRAB SAMPLE 85	DROP UP RECOVER	1056 1308 1323	2540		1°32'21"N 1°32'21"N	165°01'W 165°02'W	80	~ 40% SAMPLE. PREDOMINATELY SUB-SPHERICAL MANGANESE NODULES, GENERALLY 1/8-1/4cm IN DIAMETER, BUT UP TO 1cm. SHARK TEETH ARE COMMON. WOOD? FRAGMENTS ARE RARE.
1 APR 68	GRAB SAMPLE 86	DROP UP RECOVER	1130 1340 1415	2540		1°32'21"N	165°02'W	80	SIMILAR TO ABOVE. LOST RADIO.
2 APR 68	GRAB SAMPLE 87A	DROP	1044	2650		1°31'21"N	164°59'W	81	LOST!
2 APR 68	GRAB SAMPLE 87	DROP UP RECOVER	1102 1328 1537	2650		1°31'21"N	164°59'W	81	NO SAMPLE
3 APR 68	GRAB SAMPLE 88	DROP UP RECOVER	1059 1305 1318	2580		1°32'21"N	165°01'W	82	EMPTY.
3 APR 68	JET AKT 38	1358	1424			1°27'51"N	165°00'50"W to 1°22'N 165°00'W		150G wire out - obtained larger sample than usual - sample contained a significant amount of phytoplankton SRP

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 4 From Honolulu To Brisbane

142

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	TORAD	1008	1241	2594		4°32'2"N	165°01'W	82	3PR IN MUD, 3 ON FILM AT HIT, 02-20-44
APR	39	HIT	1053	HIT	2580				SECT 1 : COMING IN
3	TRIPOD	0950	1311	2580	2586	4°32'2"N	165°01'W	82	FILM OK WT 2 PRESS
APR	TORAD	HIT	1123						
68	WT-5								
3	Particulate	1011	1240	2612	2578	4°32'2"N	165°01'W	82	Good Slide Trace Sample Run In
APR	Particulate	HIT	1101	2580					
68	36								
3	SONOBUOY	1732	1917	2840		3°47'0"N	165°01'W		EEL TRIP - Chan 1 - Direct A - 4 SEC DELAY B - FAST TRAVERSE
APR	#48								RAT.
3	GC42	1830	1930			3°47'N	165°01'W	82.1	350 G/L Surface water Collected
APR	SWS28								
68									
3	Core	1006	1241	2594	2580	4°32'2"N	165°01'W	82	240° TO STRING, 47 SHOTS
APR	Core								
68	CAMERA								
	#28								REF
3	Bottom	0920	1311	2594	2580	4°32'2"N	165°01'W	82	5 HITS, 14 SHOTS
APR	Bottom								MUCH TURBIDITY around
68	#74								
3	Netting	0920	1311	2594	2580	4°32'2"N	165°01'W	82	NO Layer
APR	#								
68	63								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

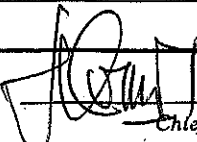
CRUISE N° 12

CRUISE LEG 4 From Honolulu To Brisbane

143

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	CORE	2032	2249	2843	2838	3°41'2N	165°03'2W	83	PENETRATION: ≥ 1860 cm, TO BASE OF HEAD. TOTAL LENGTH:
APR	83	HIT	2122	2838					1537 cm. TRUE LENGTH: 1537 cm. INTERBEDDED CLAY,
68									PREDOMINATELY MODERATE BROWN + MARL, RANGING BETWEEN
									LIGHT PINKISH GRAY, VERY PALE ORANGE + PALE YELLOWISH
									BOTTOM NEARLY FLAT.
									BROWN FINE FRACTION OF MARL CONTAINS ABUNDANT COCCOLITHS
3	MULLIGAN	1930				3°41'N	165°02'W	83	FILTERED 4 LITERS - NO CLOGGING
APR	SAMPLES								
68	83								
3	VERTICAL	1956				3°41'2N	165°03'2W	83	
APR	TOW		2006						
68	75								
3	SURFACE	2025				3°41'2N	165°03'2W	83	
APR	TOW		2040						
68	77								
3	CURRENT	0920	1311	2594	2580			82	STROBE DID NOT WORK; A SHOT EACH MINUTE
APR	METER								FROM LIGHT ON "K" CAMERA SHOWS NO
68	# 100								ONE CLEAR DIRECTION OR VELOCITY -
	60C								EXCESSIVE TURBULENCE SHOWN IN "K" CAMERA
									PICTURES MAY EXPLAIN THIS
3	CORE	2032	2249	2843	2838	3°41'2N	165°03'2W	83	HEAD BURIED - NO ORIENTATION
APR	HEAD								
68	CAMERA								
	# 100								
	29A								
3	BOTTOM	2032	2333	2843	2838	3°41'2N	165°03'2W	83	23 SHOTS SHOTS; TURBULENCE SHOWN
APR	CAMERA								BY MUD CLOUDS
68	# 75								DID NOT AFFECT
									CAT-READING


Chief Scientist


DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	NORICAL - APR METEEL 68 # 64	1940	2333	2843	2838	3°11'N 3°12'N	165°07'W 165°03'W	43	NO PENETRABLE LAYER
3	CARDON APR METEEL 68 # 60	1940	2333	2843	2838	3°11'N 3°12'N	165°07'W 165°03'W	43	W @ 22 cm/sec.
3	TURAO APR 40 68	2029 HIT	2249 2122	2843 Hit	2838	3°11'N 3°12'N	165°07'W 165°03'W	83	4 PR IN MID; 4 ON PALM. WT 1 HOW'S INVERSION (END MEAS 10 TIMES)
4	SANDBOY APR # 49	0927	1100	2848		2°12'2"N	165°08'W		EEL TRIP- CHAN 1 - A DIRECT-B:H sec delay- FAST TRAVERSE
4	CORE APR 84 68	1254 HIT	1621 1438	2845 2846	2845	2°20'N	165°12'W	84	PENETRATION 2326+SC-TOTAL LENGTH 2360-CUT TRUE LENGTH 2380 CLAY, PREDOMINATELY MODERATE BROWN INTERBEDDED WITH FORAMINIFERAL MARL COZE (~348cm) + RADIOLARIAN CLAY, MODERATE BROWN, INTERBEDDED WITH FORAMINIFERAL MARL COZE, PALE ORANGE TO PINKISH GRAY (348-3350cm). GENERALLY FLAT, OCCASIONAL HILLS
4	GRAB APR SAMPLE 68 89	DROP UP RECOVER	1337 1558 1730	2840		2°20'N	165°12'W	84	EMPTY
4	MULTI-PURPOSE APR SAMPLER 68 84					2°20'N	165°12'W	84	FUTURE 2 H LATER / NO CHANGE
4	VERTICAL APR Trawl 68 ?					2°20'N	165°12'W	84	Good size sample - CONTAINS LARGE AMPHIPOD SKP


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

145

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
4	SURFACE	1313				2°20'N	165°12'W	84	OBTAINED LARGE SAMPLE - 136 STOPS
APR	TOW		1328						USUAL PLANKTON - SAMPLE CONTAINED TWO
68	78								SMALL FISH,
									SRP
	GC 43	1254	1330	2845	2845	2°20'N	165°12'W	84	TWO WATER BOTTLES TAKEN AT 500 FMS. FOR
APR	DPS-8								1/2 OF TH-Ra SAMPLE.
68	1 st HALF								
									R.M.T.
4	TORAD	1254	1621	2846		2°20'N	165°12'W	84	4 PR IN MID. 4 ON FILM. WT & PRESS. ON LOG
APR	41	HIT	1438	HIT	2846				TEMP INV. LOG WAS 16 TIMES
68									RA
5	CORE	0949	1150	2712	2712	0°39'2N	164°52'W	85	PENETRATION: 1783±5cm. TOTAL LENGTH 1552 cm. TRUE LENGTH
APR	85	HIT	1018	2712					1552 cm. RATHER COMPLEXLY INTERBEDDED FORAMINIFERAL
68									OOZE, PINKISH GRAY TO PINKISH WHITE; CLAY, PREDOMINATELY
									MODERATE BROWN; AND MARL, GENERALLY PINKISH GRAY. COARSE
									FRACTION ALMOST EXCLUSIVELY RADOLARIA + FORAMS. BOTTOM FLAT
4	CORE	1254	1621	2845	2845	2°20'N	165°12'W	84	COMPASS BURIED - NO ORIENTATION
APR	HEAD								
68	CAMERA								
	# 24B								
4	BOTTOM	1255	1705	2845	2845	2°20'N	165°12'W	84	5 HITS, 28 SHOTS
APR	CAMERA								
68	# 76								
4	NEPHEL	1255	1705	2845	2845	2°20'N	165°12'W	84	NO LAYER
APR	METER								
68	# 65								


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 11

CRUISE LEG—From HONOLULU To BRISBANE

146

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG SIN	REMARKS
		Start	End	Start	End	Lat.	Long.		
11	GREAT	1255	1705	2845	2845	22°N	165°2'W	84	N.E. @ 6 cm/sec.
APR	61								
61									
5	MILLIPORE	900				0°39.5'N	164°5'W	85	FILTERED 4 LITERS - NO COAGULING
APR	SAMPLE								
68	85								
									SRR
5	VERTICAL	1008				0°39.2'N	164°52'W	85	GOOD SIZE CATCH - ABUNDANT PLANKTON
APR	TOW		1019						INCLUDES MANY CHAETOGNATHS AND
68	77								COPEPODS,
									SRR
5	SURFACE	1034				0°39.2'N	164°52'W	85	GOOD SIZE - SOME PHYTOPLANKTON
APR	TOW		1050						PRESENT
68	79								SRR
5	GRAB	DROP	1000	2810		0°39.2'N	164°52'W	85	EMPTY
APR	SAMPLE	UP	1228						
68	90	RECOVER	1340						
5	GC 43	0949	1150	2712	2712	0°39.2'N	164°52'W	85	TWO WATER BOTTLES TAKEN AT 500 Fms
APRIL	DPS 8								FOR 2 ND HALF OF TH-RG SAMPLE
68	2 ND HALF								
5	TIRAD	1420	1150	2800		0°39.2'N	164°52'W	85	4PR IN MUM, 4ON FILM W/ OK, PRESS OK
APR	42	Hr	1018	Hr	2712				TEMP INVERSION ON FILM; LOW WARS
68									
									R.M.T.
									(VES) 6/10

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 811

CRUISE LEG—From HONOLULU To BRISBANE

147

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5 APR 68	MILLICORE SAMPLE 86	2210				0°11'N	164°29'S	86	FILTERED 4 LITERS - NO CLOGGING OF FILTER
5 APR 68	VERTICAL TOW 78	2237	2248			0°11'N	164°29'S	86	OBTAINED LARGE PLANKTON SAMPLE - ALSO ONE SCARLET PRAWN
5 APR 68	SURFACE TOW 80	2306	2323			0°11'N	164°29'S	86	LARGE SAMPLE - CONTAINS LARGE LUMINESCENT JELLY FISH
5-6 APR 68	CORE 86	2306	0217	2845	2842	0°11'N	164°29'S	86	PENETRATION: AT LEAST TO BASE OF CORE HEAD 1231242. TOTAL LENGTH 1020cm TRUE LENGTH: 958cm. RADIOLARIAN CLAY + CLAY, PREDOMINATELY MODERATE BROWN BUT DARK YELLOWISH BROWN IN TOP 30cm + MODERATE YELLOWISH BROWN BETWEEN 150+153, 173+175, 366+372, 735-743, + 937+945. HILLY VALLEY
5-6 APR 68	GRAB SAMPLE 91	DROP 11P	0140	2844		0°11'N	164°29'S	86	EMPTY
5-6 APR 68	GRAB SAMPLE 91A	DROP 2310	2844			0°11'N	164°29'S	86	LOST
5-6 APR 68	TBRAP 43	2300	0217	2843		0°11'N	164°29'S	86	3 PR IN MUD, 2 ON FILM (P.T. BAD) WAT, PRESS 2X, TEMP INV. COULD MEAS

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BAISBALE

148

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
6	JET	1243				1°18' N	164°12' 2W	86.1	SMALL SAMPLE — SOME PHYTOPLANKTON
APR 68	JET		1314				to		CAUGHT
						1°22' 9" N	164°11' W		SRP
5-6	Jet	2300	0217	2845	2842	0°11' 9" N	164°29' 5W	86	HEAD BURIED — NO ORIENTATION
APR	Head								
68	Camera								
	#290								
5-6	Bottom	2238	0231	2845	2842	0°11' 8" N	164°29' 5W	86	5 HITS, 20 SHOTS
APR	Camera								MUCH TURBULENCE — SOFT MOD
68	#77								
5-6	Netter	2238	0231	2845	2842	0°11' 8" N	164°29' 5W	86	NO READABLE LAYER
APR	Netter								
68	#66								
5-6	Netter	2238	0231	2845	2842	0°11' 8" N	164°29' 5W	86	E. @ N.H. VEL.
APR	Netter								
68	#62								
	Particulate	2300	0217	2845	2842	0°11' 8" N	164°29' 5W		Good Sample, But when door on barrel closed it failed to lock and may have leaked slightly. Rmt.
	#37	11.1	23-2	11.1	02831				
6	Core	2051	2335	2771	2898	2°17' 54" N	163°57' 5W	87	NO CLEAR PICTURES
APR	Head								
68	Camera								
	#79								
6	Bottom	2117	2343	2771	2898	2°17' 54" N	163°57' 5W	87	5 HITS, 33 SHOTS
APR	Camera								SOME MANGA. NODULES
68	#74								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To BRISBANE

149

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
6	NEPHEL-	2012	2343	2771	2898	0°17'S	163°57'SW	87	NO READABLE LAYER
APR	METER								
68	# 67								
6	CURRENT	2012	2343	2771	2898	0°17'S	163°57'SW	87	S. @ 111-112.
APR	METER								
68	# 63								
6	CORE	2051	2335	2771	2898	0°17'S	163°57'SW	87	PENETRATION: ? CM TOTAL LENGTH: 130 CM TRUE LENGTH: 110 ? CM
APR	87	HIT	2141	2782					CORE HIGHLY DISTURBED, "STRETCHED" + SCATTERED THROUGH
68									CORE PIPE. SANDY CLAY, LIGHT BROWN TO PALE REDDISH BROWN
									CONSISTING OF ~50% OF MANGANESE NODULES + FRAGMENTS OF
									MOUNTAINOUS, 300 FMS RELIEF
									NODULES (0-27 m), SANDY CLAY, MODERATE YELLOWISH BROWN (27-110 cm)
6	GRAB	DROP	2120	2770		0°17'S	163°57'SW	87	LOST
APR	SAMPLE								
68	92A								
6	VERTICAL	2036				0°17'S	163°57'SW	87	OBTAINED LARGE SAMPLE - CONTAINED MANY
APR	TOW		2045						DELAPOD CRUSTACEA
68	79								
6	SURFACE	2109				0°17'S	163°57'SW	87	GOLD SIZE SAMPLE - WITH 100% FLUORESCENT
APR	TOW		2124						LUMINESCENCE
68	81								
7	MILLIMETER	0105				0°17'S	163°57'SW	87	FILTERED 1 LITER - NO CLOGGING - MORE
APR	SAMPLE								PHYTOPLANKTON PRESENT THAN USUAL
68	87								



Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To EPISBAHE

150

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STATION	REMARKS
		Start	End	Start	End	Lat.	Long.		
6	PARTIAL	2051	2335	2771	2818	2°17'S	163°57'W	87	GOOD SAMPLE, GOOD SLIDE
6	MIDT	HIT	2141	2782					
6	2/6								
6	TRIPOD	2024	2343	2780	2770	2°17'S	163°57'W	87	FILM OK, WIT & PRESS OK
6	T-GRAB	HIT	2136	+					
6	WIT-6								
7	JET	1209				4°06'S	163°26'W	87.1	100 ft. wire out - sample contained many L. p. in almost to exclusion of other organisms - also a few fish eggs.
APR	NET		1240			4°10'S	163°25'W		SRP
68	40								
7	Particulate	1600	1811	2564	2577	4°33'34"	163°17'W	88	Good sample & slide.
APR	Net	HIT	1653	HIT	2577				
68	#39								
7	MILLIPORC	1540				4°33'54"	163°15'20"W	88	FOUR LITERS OF SEA WATER FILTERED WITH N° CLOGGING OF FILTER EXPERIENCED
APR	SAMPLE								
68	88								SRP
7	VERTICAL	1557				4°33'34"	163°17'W	88	MODERATE SIZE SAMPLE
APR	TOW		1605						
68	80								SRP
7	SURFACE	1624	1639			4°33'34"	163°17'W	88	SAMPLE CONTAINS MANY COPEPODS
APR	TOW								
68	82								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° K11

CRUISE LEG—From HONOLULU To BRISBANE

151.

TIME ZONE 111

Date	STATION and N°	TIME		SOUNDING		POSITION		EQU	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	CORE	1600	1811	2564	2579	4°33'34"	163°17'W	88	PENETRATION: ~1350 CM. TOTAL LENGTH: 1016 CM. TRUE LENGTH: ~1016 CM.
APR	88	HIT	1653	2573					FORAMINIFERAL OOZE, VERY PALE ORANGE WITH SOME EXTREMELY
68									DISTURBED LAMINATIONS OF MODERATE BROWN CLAY IN TOP METER (0-100 CM).
									INTERBEDDED FORAMINIFERAL OOZE + MODERATE BROWN TO DISKY
									BROWN CLAY WITH VERY SHARP CONTACTS. GENTLE SLOPE, ~2m FROM ZONE
7	CORE	1600	1811	2564	2579	4°33'34"	163°17'W	88	135° ORIENTATION
APR	HEAD								
68	CANISTER								
	# 29								
7	Bottom	1600	1921	2564	2579	4°33'34"	163°17'W	88	5 SHOTS, 26 SHOTS
APR	Campan								
68	# 79								
7	NEPHEL	1600	1921	2564	2579	4°33'34"	163°17'W	88	NO READABLE WATER
APR	OMITEX								
68	# 64								
7	CURRENT	1600	1921	2564	2579	4°33'34"	163°17'W	88	N. 10 2 cm/sec.
APR	METER								
68	# 64								
7	HEAD	1600	1811	2566		4°33'34"	163°17'W	88	3 PRIN MLD, 3 ON FILM AT HIT. CORR MEAS.
APR	44	HIT	1653	HIT	2573				WT, PRESS OK, NO TEMP INV.
68									
8	NET	1625				7°21'3"	162°31'W	88.1	
APR	NET		1255			7°0			
68	41					7°26'24"	162°29'W		

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XL

CRUISE LEG—From

CRUISE LEG—From Harold Cove To Big Bay

CRUISE LEG—From Harold Cove To Big Bay

TIME ZONE

16th

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE.

153

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
8	MILLIPORE	1555				7°41'N	162°23'W	89	FILTERED 4 LITERS - NO CLOGGING
APR	SAMPLE								
68	89								
8	VERTICAL	1612				7°41'N	162°23'W	89	RELATIVELY LARGE SAMPLE - CONTAINED
APR	TOW		1621						A FEW SIPHONOPHORES OF SAME SPECIES
68	81								SRP
8	SURFACE	1629				7°41'N	162°23'W	89	LARGER SAMPLE THAN VERT. 81
APR	TOW		1644						
68	83								SRP
8	JET	2358				8°10'54"N	162°10'W	89.1	100 fms WIRE OUT - BESIDES USUAL PLANKTON -
APR	NET		0027						CONTAINED SEVERAL SIPHONOPHORES OF SAME
68	42					8°15'55"N	162°08'W		SPECIES AS CAUGHT IN VERTICAL TOW 81.
									LARGER SAMPLE THAN IN JN 41 (day tow) SRP
8	Port. 10/1	1625	1812	2312	2316	7°41'N	162°23'W	89	Good Sample + Slide
APR	Net	Hit	1906	2335					
68	40								
9	GC44	0500	0630	2308	2297	9°00'34"N	161°48'W	89.2	35 L Gal Surface water collected
APR	SWS								for Th/Ra Sample
68	29					9°21'N	161°37'W		
	TORAD			2301	2226				RMT
	45								

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

154

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
10 APR 68	CORE 90	1353 Hit	1532 1735	1535 1533		12°58'38"	161°13'7"W	90	PENETRATION: 1159±10cm TOTAL LENGTH: 1109cm TRUE LENGTH: 1109cm FORAMINIFERAL OOZE, PALE ORANGE, SOUPY + HENCE DISTURBED (0-500cm); FORAMINIFERAL MARL OOZE, VERY PALE ORANGE TO BETWEEN PALE ORANGE + VERY PALE ORANGE; MODERATELY COMPACTED, GENERALLY HOMOGENEOUS, GENTLY UNDULATING, WITH OCCASIONAL HILLS
10 APR 68	GRAB SAMPLE 93A	DROP	1420	1534		12°58'38"	161°13'7"W	90	LOST
10 APR 68	GC 45 15F DPS #9	1353 Hit	1532 1435	1535 1533		12°58'38"	161°13'7"W	90	Two Water Barrels Collected at 1490 and 1495 Fms for 1st Half of Deep Sample
10 APR 68	TORAD 46	1353 Hit	1532 1435	1534 Hit 1533		12°58'38"	161°13'7"W	90	RMT 3 PR IN MUD; 3 ON FILM. CORE HEAD MOVED IN MUD. WT & PRESS OK. COLD MEAS.
10 APR 68	MILLIPORE SAMPLE 90	1250				13°1.5'N	161°15'W	90	FOUR LITERS OF SEA WATER FILTERED WITH NO CLOGGING
10 APR 68	VERTICAL TOW 82	1343	1352			12°58'38"	161°13'7"W	90	TOW YIELDED VERY SMALL SAMPLE
10 APR 68	SURFACE TOW 84	1409	1425			12°58'38"	161°13'7"W	90	SMALL SAMPLE BUT SLIGHTLY LARGER THAN VERTICAL YIELD

SRP

SRP

SRP

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° VII

CRUISE LEG—From Honolulu To Brisbane

155.

TIME ZONE + 11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN.	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	CORE	1353	1532	1525	1533	12°58'34"	161°13'7"W	90	90° ORIENTATION 37 SHOTS
APR	HEAD								
66	CORE								
	#30								
10	Bottom	1325	1545	1525	1533	12°58'34"	161°13'7"W	90	5 HITS, 17 SHOTS
APR	CORE								
66	#81								
10	NEPHEL	1325	1545	1525	1533	12°58'34"	161°13'7"W	90	NO LAYER
APR	CORE								
66	#69								
10	CORE	1325	1545	1525	1533	12°58'34"	161°13'7"W	90	N. @ 8.9 cm/sec.
APR	HEAD								
66	#66								
10	CORE	2306	0019	1585	1585	13°30'7"	161°36'8"W	91	PENETRATION: 2100cm TOTAL LENGTH 1091cm TRUE LENGTH 1064cm
APR	91	2345	HIT	1585					*APPROXIMATELY 1 METER OF CORE LOST FROM CORE PIPE BETWEEN
66									413+414cm FORAMINIFERAL CLAY OOZE + FORAMINIFERAL MARL
									OOZE FROM PALE ORANGE TO VERY PALE ORANGE GENERALLY
									BUT WHITE BETWEEN 86.5+89.5 FORAM. OOZE, 19.5-25.1 VERY GENTLE SLOPE
10	C45	2306	0019	1585	1585	13°30'7"	161°36'8"W	91	Two Water Bottles collected at 1490
APR	OPS 7	2345	HIT	1585					and 1495 FAS FOR 2 nd Half of Th-Ra
66									Sample
10	VERTICAL	2319				13°30'7"	161°36'8"W	91	RMT
APR	TOW		2328						SAMPLE SMALLER THAN THAT OF DAY
66	83								TOW (#82)

[Signature]
Chief Scientist

SRP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

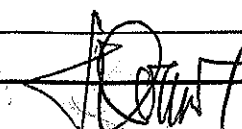
CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE.

156

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	SURFACE	2332		13°30.7'S	161°36.8'W	13°30.7'S	161°36.8'W	91	YIELD LARGER THAN DAY SAMPLE -
APR	TOW		2347						CAPTURED SOME SMALL "SHRIMP"
68	85								
									SRP
11	MILLIPORE	0040				13°16'S	161°36'W	91	FILTERED 4 LITERS OF SEAWATER
APR	SAMPLE								WITH NO CLOCCING
68	91								
									SRP
11/10	CORE	0306	0019	1585	1585	13°36'7"S	161°36.8'W	91	100° ORIENTATION 15 SHOTS
11/10	HEAD								
68	CAN #32								
11	SOUNDING	0044	0229	1585		13°35'S	161°30.0'W		EEL TRIP-CHAN 2-A, DIRECT-B, delay 4 SEC - FAST REVERSE / OFF OF
APR	# 50								MANIKI Plateau.
11	JET	1218				13°47.5'S	162°22.8'W	91.1	OBTAINED VERY SMALL YIELD -
APR	NET		1247						100 fms WIRE OUT
68	43					13°48.5'S	162°23'W		
11	MILLIPORE	1721				13°39'S	161°37'W	92	
APR	SAMPLE								
68	92								
11	VERTICAL	1825				13°39'S	161°37.5'W	92	
APR	TOW		1833						
68	84								
11	SURFACE	1854				13°39'S	161°37.5'W	92	
APR	TOW		1910						
68	86								


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

157.

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
11 APR 68	CORE 92	1815	1922	1755	1749	13°39'N	161°37'SW	92	PENETRATION: ≈ 1180 cm TOTAL LENGTH: 985 cm TRUE LENGTH: 985 cm
		HIT	1841	1755					BASE OF HEAD FORAMINIFERAL MARL Ooze, PALE ORANGE TO VERY PALE ORANGE (0-98 cm); FORAMINIFERAL Ooze, VERY PALE ORANGE (98-183 cm); FORAMINIFERAL MARL Ooze INTERLAYERED PALE ORANGE TO VERY PALE ORANGE WITH PALE YELLOWISH BROWN GENTLY UNDULATING
11 APR 68	TBRAD 47	1814	1922	1756		13°39'N	161°37'SW	92	3 PR IN MUD; 2 ON FILM AT HIT. 1T BAD. WT & PRESS OK. COLD MEAS
		HIT	1841	HIT	1755				
11 APR 68	TRIPOD	1930	2258	1755	1749	13°39'34"N	161°40'20"W	92	FILM OK. WT & PRESS.
	TBRAD								
	WT-7								
12 APR 68	CORE 93	0018	0159	1758	1764	13°42'7"N	161°21'19"W	92	NOTE: CORE 93 IS OLD. QUITE POSSIBLY PALEOCENE OR Eocene PENETRATION: 7395 cm TOTAL LENGTH: 561 cm TRUE LENGTH: 427 cm FORAMINIFERAL Ooze, PALE ORANGE (0-62 cm); MARL, RANGING FROM BETWEEN GRAYISH RED + DARK YELLOWISH BROWN TO DUSKY BROWN, VERY WELL COMPACTED, COCCOLITHS ABUNDANT + DISCOASTERS RARE IN FINE FRACTION. OUTCROP ON SLOPE
		0111	HIT	1763					
11 APR 68	CORE	1815	1922	1755	1749	13°39'34"N	161°40'20"W	92	HEAD BURIED - NO ORIENTATION
	HEAD								
	CANNON								
	#32A								
11 APR 68	CORE	0018	0159	1758	1764	13°42'7"N	161°21'19"W	92	0° DEFORMATION; 31 SLITS
	HEAD								
	CANNON								
	#27								
11 APR 68	BOTTOM	1930	2258	1755	1749	13°39'34"N	161°40'20"W	92	5 SLITS, 31 SLITS
	CANNON								
	#82								

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To Brisbane

158

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
11	MEPFL	1930	2256	1755	1749	13°39'39"	161°20'9"W	92	NO PENETRABLE LAYER
APR	OMETER								
66	# 70								
11	CURRENT	1930	2256	1755	1749	13°39'39"	161°20'9"W	92	N.E. @ 4.3 cm/s
APR	METER								
66	# 67								
12	Particulate	0002	0159	1758	1764	13°42'38"	161°41'16"	92	Bottom Pre-Tripod Sample was Discarded
APR	METER	0111		1763					
68	41 A								
12	MILLIPORE	1606				15°25'8"	162°45'W	93	Filtered 4 Liters - NO CLOGGING
APR	SAMPLE								
68	93								SRP
12	VERTICAL	1650				15°25'8"	162°45'W	93	Small Sample - CONTAINS ONE "LARGE" SIPHONOPHORE IN GOOD CONDITION
APR	TOW		1701						
68	85								SRP
12	SURFACE	1726				15°25'8"	162°45'W	93	ALSO SMALL YIELD - CONTAINS SEVERAL SIPHONOPHORES OF A SPECIES DIFFERENT FROM THAT IN VERT. TOW 85
APR	TOW		1741						
68	87								SRP
12	CORE	1653	1930	2910	2908	15°25'8"	162°45'W	93	PENETRATION 346.8 cm TOTAL LENGTH 565 TRUE LENGTH 505 cm
APR	94	HIT	1745	2906					CLAY, GRAYISH BROWN TO DUSKY BROWN (0-344 cm); CLAY, PALE YELLOWISH BROWN WITH LAMINATION OF MODERATE OLIVE BROWN BETWEEN 452 & 487 (344-505 cm). BASAL 10 cm EXTREMELY WELL COMPACTED. TOPOGRAPHY GENERALLY FLAT WITH OCCASIONAL HILLS

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

159

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	GRAB					15°25'N	162°45'W	93	
APR	SAMPLE								
68	93								
12									
APR	Particulate	1653	1730	2910	2906	15°25'N	162°45'W	93	Good Sample + Slide
68	Miller	Hit	1745	2906					
	41								
12									
APR	TURAD	1653	1930	2910		15°25'N	162°45'W	93	RMT
68	48A	Hit	1745	Hit	2906				1 PROBE IN MUD. MORE ON FILM AT HIT; PASS-THROUGHES. WT & PRESS OK.
12									
APR	Core	1653	1930	2910	2906	15°25'N	162°45'W	93	PIPE BENT - NO ACTIVES
68	HEAD								
	CAMERA								
	#33A								
12	Bottom	1645	2032	2910	2906	15°25'N	162°45'W	93	5 HITS, 16 SHOTS
APR	CAMERA								
68	#83								
12									
APR	NEPHEL-	1645	2032	2910	2906	15°25'N	162°45'W	93	NO READABLE LAYER
68	OMETER								
	#71								
12									
APR	CURRENT	1645	2032	290	2906	15°25'N	162°45'W	93	F. @ 8.2 cm/sec.
68	METER								
	#68								

[Signature]

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE N° XII
CRUISE LEG—From HONOLULU To BRISBANE

160

TIME ZONE +11

CRUISE LEG—From		To				POSITION		LOG	REMARKS
Date	STATION and N°	TIME		SOUNDING		Lat.	Long.		
13 APR	1076AV 48	1548	1631	2922	2923	17°35'N	164°21'W		
						</			

Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To BREITENBURG

161.

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
13	CORE	1528	1753	2923	2914	17°35'28"	164°51'20"	94	15° OCEAN, 8 SHOTS THRU HULL, BUNT
13	HEAD								
68	CAMERA								
	# 33								
13	BOTTOM	1500	1739	2923	2914	17°35'28"	164°51'20"	94	FILM (111) TAKEN IN CASE - NO ADVANCE
13	CAMERA								
68	# 34A								
13	NEPHEL	1500	1739	2923	2914	17°35'28"	164°51'20"	94	NO RETARDABLE LAJOL
13	OMETER								
68	# 72								
13	CURRENT	1500	1739	2923	2914	17°35'28"	164°51'20"	94	N.W. @ 7 cm/sec.
13	METER								
68	# 69								
13	G C 46	1500	1739	2923	2914	17°35'28"	164°51'20"	94	Only two bottles collected. The Top and bottom ones. Messenger got caught between wire and bottle and failed to trip 2 nd & 3 rd Bottle. Both bottles were run.
13	Rb 55								
68									
14	CORE	1906	2131	2898	2942	20°18'54"	167°09'50"	95	PENETRATION 640±30 cm TOTAL LENGTH 947 cm TRUE LENGTH 639 cm
14	96	HIT	2003	2912					CLAY, VERY DARK YELLOWISH BROWN, MODERATE BROWN & GRAYISH BROWN (0-546 cm); INTERBEDDED CLAY +
68									EXTREMELY HARD LAYERS APPARENTLY REPRESENTING ALTERED ASH LAYERS + CONSISTING OF PALAONITE (546-639 cm) THESE LAYERS, THOUGH VERY HARD, CAN BE CRUMBLED INTO A FINE GRAIN ORANGISH SAND.
									TOPOGRAPHY HILLY TO MOUNTAINOUS, 40 TO 200 fms RELIEF

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

162

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	MILLIPORT	1832				20°18'54"	167°09'55"	195	FOUR LITERS OF SEA WATER FILTERED—
APR	SAMPLE								NO LOGGING
68	95								SRP
14	VERTICAL	1923				20°18'54"	167°09'55"	195	SAMPLE CONTAINS MANY SPECIES OF
APR	TOW		1932						PLANKTON INCLUDING SEVERAL INDIGO COLORED
68	87								CRUSTACEA.
									SRP
14	SURFACE	1945				20°18'54"	167°09'55"	195	ALSO CONTAINS MORE SPECIES THAN USUAL
APR	TOW		2000						INCLUDING SAME INDIGO CRUSTACEA
68	89								FOUND IN THE VERTICAL TOW.
									SRP
14	TERAD	1906	2131	2894		20°18'54"	167°09'55"	195	2 PR IN MUD; 1 ON FILM. 2 PT'S BAD, HT &
APR	49	HT	2003	HT	2912				PRESS OK. COLO MEAS
68									RAZ
14	Core	1906	2131	2894	2912	20°18'54"	167°09'55"	195	160° ORIENTATION, 38 SUITS
APR	HEAD								
68	SPINNING								
	# 34								
14	Bottom	1634	2246	2894	2912	20°18'54"	167°09'55"	195	5 SPINNING , 26 SUITS
APR	Camera								
68	# 74								
14	NEPHE-	1634	2246	2894	2912	20°18'54"	167°09'55"	195	N.D. 2000 2000 2000
APR	OMETER								
68	# 73								

[Signature]
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG From Hudson To Boston

163

TIME ZONE -1

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	CORON	1834	2246	2894	2912	40°28'N	71°09'W	95	S. at 8.2 cm/s.
APR	METER								
68	#70								
5	JET	1252				32°15'N	168°43'W	95.1	OBTAINED VERY SMALL SAMPLE - 100 fm
APR	NET		1323			to			WIRE OUT
68	44					32°15'N	168°45'W		
14	Particle	1906	2131	2896	2942	40°28'N	71°09'W	95	Good Sample - slide
APR	M. H.		2003	2912					
68	47								
									RMT
	CORE	1550	1840	2964	2960	32°27'N	168°36'W	96	PENETRATION ≥ 1278 cm, TO BASE OF COREHEAD. TOTAL LENGTH 996 cm. TRUE LENGTH: 996 cm. CLAY, BETWEEN MODERATE BROWN + VERY DARK YELLOWISH BROWN; HOMOGENEOUS; CARBONATE CONTENT NIL; COARSE FRACTION 45% TO ONLY 20 fm. A TRACE MANGANESE NODULES COMMON AT TOP. UNDRATING, REUSE
15	97	HIT	1658	2962					
APR									
68									
15	GC 47	1550	1840	2964	2960	32°27'N	168°36'W	96	TWO WATER BARRELS collected at 2488 and 2483 fms for 1st half of Th-Ra Sample
APR	DPS #								
68	10								
	R 1/2								
15	JGRAD	1549	1840	2968		32°27'N	168°36'W	96	3 PR IN MUD; TWO ON FILM AT HIT. WT & PRESSURE LOAD WEARS.
APR	*50*	HIT	1658	HIT	2962				
68									
15	MILLIFORE	1512				32°27'N	168°36'W	96	FILTERED 4 LITERS - NO CLOGGING
APR	SAMPLE								
68	96								

[Signature]
Chief Scientist

SRP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

164

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15	VERTICAL	1541				22°27'8"	168°56'30"	96	MODERATE SIZE SAMPLE - EXCELLENT
APR	TOW		1550						FLOWMETER CORRELATION - 98%
68	88								SRP
15	SURFACE	1600				22°27'8"	168°56'30"	96	SAMPLE SLIGHTLY LARGER THAN
APR	TOW		1615						IN VERT. TOW
68	90								SRP
15	GRAB	DROP	1640	2962		22°27'8"	168°56'30"	96	FOUR FLOATS + 122 LBS OF WEIGHTS (TWO 30 LBS +
APR	SAMPLE	UP	?						TWO 25 LBS) USED. ONE COLLECTION BAG NOT SEWN,
68	94	RECOVER	1932						HENCE 1/2 OF SAMPLE LOST. SAMPLE CONSISTS OF ROUGHLY
									SPHERICAL MANGANESE NODULES BETWEEN 1/2 + 3 CM IN
									DIAMETER + PREDOMINATELY ~ 1.5 CM. TOTAL WEIGHT: 160.2 LBS
16	JET	0021				23°03'34"	169°28'10"	96.1	LARGE SAMPLE - VERY INTERESTING - CONTAINS
APR	NET		1050						3 - 2 1/2 CM EUPHASIDS AND SEVERAL SMALLER ONES -
68	45					23°07'4"	169°31'20"		2 LINE PTEROPODS - MANY COPEPODS -
									SRP.
15	CORE	1550	1840	2964	2960	22°27'8"	168°56'30"	96	HEAD + COMPASS BURIED - NO CORRELATION
APR	HEAD								
68	CAMERA								
	#35A								
15	BOTTOM	1514	1926	2964	2960	22°27'8"	168°56'30"	96	5 HITS, 31 SHOTS
APR	CHIMNEY								
68	#75								
15	NEPHEL	1514	1926	2964	2960	22°27'8"	168°56'30"	96	NO READABLE LAYER
APR	CHIMNEY								
68	#74								

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

165.

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15	CURRENT	1514	1926	2964	2960	22°27'34"N	173°32'51"W	96	N.E. @ 413 cm/s.
15	METER								
68	71								
	71								
16	CORE	1200	1457	3022	3010	24°32'58"N	170°38'W	97	PENETRATION: 1050 INCHES TOTAL LENGTH: 946 cm TRUE LENGTH: 946 cm
APR	98	HIT	1320	3010					CLAY, VERY DARK YELLOWISH BROWN; HOMOGENEOUS EXCEPT
68									FOR EXTREMELY SLIGHT GRADATIONAL CHANGES IN COLOR
									+ COMPOSITION; MODERATELY COMPACTED; COARSE FRACTION
									1% TO A TRACE; CARBONATE CONTENT NIL. GENTLE HILLS 4306.
16	GRAB	DROP	1238	3012		24°32'58"N	170°38'W	97	FOUR FLOATS; 122 lbs BALLAST. SAMPLE CONSISTS
APR	SAMPLE	UP	~1440						OF ~1 lb. OF PALE TO DARK YELLOWISH BROWN, SUB-
68	95	RECOVER	1530						ANGULAR GRANULES + PEBBLES (1/4-7.5 cm) + 1 CORBLE
									(7x5x4 cm) OF PUMICE. ONE OR TWO MANGANESE
									NODULES (OR MANGANESE COATED PUMICE) ALSO PRESENT.
16	SURFACE	1309				24°32'58"N	170°38'W	97	HIGH BIOMASS SAMPLE - CONTAINED MUCH
APR	TOW		1327						PHYTOPLANKTON
68	91								SRP
16	VERTICAL	1506				24°37'58"N	170°38'W	97	SAMPLE CONTAINED SEVERAL LARGE JELLYFISH
APR	TOW		1515						
68	89								SRP
16	MILLIPORE	1540				24°32'58"N	170°38'W	97	FOUR LITERS BEN WATER FILTERED - NO CLOGGING
APR	SAMPLE								MUCH PHYTOPLANKTON ON DRIED FILTER
68	97								SRP
16	GC 47	1200	1457	3022	3010	24°32'58"N	170°38'W	97	TWO WATER BARRLS COLLECTED AT 2466 AND
APR	DPS 10								2461 FOR 2 ND HALF OF TH-Ro SAMPLE
68	2 ND 1/2								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE.

166

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	TBRAD	1200	1457	3022		24°32'59" N	170°38'W	97	3 PR IN MID; 1 ON FILM AT HT. 2 PTS BAO. WT & PRESS OK COMB MEAS
APR 68	51	Hr	1320	Hr	3010				
"	TRIAD	1121	1531	3042		24°32'59" N	170°38'W	97	Film OK WT & PRESS OK
	TBRAD								
	WT-8								
16	JET	0008				25°31'29" N	171°38'W	97.1	MANY COPEPODS AND SEVERAL EUPHASIDS IN SAMPLE
APR 68	NET		0037			TO			
	46					25°47'29" N	171°30'W		SRP.
16	CORE	1200	1457	3022	3010	24°32'59" N	170°38'W	97	95° ORIENTATION — 29 SHOTS
APR 68	HEAD								
	CAMERA								
	#35								
16	BOTTOM	1121	1531	3022	3010	24°32'59" N	170°38'W	97	5 HITS, 30 SHOTS
APR 68	CAMERA								
	#86								
16	NEPHEL	1121	1531	3022	3010	24°32'59" N	170°38'W	97	VERY CORADIAN UPPER STARTING
APR 68	OMETER								ABOUT 300 FMS OFF BOTTOM (?)
	#75								
16	CURRENT	1121	1531	3022	3010	24°32'59" N	170°38'W	97	N.E. @ 4 cm/s
APR 68	METER								
	#72								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

167

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17 APR 68	MILLIPORE SAMPLE 98	0945				26°00'S	173°09'00"W	98	FILTERED 4 LITERS WITH NO CLOGGING
									SRP
17 APR 68	VERTICAL TOW 90	1011	1020			26°00'S	173°08'20"W	98	LARGER BIOMASS THAN SURFACE SAMPLE
									SRP
17 APR 68	SURFACE TOW 92	1050	1105			26°00'S	173°08'20"W	98	GOOD SIZE SAMPLE
									SRP
17 APR 68	CORE 99	1020	1232	2756	2753	26°00'S	173°08'20"W	98	PENETRATION: 66.5 ± 20 cm. TOTAL LENGTH: 863 cm. TRUE LENGTH: 576 cm. CLAY + ASH-RICH CLAY, GENERALLY VERY DARK YELLOWISH BROWN BUT PALE ORANGE ASH LAYERS BETWEEN 151 ± 158 cm AND 423 ± 426 cm. COARSE FRACTION GENERALLY < 5% BUT ~10% IN TOP 50 cm OR SO. GENTLY UNDULATING WITH OCCASIONAL HILLS
17 APR 68	GRAB SAMPLE 96	DROP 1112	UP 1302	2750		26°00'S	173°08'20"W	98	FOUR FLOATS; 122 LBS BALLAST. TOTAL WEIGHT OF SAMPLE < 1 lb. CONSISTS OF SUB-ANGULAR TO SUB-ROUNDED, DARK TO VERY DARK YELLOWISH BROWN FRAGMENTS OF PUMICE. PREDOMINATELY GRANULES + PEBBLES 1/4 TO 2 cm IN DIAMETER BUT UP TO (4x1 1/2 x 1 1/2) cm RARELY MANGANESE COATED
17 APR 68	CORE HEAD #36	1020	1232	2756	2752	26°00'S	173°08'20"W	98	180° ORIENTATION, 25 SHOTS
17 APR 68	BOTTOM CAMERA #45	1000	1327	2756	2752	26°00'S	173°08'20"W	98	5 LITS, 11 SHOTS

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

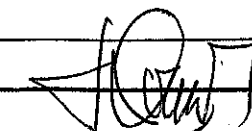
CRUISE N° XII

CRUISE LEG-From Honolulu To BRISBANE

168

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17 APR 68	NEPHEL- OMETER #76	1000	1327			26°00.8'N	173°08.2'W	98	NO READABLE LOGS
17 APR 68	CURRENT METER #73	1000	1377			26°00.5'N	173°08.2'W	98	E. @ 6.8 cm/s.
17 APR 68	TORAD 52	1017	1232	2755		26°00.5'N	173°08.2'W	98	1 or 2 PR IN MUD AT HULL; ONE ON FILM PRESS ON WT OFF SCALE. COND MEAS.
	TORAD TRIPOD WT 9	1000	1327	2757		26°00.5'N	173°08.2'W	98	FILM OK, WT & PRESS (KAR).
17 APR 68	Particulate Matter Trip 44	1020	1232	2756	2752	26°00.5'N	173°08.2'W	98	Water barrel sample Taken 50 Fms from the bottom. Sample Run for Com- parison
17 APR 68	GC#48 SWS 306	1530	1700	2766	2711	26°17'N	173°29'W	98.1	350 Gals of Surface water collected In two Tanks for Th-Ra Sample.
17 APR 68	SODAGWAY 51	1833	2016	2650		26°02.3'S	174°13.0'W		EE Trip - Chan. 2 - A, direct - B, 4 sec delay - Fast Traverse -



Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

169

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 APR 68	MILLIPORE SAMPLE 99	2300				26°01'N	174°41'W	99	FOUR LITERS OF SEA WATER FILTERED - FILTER WAS NOT CLOGGED
17 APR 68	VERTICAL TOW 91	2349	2357			26°01'N	174°37'8" W	99	SAMPLE IS LARGER THAN SURFACE SAMPLE OBTAINED THIS STATION - VERT. SAMPLE CONTAINS MANY EUPHASIDS PLUS OTHER PLANKTON
18 APR 68	SURFACE TOW 93	0018	0033			26°01'N	174°37'8" W	99	MODERATE SIZE SAMPLE
17-18 APR 68	CORE 100 + CORE HEAD CAMERA #37					26°01'N	174°37'8" W	99	PENETRATION: 100±30cm TOTAL LENGTH: 58 cm TRUE LENGTH: 58 cm CORE DID NOT DRICER. GRAVITY CORE - NOT ENOUGH TIME ALLOWED FOR MESSENGER. ASH-RICH CLAY, DARK YELLOWISH (300° ORIENTATION, 46 SHOTS KOF) BROWN + VERY DARK YELLOWISH BROWN. HILLY, ~70cm RELIEF.
17/18 APR 68	BOTTOM CAMERA #88	2327	0222			26°01'N	174°37'8" W	99	5 HITS, 23 SHOTS
17/18 APR 68	NEPHEL-OMETER #77	2327	0222			26°01'N	174°37'8" W	99	STRONG LAYER FROM 1750-2000 FMS
17/18 APR 68	CURRENT METER #74	2327	0222			26°01'N	174°37'8" W	99	E.S.E. @ 6 cm/s

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

170

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17-18	Particulate Matter					26°01'S	174°37'W	99	
APR 68	45A								
18	CORE	0332	0512	2329	2320	26°00'S	174°37'W	99	PENETRATION: 560±30cm TOTAL LENGTH: 840cm TRUE LENGTH: ~580cm. ASH-RICH CLAY, INTERBEDDED PALE YELLOWISH BROWN TO VERY DARK YELLOWISH BROWN ABOVE ~450cm, OTHERWISE MODERATE BROWN TO DARK BROWNISH GRAY; VERY WELL COMPACTED; COARSE FRACTION 20-60% - HILLY.
APR 68	101	0346	HIT	2322					
18	Particulate	0332	0512	2329	2320	26°00'S	174°37'W	99	Good Sample & Slide
APR 68	Matter Trip 45	0346		2322					
17-18	TRIPOD	2327	0222	2346		26°01'S	174°37'W	99	RMT. FILM, WT & PRESS TRACES OK.
APR 68	TRIPOD HIT	1237							
	WT-10								
18	MILLIPORE	1040				26°S	175°34'W	100	FOUR LITERS FILTERED WITH NO CLOGGING
APR 68	SAMPLE 100								
18	VERTICAL	1135				26°S	175°34'W	100	SAMPLE CONTAINS SEVERAL SIPHONOPHORES PLUS USUAL PLANKTONIC ORGANISMS
APR 68	TOW 92		1143						
18	SURFACE	1212				26°S	175°34'W	100	MODERATE SIZE SAMPLE - CONTAINS MANY BRILLIANTLY COLORED CRUSTACEA
APR 68	TOW 94		1228						

Chief Scientist

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG From HONOLULU To BRISBANE

171

TIME ZONE +11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 APR 68	CORE 102	1123	1346	~2882	~2945	26°8'	175°34'W	100	PENETRATION: 320-30cm TOTAL LENGTH: 341 cm TRUE LENGTH: 341 cm ASH-RICH CLAY PREDOMINATES; RANGES BETWEEN DARK YELLOWISH BROWN PALE YELLOWISH BROWN. CONTAINS ASH LAYERS GRAYISH BLACK + DARK BROWNISH GRAY BETWEEN 99+107, +112+119cm EXTREMELY WELL COMPACTED. TRENCH SLOPE.
18 APR 68	GRAB SAMPLE 97	DROP UP RECOVER	1220 ? 1502	2950		26°8'	175°34'W	100	FOUR FLOATS; 122 lbs BALLAST. SAMPLE CONSISTS OF ~1 lb. of DARK YELLOWISH BROWN (10YR 4/2) CLAY FRAGMENTS RANGING FROM 1/4cm in DIAMETER TO 8x4x1 1/2cm + 6x5x4cm. LARGER FRAGMENTS COATED ON ONE SIDE (APPARENTLY OCEAN FLOOR) BY A GRAYISH BLACK (N2) MANGANESE CRUST, 1-3mm THICK.
18 APR 68	Particulate Mottled 46A	1123	1346	~2882	~2945	26°8'	175°34'W	100	Barrel Pre-tipped when Wench Stopped before going down for Hit. Sample discarded.
18 APR 68	JET NET 47	1520	1549			25°59.5'S	175°35'W to 25°59.5'S 175°40.5'W	100.1	RMT. SAMPLE CONTAINS - BLUE COPEPODS; EUPHASID SHRIMP; CHAETOGNATHS; AND A SMALL CRUSTACEAN LARVAE WITH EYES AT THE END OF EYESTALKS
	TURBO 53A	1123	1346	2853		26°8'	175°34'W	100	SRP. ONE PROBE IN MUD, NONE ON FILM AT HIT. TWO PT'S BAD. WT & PRESS OK CONDUCTIVITY MEAS.
	TURBO WT11	1106	1442			26°8'	175°34'W	100	WT & PRESS TRACES OK. FILM OK.
20 APR 68	JET NET 48	1225	(-12) 1256			26°00.3'S	179°46'W to 26°00.3'S 179°46'SW	100.2	SAMPLE CONTAINS SEVERAL CRUSTACEA LARVAE; MANY COPEPODS. MORE PHYTOPLANKTON THAN USUAL; MANY CHAETOGNATHS. SRP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To Bora Bora

172

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG Fm	REMARKS
		Start	End	Start	End	Lat.	Long.		
18	KORE	1123	1346	2853	2900	26°8'	175°34'W	100	90° ORIENTATION 20 SHOTS
APR	HEAD								
68	CAMERA								
	#36								
18	BOTTOM	1106	1442	2853	2900	26°8'	175°34'W	100	5 HITS, 29 SHOTS
APR	CAMERA								
68	#89								
18	NEPHEL	1106	1442	2853	2900	26°8'	175°34'W	100	HENRY LAYER FROM 1920 - 2700 Fms
APR	METER								
68	#78								
18	CURRENT	1106	1446	2853	2900	26°8'	175°34'W	100	N.W. @ 9 cm/s
APR	METER								
68	#75								
20	GC 49	1336	1500			26°8'	179°51'W	100.3	350 Gals surface water collected in two tanks for Th-Ra sample
APR	SWS								
68	#31					26°8'	179°23'E		
									R.M.T.
20	CORE	1642	1750	1290	1290	26°8'	179°44.2'E	101	PENETRATION: 915 ± 10 cm TOTAL LENGTH: 898 cm TRUE LENGTH? cm
APR	103	HIT	1711	1288					ASH-RICH FORAMINIFERAL CLAY + FORAMINIFERAL CLAY GOZF, RANGING FROM BETWEEN PALE YELLOWISH BROWN + LIGHT BROWN TO PALE ORANGE; CARBONATE CONTENT LOW TO MODERATE; FINE GRANULES + SMALL PEBBLES AT TOP, BASE OF CORE, 406 cm REUSE
68									
20	Particulate	1642	1750	1290	1290	26°8'	179°44.2'E	101	Good Sample & Slide
APR	Matter	HIT	1711	1288					
68	46								

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 173

CRUISE LEG—From Hamam

To Palisades

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	CORE	1642	1730	1290	1290	26° 8' 17" N	42° 22' E	101	180" ORIENTED, 20 SHOTS
APR	HOOD								
68	CAMERA								
	# 59								
20	BOTTOM	1747	2032	1290	1290	26° 8' 17" N	42° 22' E	101	6 HITS, 17 SHOTS
APR	CAMERA								
68	# 90								
20	NETHER	1747	2032	1290	1290	26° 8' 17" N	42° 22' E	101	NO READER LAYER
APR	CAMERA								
68	# 71								
20	CORING	1747	2032	1290	1290	26° 8' 17" N	42° 22' E	101	E. D. 7 m/s
APR	METER								
68	# 76								
20	MILLIPORE	1605				26° 8' 17" N	42° 22' E	101	FILTERED FOUR LITERS OF SEA WATER WITH NO CLOGGING
APR	SAMPLE								
68	101								SRP
20	VERTICAL	1805				26° 8' 17" N	42° 22' E	101	SAMPLE CONTAINS SEVERAL FISH EGGS, MYXIDS, COREPODS AND CHAETOGNATHS.
APR	TOW		1814						
68	93								SRP
20	SURFACE	1824				26° 8' 17" N	42° 22' E	101	SAMPLE OF LARGER DIAPYCS THAN VERTICAL TOW CONTAINS A FEW OF SAME FISH EGGS AS IN VERTICAL SAMPLE, PLUS MANY LARVAE CRUSTACEA
APR	TOW		1834						
68	95								SRP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To BRISBANE

174

TIME ZONE - 12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20 APR 68	GC 50 Ra #6	1747	2032	1290	1290	26°8'	177°41'2"	101	Ra Profile Taken with 3 Niskin bottles. One on tripod, 5 fms, and 15 fms. One closing valve broke just before lowering causing removal of bottle.
	GRAB	1641	1750	21290		26°8'	177°41'2"	101	3 PR IN MVD; 2 ON FILM AT HIT. WT & PRESS OK. (ORD MEAS.)
21 APR 68	SONOBUOY # 52	1205	1345	2335 fms.		26°02.5'	176°54.0'E		FEL TAPPING DIRECT "A" 4 SECONDS DELAY "B" RECORDER CHAIN = 2 FAST TRAVEL; SOUTH FIJI BASIN - SEE FOR P.T. TAKEN HERE.
21 APR 68	CORE 104	1619	1800	2308	2302	26°03.8'	176°42'2"E	102	PENETRATION: 190° S cm. TOTAL LENGTH: 864 cm. TRUE LENGTH 171 cm. CLAY + ASH RICH CLAY, PREDOMINATELY MODERATE YELLOWISH BROWN + GRAYISH BROWN; GENERALLY STRUCTURE- LESS + MODERATELY TO WELL COMPACTED. VERY HARD LAYER BETWEEN 13 + 19 cm, SIDE OF ISOLATED HILL, REGION OTHERWISE FLAT
21 APR 68	GRAB SAMPLE 98	DROP	1848	2340		26°03.8'	176°42'2"E	102	FOUR FLOATS; 132 LBS BALLAST. SAMPLE CONSISTS OF 221 LB OF MODERATE YELLOWISH BROWN TO BROWNISH BLACK, SUB-ANGULAR TO ROUNDED GRANULES + PEBBLES (2mm to 2.5cm in diameter) of PUMICE.
21 APR 68	MILLIPORE SAMPLE 102	1406				26°03.2'	176°40'7"E	102	FILTERED 4 LITERS - NO CLOGGING OF FILTER
21 APR 68	VERTICAL TOW 94	1807				26°03.8'	176°42'2"E	102	SAMPLE CONTAINS A FEW FISH EGGS, SOME MYSID CRUSTACEA, AND MANY COPEPODS
21 APR 68	SURFACE TOW 96	1823	1839			26°03.8'	176°42'2"E	102	SAMPLE OF EXTREMELY LARGE BIOMASS - CONTAINS SYMPHYPTERES, JELLYFISH MEDUSAE, LIVE COLORED COPEPODS, MANY FISH EGG, EUPHRAEIDS, AND CHAETOGNATHS

SRP

SRP

SRP


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANK

175

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
	IGRAD	1620	1800	2319	2305	21°03'28"N	171°29'28"E	102	1 PRIM MUD; NONE ON FIRM AT HT. INT 2 PAGES TOTALS
	5AA	HIT	1658		M HIT				OK (COTD APT MEAS.
21	CORE	1939	2301	2304	2345	21°03'28"N	171°29'28"E	102	PENETRATION 430±10cm TOTAL LENGTH 288cm TRUE LENGTH 284cm
APR	105	2204	HIT	2343					CLAY + ASH-RICH CLAY, GRAYISH BROWN; HOMOGENEOUS
68									EXCEPT FOR LAYERS, VERY RICH IN GLASS SHARDS,
									PALE ORANGE IN COLOR + OCCURRING BETWEEN 54167cm
									AND 223±229cm VERY NEAR ISOLATED HILL IN FLAT AREA.
21	JET	2350				21°03'28"N	171°25'E	102.1	EXCELLENT SAMPLE - CONTAINS MANY FISH EGGS;
APR	NET		0021				to.		ONE SMALL FISH, MANY EUPHRAIDIDS, COPEPOD-
68	TOW								AND OTHER PLANKTONIC ORGANISMS
	49					21°03'33"N	171°28'28"E		
									SRP.
21	CORE					21°03'28"N		102	270° ORIENTATION, 43 SHOTS
APR	HEAD					21°03'28"N	171°29'28"E		
68	CAMERA								
	#40								
	(CORE #104)								
21	CORE					21°03'28"N	171°22'E	102	20° ORIENTATION, 45 SHOTS
APR	HEAD								
68	CAMERA								
	#41								
	(CORE #105)								
21	BOTTOM	1753	2057	2319	2365	21°03'28"N	171°22'E	102	4 HITS, 24 SHOTS
APR	CAMERA								
68	#91								
21	N-DUAL	1753	2057	2319	2305	21°03'28"N	171°22'E	102	NO REMARKABLE TYPE
APR	SONAR								
68	#40								


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To Brisbane

176.

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
21 APR 66	CURRENT METAL # 77	1753	2051	2317	2305	26°03'8"N	176°22'2"E	102	N.E. @ 4.6 cm/s
22 APR 68	SET NET TOW 50	1234	1305			26°00'6"N	174°07'8"E	102.2	
31 APR 68	Portulaca Matter 47	1619	1800	2308	2302	26°03'8"N	176°22'2"E	102	Good Slide and Sample Taken 5 ft above Core Head.
22 APR 68	CORE 106	1435	1731	2477	2456	26°00'5"N	174°01'3"E	103	PENETRATION: 608 ± 10 cm TOTAL LENGTH: 507 cm TRUE LENGTH: 507 cm CLAY + ASH- RICH CLAY, PREDOMINATELY MODERATE BROWN (0-55, 65-190, 199-287 cm); VERY ASH-RICH CLAY, PALE YELLOWISH BROWN (55-65, 90-99 cm); CLAY OR MARL, VERY PALE ORANGE, HOMOGENEOUS, ABUNDANT COCCOLITHS ON SLICE, ~1500 ft RELIEF.
22 APR 68	GRAB SAMPLE 99	DROP UP RECOVER	1512 1700? ~1830	2470		26°00'5"N	174°01'3"E	103	FOUR FLOATS; 123 lbs BALLAST. SAMPLE CONSISTS OF LESS THAN 1 lb OF GRANULES + PEBBLES (3mm to 3cm in diameter) OF ANGULAR to SUB-ROUNDED PUMICE FRAGMENTS MODERATE TO DUSKY YELLOWISH BROWN ON MOIST SURFACE BUT FREQUENTLY COATED WITH A THIN (4mm) Mn COATING.
22 APR 68	CORE HEAD CAMERA # 42	1435	1731	2474	2456	26°00'5"N	174°01'3"E	103	30° ORIENTATION, 37 SHOTS
22 APR 68	BOTTOM CAMERA # 92	1406	1706	2474	2456	26°00'5"N	174°01'3"E	103	5 HITS, 8 SHOTS (MUCH TURBIDITY)


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

177

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STN	REMARKS
		Start	End	Start	End	Lat.	Long.		
22	NEPHEI-	1406	1706	2474	2456	26°00.5'S	174°01.3'E	103	NO READABLE LAYER
APR	METER								
68	# 81								
22	CURRENT	1406	1706	2474	2456	26°00.5'S	174°01.3'E	103	E. 2 5.2 cm/s
APR	METER								
68	# 78								
22	MILLIPORE	1346				26°00.5'S	174°01.3'E	103	FOUR LITERS OF SEA WATER FILTERED—
APR	SAMPLE								FILTER NOT CLOGGED
68	103								SRP
22	VERTICAL	1443				26°00.5'S	174°01.3'E	103	SAMPLE CONTAINS SEVERAL OF THE BLUE
APR	TOW		1451						COLORRED COPEPODS PRESENT IN FEW PREVIOUS TOW;
68	95								CHAETOGNATHS; SIPHONOPHORES; MYXIDS; AND
									A FEW DIATOMS
									SRP
22	SURFACE	1459				26°00.5'S	174°01.3'E	103	SAMPLE SLIGHTLY LARGER THAN VERT
APR	TOW		1515						TOW THIS STATION - CONTENTS
68	97								ROUGHLY SIMILAR
									SRP
22	TORAD	1435	1731	2474		26°00.5'S	174°01.3'E	103	2 PR IN MUD; 2 ON FIRM. WT 2 PRESS TRACES OK;
APR	54	HT	1514	HT	2481				TEMP INVERSION. COAD MEAS
68									PL
22	GC 51	1435	1731	2474	2456	26°00.5'S	174°01.3'E	103	Four water barrels collected at 100 fms for
APR	INS								Th-Ra sample
68	# 8								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG-From Honolulu To BRISBANE

178

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23	JET	1220				21°00'N	170°31'E	1031	SMALL SIZE SAMPLE
APR	NET		1253						LARVAL CRUSTACEA WITH ITS EYE AT THE END
68	TOW					26°01'N	170°31'E		NO SHORT, STUPID EYE STALKS
	51								SRP
23	CORE	2041	2201	1663	1663	26°00'N	169°11'S	104	PENETRATION 633210 CM TOTAL LENGTH: 552 CM TRUE LENGTH: 552 CM
APR	107	2111	HIT	1665					FORAMINIFERAL MARI, PALE YELLOWISH BROWN TO PALE
68									ORANGE, GENERALLY HOMOGENEOUS, MODERATELY COMPACTED, CARBONATE
									CONTENT LOW TO MODERATE, COLLOIDAL IN LOWER THIRD (0-50%);
									VERY ASH BROWN CLAY, PALE YELLOWISH BROWN GENTLY UNDULATING.
23	GRAB	DROP	2010	1640		26°00'N	169°11'S	104	FOUR FLOATS; 122 106 BALLAST EMPTY
APR	SAMPLE	UP	2115						
68	100	RECOVER	2310						
23	MISPORE	2000				26°00'N	169°11'S	104	FILTERED 4 LITERS - NO CLOGGING
APR	SAMPLE								
68	104								
23	VERTICAL	2024				26°00'N	169°11'S	104	LARGE SAMPLE - ALSO CONTAINS SMALL
APR	TOW		2033						FISH LARVAE
68	96								SRP
23	SURFACE	2046				26°00'N	169°11'S	104	LARGER THAN VERT. SAMPLE - CONTAINS A LARGE
APR	TOW		2101						SPHONOPHORE AND ANOTHER LARVAL FISH OF A
68	98								DIFFERENT SPECIES FROM ONE CAUGHT IN
									VERT. TOW
									SRP
	GRAB	2041	2201	1652		26°00'N	169°11'S	104	2 PR IN MUD; ONE ON FIRM AT 110 WT 2 12550 GR
	55	Hit	2111	Hit	1655				CONTAINS

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

179

TIME ZONE -12

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23	Bottom	2041	2301	1663	1663	26°00'N	169°45'W	104	Screw on Flag which holds slide slipped off therefore no trace on slide was made. The sample was discarded. Mechanism was repaired for further use.
APR	Matter	Tip	?						
68	48A								
24	GC 52	1100	1300			25°59'N	166°52'E	104	350 Gal. surface water collected in Two Tanks for Th-Ro sample
APR	SW 9-								
68	32					25°59'N	166°28'S		
24	THRAD	1653	1825	1743		26°02'N	165°48'S	105	2 PR IN MUD, 2 ON FIRM AN INT. AT 2 PRESS OK. (CONSIDERING MUD) CONDITIONS ABOVE IN MUD.
APR	56	1733		1741					
68									
24	Bottom	2041	2201	1663	1663	26°00'N	169°45'W	104	110° TO STRINGS; 13 SLITS
APR	Head								
68	Camera								
	# 43								
24	Bottom	2109	2310	1663	1663	26°00'N	169°45'W	104	5 HITS, 35 SLITS
APR	Camera								
68	# 93								
23	Normal	2009	2310	1663	1663	26°00'N	169°45'W	104	NO REMARKS W/PR
APR	Camera								
68	# 82								
23	Current	2009	2310	1663	1663	26°00'N	169°45'W	104	N. W. 10.8 cm/sec.
APR	Matter								
	# 79								

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

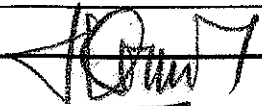
CRUISE N° XII

CRUISE LEG From HONOLULU To BRISBANE

180

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24 APR 68	VERTICAL TOW 97	1638	1647			26°02'N	165°48'W	105	SAMPLE CONTAINS ALL USUAL PLANKTONIC ORGANISMS AND SOME PHYTOPLANKTON AS WELL
									SRP
24 APR 68	SURFACE TOW 99	1638	1711			26°02'N	165°48'W	105	MODERATE SIZE SAMPLE - SIPHONOPHORES, CHAETOGNATHS, APPENDICULARIA, DOLIOLIDS COPEPODS ALL PRESENT. SAMPLE LARGER THAN VERT.
									SRP
24 APR 68	MULLIPORE SAMPLE 105					26°02'N	165°48'W	105	
24 APR 68	CORE 108	1659	1825	1780	1780	26°02'N	165°48'W	105	PENETRATION: 494.21cm TOTAL LENGTH: 485cm TRUE LENGTH: 461cm FORAMINIFERAL MARL, GENERALLY PALE YELLOWISH BROWN (0-240cm); MARL, GENERALLY VERY PALE ORANGE (240-361+ 361-461cm); VERY ASH-RICH CLAY, PALE YELLOWISH BROWN (361-366cm). COCCOLITHS ABUNDANT. GENTLE SLOPE.
24 APR 68	GRAB SAMPLE 101	DROP UP RECOVER	1745 1904 1936	1792		26°02'N	165°48'W	105	FOUR FLOATS 122 lbs BALLAST EMPTY
24 APR 68	CORE HEAD CAMERA #44	1659	1825	1780	1780	26°02'N	165°48'W	105	200° TO SPRING : 23 SHOTS
24 APR 68	Bottom Camera #94	1819	1907	1780	1780	26°02'N	165°48'W	105	5 HITS 16 SHOTS



Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From

Honolulu

To

BRISBANE

181.

TIME ZONE

-11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG SYN	REMARKS
		Start	End	Start	End	Lat.	Long.		
24	NEPHEL-	1619	1707	1780	1780	16°02'S	165°48'E	105	NO READABLE LAYER
APR	OMETER								
66	#83								
24	CURRENT	1619	1707	1780	1780	16°02'S	165°48'E	105	N.W. 106 cm/sec.
APR	MOTOR								
66	#83								
24	Particulate	1659	1825	1780	1780	16°02'S	168°48'E	105	Sample taken 50 Fms from the bottom
APR	Mottler			Trp	1730				at 1730 Fms. Good Slide
68	#48								
25	JET	1251				25°57'8"	162°24'56"	100.1	150 ft. WIRE OUT — MODERATE SIZE
APR	NET		1323			to			SAMPLE — BEYOND USUAL PLANKTON, SAMPLE
68	TOW					25°57'58"	162°5'SE.		CONTAINS A FISH FRY OF A SPECIES CAUGHT
	52								BEFORE.
									SRP
25	SONOBOOY	1447	1613	703 HR.		25°57'2"	162°12'E		EEL TRIPPING DIRECT A and B; "B" 5 SECONDS REVOLUTION FAST TRAVERSE
APR	#								RECOVERING CABLE #2
68	53								
25	JET	2153				25°54'	160°35'E	105.2	MUCH BIOLUMINESCENCE IN WATER TONIGHT —
APR	NET		21521			to			100 FT WIRE OUT — OBTAINED ONE OF LARGEST
68	TOW					25°54'	160°36'E		SAMPLES (BIOMASS) THIS LEG — ALL MAJOR PHYLA
	53								REPRESENTED INCLUDING ONE 2.5 CM.
									EUPHASID.
									SRP
26	CORE	1450	1710	1572	1567	25°53'3"	157°52'E	106	PENETRATION: 860 ± 5 cm. TOTAL LENGTH: 879 cm. TRUE LENGTH: 2680 cm.
APR	109	1537	HIT	1567					FORAMINIFERAL MARL RANGING FROM PALE YELLOWISH BROWN
68									TO VERY PALE ORANGE, PINKISH GRAY & VERY LIGHT GRAY.
									Coccoliths abundant.
									RICH IN GLASS SHARDS 545-645 μm. SMALL HILLS, 5 to 50 cm.

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

TIME ZONE

Chief Scientist

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From Honolulu To BRISBANE

183

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG FMS	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	CORE	1452	1710	1579	1567	25°53'39"	157°52'E	106	340° TO SPRING; 12 SHOTS
APR	HEAD								
68	CAMERA								
	#45								
26	BOTTOM	1345	1638	1579	1567	25°53'39"	157°52'E	106	6 HITS, 25 SHOTS
APR	CAMERA								
68	#75								
26	NOONEL	1345	1638	1579	1567	25°53'39"	157°52'E	106	NO READABLE WATER
APR	CAMERA								
68	#34								
26	CURRENT	1345	1638	1579	1567	25°53'39"	157°52'E	106	S.E. 62 CM/SEC.
APR	METER								
68	#81								
26	SONDEUR	2245	2345	2422		25°52'S	156°48'E		FEL TRIPPING REEVE (U. A 1 DIPPED A 4 SEC. B DELAY FAST TRAVERSE (USIA TWO SHOTS 516-577) JK
APR	#54		0213						
68	#4								
27	CORE	1316	1433	~880	~1100	26°8'	157°54'E	107	PENETRATION: 250± SCm TOTAL LENGTH: 0± CM CUTTING EDGE SCREWS SHEARED OFF. CUTTING EDGE, CORE CATCHER AND CORE LOST. SEDIMENT SCRAPED FROM SLOPE, SIDE OF 1500m DEEP MOON I. OUTSIDE OF BOTTOM OF PIPE SENT TO BURCKLE, SAITO+HAYS.
APR	110A	1359	HIT	~1040					
68									
27	GRAB	DROP	1339	820		26°8'	157°54'E	107	FOUR FLOATS. 122 LBS BALLAST
APR	SAMPLE	UP	1438						EMPTY
68	102	RECOVER	1600						
27	ROCK	1537	1700			26°8'	157°54'E	107	EMPTY
APR	DREDGE	ON BOTTOM	ON BOTTOM						
68	2A	1613	1831	~1240	~1080				

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° XII

CRUISE LEG—From HONOLULU To BRISBANE

184

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27 APR 68	MILLIPORE SAMPLE 107	1250				26°08'	154°51'E	107	FILTERED 4 LITERS OF SEA WATER—EXPERIENCE NO CLOGGING OF FILTER
									SRP
27 APR 68	VERTICAL TOW 99A					26°08'	154°51'E	107	NET LOST
									SRP
27 APR 68	SURFACE TOW 101	1331	1346			26°8'	154°51'E	107	LARGE SIZE SAMPLE—CONTAINS LARGE NUMBER OF CHAETOGNATHS, MANY COPEPODS, SOME SMALL MYSIDS
									SRP
27 APR 68	TIRAD TRIPOD WT 12	1300 411	1512 1338	750		26°8'	154°51'E	107	Film OK, WT & PRESS OK.
27 APR 68	CORE HEAD CAMERA #46	1316	1433	880	1100	26°8'	154°51'E	107	20° ORIENTATION TO STRING; 12 SHOTS
27 APR 68	BOTTOM CAMERA #96	1255	1512	880	1100	26°8'	154°51'E	107	6 HITS, 19 SHOTS SHOW LARGE ROCKS IN SOME HITS PLAIN MUD IN OTHERS
27 APR 68	NEPHELE- OMETER #95	1255	1512	880	1100	26°8'	154°51'E	107	NO READABLE LAYER

[Signature]

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 121

CRUISE LEG—From Honolulu To SPRING

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		EOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27	CURRENT	1255	1512	800	1100	26°00'S	150°31'E	107	S.W. 10 3.6 cm/sec.
27	METER								
66	#12								
27	Particulate	1316	1433	850	1100	26°00'S	151°54'E	107	Barrel failed 1. Trip.
27	Water	1412	1551	900					
66	498								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

185

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG STA	REMARKS
		Start	End	Start	End	Lat.	Long.		
2	CORE	1510	1613	908	1095	25-52.9	154-51.0	108	PENETRATION 27.5m. TOTAL LENGTH 15.5m. TRUE LENGTH 15.5m.
MAY	110	1539	HIT	990					CONSISTS PREDOMINATELY OF FRAGMENTS OF A MANCANEER
68									CRUST OR MUD-LESS FRAGMENTS ARE ANGULAR, GRAYISH-BLACK,
									FREQUENTLY LAMINATED + RANGE FROM VERY FINE SAND TO
									(RUGGED MOUNTAINOUS REGION, NEARLY 2000 M. RELIEF ABOVE PLAIN).
									SMALL CORALS, ELEGANT + IRONIC SAND ARE ABUNDANT.
2	GRAB	DEEP	1543	990				108	FOUR FLOATS. 177 lbs. BALLAST
MAY	SAMPLE	UP	1636			25-52.9	154-51.0		EMPTY
68	103	RECOVER	1640						
2	ROCK	1735	2044			26-01.4	154-52.3	108	ROCK DREDGE CONTAINS TWO VERY IRREGULAR CORAL
MAY	DREDGE	ON BOTTOM	ON BOTTOM						FRAGMENTS (10x12x4 + 1x4x3) WHICH ARE COATED WITH
68	AND	1937	2013	1316	1039				MO, A WELL ROUNDED PUFFIN CORAL (1x9x7), + WHAT APPEARS
	PEBBLE								TO BE A CORAL OF ALTERED VOLCANIC MATERIAL (1x4x3).
	DREDGE								A BRACHYPOD
2	PARTIAL	1510	1613	912	1045	25-58.7	154-59	108	PEBBLE DREDGE CONTAINS SMALL CORAL FRAGMENTS + CAST
MAY	M.H. 2	1531	HIT	990					BULLOCK Failed 1. Trip even after haul hit.
68	49C								Intertidal trap spring being replaced.
2	CONRAD	1510	1613	990		25-58.9	154-59	108	R.M.T.
MAY	WT-13	HIT	1531	990					WT 2 PASSIRALOT OR
2	MUSKIE	1420				25-59	154-59	108	BOCC.
MAY	SAMPLE								FILT. 2-2 4 LITRE NO. 2000
68	108								SRP
2	ECTICAL	1449				25-59	154-59	108	
MAY	TOW		1458						
68	99								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

186.

TIME ZONE -10.

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
2 MAY 68	SURFACE	1524				25° 58' 15" S	154° 59' 00" E	108	SAMPLE SLIGHTLY LARGER THAN VERT. SAMPLE CONTAINS USUAL FAUNAL: COPEPODS, (MANTO GASTROPODS, ETC.) - ALSO A SMALL JELLYFISH MEDUSAE WITH CELL DIAMETER OF ~1 CM.
2 MAY 68	Core	1423	1642	900	1000	25° 58' 9" S	154° 59' 00" E	108	Compass out of focus, developing very poor
2 MAY 68	Camera #47A	1510	1613	908	1045	25° 58' 9" S	154° 59' 00" E	108	Definition of orientation =
2 MAY 68	Bottom Camera #97A	1539	1613	910	1045	25° 58' 9" S	154° 59' 00" E	108	I switched the start switch in the wrong direction (FA).
2 MAY 68	Nephel.	1423	1642	900	1000	25° 58' 9" S	154° 59' 00" E	108	No Nepheloid Layer present. Very poor developing.
2 MAY 68	Currents	1423	1642	900	1000	25° 58' 9" S	154° 59' 00" E	108	5.3 cm/sec. East.
2 MAY 68	Meter	1423	1642	900	1000	25° 58' 9" S	154° 59' 00" E	108	
2 MAY 68	GC 54	0815	0945	30	48	25° 28' 15" S	153° 55' 00" E	109	250 Gals surface water collected in two tanks for Th-Ra sample
2 MAY 68	SW 5					25° 25' 15" S	153° 35' 00" E		
2 MAY 68	33					25° 25' 15" S	153° 35' 00" E		
3 MAY 68	CORE	1944	2033	640	648	25° 09' 2" S	155° 00' 8" E	109	PENETRATION ~30 cm TOTAL LENGTH ~30 cm TRUE LENGTH ~30 cm CONSISTS PREDOMINATELY OF WHITE TO PINK YELLOWISH BROWN CORAL FRAGMENTS FRAGMENTS ARE COMMON PLATE BRIDGES, GASTROPODS, ECTOPODS, ETC. MISC. MEDUSAE ARE RARE. RUGGED MOUNTAINOUS REGION, 2150 FATHOMS

Chief Scientist

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	GRAB	DROP	2039			25-09.2	155-00.5	109	FOUR FLOATS. 123 lbs BALLAST CONSISTS OF #1 W.
MAY	SAMPLE	UP	2103						OF FLATISH FRAGMENTS OF POORLY CEMENTED MASSES
68	104	RECOVER	2120						OF FORAMS, CORAL FRAGMENTS, SHELL FRAGMENTS (INCLUDE
									PELECYPODS, GASTROPODS, PTEROPODS + BRACHIOPODS). FRAG-
									MENTS COATED WITH THIN FILM OF MANGANESE
3/4	ROCK	2247	0440			25-10.0	155-01.0	109	ROCK DREDGE + ATTACHED PEBBLE DREDGE EMPTY
MAY	DREDGE	ON BOTTOM							A FEW MANGANESE GRAINS SCRAPED FROM DREDGE
68	3A AND	2322	0052	1506	11330				FRAME, PLACED IN SNAP-TOP VIAL + INCLUDED WITH
	PEBBLE	0125	0143	1100	11150				BOTTOM SAMPLES TO BE SENT TO HAYS 2501
	DREDGE	0212	0415	1155	754				
3	MULLIPORT	1823				25.24	155.0E	109	FILTERED 4 LITERS - NO CLINGING -
MAY	SAMPLE					25-09.2	155-00.5		SAMPLE SMALLER THAN PREVIOUS
68	109								
3	VERTICAL	1927				25.24	155.0E	109	MODERATE SIZE SAMPLE - CONTAINS KIBICOL
MAY	TOW		1936			25-09.2	155-00.5		NUMBER OF GRAINS PER BIOMASS THAN
68	100								MOST OTHER SAMPLES
3	SURFACE	1958				25.24	155.0E	109	VERY LARGE SAMPLE - 100% STECKATIS
MAY	TOW		2015			25-09.2	155-00.5		RECENT INCLUDE PRADUS, CHARTOGATHIS
68	103								SIPHONOPHORE, GASTROPODS - VERTICILLATE
									ALSO PRESENT IN FORM OF ONE SIPHONOPHORE
									LANTERN FISH - 100% KIBICOL
3	PORTLAND	1944	2033	2646	645	25.24	155.0E	109	Good slide and sample
M	M.H. 1	2057	N.T	640		25-09.2	155-00.5		
A	47								
Y									
190									R.M.T.
3	TORAP	1949				25.24	155.0E	109	W. OF SCALE.
M	WT 14A					25-09.2	155-00.5		
68									

[Signature]

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE N° 12
CRUISE LEG-2 From Brisbane To Tokyo

TIME ZONE 10

Date	STATION and N°	TIME		SOUNDING		POSITION		STN LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3 May 68	CORE	1940	2033	~640	648	25-09.2	155-00.5	109	30 usable photos, ORIENTATION OF STARS ON CORE = 105° J.P.
	Camera	2007	HIT	HIT	640				
	* 47								
3 May 68	BOTTOM	1845	2124	~640	648	25-09.2	155-00.5	109	20 usable photos, large rocks and sediments. J.P.
	Camera	HIT	1958	HIT	692				
	on Tripod								
	# 97								
3 May 68	Nephel.	1845	2124	~640	648	25-09.2	155-00.5	109	No Nepheloid Layer present Housing developed slight Leak, causing end of film to be wet. J.P.
	on Tripod	HIT	1958	HIT	692				
	# 87								
3 May 68	CURRENT	1845	2124	~640	648	25-09.2	155-00.5	109	Film jammed After Test shots. J.P.
	Meter	HIT	1958	HIT	692				
	on Tripod								
	# 84A								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From BRISBANE To TOKYO

189

TIME ZONE

-10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5 MAY 68	CORE 112	1025	1151	1378	1367	24.89	159.3E	110	PENETRATION: 82031000 TOTAL LENGTH 100' - 100' LENGTH - 100'
		1100	HIT	1374		24.500	159-16.8		TOP ONE OR TWO METERS OF CORE LOST - SEDIMENT SLID
									UP OF UPPER CORE PIPE AS IT WAS UNCOUPLED & LANDED
									FORAMINIFERAL CLAY LIGHT GRAY VERY LIGHT GRAY - BETWEEN
									LIGHT GRAY & PINKISH GRAY; FORAMINIFERAL SHELLY CORE 1057-1059
5 MAY 68	GRAB 105	DEEP	1048	1370		24.89	159.3E	110	FOUR FLOATS 123 lbs BALLAST EMPTY
	SAMPLE UP		1140			24.500	159-16.8		
	RECOVER		1330						
5 MAY 68	MILLPORE 110	0845				24.89	159.3E	110	FOUR LITERS OF SEA WATER FILTERED
	SAMPLE					24.500	159-16.8		WITH NO CHANGING OF FILTER
5 MAY 68	VERTICAL 101	0904				24.89	159.3E	110	MODERATE SIZE SAMPLE - CONTAINS SEVERAL
	TUB		0913			24.500	159-16.8		LARGE CAMPTONATHS - ALSO CORPUS
									PRON. AND A DOLLOID.
5 MAY 68	SURFACE 104	1034				24.89	159.3E	110	RIDGEMAN VERY LARGE - SEMI-ALPHALID, MANY
	TUB		1050			24.500	159-16.8		SHELLS OF CEPHALOPODS, CAMPTONATHS, PRON.
									ALL IN SAMPLE.
5 MAY 68	Anticorub 112	1025	1151	1378	1367	24.89	159.3E	110	Good slide and sample. Split in seam between
	ANTICORUB	1100	HIT	1374		24.500	159-16.8		well and top of barrel noticed being repaired
	50								with epoxy
	THRAD 58	10243	1151	1371		24.89	159.3E	110	2 PR. W. MWD. 2 ON TUB. IN PRESS. OK
		1100		1374		24.500	159-16.8		THIS INSECTS.

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

190

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	CORE	6954 1307		1330	1342	24-50.0	159-16.8	110	10 usable photos, 210 = ORIENTATION. A string of core
May	Camera	H		H.T	1342				
6's	# 48	1424	1526						
		1451	H.T						
									J.P.
5	Bottom	0954	1307	1330	1342	24-50.0	159-16.8	110	7.44 photos, sediment and possibly a bit of fish.
May	camera	H.T	1118	H.T	1432				
18	on Tripod								
	# 98								J.P.
5	Nephel.	0954	1307	1330	1342	24-50.0	159-16.8	110	No Nepheloid Layer, p.m. were cleaned before
May	on Tripod	H.T	1118	H.T	1432				film and reloaded during this time. No time
6's	# 88								for or possible time.
									J.P.
5	CURRENT	0954	1307	1330	1342	24-50.0	159-16.8	110	Motor was started
May	Motor	H.T	1118	H.T	1432				
6's	on Tripod								
	# 84B								J.P.
5	GC 55	1730	1915	660	900	24-52.5	159-56.7	110.1	350 Gals. Surface water collected in two
M	SWS					24-52.5	160-20.1E		tanks for Th-Ro Sample.
Q	34								
Y									
									R.M.T.
6	CORE	1424	1526	1330	1342	24-9 1/2	163.5E	111	PENETRATION 2002 CM. TOTAL LENGTH 835 CM. TRUE LENGTH 700 CM.
MAY	113	1451	H.T	1314		24-53.0	163-31.0		ABOUT 35 CM. OF CORE LOST AT 193 CM. DURING HANDLING OF
6's									CORE PIPES FORAMINIFERAL CLAY ROZE, PALE ORANGE (1-10).
									FORAMINIFERAL CLAY FROM BETWEEN PALE ORANGE + VERY PALE
									ORANGE TO PINKISH GRAY. GRADUAL SLOPE WITH SMALL HILLS.
6	GRAB	DROP	1456	1314		24-9 1/2	163.5E	111	FOUR FLOATS, 122 LBS BALLAST.
MAY	SAMPLE	UP	1604			24-53.0	163-31.0		EMPTY
6's	106	RECOVER	1632						

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Boston To Gokey

191

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
6						24.94	163.5E	III	
MAY 68	MILLIFORE SAMPLE III	1205				24-38	163-31.0		FILTERED 4 LTS. SEA WATER - NO CLUCCING - BUT HIGH CONCENTRATION OF NANNOPLANKTON. SPP
6	VERTICAL	1353				24.94	163.5E	III	
MAY 68	TOW 102		1403			24-38	163-31.0		MODERATE SIZE SAMPLE - CONTAINS A VERY LARGE NUMBER OF CHAETOGNATHS (ALL SIZES), A SMALL WHITE FISH LARVAE, SEVERAL PRADONS, SNIP, AN EEL LARVAE AND MANY COPEPODS AS USUAL. SPP
6	SURFACE	1431				24.94	163.5E	III	
MAY 68	TOW 105		1446			24-38.0	163-31.0		SAMPLE OF LARGE BODINSE - CONTAINS ALL USUAL PLANKTONIC ORGANISMS - COPEPOD, CHAETOGNATHS, PRADONS, ETC. ALSO SEVERAL TURBOIDS (EUSTACIA) SPP
6	TBRAD	1424	1526	1240		24.94	163.5E	III	
MAY 68	371	H.T. 1451		H.T. 1314		24-38.0	163-31.0		3 PROBLEM AND 2 ON FILM IN H.T. 1314 PROBLEM (LOW MOUNTS)
6	CORE	1424	1526	1330	1342	24-38.0	163-31.0	III	
MAY 68	CAMERA #49	H.T. 1451		H.T. 1314					20 usable photo, orientation of string on core = 185° J.P.
6	BOTTOM	1326	1652	1330		24-38.0	163-31.0	III	
MAY 68	CAMERA #79	H.T. 1522		H.T. 1500					13 usable photos, sediments and Mounds. J.P.
6	NEPHELOID					24-38.0	163-31.0	III	
MAY 68	89	H.T. 1522		H.T. 1500					No Nepheloid layer J.P.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

192

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
6 MAY 68	CURRENT METER # 047111 84.C	1326	1652	1350		24-46.0	170-26.2	111	Motor shorted, Loose wire
		HIT	1522	HIT	1500				
8 MAY 68	CORE 114	1627	1824	2130	2123	24-46.0	170-26.2	112	PENETRATION 510130cm. TOTAL LENGTH 578cm. TRUE LENGTH 420cm. FORAMINIFERAL CLAY, MODERATE YELLOWISH BROWN TO VERY DARK YELLOWISH BROWN (0-103, 314-400), FORAMINIFERAL CLAY GLOBE, VERY PALE ORANGE + YELLOWISH CLAY (103-314 + 314-410), FORAMINIFERAL PALE ORANGE (410-500) DISCHARGERS RARE NEAR BASE
		HIT	1710	2130					
8 MAY 68	TICRAD 60	1627	1824	2141		24-46.0	170-26.2	112	2 PR IN MID. 2 ON FILM AT HIT AT 2 PRESS OK. LONG METAS.
		HIT	1710	2130					
8 MAY 68	MILLIMETER SAMPLE 112	1525				24-46.0	170-26.2	112	FILTERED METAS - NO CLOGGING
8 MAY 68	VERTICAL TOW 103	1627	1824			24-46.0	170-26.2	112	MID-WATER SIZE SAMPLE - 2 CONTAIN. CHITONID LARVAE, TROCHOPORIC LARVAE, MOLLUSC LARVAE, COELOTELLA LARVAE
8 MAY 68	SURFACE TOW 106	1627	1824			24-46.0	170-26.2	112	SAMPLE LARGER THAN VERT. - VERY MANY OF THE TROCHOPORIC LARVAE AT SAME SPECIES AS IN VERT. SAMPLE. Also many COELOTELLA LARVAE and small MOLLUSCS
8 MAY 68	Particulate MATERIAL 51	1627	1824	2130	2123	24-46.0	170-26.2	112	Bottom photographed at depth less than 50m. This was probably due to the very rough bottom during station. Sample was from
		HIT	1710	HIT	2111				

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

193

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
8	CORE	1543	1624	2130	2123	24-46	170-262	112	Strobe didn't work, pulse wire came off
May	Camera	H.T.	1732	H.T.	2130				
68	#50A	1627	1824						
		H.T.	1710						J.P.
8	Bottom	1543	2020	2100	2123	24-46	170-262	112	4 small photos, sediment, trigger sight
May	Camera	H.T.	1832	H.T.	2234				
68	on Tripod								J.P.
	#100								
8	Nephel.	1543	2020	2100	2123	24-46	170-262	112	N. Nepheloid Layer present
May	on Tripod	H.T.	1832	H.T.	2234				
68	#90								J.P.
8	CURRENT	1543	2020	2100	2123	24-46	170-262	112	poor stat., possibly dragging, too variable
May	Metron	H.T.	1832	H.T.	2234				and steady dir., but contradictory, think
68	on Tripod								CURRENT N.W. > 2 mph by correlation with
	#84								H.T. 143 on K-100, must cloud drift with N.W.

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
 LAMONT GEOLOGICAL OBSERVATORY
 PALISADES

Research Vessel **ROBERT D. CONRAD**
 CRUISE N° 12
 CRUISE LEG 5 From BRISBANE To TOKYO.

194

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
9 MAY 68	MILLIPORE SAMPLE 113	1905				22-04.8	173-16.0	113	Filled 4 tubes with no clogging.
									SRP
9 MAY 68	VERTICAL SAMPLE 104	1935	1945			22-04.8	173-16.0	113	Moderate size sample, contains large size chaetognaths, euphrosines, rhyds, and a few of the Turquoise copepods captured in yesterday's samples.
									SRP
9 MAY 68	SURFACE SAMPLE 102	2017	2032			22-04.8	173-16.0	113	Sample of large biomass. contains a large number of the turquoise copepods found in vertical sample - also contains many chaetognaths, rhyds, and a few of the white crustacea larvae.
									SRP
9 MAY 68	CORE 115	1955	2147	1950	1032	22-04.8	173-16.0	113	PENETRATION? cm TOTAL LENGTH 365 cm TRUE LENGTH 365 cm. ASH, PALE YELLOWISH BROWN TO BETWEEN BROWNISH GRAY + MEDIUM DARK GRAY (0-40 cm) - VERY DARK YELLOWISH BROWN TO GRAYISH BLACK (40-365 cm). FORAMS ABUNDANT IN TOP METER. ORIGINAL TEXTURE DESTROYED BELOW 100 cm BY EXTRUSION.
9 MAY 68	CORE # 50B	1955	2147	1950	1032	22-04.8	173-16.0	113	Film didn't advance. too little film on spool for motor to activate.
									J.P.
9 MAY 68	BOTTOM SAMPLE 101	1900	2141	900	1110	22-04.8	173-16.0	113	Quarable photos, sediments, tracks, fossils, fossils.
									J.P.
9 MAY 68	Nephel. # 91	1900	2141	900	1110	22-04.8	173-16.0	113	N Nepheloid layer present.
									J.P.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Brisbane To Tokyo

195

TIME ZONE 11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
9	CURRENT	1900	2144	700	1000			113	POOR station, bottom photos of first H.T. shows dragging and final cloud
MAY 68	Mitt	H.T.	2036	H.T.	1035				drifting E.T. H.T. for N. NE. - Toward End of C.M. short
	85								film section points N.E. current > 2 cm/sec, probably direction N.E.
9 MAY 68	GC 56	1955	2147	~780	1022	22°04.8	173°16"	113	Four Benthic collected at 500 fms for
	INS. 10								TL-Ro sample. ~190 Gals. RMT
10	CORE	1925	2051	1675	1666	19-27.5	175-06.3	114	PENETRATION? TOTAL LENGTH 435cm. TRUE LENGTH 435cm.
MAY 68	116	2002	HIT	1676					ASH-RICH CLAY + ASH RICH FORAMINIFERAL CLAY, GENERALLY
									MODERATE YELLOWISH BROWN TO DARK YELLOWISH BROWN BUT
									LAYERS RICHER IN ASH (AS BETWEEN 042cm, 1147cm, 2043cm, +
									230-245cm) ARE SOMEWHAT DARKER. HILLY, SMOOTH RELIEF.
10	MILLIPORE	1812				19-27.5	175-06.3	114	FILTERED 4 LITERS - NO CLOGGING - MANY
MAY 68	SAMPLE								CONCENTRATION OF NAUPLANKTON ON FILTER
	114								
									SRP
10	VERTICAL	1913				19-27.5	175-06.3	114	LARGE SIZE SAMPLE - CONTAINS - 2cm L.
MAY 68	TOW		1918						LANTERN FISH, MANY MYXIDS, A 1.5 cm PRALIN,
	105								SIPHONOPHORES, CHAETOGNATHS, TON LARVAE,
									COPEPODS
									SRP
10	SURFACE	1942				19-27.5	175-06.3	114	SAMPLE LARGER THAN A. M. L. SAMPLE - CONTAINS
MAY 68	TOW		1957						1.5 cm LANTERN FISH, 2cm MYXIDS, MYXIDS,
	106								SAIPS, PTERODS, COPEPOD.
									SRP
10	Particulate	1925	2051	1675	1666	19-27.5	175-06.3	114	Bottom Pro. stopped due to sudden stopping
MAY 68	Mitt	2002	HIT	1676					of the watch. Sample discarded.
	52A								
									RMT
10	TORAD	1925	2051	1675		19-27.5	175-06.3	114	WT & PRESS OK.
MAY 68	WT-15	HIT	2002	HIT	1676				
	(2)								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
 LAMONT GEOLOGICAL OBSERVATORY
 PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

196

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	CORC	1925	2051	1675	1666	17°-05E		114	43 usable ft ^{phos} , concentration of
May	Cameroon	H.T	2002	H.T	1676	17-11			STATION ON CORC = 000
68	# 50								J.P.
10	B. H. M.	1830	2200	172		17-25	17-65	114	11 usable phos. sediment. records
May	Cameroon	H.T	2008	H.T	1711				
68	on Tapped								J.P.
	# 102								
10	N. H. M.	1830	2200	1750		17-25	17-65	114	No Nepheloid Layer present
May	on Tapped	H.T	2008	H.T	1711				
68	# 92								J.P.
10	Cameroon	1830	2200	1750		17-25	17-65	114	poor station, second hit shows concentration
May	M. H. M.	H.T	2008	H.T	1711				North 68 km from same direction. Found in
68	on Tapped								3 bit of C.H. Mud cloud in K-102 station
	# 86								drift also toward N. J.P.

[Signature]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO.

197

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
9 MAY 68	TOREAD WT-14	MISS 11	2147 2026	937 11	1004	24°09'N	173°16'E	113	WT & Press Cr
11 MAY 68	GC 57 S.W.S 35	1415	1600	1180	1460	16-41.0	174-26	114.1	350 Gals Surface water collected in two tanks For Th-Ra Sample.
									R.M.T.
11 MAY 68	CORE # 117	1639	1807	1455	1432	16-24.5	174-30	115	PENETRATION: 620 ± 10. TOTAL LENGTH 452cm. TRUE LENGTH 452cm. FERRUGINOUS CLAY, MODERATE YELLOWISH BROWN TO DARK YELLOWISH BROWN. COARSE FRACTION REPRESENTS ~30% ASH IS ABUNDANT BETWEEN APPROXIMATELY 404-423, 410-435, 470-470, 500-535, 540-570 AND 413-416. HILLY, ± 120 ft RELIEF
11 MAY 68	Particulate matter 52	1637	1807	1455	1432	16-24.5	174-30	115	Good Sample of Shale
									R.M.T.
11 MAY 68	NUMEROUS SAMPLE 115	1600				16-24.5	174-30	115	Found 4 meters - 11.5 cm. of FINE
11 MAY 68	VERTICAL Tow 106A					16-24.5	174-30	115	NET LOST
11 MAY 68	VERTICAL Tow 109	1153	1708			16-24.5	174-30	115	1500 GALS - 11.5 cm. of FINE, 1.5 m. TOWED, 1.5 m. TOWED, AND T. V. 1.5 m. TOWED.

[Signature]
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG-From BRISBANE To TOKYO

198

TIME ZONE - 11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
11 May 68	CORE Kamela # 51A					16-24 S 174-30 W	115	panice wire from camera to stake cut off No pictures. J.P.	
11 May 68	B.T.H. Kamela on tripod # 103	1550 H.t	1824 1702	1460 H.t	1432 1525	16-24 S 174-30 W	115	26 small photos. Front, side, rear and top photo taken Typed J.P.	
11 May 68	Nephel. on tripod # 93	1550 H.t	1824 1702	1460 H.t	1432 1525	16-24 S 174-30 W	115	N. Nepheloid Layer present J.P.	
11 May 68	CURRENT Mata on tripod # 87	1550 H.t	1824 1702	1460 H.t	1432 1525	16-24 S 174-30 W	115	SOUTH; 8.5 cm/sec J.P.	

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 211

CRUISE LEG—From BRISBANE To TOKYO

199

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
11 MAY 68	GRAB	DROP	1515	1460		16-24.5	174-30.0E	115	FOUR FLOATS 72# BALLAST. EMPTY
	SAMPLE	UP	1826						
	107	RECOVER	1840						
11 MAY 68	TGRAB	1639	1807	1460		16-24.5	174-30.0E	115	2 PC IN MID; 2 ON FILM AT HIT. WT 2. PRESS OK
	61	HIT	1713	HIT	1463				CORR WNAS.
12 MAY 68	JET	1249				13-12.6	174-22.4E	115.1	
	NET		1319			13-07.5	174-20.2E		
	TOW								
	54								
12 MAY 68	MILLIPORE	1442				12-58.8	174-00.9E	116	FILTERED 4 LITERS. LIT. NO LIT. COULD BE FILTERED LOW CONCENTRATION OF MATERIALS.
	SAMPLE								
	116								
12 MAY 68	VERTICAL	1530				12-58.8	174-00.9E	116	Sample 2. Small amount of material. A. Low vertical (upward) AMPHIBOL, CHLORITIC, CORN, etc. 175.125
	TOW		1539						
	106								
12 MAY 68	SURFACE	1607				12-58.8	174-00.9E	116	A. Small amount of material. A. Low vertical (upward) AMPHIBOL, CHLORITIC, CORN, etc. 175.125
	TOW		1623						
	110								
12 MAY 68	CONE	1741	1741	1710	1767	12-58.8	174-00.9E	116	31 mobile photo. String orientation
	Camera	HIT	1641	1720	HIT				
	51								


Chief Scientist

200

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	Bottom	1448	1802	1731	1763	2-5888	174-00.9E		21 available photos, sediments, Mounds, Trails
MAY	Camera	HIT	1619						
68	Tripod								
	# 104								
12	Current	1448	1802	1731	1763	2-5888	174-00.9E	116	50074 West, 22 cm/sec
MAY	Meter	HIT	1619						
68	on Tripod								
	# 88								
12	Nephtelium	1448	1802	1731	1763	2-5888	174-00.9E	116	NO Nephtelium Layer present
MAY	on Tripod	HIT	1619						
68	# 94								
12	CORE	1549	1741	1728	1763	2-5888	174-00.9E	116	PENETRATION 116312cm TOTAL LENGTH ~1080cm TRUE LENGTH ~1080cm
MAY	118	1641	HIT	1730					FORAMINIFERAL CLAY COLE + FORAMINIFERAL CLAY BETWEEN
68									PALE YELLOWISH BROWN + MODERATE YELLOWISH BROWN STRUCTURE
									LESS EXCEPT FOR THIN LAYERS OF FORAMINIFERAL COLE (235-238)
									235-238, 332-333 (531-553) 441-446cm. ACH. DARK GRAY (COLE 441-446cm)
12	TRAD	1541	1741	1727		2-5888	174-00.9E	116	3PRIM MWD AT HIT - 3 on RUM. W. & P. 35 OR.
MAY	62	HIT	1641	HIT	1730				LONG WEARS
68									
12	GC	1541	1741	1728	1763	2-5888	174-00.9E	116	Two water barrels collected at 9:00 and
MAY	58	1641	HIT						47 PM. For First half of Th. R. sample
68	1/2								
13	CORE	1300	1529	1650	1679	10-0287	173-17.0E	117	PENETRATION 11715 TOTAL LENGTH 1059 TRUE LENGTH ?
MAY	119	1405	HIT	1650					CLAY, MODERATE BROWN TO BETWEEN MODERATE BROWN +
68									DUSKY BROWN WITH LAYERS OF FORAMINIFERAL COLE VERY
									PALE ORANGE + MODERATE YELLOWISH BROWN (233-205, 331-347, 404-506 & 528-530cm) VERY GENTLY UNDULATING, 5-40cm RELIEF

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

201

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
13	VERTICAL	1215				10-02.84	173-17.0E	117	SAMPLE OF SMALL BIOMASS - CONTAINS A SMALL
MAY	TOW		1244						FOUR LARVAE, MYIDDS, CHLITOCARIDS, COPEPODS, AND
68	107								A 4 CM LONG JELLYFISH
									SRP
13	SURFACE	1246				10-02.84	173-17.0E	117	MODERATE SIZE SAMPLER - MUCH PHYTOPLANKTON,
MAY	TOW		1303						MANY COPEPODS AND CHLITOCARIDS, AND A FEW
68	111								MYSTICUS PRESENT.
									SRP
13	MULTI-PUR	1638				10-02.84	173-17.0E	117	FOUR LITERS OF SEA WATER FILTERED FROM NO
MAY	SAMPLE								CIRCUMFERENCE OF FILTER - SMALL CONCENTRATION
68	117								OF NANOPLANKTON
									SRP
13	GRAB	DEEP	1515	2680		10-02.84	173-17.0E	117	FOUR FLOATS, 12 LB BALLAST LOST
MAY	SAMPLE								
68	108A								
13	TREAD	1258	1524	2679		10-02.84	173-17.0E	117	300 A.M.D., 2 ON TREAD AT 4.00 - CORRECTIONS,
MAY	63	1405		2680					PRESSURE WT OF SCALE
68									
13	GC 56	1300	1534	2680	2679	10-02.84	173-17.0E	117	TWO WATER SAMPLES COLLECTED AT 500 AND 400
MAY	DPS	1405							AND FOR SECOND HALF OF THE DAY SAMPLE
68	H 2 1/2								
									R.M.T.
13	CORE	1700	1724	2679	2679	10-02.84	173-17.0E	117	30 usable photos orientation of core =
MAY	CAMERA	1705		2679					
68	# 52								NO 15°

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From

BRISBANE

To

TOKYO

202

TIME ZONE - 11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
MAY 13	BOTTOM					10-02.8	173-17.0	117	Locally photos, hydro wires, sediments, and pebbles.
MAY 68	TRIPOD								
	# 105								
						10-02.8	173-17.0		
MAY 13	NEPHELOM	18 30		650				117	No Nepheloid Layer present. The light is being scattered by the water and the bottom. The light is being scattered by the water and the bottom.
MAY 68	ON	18 30		650					
	TRIPOD.								
	# 95								
MAY 13	CURRENT	22 11 30		650		10-02.8	173-17.0	117	West, 3.4 cm/sec
MAY 68	METER HIT	22 11 30		650					
	TRIPOD.								
	# 89								
MAY 14	CORE	1556	1813	3745	3752	7-17.5	171-14.5	118	PENETRATION 83745 cm. TOTAL LENGTH 847 cm. TRUE LENGTH 847 cm. CLAY, MODERATE BROWN, HOMOGENEOUS EXCEPT FOR A LAYER BETWEEN 234+242 cm. OF A SLIGHTLY DIFFERENT COLOR, MODERATELY COMPACTED, CARBONATE CONTENT NIL, COARSE FRACTION REPRESENTS 51% GENTLY UNDULATING.
MAY 68	# 120	1652	HIT	3752					
MAY 14	Particulate	1556	1813	3745	3752	7-17.5	171-14.5	118	Barrel run at 2700 fms. of wire out when winch was stopped before making hit. Sample was run. Initial trip spring tightened.
MAY 68	Matter	1652	HIT	3752					
	53								
MAY 14	METER	1556				7-17.5	171-14.5	118	Penetration 83745 cm. NO CARBONATE. MODERATELY COMPACTED. CARBONATE CONTENT NIL. COARSE FRACTION REPRESENTS 51% GENTLY UNDULATING.
MAY 68	SAMPLE								
	118								
MAY 14	TRIP	1529				7-0.5	171-14.5	118	1.0 m. CHALCOGRAPHY, CO. 1000 fms. out. 1.0 m. CHALCOGRAPHY, CO. 1000 fms. out. 1.0 m. CHALCOGRAPHY, CO. 1000 fms. out.
MAY 68	TRIP								
	108								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

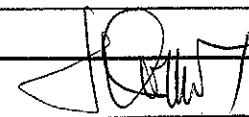
CRUISE N° 12

CRUISE LEG From BRISBANE To TOKYO

203

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14 MAY 68	SURFACE	1604				7-12.54	171-14.5E	118	CONTAINS SOME TYPES OF ORGANISMS AS VERTICAL TOW. EXCEPT THIS TOW IS OF LARGE BIOMASS.
	TOW		1619						
	11Z								
14 MAY 68	BOTTOM	1512	1933	2744	2752	7-12.5	171-14.5	118	3 usable photos, Lots of dragging, sediment
	CAMERA	Hit	1654	Hit	2836				
	on TRIP								
	# 106								D.P.
14 MAY 68	Nephel.	1512	1933	2744	2752	7-12.5	171-14.5	118	No Nepheloid Layer
	on	Hit	1654	Hit	2836				
	Tripod								
	# 96								D.P.
14 MAY 68	CURRENT	1512	1933	2744	2752	7-12.5	171-14.5	118	poor station, ~4.2 cm/sec South
	METER	Hit	1654	Hit	2836				
	on TRIP								
	# 90								D.P.
14 MAY 68	CORE	1956	1813	2744	2752	7-12.5	171-14.5	118	Very poor station, strob was delayed, possible orientation of string ~ 130°
	CAMERA	Hit	1652	Hit	2752				
	# 53								
14 MAY 68	TRAD	1556	1813	2744				118	3RR in mid. CAL ON FILM in HIT. AT 1540. PICS OK.
	64	Hit	1652	Hit	2752	7-12.54	171-14.5E		14T VARIATIONS. VARY RANDOM. (CAND. PHOTO)


Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From

BRISBANE To TOKYO.

204. TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15 MAY 68	MULLIPORE SAMPLE 119	2150				3-49.09	168-23.0E	119	FOUR LITERS OF SEA WATER FILTERED WITH NO CLOGGING OF FILTER. SRP.
15 MAY 68	VERTICAL TOW 109	2227				3-49.09	168-23.0E	119	SEVERAL LARGE JOLLYFISH; MANY SMALLER SYPHONOPHORES; MANY SMALL MYCIDS; A WELL DEVELOPED LANTERN FISH LARVAE; COPEPODS; SOME CINCTOCANTHUS SRP.
15 MAY 68	SURFACE TOW 113	2250				3-49.09	168-23.0E	119	SMALL LANTERNS; MANY SYPHONOPHORES; SOME CINCTOCANTHUS, A FEW MYCIDS. SRP.
15 MAY 68	SCHNABLOF 55	1000	2305	1735		5-155	169-45E		CO. 7447-6 LITH 2 UNIT A
15-16 MAY 68	CORE 121	2246	0021	1884	1880	3-49.09	168-23.0E	119	PENETRATION 1612 TOTAL LENGTH. 100% TRUE LENGTH 1600. FORAMINIFERAL CLAY Ooze, PALE ORANGE TO VERY PALE ORANGE; HOMOGENEOUS EXCEPT FOR SLIGHT GRADATIONAL COLOR CHANGES; CARBONATE CONTENT LOW TO MODERATE; LOCCOLITHS COMMON TO ABUNDANT. GENTLY UNDULATING SPR IN NVD. FOLLOW FUM. WT. 2 PAGES OR, BUT ALL TRACES WANDER AN OVER THE FUM. COLO. AREAS.
15-16 MAY 68	Particulate Auth. 54A	2246	0021	1884	1880	3-49.09	168-23.0E	119	Gulf Loop peeled off slide so no pressure trace was left. This is one of many labels that have been turned around because of these faulty slides. RM7
	CORE CAMPBELL #54	2246	0021	1884	1880	3-49.09	168-23.0E	119	20 usable photos, ORIENTATION of things on core = 097° = 097° LP.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From 5 BRISBANE To TOKYO

205

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15-16	Bottom	2206	0108	1880	1880	3°44.0'	168°27.0'	119	12 usable photos, Tracks, Tracks, Sediment, mounds. J.P.
16-17	Camera	HIT	2332	HIT	2120				
68	on Tripod # 107								
15-16	Upshot	2200	0108	1880	1880	3°44.0'	168°27.0'	119	No Nephroid Layer, Tripod dirty, IT Left Mud Tracks. J.P.
16-17	on Tripod	HIT	2332	HIT	2120				
68	# 97								
15-16	Camera	2200	0108	1880	1880	3°44.0'	168°27.0'	119	Film jam as result of hitting against side of ship on decent. J.P.
16-17	on Tripod	HIT	2332	HIT	2120				
68	# 91A								
16	CORE	1943	2140	2263	2264	01-16.05	166-43.0E	120	PENETRATION 1248 ¹¹⁵ TOTAL LENGTH 1247 cm TRUE LENGTH 1190 cm
MAY	122	2033	HIT	2267					FORAMINIFERAL CLAY, CONSISTING OF ABUNDANT INTER- BEDDED LAYERS & LAMINATIONS; PREDOMINANTLY VERY PALE ORANGE TO PALE YELLOWISH BROWN; MODERATELY COMPACTED; STRONGLY BURROWED. COCCOLITHS RARE TO ABUNDANT. UNDULATING.
68									
16	GRAB	DROP	2036			01-16.05	166-43.0E		THREE FLOATS; 122 lbs BALLAST EMPTY EXCEPT FOR 1 PRAWN & SOME ORGANIC FRAGMENTS.
MAY	SAMPLE	UP	2208						
68	108	RECOVER	2219						
16	CORE	1943	2140	2263	2264	01-16.05	166-43.0E		VERY POOR, ORIENTATION of string = ~040°, taken from last photo of penetration, all others blacked out J.P.
MAY	Camera	2033	HIT	2267	HIT				
68	# 55								
16	Bottom	1829	2219	2265	2280	01-16.05	166-43.0E	120	8 usable photos, Track, Sediment, mounds, Tracks. J.P.
MAY	Camera	HIT	2037	HIT	2370				
68	on Tripod # 108								

108

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From Brisbane To Tokyo

206

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	Nephel.	1929	2219	2265	2280	01° 16' S	166° 43' E	120	No Nepheloid Layer present
MAY	cut sample	HIT	2033	HIT	2370				
68	#98								AP
16	CHIRP	1929	2219	2265	2280	01° 16' S	166° 43' E	120	poor stationing, West ~2 cm/sec
MAY	MOTW	HIT	2033	HIT	2370				J.P.
68	cut sample								
	#91								
16	Particulate	1943	2140	2263	2264	01° 16' S	166° 43' E	120	Good Slide, large sample
MAY	motion	2033	HIT	2267					
68	54								
16	TORAD	1943	2140	2260				120	PROBE TRACES DISAPPEAR FROM FILM SUDDELY AFTER IT STARTS. PRESS. OK. (LOAD NOT MET)
MAY	65B	HIT	2033	HIT	2267				
68									RL
16	M. ...	1814				01° 16' S	166° 43' E	120	Thin ... of ... - No ...
MAY	Sample								... of ...
68									
16	if ...	1915				01° 16' S	166° 43' E	120	Sample from ... May find ...
MAY	70W		1923						... , ...
68	110								
16	Surface	1939				01° 16' S	166° 43' E	120	Large ...
MAY	70W		1954						
68	114								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° BRIGANE

CRUISE LEG—From BRIGANE To TOKYO

207

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17	JCT	1241				00-53N	165-20.0E	107	ALSO COB END WORKS EXTREMELY WELL -
MAY	JCT		1241			00-58N	165-21.5E		LARGE BIODID SAMPLE - CONTAINS MYDIA,
68	TOW								PHYLLOPODS, CRUSTACEAN LARVAE, COPEPODS, AMPHIPODS.
	55								SRP.
17	GC 59	0200	0345	2335	2330	00-09N	166-02.5E	120.1	350 Gall surface water collected in
MAY	SWS					00-10N	165-49.0E		two tanks for TA-M. Sample
68	36								RMT.
17	CORE	1923	2119	2295	2286	1-37.9N	164-49.4E	121	PENETRATION 1730105m TOTAL LENGTH 1160m TRUE LENGTH 1160cm
MAY	173	2009	HIT	2285					PREDOMINATELY FORAMINIFERAL CLAY TO FORAMINIFERAL MARL,
68									SHADES OF PALE ORANGE + PALE YELLOWISH BROWN CONTAINING
									OCCASIONAL DARKER COLORED CLAY LAYERS + A LAYER OF FORAM.
									ORE BETWEEN 729480cm COCCOLITHS PRESENT. ACRYCAL PLAIN
17	ALUMINUM	1012				1-37.9N	164-49.4E	121	FOUR LITERS WATER FILTERED WITH NO CLOGGING
MAY	DAMPING								OF FILTER + LOW CONCENTRATION OF
68	121								NANOPLANKTON.
									SRP.
17	VERTICAL	1906				1-37.9N	164-49.4E	121	MODERATE SIZE SAMPLE - CONTAINS LARGE NUMBER
MAY	TOW		1714						OF AMPHIPODS, SOME SIMULONIDAE, CHAETOCNATHS,
68	111								VIOLET COLORED COPEPODS, COPEPODS, AND MYDIA
									SRP.
17	SURFACE	1726	1743			1-37.9N	164-49.4E	121	LARGE MOD VERTICAL SAMPLE - MOD LARGE (100cm)
MAY	TOW								CHETOCNATH + SEVERAL COCCOLITHS, MANY AMPHIPODS
68	115								MANY MYDIA, A MODERATE NUMBER OF COPEPODS
									SRP.
17	CORE	1923	2119	2295	2286	1-37.9N	164-49.4E	121	VERY FINE GRAINED, DARK GRAY TO BLACK, FINE
MAY	CORE	2009	HIT	HIT					TEXTURE, FINE GRAINED, FINE GRAINED, FINE GRAINED
68	56								29th Dec

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From Brisbane To Tokyo

208

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17 MAY 68	B.H. on T. and #109	1818	2213	2285	2286	1°37.9'N	164°44.4'E	121	33 small photos, Tracts, Tents, sediments, Hydro wires
									D.P.
17 MAY 68	N.H.L. on T. and #99	1818	2213	2285	2286	1°37.9'N	164°44.4'E	121	No Nepheloid Layer present very poor development
									D.P.
17 MAY 68	CURRENT on T. and #92	1818	2213	2285	2286	1°37.9'N	164°44.4'E	121	North West ~ 3.7 cm/sec
									D.P.
17 MAY 68	SONOBUEY 56	2215	2255		2281	1°37.9'N 1°37.9'N	164°48.4'E 164°48.4'E		SONOBUEY not recorded by mistake
17 MAY 68	PARATHUM/LO on T. and 55	1923	2119	2285	2286	1°37.9'N	164°44.4'E	121	Bottom protruded on false hit with 2315 Fms of wire out Sample Run
									R.M.T.
18 MAY 68	CORE 124	1426	1720	2357	2356	3-36.4'N	163-19.5'E	122	PENETRATION 104013 TOTAL LENGTH 1120 TRUE LENGTH 1136 TRUE LENGTH SEEMS CORRECT BUT NOTE PENETRATION! VERY VARIABLE CORE. CONSISTS OF INTERLAYERED CLAY, ASH- RICH CLAY, FORAMINIFERAL CLAY+ MARL, AND ASH. COLORS RANGE FROM VERY PALE ORANGE TO GRAYISH BLACK ABYSSAL PLAIN.
18 MAY 68	PARATHUM/LO on T. and 51A	1426	1720	2357	2356	3-36.4'N	163-19.5'E	122	Bottom protruded but connection line from message on reel above got smaller as down reel descended Glass slide flag showed off Pressure Tell-tale replaced

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

209

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 MAY 68	GC 160 TNS # 11	1426	1720	2352	2354	3-36.4N	163-19SE	122	Four Burels collected at 100 fms. bot 200 GUL TH-Ru Sample.
18 MAY 68	CORE Capella # 7A	1524 HIT	1707 1507	2357	2356	3-36.4N	163-19SE	122	File Advanced while camera on surface Therefore exposed and no change. R.M.T. J.P.
		1526	1730						
		HIT	1728						
18 MAY 68	Bottom Camera on Tripod # 110A	1325	1703	2357	2356	3-36.4N	163-19SE	122	File jammed J.P.
		HIT	1503	HIT	2419				
18 MAY 68	Night on Tripod # 100	1325	1703	2357	2356	3-36.4N	163-19SE	122	No Nepheloid Layer present J.P.
		HIT	1503	HIT	2419				
18 MAY 68	Current H.T.R. on Tripod # 93A	1325	1703	2357	2356	3-36.4N	163-19SE	122	Light on house, wasn't tight enough, it flared on decent, file didn't advance J.P.
		HIT	1503	HIT	2419				
18 MAY 68	MILLIPORE SAMPLE 122	1325				3-36.4N	163-19SE	122	Filtered 4 samples - NO CLOGGING SRP
18 MAY 68	VERTICAL TOW 112	1353	1401			3-36.4N	163-19SE	122	SHALL SAMPLE - CONTAINED 5% ON LINE MARINE WORM AND SOME LONG SPODS - ALSO A FEW CIRCULAR, CIRCULAR AND MYIDS SRP

J. Cowart
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From BRISBANE To TOKYO

210

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 MAY 68	SURFACE	1414				3°36.4N	143°15'E	122	SMALL BIOMASS - COPEPODS, AN APPENDICULARIA, AND SOME CHARTOGNATHIDS
	T.W.		1429						
	116								SRP
18 MAY 68	TERRAD	1436	1730	2356		3°36.4N	143°15'E	122	2 PROBES IN MUD. NONE ON FILM AT 117. INT. INVISIBLE. DETERIORATED.
	65C	1441	1528	441	2357				FORGOTTEN FILM - AFTER DEVELOPING, FILM COMPLETELY BLACK.
									BAD FILM?
19 MAY 68	SONOBODY	1104	1330	2515		6°00.0N	161°45.0E		EEL TRIPPING RECEIVER CHANL. 2, SPEED 5KTS. HYDROPHONE DEPTH 60FT.
	MAY 57					(START)			DIRECT A" 4000 DELTA; B" PROBE 687
	68								1st PORTION TO 1140KS, LOW FREQUENCY RECORDING DETERIORATED
									(12N F SHUNT FILTER OUTPUT - REMOVED)
									IN CHANNEL B-2.
19 MAY 68	MUD CORE	2235				7-27.5N	160-42.5E	173	FILTERED 4 LITERS OF MUD. NO CLOGGING OF FILTER - LIGHT CONCENTRATION OF NAUPLANKTON.
	123								SRP
19 MAY 68	VERTICAL	2323				7-27.5N	160-42.5E	123	MODERATE SIZE - MANY CHARTOGNATHIDS, FISH LARVAE, SEVERAL PTEROPODS, STYLOPODS, VARIOUS SPECIES OF COPEPODS, AND MYXIDS PRESENT.
	T.W.		2341						
	113								SRP
19 MAY 68	SURFACE	2345				7-27.5N	160-42.5E	123	LARGE SAMPLE - SQUID AT SAME SPECIES AS CAUGHT IN VERT. T.W. II, JELLYFISH MEDUSAE, STYLOPODS, FISH LARVAE, EUPHROSINE, CHARTOGNATHIDS, MYXIDS AND COPEPODS ALL PRESENT IN SAMPLE.
	T.W.		0000						
	117								SRP
19 MAY 68	CORE	2345	0146	2575	2575	7-27.5N	160-42.5E	173	PENETRATION 505320 - TOTAL LENGTH 670 - TRUE LENGTH 390
	125	0031	1117	2575					ALSO SECTIONS OF "GOOD CORE" WITHIN FLOW-IN CLAY.
									ASH-RICH CLAY + RADIOLARIAN CLAY, PREDOMINATELY DARK YELLOWISH BROWN TO OLIVE GRAY ARYSSAL PLAIN.

Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From BRISBANE To TEKVO

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
19-20	Part. culat.	2345	0146	2575	2575	7-27.5N	160-42.5E	123	New tell-tale mechanism working fine. Good slide.
MAY	Motion	0031	14.1	2575					
19	56								
19-20	TITRAD	2345	0146	2580		7-27.5N	160-42.5E	123	2 PR INT AWD, 1 ON FILM AT HIT PROBE 31145. WT 5
MAY	65	111	0031	Hit	2575				Process ok. Consistent
68									
20	JLT NLT	1221				8-56.0N	159-40.0E	123.1	
MAY	T.W		1252			9-01.0N	159-37.0E		
68	56								
19-20	CORE	2345	0146	2580	2575	7-27.5N	160-42.5E	123	30 usable photos, ORIENTATION of STRIP on CORE 274°
MAY	CAMERA	111	0031	Hit	2575				
68	# 57								
19-20	Bottom	7300	0233	2575	2575	7-27.5N	160-42.5E	123	13 photos, sediment, grounds, trail
MAY	CAMERA	0042	Hit	Hit	2645				
68	on Tripod								
	# 110								
19-20	Nephel.	2300	0233	2575	2575	7-27.5N	160-42.5E	123	No Nepheloid Layer present
MAY	on Tripod	0042	Hit	Hit	2645				
	# 101								
19-20	CURRENT	2300	0233	2575	2575	7-27.5N	160-42.5E	123	NW, 10.7 cm/sec - Light in C.M. bottom (N. space)
MAY	Motion	0042	Hit	Hit	2645				Using light from bottom stack, I drilled 4 holes in glare shield
68	on Tripod								1st stack in C.M. could have more light. same principle
	# 93								used in N. side middle of C.M. Aperture removed in

Lower C.M. depth of 1000 ft. 1/4" hole drilled

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

212

TIME ZONE - 11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20 MAY 68	CORE 136	1918	2131	2819	2819	9-37.0N	157-08.0E	124	PENETRATION 5534cm - MEASURED TO REMD IN PIPE TOTAL LENGTH 5811cm TRUE LENGTH 5842cm CLAY, PREDOMINATELY RANGING FROM BETWEEN PALE BROWN + LIGHT OLIVE GRAY TO BETWEEN BROWNISH GRAY + OLIVE GRAY; CONTAINS ABUNDANT LAMINATIONS. COARSE FRATION < 5% GENERALLY 1-2% RARE HILLS
20 MAY 68	GRAB SAMPLE 109	DROP UP RECOVER	1921 2120 2155	2819		9-37.0N	157-08.0E	124	THREE FLOATS 122105 BALLAST EMPTY BUT GRABBER RECOVERED UP SIDE DOWN + HENCE IT IS POSSIBLE THAT SOME SEDIMENT WAS PICKED UP ORIGINALLY
20 MAY 68	MULLIPID SAMPLE 124	1750				9-37.0N	157-08.0E	124	FILTERED 4 LITERS - NO CLOGGING OF FILTER - LOW MAND PLANKTON CONCENTRATION
20 MAY 68	VERTICAL TOW 114	1825	1833			9-37.0N	157-08.0E	124	MODERATE SIZE - CONTAINS A LARGE COELOCATERATE JELLYFISH MEDUSAE, A 30cm LONG CHAETOGNATH, SIPHONOPHORES, PTEROPODS, AMPHIPODS, COPEPODS, HYDIDS.
20 MAY 68	SURFACE TOW 114	1844	1905			9-37.0N	157-08.0E	124	LARGE SUR. SAMPLE - DUCK OF SAMPLE COMPOSED OF ONE SPECIES OF COPEPOD, ALSO PRESENT - CHAETOGNATHS, SIPHONOPHORES, SEVERAL JELLYFISH, 1 FISH LARVA AND SEVERAL VIBRAT COLLECTED.
20 MAY 68	SURFACE TOW 57	2225	0006			9-49N	158-58E	124	VERY SMALL BODIES, AMPHIPODS, HYDIDS, CHAETOGNATHS AND ONE DEEP VIBRAT COLLECTED.
20 MAY 68	VERTICAL TOW 57	1918	2131	2811	2819	9-37.0N	157-08.0E	124	CORE 51.1m

R.M.T.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Brisbane To Tokyo

213

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20 May 68	CORC # 55A	1918 H.T	2131 2002	2819 H.T	2818	9° 32' N	157° 30' E	124	Starter Magnet jammed J.P.
20 May 68	Bottom Cannon on Tripod # 111A	1754 H.T	2152 1943	2820 H.T	2976	9° 32' N	157° 30' E	124	Flooded, Film did not Advance J.P.
20 May 68	Neph on Tripod # 1072	1754 H.T	2152 1943	2820 H.T	2976	9° 32' N	157° 30' E	124	No Nepheloid Layer, prop. film J.P.
20 May 68	Cannon on Tripod # 94A	1754 H.T	2152 1943	2820 H.T	2976	9° 32' N	157° 30' E	124	Flooded, male & female grove for housing Lid broke. J.P.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG ⁵ From BRISBANE To TOKYO

214

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21 MAY 68	GC 61 SWS	0945	1115	3029	3072	11°25'N 157°54'E		124.1	350 Gals Surface water collected in two tanks for TH-R sample
	37								
									R.M.T.
21 MAY 68	JCT UOT	1251				11°43'N 157°35'E		124.2	OBTAINED SMALL SAMPLE INCLUDING A PORT VIOLET COLORED CUPPED
	TUN 58		1322			11°46'N 157°31'E			
									JRP
20 MAY 68	IRAD 66A	1103	2131	2320		11°37'N 157°28'E		124	2 PROBES IN MID; ARE ON FILM PLATE
		HIT 2002		HIT 2819					WORK FROM STOCK. FILM PLATE
									DO NOT SORTED OUT OR
21 MAY 68	CORE	1907	2200	3115	3121	12°24'N 157°00'E		125	30 photos, ORIENTATION OF STRING ON CORE = 33°
	Camera # 58	HIT 1958		HIT 3112					J.P.
21 MAY 68	Bottom	1809	2255	3115	3121	12°24'N 157°00'E		125	9 usable photos, sediments, Tracks
	Camera # 111	HIT 2009		HIT 3240					J.P.
21 MAY 68	Neph.	1809	2255	3115	3121	12°24'N 157°00'E		125	No Nepheloid Layer Present
	out Typod # 103	HIT 2009		HIT 3240					J.P.
21 MAY 68	Current					12°24'N 157°00'E		125	Empty housing was sent X down to see if it was watertight with remaining pressure
	no nbr.								Pressure Test J.P.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

215

-10/-11

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21 MAY 68	CODE 127	1902	2300	3115	3131	12°39'N	157°00'E	125	PENETRATION 116830cm TOTAL LENGTH 1018cm TRUE LENGTH 960cm CLAY, MODERATE BROWN, HOMOGENEOUS EXCEPT FOR TWO THIN LAYERS OF COARSE SAND (APPARENTLY ALTERED ASH) BETWEEN 497+502 + 222-235cm + BOUNDED BY VERY SHARP CONTACTS. COARSE FRACTION OF CLAY <5%. GENTLY UNDULATING.
21 MAY 68	CRAB SAMPLE 110	DROP	2016	3113		12°39'N	157°00.0E	125	THREE FLOATS. 146 lbs. BALLAST EMPTY Sinking Speed (DRY) = 70 m/min
21 MAY 68	MILLMOORE 115	1800				12°41'N	157°00'E	125	Small silt sample - contains usual pinkish brown foraminifera - corals, chalcogonids, pteropods. Also - small amount of hydroids.
21 MAY 68	VERTICAL TUN 115	1817	1836			12°42'N	157°00'E	125	Small silt sample - contains usual pinkish brown foraminifera - corals, chalcogonids, pteropods. Also - small amount of hydroids.
21 MAY 68	SURFACE TUN 119	1852	1907			12°42'N	157°00'E	125	Modest silt sample - contains usual pinkish brown foraminifera - corals, chalcogonids, pteropods. Also - small amount of hydroids.
21 MAY 68	TERAD 66	1902	2200	3114	3113	12°29.2N	157°00 E	125	21 m and 2 m, 1 kg dry on beam at hit with 5 mbs. OK. (see meas.)
22 MAY 68	JFT 114	1714	1713			14°33'N	155°29'E	125	Small biomass - contains a 15 cm long crustacean larva, corals, pteropods, chalcogonids, hydroids and a jellyfish.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

216

TIME ZONE

-10/-11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21	Particulate	1852	2200	345	312	12-29.2	157-00.0	125	Well to full depth bottom type A. Sample
MAY	m. H.	1858	11.1	312					Sample / Side Band
68	58A								
									RMT
21	Particulate					15-17.5	154-55.0		
MAY	58A								CAMERA Lost with core head
68	58A	2106	2150	964	977	15-20N	154-51E	126	No SPARES J.P.
	58A	H.T	2125	H.T	970				
22	Particulate	1832	2019	962	1410	15-17.5	154-55.0	121	Basal tripod but line from messenger on
MAY	Matter								basal above caught in door. Sample disturbed
68	58B								ed Taken with core 125
									RMT
22	CORE	1827	2019	962	1410	15-17.5	154-55.0	121	No penetration of core, The core fell over,
MAY	Head	H.T	1901	H.T	1089				therefore NO ORIENTATION.
68	CAMERA								J.P.
	# 59								
22	Bottom	1800	1956	0953	1410	15-17.5	154-55.0	121	34 usable photos, ROCKS, Manganese
MAY	Camera	H.T	1844	1061	H.T				CRUST J.P.
68	out, pot								
	112								
22	Nephel.	1800	1956	0953	1410	15-17.5	154-55.0	121	No Layer present
MAY	104	H.T	1844	H.T	1061				J.P.
68									
22	CURRENT	1846	1956	0953	1410	15-17.5	154-55.0	121	Camera placed in housing wrong, Magnetic
MAY	METER	H.T	1844	H.T	1061				switch not parallel to Magnet.
68	94B								J.P.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO.

217

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
22 MAY 68	MILLPORE	1744				15-17.5N	154-55E	126	FILTERED 4 LITERS - NO CLOGGING -
	SAMPLE								
	126								
22 MAY 68	VERTICAL	1811				15-17.5N	154-55E	126	MODERATE DIL - MANY C. LARVAE, AND CHAL. C. LARVAE.
	TOW		1819						SPERMAT. MYDIDS AND NO E. L. SPERMATIDIA.
	126								
22 MAY 68	SURFACE	1830				15-17.5N	154-55E	126	LARGE MAN VERTICAL SAMPLE CONTAIN. AMPHIPS.,
	TOW		1845						VAR. C. LARVAE, MANY C. LARVAE, CHAL. C. LARVAE, A
	120								JELLYFISH, CRUSTACEAN LARVAE, AND SEVERAL DIATOMS
									FROM THE PHYTOPLANKTON.
22 MAY 68	CORE	1827	2019	962	1410	15-17.5N	154-55E	126	PENETRATION 140210? TOTAL LENGTH 5 - TRUE LENGTH 5.
	128	1901	HIT	1089					SEDIMENT ON PIPE BY WHICH PENETRATION MEASURED PERHAPS
									COLLECTED WHEN PIPE FELL OVER. CAMERA PICTURES SHOW NO
									SEDIMENT. CORE CONSISTS OF MANGANESE FRAGMENTS
									FROM FINE GRAIN TO 4x4x3 - UPPER SLOPES. SEAMOUNT
22 MAY 68	GRAB	DROP	1847	960		15-17.5N	154-55E	126	THREE FLOATS, 144 LBS BALLAST. EMPTY
	SAMPLE	UP	1935						
	III	RECOVER	2030						
22 MAY 68	CORE	2106	2150	964	977	15-20	154-56	126	WIRE BROKE SLIGHTLY ABOVE PISTON, CORE PIPE + CORE
	129A	2125	HIT	970					HEAD LOST.
									TOP OF SEAMOUNT HAVING 22000 L. RELIEF.
22 MAY 68	GRAB	DROP	2112	966		15-20	154-56	126	THREE FLOATS, 114 LBS BALLAST LOST
	SAMPLE	UP	—						Did not surface
	112 A	RECOVER	—						

[Signature]
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

218

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
22 MAY 68	76RAD 67A	1827	2019	1827	1901	15200	154°56.0	126	NO PLANTATION, NO CORE. PT. 100m UNDER.
22 MAY 68	INS 12 6062	1827	2019	1827	1910	15200	154°55.0	126	4 Barrels taken at 50Fm. for TA-Ra Sample. Taken with core 128.
23 MAY 68	Particulate Mottler 58C	2106	2150	2106	2137	15200	154°56	126	Barrel failed to top. Wire broke obscuring core barrel pipe. Taken with core 129A.
23 MAY 68	Jet NET TOW 60	1242			1311			126.1	VERY SMALL SAMPLE - CONTAINS SOME CORALPODS AND MYXIDS.
23 MAY 68	Particulate Mottler 58D	2035	2050	2035	2047			127	Barrel failed to top even on good hit.
23 MAY 68	Bottle Camera on Tripod # 113	1801	2135	2800	2787	18°05'N	152°57'E	137	13 usable photos, Manganese nodules
23 MAY 68	Net on Tripod # 105	1801	2135	2800	2787	18°05'N	152°57'E	127	Using Experimental A-Hemitea, on the left corner side, 16" fishing on the right side of 3 pieces of acetate drafting paper and one envelope slide.

Chief Scientist

**Columbia University
in the City of New York**

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG. From BARKHANE To TIKVI

219

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23 MAY 68	Current meter on Trawl # 94	1801 Hit	2135 19:38	2800 Hit	2787 2925	18°05'N	152°57'E	127	~42 cm/sec - South, insufficient light, direction estimated with help of frame to frame correlation with bottom camera compass. NO STROBE LIGHT, (NO SPARE BULB)
23 MAY 68	CORE 129	1835 1733	3050 Hit	2796 2772	2787	18°05'N	153°57'E	127	PENETRATION 971 ± 5 cm TOTAL LENGTH 1006 cm TRUE LENGTH 801 cm CLAY, MODERATE BROWN, HOMOGENEOUS; CLAY, INTERLAMINATED GRAYISH BROWN TO DUSKY BROWN, PALE BROWN & MODERATE BROWN; LAMINATIONS ARE EXTREMELY ABUNDANT, 1 cm TO 5 cm THICK & APPARENTLY DUE TO VARIATIONS IN MOISTURE CONTENT. WILLY, 20' 40" RELIEF.
23 MAY 68	Mud core SAMPLE 127	1727				18°05'N	153°57'E	127	GOOD CONCENTRATION OF NANUPLANKTON - FILTERED 4 LITER OF SEA WATER - NO CLEAVING.
23 MAY 68	VERTICAL TOW 117	1800	1809			18°05'N	153°57'E	127	MODERATE SIZE SAMPLE - CONTAINS SEVERAL LARGE MEDUSAE, POLYPODS, COPEPODS, A FEW LONG TUBE LARVAE, AMPHIPODS, SIMONOPHORES, CRUSTACEANS SHELLS AND MYXIDS
23 MAY 68	SURFACE TOW 121	1817	1832			18°05'N	153°57'E	127	LARGE SAMPLE - CONTAINS A LARGE SIMONOPHORE, COPEPODS, CRUSTACEANS, SEVERAL FISH LARVAE, AMPHIPODS, SEVERAL CRUSTOPODS, SEVERAL SMALL SIMONOPHORE 3 CRUST (ONE 15 cm LONG, TWO ARE SMALLER) - LARGE SPECIES.
23 MAY 68	Trawl 67	1835 Hit	2050 1933	2804 Hit	2772	18°05'N	153°57'E	127	3 POLYPODS IN ALL, ONE ON FINE MESH, 2 BAD PTS W/ AC PRESS (WILL HAVE TO CORRECT FOR WEIGHTS)
24 MAY 68	CORE 120	1350 1437	1608 Hit	3067 3070	3072	20°25'N	151°45'E	128	PENETRATION 1032 ± 15 cm TOTAL LENGTH 1032 cm TRUE LENGTH 904 cm DIATOMALGOUS CLAY CORE, MODERATE BROWN (0-3 cm); CLAY, MODERATE BROWN TO DARK BROWN (30-90 cm); HOMOGENEOUS, MODERATELY COMPACTED, VIRTUALLY FLAT

Chief Scientist

[Signature]

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 2 From BRISBANE To TOKYO

220

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24 MAY 68	MILLIPORE SAMPLE 120	1304				20°25'N	151°39'E	128	FILTERED 4 LITERS - NO CLOGGING.
									SRP
24 MAY 68	VERTICAL TOW #118	1328	1337			20°25'N	151°39'E	120	MODERATE SIZE SAMPLE - CONTAINS AMPHIPODS, COPEPODS, CIRRIPEDS, DARTONS, MYIDS, CRUSTACEA LARVAE, AND SIPHONOPHORES.
									SRP
24 MAY 68	SURFACE TOW #122	1350	1405			20°25'N	151°39'E	128	SMALL SIZE TOW VERTICAL SAMPLE - CONTAINS COPEPODS, CIRRIPEDS, DARTONS, A SMALL SIPHONOPHORE, A FEW MYIDS.
									SRP
24 MAY 68	T-Grand #68	1350	1408	3066		20°25'N	151°39'E	128	3 PROBES IN MUD, 3 ON FILM AT INT. W/ 2 PROBS OK
			HT 1438	HT 3070					COIN MTS. PERFECT FILM.
									SSC
24 MAY 68	Bottom Camera #114	1314	1457	3066		20°25'N	151°39'E	124	4 usable photos, sediments
			HT 1454	HT 3218					J.P.
24 MAY 68	Nephelometer #106	1314	1457	3066		20°25'N	151°39'E	120	No Layer.
			HT 1454	HT 3218					J.P.
24 MAY 68	CURRENT Meter on TRYPAN #5A	1314	1457	3066		20°25'N	151°39'E	128	NO STROBE LIGHT BECAUSE NO SPARE BULB - INSUFFICIENT LIGHT TO MAKE IMAGES Readable
			HT 1454	HT 3218					J.P.

Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

221

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG² From BARBANE To TEKYO

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24	Ant. 1110	1750	1806	3047	3072	20-25N	151-34SE	126	Inertial top mechanism was changed in that a heavier spring and lead weight replaced lt spring and flat plate lead was removed from barrel and chucklet. Barrel failed to trip again indicating something something went wrong with the barrel itself. The inertial mechanism was removed and placed on another barrel.
MAY	1110	1837	1841	3070					
68	58E								
24	6603	1900	2030	2137	2141	20-48.5	151-23.0	126.1	350 c.c. sample water collected in 2 tanks for T.P. sample
MAY	58E					20-57N	151-12.0		
68	38								
25	1110	1520				23-26N	149-17E	119	RMT FILTERED 4 FILTERS - NO CLOGGING OF FILTER. SRP
MAY	1110								
68	129								
25	1110	154				23-26N	149-17E	119	MODERATE SIZE SAMPLE - CONTAINS CONTAINS A MEDUSAE, MANY CHALFONATHS + CERCOPIDS, A SMALL FISH LARVAE, SOME SIPHONOPORES AND A FEW PTERODIDS. SRP
MAY	1110		154						
68	119								
25	1110	1554						119	LARGE BIOMASS SAMPLE - CONTAINS MANY CHALFONATHS, FINE LARVAE OF FISH LARVAE OF SAME SPECIES, A MEDUSAE, DIATOMS, A FEW PTERODIDS. SRP
MAY	1110		1559			23-26N	149-17E		
68	119								
25	1110					23-26N	149-17E	119	C. A. Slide and Sample. Inertial top mechanism worked ok, no new barrel.
MAY	1110								
68	58								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

222

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From BRISBANE To TOKYO

TIME ZONE -11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23 MAY 68	BATHY	1536	2121	3066	3072	23-26N	149-17E	129	14 usable photos, section 75 of some SUR.
	CAMERA # 115	1912	← H. 15 →	3208					J.P.
23 MAY 68	NEPH	1536	2121	3066	3072	23-26N	149-17E	129	No Nepheloid Layer. Light source weak at H.T.
	# 107	1912	← H. 15 →	3208					J.P.
23 MAY 68	CURRENT METER # 95B	1536	2121	3066	3072	23-26N	149-17E	129	NO STROBE LIGHT BECAUSE NO SPARE BULB. Film didn't advance
		1912	← H. 15 →	3208					J.P.
23 MAY 68	CORE 131	1647	1939	3071	3075	23-26N	149-17E	129	PENETRATION 629-30 TOTAL LENGTH 729 cm. TRUE LENGTH 637 cm. MANICANEE CRUST (0-1/2 cm), VERY SANDY CLAY, DARK YELLOWISH BROWN (1/2-26 cm), CLAY, MODERATE BROWN (26-60 cm), EXTREMELY HARD, BRITTLE, VIRTUALLY LITHIFIED, MODERATE BROWN LAYER (60-63 cm) BASAL SEDIMENT, IF CRUSHED, YIELDS SMALL COARSE-FRACTURED
		1801	HIT	3072					NO PROBES IN MUD = KNOWN OFF AT HIT WT & PRESS. OK. CONT NOT MEAS.
23 MAY 68	THERMOS 64A	1647	1940	3066		23-26N	149-17E		
		1801		3072				129	
23 MAY 68	SOMOBUOY # 58	1015	1341	3043		22-15N	149-38E		FEL TRIPPING CINE 2. DIRECT 'A' 4 SEC DELAY 'B' FAST TRAVERSE PROBERS # 722 & 723 (1145 FAILURE 'B' STRUCTURE, 1149 FIXED) B.2 Channel, Stylus Traverse failure, sometime before 1145-45 Marked Time line at 1145 hrs To have an additional reference J.K. Initial D line affected by slight unexpected change in speed from 6.0 to 5.0 K5
26 MAY 68	JET NET 61	1659	1810			25-42N	147-36E	149.1	Very small sample obtained from this area. Need new probe for corresponding sample. Sample contained small, dark, and a small number
						25-46N	147-34E		

Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 10

CRUISE LEG—From BRISBANE To TAKEYO

223

2/10

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	GC 14	1430	1600	2260	2460	26-57N	147-25E	1292	350 Gals surface water collected in two
MAY	505					26-10	147-14		Looks like TA Rn sample
68	39								
26	11 T	1817				26-30N	146-56E	1292	Very large biomass - Combed primary RMT Three
MAY	11 T		1849			26-33N	146-55E		Excellent observations - Accurate & Detailed
68	11 T								How many small organisms - Very large - Excellent
	62								Positive correlation between SPP and
									large biomass of small SPP
26	Particulate					26-40S	146-47.0	131	Core side sample
MAY	6045	2045	2305	2893	2905				
68	59	2137	HIT	2892					
26	Bottom	2047	2352	2898	2905	26-40S	146-47.0	130	RAM
MAY	6045		2200	HIT	3057				17 usable photos, pebbles, sediments
68	# 116								J.P.
26	NEPH	2017	2352	2898	2905	26-40S	146-47.0	130	No large present
MAY	# 108		2200	HIT	3057				J.P.
68									
26	Core 1	2047	2352	2898	2905	26-40S	146-47.0	130	NO STROBE LIGHT BECAUSE NO SPARE BULB
MAY	6045	2137	HIT	2892					5m didn't advance for more than
68	#956								7 ft, light insufficient for reading
									J.P.
26	CORE	2045	2305	2893	2905	26-40S	146-47.0	130	PENETRATION: TOTAL LENGTH 306.115 TIME LENGTH 355
MAY	132	2137	HIT	2892					VERY ASH-RICH CLAY, VERY DARK YELLOWISH BROWN (0-4cm), ASH-
68									VERY DARK YELLOWISH
									RICH CLAY GRADING WITH DEPTH TO CLAY
									BROWN TO DARK YELLOWISH BROWN (1-352 cm), ASH-RICH CLAY, MODERATE
									YELLOWISH BROWN (353-555 cm), HILLY, 5 TO 60 cm RELIEF.

Chief Scientist

J. Conrad

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N°

CRUISE LEG—From To

TIME ZONE

224.

10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26 MAY 68	Multi-Pod 130	1450				26°40'S 116°41'E		130	FOUR LITERS SEA WATER - WITH NO COAGULING OF FILTER - LOW CONC. OF NANOPARTICLES
									SRP
26 MAY 68	Vertical TOW 120	2024	2033			26°40'S 116°41'E		130	MODERATE SIZE VERY LARGE SIZE - CONTAINS A LARGE AMPHIBOL, MANY LONG (1-4 cm) CHALCOCYANITE, A FEW L.A. LUNGS, A DOLLOID, MANY SMALL PHYSIDS, ONE LARGE PTEROPOD, A BRYOZOAN, AND MANY XOPUS PODS.
									SRP
26 MAY 68	SURFACE TOW #124	2040	2055			26°40'S 116°41'E		130	EXTREMELY LARGE BRYOZOAN - 5 cm to 10 cm. MANY TOW TOW TO PREVENT OVERCROWDING - CONTAINS A 2 cm. LONG CAPTIVATED TOW, VERY LARGE NUMBER OF PHYSIDS (SOME SIZE - SOME SMALL), AMPHIBOL, SQUID, PTEROPODS, CHALCOCYANITE, CHALCOCYANITE, LUNGS. SRP
26 MAY 68	TURBO 69B	2045 HIT	2305 2137	2890 4m	2882	26°40'S 116°47'E		130	ONE PROBE IN MUD, VARY ON FILM. UT OK, WIRE TRACE WIERD. (LODGE MOTTS)
									SRP
27 MAY 68	JET NET TOW 63	1257	1307			28-10N 144-56E 28-14N 144-53E		130.1	MODERATE SIZE SAMPLE - CONTAINS A FEW AMPHIBOL, MANY XOPUS PODS + CHALCOCYANITE, SOME PHYSIDS, SEVERAL (CHALCOCYANITE) LUNGS, A FEW DOLLOIDS.
									SRP
27 MAY 68	Particulate Matter 69A	1942	2216 HIT	3052 3097	3097	29-06N 149-25E		131	Probe Pin in opened batch fell out. Barrel failed to trip. Pin Replaced.
									SRP
27 MAY 68	Bottom Camera #117A	1855 HIT	2311 2405	3088 HIT	3100 3285	29-06N 149-25E		131	Film didn't Advance
									SRP

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From BRISBANE To TOKYO

225

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
27	NEPH	1855	2311	3088	3100	29-06N	144-25E	131	NO Nepheloid Layer
MAY	#	HIT	2105	HIT	3285				
68	109								J.P.
27	Current	1855	2311	3088	3100	29-06N	144-25E	131	Final data + Advance
MAY	110	HIT	2105	HIT	3285				
68	#								J.P.
27	CORE	1942	2216	3087	3097	29-06N	144-25E	131	PENETRATION 92312cm TOTAL LENGTH 92412cm TRUE LENGTH 100m?
MAY	133	3042	HIT	3097					OBVIOUS PROBLEM IN RECONCILING PENETRATION + TRUE LENGTH
68									CLAY, VERY DARK YELLOWISH BROWN + DARK YELLOWISH BROWN
									CONTAINING ASH LAYERS, PALE YELLOWISH BROWN TO REDDISH
									GRAY BETWEEN 3071357, 3071372, 3071387, + 3071392. UNDISTURBED
27	MILLPORE	1905				29-06N	144-25E	131	Filtered + filtered NO CLOGGING OF FILTER
MAY	SAMPLE								SIZE OF NAUPLANKTON SAMPLE OBTAINED EXCEEDED
68	131								THAN RECOMMENDED SAMPLE
									S.R.P.
27	Vertical	1926				29-06N	144-25E	131	SAMPLE MODERATE TO LOOSE SITE - MANY LAMINATIONS
MAY	100		1935						MANY MYCETOCYANOBACTERIA, AND COCCIDIA, A SMALL
68	101								DIATOM, SOME AMPHIRODUS, AND A LARVA
									(20-30) DIATOMS PER CC.
									J.R.P.
27	SURFACE	1946				29-06N	144-25E	131	VERY LOOSE SITE - DIATOMS, TENDRILS, AND COCCIDIA
MAY	102		1951						DIATOMS, TENDRILS, AND COCCIDIA, AND A SMALL
68	103								DIATOM, SOME AMPHIRODUS, AND A LARVA
									(20-30) DIATOMS PER CC. + COCCIDIA.
27	TOTRAD	1942	2216	3088		29-06N	144-25E	131	3 m in water, 2 feet of water - 1st OK, 2nd OK
MAY	69	HIT	2042	HIT	3097				CONDUITS
68									

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N°

CRUISE LEG—From BRISBANE To TOKYO

226

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28 MAY 68	GC 65 SWS 70	0515	0645	2925	2878	29-58N	143-45E	131.1	350 Gals surface water collected in 7 tanks for Th-Ra Sample
									RMT
28 MAY 68	Foot, corals McHew 60	1516	1758	3433 ~ 3490	3461	31-12.7	142-47.4	132	Good Barrel maybe. Pressure trace went off end of slide. Sample Run
									RMT
28 MAY 68	Bottom Camera #117B	1407	1452	3495	3530	31-12.7	142-47.4	132	TRypod didn't hit sea floor
									J.P.
28 MAY 68	North #110	1407	1452	3495	3530	31-12.7	142-47.4	132	Thick Nepheloid Layer, sea floor ~ 6000 ft off section
									We stopped short of the J.P. from by about 20 ft
28 MAY 68	Current Meter #45E	1407	1452	3495	3530	31-12.7	142-47.4	132	TRypod didn't hit sea floor
									J.P.
28 MAY 68	TRAD 70	1516	1758	3462 HIT 3461		31-12.7	142-47.4	132	2 1/2 in. mud, bottom of from at hit. Hit ok, note inversion. P.C.S. cv. CONTAMINATED.
28 MAY 68	CORE 134	1516	1758	3433 - 3490 HIT 3461		31-12.7	142-47.4	132	PENETRATION 3472.5cm TOTAL LENGTH 344cm TRUE LENGTH 344cm PREDOMINATELY CLAY WITH SMALL AMOUNTS OF ASH, SHADES OF DARK YELLOWISH BROWN + OLIVE GRAY, CONTAINS HARD LAYER OF ASH-RICH CLAY, OLIVE GRAY TO MODERATE YELLOWISH BROWN BETWEEN 3510-3515cm. GENTLE SLOPE (EAST SIDE JAPAN TRENCH).

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

227

Research Vessel ROBERT D. CONRAD

CRUISE N°

CRUISE LEG—From To

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28 MAY 66	MULLDOPE SAMPLE 102	1409				31 12.7N	142 47.4E	102	FILTERED 4 LITERS - NO CLOGGING SRP
28 MAY 66	VERTICAL TOW 142	1429	1438			31 12.7N	142 47.4E	102	MODERATE SIZE SAMPLE - CONTAINS MANY POLICHOETS, AMPHIPODS AND CHAETOGNATHS, ALSO FEW MYSIDS AND MANY COPEPODS. SRP
28 MAY 66	SURFACE TOW 126	1451	1506			31 11.7N	142 47.4E	102	LARGE BIOMASS - MANY SIPHONOPHORES, CHAETOGNATHS, AMPHIPODS, FEW MYSIDS, COPEPODS. SRP
29 MAY 66	MULLDOPE SAMPLE 103	1035				32 38.6N	141 49.6E	133	MODERATE SIZE SAMPLE BUT SLIGHTLY SMALLER THAN VERT 122. TODAY'S SAMPLE CONTAINS COPEPODS, CHAETOGNATHS, AMPHIPODS, SOME MYSIDS AND SOME PHYTOMANCTON. SRP
29 MAY 66	VERTICAL TOW 123	1100	1108			32 38.6N	141 49.6E	133	↓
29 MAY 68	SURFACE TOW 127	1122	1107			32 38.6N	141 49.6E	133	MODERATE SIZE SAMPLE ABOUT SAME SIZE AS TODAY'S VERTICAL SAMPLE - CONTAINS AMPHIPODS, FEW COPEPODS, SOME SMALL CHAETOGNATHS AND A SINGLE SIPHONOPHORE. SRP
29 MAY 68	CORE 135	1132	1436	3400	3560	32 38.6N	141 49.6E	133	PENETRATION 543 ± 10 cm. TOTAL LENGTH 473 cm. TRUE LENGTH 2463 cm. CLAY SHADES OF YELLOWISH BROWN (6-6.5) + SHADES OF OLIVE + GREEN GRAY (5-15, 10-100, 30-342 + 107-1463); CONTAINS ASH-RICH CLAY (145-154), ASH (315-319) + A HARD CRUSTY LAYER (100-105). MODERATE SLOPE (WEST SIDE JAPAN TRENCH)

Chief Scientist

J. R. W. 7

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 5 From Bahamas To Tokyo

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21	Nagasaki	1027	1520	3372	3547	32 38.6	141 49.6	133	Thick Nagasaki Layer, section + 1600 ft
11	on Tappal	Hit	1256	1111	3668	N	E		at 500 ft
12	# 111								
									P.P.
22	Bathurst	1027	1520	3372	3547	32 38.6	141 49.6	133	4 usable photos, section, Tuck
11	Camera	Hit	1256	1111	3668	N	E		
12	Camera								Station magnet stuck for all but one hit
	# 117								P.P.
29	CURRENT	1027	1520	3372	3547	32 38.6	141 49.6	133	Because of Bathurst Camera magnet stuck.
May	Meter	Hit	1256	1111	3668	N	E		C.M. magnet didn't lift and start C.M.
68	on Tappal								The one time it did lift the light
	# 95 F								was insufficient for discussing describing.
									P.P.
29	Particulate	1132	1436	3340	3560	32 38.6	141 49.6	133	Barrel pre-typed near surface. Sample
MAY	Matter	1237	Hit	3542		N	E		discarded.
68	61 A								
29	TURAD	1132	1436	3372		32 38.6	141 49.6	133	2 PRIN MIN. ALIQUOTS and from 400 ft = D's BAD.
MAY	71A	Hit	1237	Hit	3547	N	E		like 71A's OK. LONG NORMALS.
68									
									SOBC

[Signature]
Chief Scientist

229

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE LEG ~~2~~ From

CRUISE LOG - From

Tokyo

— To

Tokyo

TIME ZONE

[illegible]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

230

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Tokyo To Tokyo

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
4	NET	2016				33°14'N	137°54'E	134	Very large sample contains 4 LANTORN P. H.
JUNE	NET		2047			33°12'N	137°48'E		Several P. H. larvae, 700 larvae of various body
68	TOW								CHARACTERISTICS, MYCETES, A Ctenophore, DOLLOPS AND
	64								MANY COPEPODS.
									SRP
6	CORE	1843	1853	71	71	33°12.6	133°39.7	135	PENETRATION (END IN PIPE) NO 10 cm TOTAL LENGTH 58 cm
JUNE	137	1847	HIT	71					TRUE LENGTH 58 cm, SAND, DARK GRAY (MS), HOMOGENEOUS
68									EXCEPT FOR A LAMINATION RICH IN SHELLS & SMALL FRAGMENTS
									BETWEEN 100-200, WELL COMPACTED, COARSE GRAINED LAMINATIONS
									NEARLY FLAT BOTTOM
									75% PREDOMINATELY FINE WELL SORTED SAND, SHELL FRAGMENTS ABN. BEHNE
6	MILLIPONE	1522				33°12.6	133°39.7	135	FIELD "LIFE" OF "SEA" WATER
JUNE	SAMPLE								NO CLECCING, MANY CONCENTRATION
68	135								OF NANOPLANKTON - WATER NO SHALLOWER VERTICAL
									TOW IN THIS STATION.
									SRP
6	SONOBUOY	1528	1541	60 FPS		33°20'N	133°36.6E		FAILED !!! PROFLER 768 DIRECT A+B NOT RECORDED
JUNE	59 A								
68									
									1.K.
6	SONOBUOY	1542	1618	71 FPS		33°20'N	133°36.6E		CHNL. 2 60 FPS HYDROPHONE PROFLER 767 FEL TRIPPING DIRECT A+B
JUNE	59								FAST TRAVERSE NOT RECORDED
68									
									2.K.
6	SONOBUOY	1625	1745	75 FPS		33°21'N	133°46.1E		CHNL. 2 60 FPS HYDROPHONE PROFLER 770 FEL TRIPPING
JUNE	60								DIRECT A+B FAST TRAVERSE NOT RECORDED
68									
									2.K.
6	BOTTOM	1930	2025	72	74	33°15'N		135	8 photos, Sediments, possibly clams
JUNE	CAMERA	1938		74			133°44.7E		
68	#119								P.D.

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG ~~1~~2 From

CRUISE LEG# From 10K40 To 10K40

To 10KYO

TIME ZONE

23

[illegible]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

232

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
6 Jun	CURRENT	1430	2025	077	074	32°15'N	133°37'E	135	Sea to ~ 20 cm / sec
68	METER	1438		74					
	95								S.P.
7	CORE	?	1517	?	305	33°00'N	134°09'E	136	PENETRATION: 285 ± 15 cm TOTAL LENGTH: 553 cm TRUE LENGTH: 540
68	138	1507	HIT	324					FORAMINIFERA-RICH CLAUCONITIC SAND, BETWEEN OLIVE
									GRAY + MEDIUM DARK GRAY; QUITE HOMOGENEOUS. COARSE
									FRACTION REPRESENTS ABOUT 95 TO 95%; CONSISTS
									PREDOMINATELY OF FORAMS, CLAUCONITE + ASH VERY GENTLY MODULATING
7	VERTICAL	1510				33°00'N	134°09'E	136	LARGE SIZE SAMPLE - MANY CHALCOCYNTHS, SOME
JUNE	TOW		1516						ANNULID WORMS, A PTEROPOD, A SMALL SQUID,
68	125								MANY SIPHONOPHORES, JUPITERIDS, MANY MYXIDS,
									CLIPPODS.
									SRP
7	SURFACE	1540				33°00'N	134°09'E	136	SMALLER THAN VERT. SAMPLE - A LARGE NUMBER OF
JUNE	TOW		1555						SIPHONOPHORES, SOME CHALCOCYNTHS, CLIPPODS.
68	129								SRP
7	MILLIPORE	1700				33°00'N	134°09'E	136	FILTERED 4 LITERS OF WATER - NO CHLORINE -
JUNE	SAMPLE								HIGH CON. OF NAUPLANKTON.
68	126								SRP
8	CORE	0658	0801	1533	1810	32°18'N	134°09'E	137	PENETRATION: 510 ± 20 cm TOTAL LENGTH: 332 cm TRUE LENGTH: 342 cm
JUNE	139	0736	HIT	1490					CLAY, BETWEEN DARK YELLOWISH BROWN + VERY DARK YELLOWISH
68									BROWN (0-6 cm) + PREDOMINATELY MEDIUM DARK GRAY + DARK GREENISH
									GRAY. PYRITE ABUNDANT. CORE HAS AN ODEAR OF HYDROGEN
									SULFIDE + EXTENDED ITSELF 20 cm BY GAS PRESSURE. MUDY SLOPE
8	MILLIPORE	1440						138	FOUR LITERS OF WATER + FILTERED WITH NO
JUNE	SAMPLE								CHLORINE OR SULFIDE - WITH 1 ml (CLIPPODS)
68	127								DEPTH - 1 LITER C.O. OF NAUPLANKTON
									SRP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

233

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
8	VERTICAL	1500				31-49.5	134-12	138	SAMPLE OF MEDIUM SIZE (CONTAINS THE USUAL
JUNE	TOW		1508						SAMPLES OF COPEPODS, CHLOROCYSTIS, MYSIDS,
68	126								AND SIPHONOPHORES.
									SRP
8	SURFACE	1532				31-49.5	134-12	138	SAMPLE OF MEDIUM SIZE MEDIUM VERTICAL - MANY
JUNE	TOW		1547						SIPHONOPHORES, 100 FT H LARVAE, MANY CHLOROCYSTIS,
68	130								SEVERAL MYSIDS, A CRUSTACEA LARVAE AND
									MANY COPEPODS.
									SRP
8	CORE	1721	1916	2593	2594	31-49.5	134-12	138	PENETRATION 10 MILES. TOTAL LENGTH: 909. TUBE LENGTH: 2900
JUNE	140	1801	HIT	2593					CLAY TOP 2 CM. ARE DARK YELLOWISH BROWN BUT OTHERWISE
68									HYDROGRAPHIC ABUNDANT. H.S. 1000. TOP 1000 SOFT & DISTURBED
									RANGES FROM BETWEEN MEDIUM DARK GRAY & OLIVE GRAY TO BETWEEN
									DARK GRAY & DARK OLIVE GRAY. CONTAINS MANY THIN LAYERS WITH
									NEARLY FLAT TOPOGRAPHY. (1445-530)
9	JET NET	1401				31-49.5	134-12	138.1	SLIGHTLY LARGER. COARSE FRACTION (10-145 & 530-7000) ASH-RICH CLAYASH
JUNE	TOW		1508						SAMPLE CONTAINS MUCH PHYTOPLANKTON, SEVERAL FISH LARVAE,
68	65								A FISH LARVA, MANY CHLOROCYSTIS, MYSID, DECAPOD
									CRUSTACEA, COPEPODS, APPOLOPHORUS.
									SRP
8	SRP 6R	1627	1855					138	CONRAD RECEIVING
JUNE	7	1858	2214						
9	SRP 7R	0001	0324					-	CONRAD SHOOTING
JUNE									
9	MILLIPORE	1527						139	FILTERED 100 LITERS OF SEA WATER -
JUNE	SAMPLE								NO CLOGGING OF FILTER - 100 LITERS.
68	18								ALL MAMMPLANKTON
									SRP

234

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE LEAD From 10 Nyo To 10 Nyo

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
8	Bottom	1923	2323	2593		31°49.5'N		138	Starter Magnet spring too weak to pull Magnet all the way up. Therefore film did not advance.
June 68	Camera outayed #120A	2127		2989			134°12'E		D.P.
8	Current	1923	2323	2598		31°49.5'N		138	Strobe Light weak, No image
June 68	Meter outayed #96A	2127		2989			134°12'E		D.P.
8	Nephel.	1923	2323	2593		31°49.5'N		138	No Nepheloid Layer present.
June 68	outayed #113	2127		2989			134°12'E		D.P.
9	Nephel	2049	0037	2406	2406	30°36'N			No Nepheloid Layer, unusually dark film.
June 68	#114	2237		2890		30°36'N	134°13'E	139	
9	Bottom	2049	0037	2400	2406	30°36'N		139	#2 usable photo, Sediments
June 68	Camera #120M	2237		2890			134°13'E		After station, I shortened spring for starter magnet.
9	Current	2049	0037	2400	2406	30°36'N	134°13'E	139	Light too weak for image.
June 68	Meter 96B	2237		2890					D.P.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

235

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
JUNE 66	VERTICAL 127	1851	1900			30°36'N	139°12'E	139	MEDIUM SIZE SANDS CONTAINING MANY THALASSIOMES, SIPHONOPHORES, A LOT OF SNAILS, A FEW CORALS, GASTROPODS AND A FEW PTEROPODS. SRP
JUNE 66	SURFACE 121	1717	1729			30°36'N	139°12'E	139	LARGE DIATOMS MADE UP OF A LARGE NUMBER OF SNIPS, A LARGE (100) PTEROPOD, MANY CHARACTERS AND SIPHONOPHORES, GASTROPODS, A FEW CORALS AND GASTROPODS. SRP.
JUNE 66	CORE 141	1900	2043	2405	2395	30°36'N	139°13'E	139	PENETRATION: 405310cm TOTAL LENGTH: 869 cm. TRUE LENGTH: 8570cm. CLAY, DARK YELLOWISH BROWN GRADING TO BETWEEN BROWNISH GRAY TO LIVE GRAY (0-43cm); ASH, DARK YELLOWISH BROWN, PALE YELLOWISH BROWN + SHADES OF BROWNISH GRAY (43-72cm); CLAY, BETWEEN DARK GRAY + DARK BROWNISH GRAY (72-150cm); ASH, LIGHT GRAY TO BROWNISH GRAY (150-180cm). 3 PROBES IN MUD AT HIT, 2 ON, 1 OFF. WT & PRESS OK, NOTE 10% INVERSION. (LOW MEAS.) BOSC
JUNE 66	TRAD 1/2	1900	2043	2401	2405			139	2 PROBES IN MUD. 1 IS AT HIT, THE OTHER MOVES AROUND. (LOW MEAS.) BOSC
JUNE 66	TRAD 72B	1931	1924	2533	2553			140	1 PROBE IN MUD, IS AT HIT, THE OTHER MOVES AROUND. (LOW MEAS.) BOSC
JUNE 66	SRP 8	1043	1335						CONRAD SHOOTING
JUNE 66	SRP 8R	1530	1931					140	CONRAD RECEIVING

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

236

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat. N	Long. E		
10	CORE	1431	1652	2553	2553	29°40'N	134°48'E	140	PENETRATION: 236 fms. TOTAL LENGTH 283 cm TRUE LENGTH: 388 cm
JUNE 68	142	1524	HIT	2553					CLAY, DARK YELLOWISH BROWN (0-31); ASH, SHADES OF GRAY + YELLOWISH BROWN (117-121); CLAY, PREDOMINATELY MEDIUM BROWNISH GRAY; CLAY IN ASH-RICH CLAY, MEDIUM DARK GRAY (52-77); ASH, BETWEEN MEDIUM LIGHT GRAY + LIGHT BROWNISH GRAY VERY GENTLE HILLS
10	HYDROG	1357				29°40'N	134°46'E	140	FLUORIDE SLA WATER FILTERED - LOW CON.
JUNE 68	SAMPLE								1. MARIPLANKTON
									SRP
10	SURFACE	1316				29°40'N	134°45'E	140	MEDIUM SIZE SAMPLE - MANY CHALCOCYNATHS + COPEPODS, A FEW MYSIDA, SUPHON-PHORES AND SOME SARIPS, A SAMPLE
JUNE 68	132		1331						RP
10	VERTICAL	1423				29°40'N	134°46'E	140	LARGE MTD SURFACE SAMPLE. CONTAINS A LARGE NUMBER OF SARIPS, MANY MYSIDA, COPEPODS + CHALCOCYNATHS IN CASEY ADONIAE.
JUNE 68	128		1432						SRP
11	Nephel.	0714	0926	1505	1200	29°45'N	134°46'E	141	N. L. P. PRESENT, N. L. P. PRESENT, N. L. P. PRESENT
JUNE 68	on Tripod #117	0815		1505					on Tripod #117
11	Bottom	0714	0926	1505	1200	29°45'N	134°46'E	141	8.00 bl. photo, Sub. cont, Z. light cont, Typ
JUNE 68	Camera on Tripod #21	0815		1505					Working on it
									RP
JUNE 11	CURRENT Meter	0714	0926	1505	1200	29°45'N	134°46'E	141	Per. station, dir. very light, South West ~ 3.2 cm/sec
JUNE 68	on Tripod #96	0815		1505					RP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

237

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
11	CORE	0807	1919	1360	1197	29°45'N	133°11'E	141	PENETRATION 345.5cm. TOTAL LENGTH 324cm. TRUE LENGTH 324cm.
JUNE	143	0837	HIT	1360					ASH-RICH FORAMINIFERAL CLAY CORE, MODERATE YELLOWISH BROWN
68									(0-25cm); VERY ASH-RICH FORAMINIFERAL CLAY CORE, PALE YELLOWISH
									BROWN, FORAMINIFERAL MARL + MARL CORE (50-70cm); HARD
									BRITTLE MANGANESE CRUST, BROWNISH BLACK. ONLY 40-50cm.
11	SRP 9	0315	0640					-	CONRAD SHOOTING
JUNE	9R	0810	1326					141	CONRAD RECEIVING
11	SURFACE	1018				29°45.8'N	133°16.6'E	141	SAMPLE AT SMALL BIOMASS - C. CARINATA
JUNE	TOW		1333						(HALINOCNATHUS, DIPHTERODON, AND A FEW
68	133								APPENDICULARIA, AND SOME DIPTERODON.
									SRP
11	VERTICAL	1415				29°45.8'N	133°16.6'E	141	MANY COPEPODS, LARVAL SALPS, SOME FISH
JUNE	TOW		1424						LARVAE, MYXIDAE, A SMALL HYDROCALYPTUS AND A
68	129								PTEROPOD
									SRP
11	MILLIPUR	1435				29°45.8'N	133°16.6'E	141	FILTERED 4 LITERS NO CLOGGING OF FILTER -
JUNE	SAMPLE								LOW CONC. OF NAUPLANKTON
68	140								SRP
11	TREAD	0807	0819	1600		29°45.8'N	133°16.6'E	141	1 PROBE IN MUD AND ON FILM WT & PRESS OK.
JUN	72	1111	0837	1111	1285				LOW MEATS.
68									SRP
12	TREAD	0204	0357	2580		29°01.3'N	132°14.2'E	142	2 PR IN MUD, BOTH ON FILM WT & PRESS OK.
JUNE	73	1111	0248	1111	2620				LOW MEATS.
68									SRP

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

238

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From Tokyo To Tokyo

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	COPE	0206	0357	2610	2667	21-07.3	132-14.2	142	PENETRATION 87513cm TOTAL LENGTH 1006cm TRUE LENGTH 849cm
JUN 68	144	0348	HIT	2620					CLAY, RANGING BETWEEN VERY DARK YELLOWISH BROWN, DARK YELLOWISH BROWN, MODERATE YELLOWISH BROWN + BROWNISH GRAY, CLAY, RANGING BETWEEN MEDIUM DARK GRAY, BROWNISH GRAY & MEDIUM BROWNISH GRAY (17-61cm) SLOPE NEAR SEABOTTOM CONTAINS ASH RICH LAYER (657-613)
1412	144 SAPIO	1552	2730					-	CONRAD SHOOTING
JUN 68	144 SAPIOR	0114	0436					142	CONRAD RECEIVING
12	NEPHELE	0759	0733	2111	17	21-07.3	132-14.2	142	Light T. mark
JUN 68	OMETER #116	0731							J.P.
12	CURRENT	0348	0733	2111	17	21-07.3	132-14.2	142	Light T. mark
JUN 68	METER -97A	0731							J.P.
12	BOTTOM	0758	0733	2111	17	21-07.3	132-14.2	142	Light T. mark
JUN 68	CAMERA 122	0731							J.P.
12	COPE	1640	1845	2971	2938	21-20.4	131-57.5	143	PENETRATION: 44915cm TOTAL LENGTH 966cm TRUE LENGTH 410cm
JUN 68	145	1443	HIT	2979					CLAY, VERY DARK + DARK YELLOWISH BROWN (0-16cm); CLAY, BETWEEN MEDIUM DARK GRAY + BROWNISH GRAY (16-29, 77-106cm); ASH, MEDIUM DARK GRAY (34-77, 106-147cm); CLAY, BROWNISH GRAY (147-334cm); ASH RICH CLAY, BETWEEN BROWNISH GRAY + MEDIUM DARK GRAY, HILLY 20-200
12	SAP II	1034	1444			21-20.4	131-57.5		CONRAD SHOOTING
JUN 68	11R	1649	1921					143	CONRAD RECEIVING

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG ~~1~~ From TOKYO To TOKYO

TIME ZONE _____

239

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12 JUNE 68	TERRAD 74	1640 Hrt	1845 1719	2998 Hrt	2979	29-20.4	131-57.5	143	2 PR IN MUD COLD METAS, BOTH ON FILM WT OK, PRESS OK BSC
12 JUNE 68	MILLIPORC SAMPLE 141	1554				29-20.4	131-57.5	143	FILTERED 4 LITERS - NO SIEVEING
12 JUNE 68	SURFACE T.W. 134	1216	1231			29-32.6	131-29.7	144	LARGE PIONASS EVIDENTLY LATELY DEPOSITED THIS SAMPLE, C. 20 CM, SIPHONOPHORES, SALPS, SEVERAL SMALL GASTROPODS. SRP
12 JUNE 68	CORE 146	1259 1328	1432 HIT	2097 2095	2089	29-32.6	131-24.7	144	PENETRATING 320±10 CM. TOTAL LENGTH 47 CM. CORE LENGTH 47 GRAVITY CORE. CORING DEVICE TRIPPED ABOVE BOTTOM! APPARENTLY LOWERED TOO RAPIDLY! ASH-RICH CLAY, BETWEEN MEDIUM DARK GRAY & BROWNISH GRAY, BASAL TEN VERY ASH-RICH (0-4cm). CLAY, MEDIUM DARK GRAY WITH ASH (25-29cm) (F-44cm) HILY, NEAR SEMI-HARD CONCRETE SHOOTING
12 JUNE 68	SRP 12	0600 1120	0910 1402			29-32.6	131-24.7	144	CONRAD RECEIVING
13 JUNE 68	TERRAD 75	1259 Hrt	1432 1328	2053 Hrt	2015	29-32.6	131-24.7	144	2 PROBES IN MUD, BOTH ON FILM. WT & PRESS OK COLD METAS. BSC
13 JUNE 68	BCH	1791	1637	2085	2102	29-32.6	131-24.7	144	7 small phos sediments, sands, tracks. A.P.

Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

240

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Tokyo To Tokyo

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
13	Nobori	1355	1637	214	216	29-52.4	131-29.7	144	No Nepheloid Layer
June	117								
68									J.P.
13	CORE	1351	1637	214	216	29-52.6	131-29.7	144	E.T. Rebuilt C.M. before
June	117								Station, Rewinding, new resistors, etc.
68									J.P.
14	CORE	0318	0342	232	248	29-35.0	130-16.8	145	PENETRATION SLIGHT. TOTAL LENGTH 25 CM. TRUE LENGTH 25 CM.
June	147	0333	HIT	230					MOST OF FINE FRACTION WASHED OUT OF CORE PIPE AS IT
68									WAS BROUGHT TO THE SURFACE. FRACTION CONSISTS MAINLY
									OF FORAMINIFERA FRAGMENTS, FROM FINE GRAIN TO LARGE PEBBLES
									(UP TO 2 CM) / SPEED SLOW, SIDE OF SEAMANT
14	SRP 13	2316	0225						COARSE SILTY MUD
June	148	0343	0654					145	COARSE SILTY MUD
14	SRP 14	0228						145	COARSE SILTY MUD
June	149								
16	SRP 15								
14	SRP 16	0211						145	COARSE SILTY MUD
June	150								
16	SRP 17								
16	SRP 18								

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG-From Tokyo To Tokyo

TIME ZONE

[illegible]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

242

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	VERTICAL	0642				29-35.0N	130-10.0E	145	MODERATE SIZE SAMPLE - CONTAINS CAECOTRACHIDS, SEVERAL AMPHIPODS, A FISH EGG, COPEPODS AND SEVERAL SIPHONOPHORES.
JUNE 68	TOW		0651						
	131								
14	MILLIDISC	1824				30°33.9N	129°12.0E	146	FILTERED 4 LITERS OF SEA WATER WITH NO CLOGGING OF FILTER - HEAVY CON. OF PHYTO-PLANKTON ON DRYED FILTER.
JUNE 68	SAMPLE								
	143								
14	SURFACE	1935				30°33.9N	129°12.0E	146	EXTREMELY LARGE SAMPLE - BULK COMPOSED OF COPEPODS & CAECOTRACHIDS. ALSO PRESENT - ONE SMALL HYDROMEDUSAE, A FEW FISH LARVAE, AND SOME AMPHIPODS.
JUNE 68	TOW		1950						
	136								
14	CORE	1919	1947	438	430	30°33.9N	129°12.0E	146	PENETRATION 2 cm TOTAL LENGTH 300 cm TRUE LENGTH 300 cm VOLCANIC ASH + LAPILLI, BETWEEN MEDIUM DARK GRAY + BROWNISH GRAY; HOMOGENEOUS EXCEPT FOR SLIGHT VARIATIONS IN AVERAGE GRAIN SIZE. COARSE FRACTION REPRESENTS NEARLY 100%: PRE DOMINATELY GENTLY UNDULATING, NEAR SPHERICAL (1-10 μm DIAMETER) ASH + FRAGMENTS UP TO 40 μm ACROSS; FORAMS COMMON.
JUNE 68	148	1934	HIT	432					
14	VERTICAL	2127				30°33.9N	129°12.0E	146	MODERATE SIZE - MANY SMALL FISH LARVAE, MANY CAECOTRACHIDS & COPEPODS, A FEW AMPHIPODS AND MANY MYSIDS.
JUNE 68	TOW		2137						
	132								
14	SRP 14	1530	1815					-	CONRAD SHOOTING
JUNE 68	148	1933	2221					146	CONRAD RECEIVING
15	CORE	1236	1243	56	56	30°40.7N	127°05.2E	147	PENETRATION 200 cm TOTAL LENGTH 300 cm TRUE LENGTH 300 cm CORE WAS EXTRUDED BY SHAKING IN OUT OF THE INCLINED CORE PIPE. HENCE, TEXTURE COMPLETELY DESTROYED, + LENGTH + DEPTH MEASUREMENTS ONLY APPROXIMATE. SAND, OLIVE GRAY, SHELLS COMMON.
JUNE 68	149	1238	HIT	56					

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

243

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	SONOBUOY	0042	0226	56		29°57.7'N	126°52.3'E		CHNL. 2 SPEED SKT. FEL TRIPPING. DIRECT A+B, PROFILER 809 FAST TRAV. NOT RECORDED. HYDROPHONE DEPTH 60 FT. J.K.
JUNE	61								
68									
	SONOBUOY	0229	0408	58		30°05.1'N	127°06.0'E		CHNL. 2 SPEED SKT. FEL TRIPPING DIRECT A+B PROFILER 810 FAST TRAV. HYDRO-PHONE DEPTH 60 FT. NOT RECORDED. J.K.
	62								
16	SONOBUOY	0412	0542	62		30°08.5'N	127°17.4'E		RECEIVER CHANL. 2 SPEED SKT. FEL TRIPPING, DIRECT A+B PROF. 811 HYDRO-PHONE DEPTH 60 FT. FAST TRAVERSE NOT RECORDED J.K.
JUNE	63								
68									
	SONOBUOY	0546	0618	68		30°11.0'N	127°22.8'E		FAILED - PROFILER 812 J.K.
	64 A								
16	SONOBUOY	0623	0800	72		30°12.0'N	127°28.8'E		CHNL. 2 SPEED SKT FEL TRIPPING, DIRECT A+B PROFILER 813 FAST TRAVERSE, HYDRO-PHONE DEPTH 60 FT. NOT RECORDED J.K.
JUNE	65								
68									
	SONOBUOY	0804	0946	105		30°10.0'N	127°40'E		CHNL. 2 SPEED SKT FEL TRIPPING DIRECT A+B PROFILER 814 FAST TRAV. HYDROPHONE DEPTH 60 FT. NOT RECORDED J.K.
	66								
16	SONOBUOY	0952	1135	190		30°13.7'N	127°53.0'E		CHNL. 2 SPEED SKT FEL TRIPPING DIRECT A+B PROFILER 815 FAST TRAV. FILT A 30/120, HYDROPHONE 60 FT. NOT RECORDED J.K.
JUNE	67								
68									
	SONOBUOY	1139	1323	221		30°15.5'N	128°04.5'E		CHNL. 2 SPD SKT FEL TRIPPING DIRECT A+B PROFILER 816 FAST TRAV. HYDRO-PHONE 60 FT. NOT RECORDED J.K.
	68								
16	SONOBUOY	1327	1508	340		30°16.1'N	128°15.5'E		SAHE AS ABOVE PROFILER 817 XBT-48 73.4°F 35 FT. NOT RECORDED J.K.
JUNE	69								
68									
	SONOBUOY	1511	1654	475		30°19.2'N	128°25.0'E		CHNL. 2 SPD SKT FEL TRIPPING DIRECT A+B PROFILER 818 FAST TRAV. HYDRO-PHONE 60 FT. NOT RECORDED J.K.
	70								
16	SONOBUOY	1659	1700	465		30°20.8'N	128°31'E		FAILED PROFILER 819 J.K.
JUNE	71 A								
	71 B	1704	1733	464		30°22.4'N	128°34'E		FAILED - PROFILER 819 J.K.
16	71 C	1702	—						FAILED - PROFILER 821 AIRGUN OUT J.K.
JUNE	SONOBUOY								
68	71	1807	1946	445		30°24.3'N	128°37.3'E		CHNL. 2 SPD SKT FEL TRIPPING, DIRECT A+B PROF. 821 FAST TRAV. NOT RECORDED J.K.

Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG ⁶ From TOKYO

To TOKYO

TIME ZONE:

244

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
16	SONOBUDY	2135	2245	417		30°34.2'N	128°35.0'E		CHANN. RECEIVE, 2 SPDSHT. EEL TRIPPING DIRECT A+B PPOF 823
JUNE	72								PAST TRAVERSE. FILT A 30/120 HYDROPHONE 60FT NOT RECORDED
68									J.R.
15	SRP 15	1300	1523					147	CONRAD RECEIVING
JUNE	SRP 15R	2049	2358					148	CONRAD RECEIVING
68									(RECEIVED BOTH ENDS - CHANGED POSITION AFTER FORWARD HALF)

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

245

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 JUNE 68	CORE 150	2020	2215	2583	2573			149	PENETRATION: 341.7cm TOTAL LENGTH: 343 cm TRUE LENGTH: 343.2cm CLAY, VERY DARK YELLOWISH BROWN; CLAY, BETWEEN MEDIUM DARK GRAY + BROWNISH GRAY (7-747cm); ASH, BETWEEN MEDIUM GRAY + MEDIUM BROWNISH GRAY, COARSE GRAIN BETWEEN 710 + 317 AND 337 + 337cm. EXTREMELY GENTLY UNDULATING
18 JUNE 68	MILLIPORE SAMPLE 144	1956				31°03.4'N	132°50.4'E	149	FILTERED 4 LITERS OF SEA WATER WITH NO CLOGGING OF FILTER - MODERATE CONCENTRATION OF NAUPLANKTON
18 JUNE 68	SURFACE TOW 137	2033	2048			31°03.4'N	132°50.4'E	149	MODERATE - LARGE SAMPLE - CONTAINS A LARGE CTENOPHORE WITH A SMALL CRUSTACEA TRAPPED IN ITS TENTACLES, A HYDRO MEDUSAE, MANY COPEPODS, SIPHONOPHORES, CHAETOCNATHS, DOLIOLIDS, MYSIDS AND AMPHIPODS
18 JUNE 68	VERTICAL TOW 103	2224	2233			31°03.4'N	132°50.4'E	149	MODERATE SIZE SAMPLE - INCLUDED ARE A LARGE PTEROPOD 2.5 x 2.0 cm, A LARGE (4cm long) CHAETOCNATH AND SEVERAL SMALLER ONES, DOLIOLIDS, MYSIDS, FISH LARVAE, AMPHIPODS, COPEPODS, CRUSTACEAN LARVAE AND A SOLID 30.5cm L.T.C.
18 JUNE 68	Current Meter # 98B	2220	0133	2580	2521	31°03.4'N	132°50.4'E	149	Film did not advance, cable between it and C.M. came loose, therefore there was nothing to pull starter magnet up.
18 JUNE 68	Bottom Camera # 124B	2220	0133	2580	2521	31°03.4'N	132°50.4'E	149	Film jammed, did not advance any further than two dark shots.
18 JUNE 68	Nephel. # 118	2220	0133	2580	2521	31°03.4'N	132°50.4'E	149	No Layer present. 125" coated plexiglass replacing Teflon sheets on Attenuator. One sheet on each side of Attenuator. Obtained from Light shade Fixture. This Attenuator will be used until notified otherwise.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From

TOKYO To TOKYO

246

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
19 JUNE 68	MULLPORE SAMPLE 145	1045				30-44.3	134-09.4	150	FOUR LITERS SEA WATER FILTERED WITH NO CLOGGING OF FILTER - MODERATE CON. OF NAUOPLANKTON - SOME GREEN PHYTOPLANKTON ALSO PRESENT. SRP
19 JUNE 68	VERTICAL TOW 134	1029	1037			30-44.3	134-09.4	150	MEDIUM SIZE - SAMPLE CONTAINS MANY COPEPODS AND CHAETOGNATHS, EPHIROPHORES, DOLIOLIDS, AMPHIPODS, MYIDS AND SOME PHYTOPLANKTON SRP.
19 JUNE 68	CORE 151	0845	1019	2380	2379	30°44'N 134°04'E		150	PENETRATION: 1205±20 cm TOTAL LENGTH: 909cm TRUE LENGTH: 909cm CLAY, DARK YELLOWISH BROWN TO VERY DARK YELLOWISH BROWN (0-46cm); ASH-RICH CLAY (PALE YELLOWISH BROWN TO MEDIUM BROWNISH GRAY (46- 64cm); CLAY, MEDIUM DARK GRAY (64-474, 507-509cm); CLAY GRADING TO ASH, SHADES OF GRAY + BROWNISH GRAY (474-502cm) GENTLY UNDULATING
19 JUNE 68	MULLPORE SAMPLE 146	1722				30-43.5	135-23.0	151	FILTERED 4 LITERS - NO CLOGGING - LIGHT CON. OF NAUOPLANKTON. SRP
19 JUNE 68	VERTICAL TOW 135	1740	1748			30-43.5	135-23.0	151	SMALL SAMPLE - A SMALL CTENOPHORE, MANY CHAETOGNATHS, MANY SMALL SIPHONOPHORES, A FEW MEDUSAE, MANY Copepods, MYIDS, AMPHIPODS, AN ANNELID WORM AND A FEW DOLIOLIDS WERE CAPTURED IN THIS SAMPLE. SRP
19 JUNE 68	SURFACE TOW 138	1804	1820			30-43.5	135-23.0	151	VERY SMALL SAMPLE - CONTAINS DOLIOLIDS, SOME CHAETOGNATHS, A FEW SIPHONOPHORES, A FEW PTEROPODS, COPEPODS, SCYLLARID NAUOS, GASTROPODS, AND A CERATE MEDUSAE. SRP
19 JUNE 68	CORE 152	1755	1937	2292	2309	30°43.5'N 135°23.0'E		151	PENETRATION: 1195±20 cm TOTAL LENGTH: 911 cm TRUE LENGTH: 911 cm CLAY, PRE DOMINATELY DARK YELLOWISH BROWN (0-29cm); VERY ASH- RICH CLAY, BETWEEN MEDIUM DARK GRAY + BROWNISH GRAY (29-47cm); LAY ASH RICH CLAY, MEDIUM DARK GRAY (47-50cm) MOUNTAINOUS REGION

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG-6 From TOKYO To TOKYO

247

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 JUN 68	TORAD 76	2120	2215	2585				149	2 PROBES IN MUD - BOTH ON FILM. WT AND PRESS. OK. CORO MEAS.
									BORC
19 JUN 68	TORAD 77	1755	1937	2292		30°43'S	135°23.0'	151	3 PROBES IN MUD, TWO ON FILM AT HITS. WT & PRESS. OK. CORO MEAS.
									BORC
19 JUNE 68	BOTTOM CAMERA 124	1728	2025	2292	2292	30°43.5'N	135°23.0'E	151	41 usable photos, Tracks, Trunk, Sediments, etc.
									J.P.
19 JUNE 68	CURRENT METER 98	1728	2025	2292	2292	30°43.5'N	135°23.0'E	151	With ~24 cm/sec, starting this station and all the rest, all the pendulums will be 0.10 thick, unless other were noted.
									J.P.
19 JUNE 68	NEPHELOMETER 119	1728	2025	2292	2292	30°43.5'N	135°23.0'E	151	NO Layer present, Experimental Attenuation.
									J.P.
20 JUNE 68	CORE 153	0651	0840	2414	2344	30°10'N	137°09.5'E	152	PENETRATION: 940 ± 10 cm TOTAL LENGTH: 965 cm TRUE LENGTH: ~940 cm. CLAY, DARK YELLOWISH BROWN TO VERY DARK YELLOWISH BROWN (10-14 cm); ASH, PREDOMINATELY PALE YELLOWISH BROWN (14-27 cm); CLAY + ASH - RICH CLAY, RANGING BETWEEN MEDIUM GRAY + MEDIUM DARK GRAY (27-~940 cm) AT BASE OF SEAMOUNT.
20 JUNE 68	TORAD 78	0651	0840	2410		30°10.0'	137°04.5'	152	3 IN MUD & ON FILM. WT & PRESS. OK. CORO MEAS.
									BORC

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

248

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20	Amurens	0602				30°10'N	137°04.5'E	152	FILTERED 4 LITERS. NO CLIPPING OF PLANKTON.
JUNE	Amurens								ENTER. LOW CONCENTRATION OF NAUPLANKTON.
66	147								
20	VERTICAL	0600				30°10'N	137°04.5'E	152	SAMPLE CONTAINS MANY PLANKTONS (SEE UP).
JUNE	TOW		0630						A LARGE JUBBER OF AMPHIPODS (AMPHIROPS), DIATOMS,
66	126								CHARACTERISTICS, DIATOMS, A MEDUSA, FISH LARVAE,
									AND Copepods.
20	SURFACE	0654				30°10'N	137°04.5'E	152	SMALLER PLANKTONS. MANY PLANKTONS, DIATOMS,
JUNE	TOW		0709						DIATOMS, CHARACTERISTICS, AMPHIPODS, MANY Copepods,
66	139								DIATOMS, FISH LARVAE.
20	JET NET	1557				30°03.5'N	137°27'E	152.1	SAMPLE UP SMALL PLANKTONS - MADE UP OF Copepods,
JUNE	TOW		1630						AND CHARACTERISTICS ALMOST EXCLUSIVELY. ALSO
66	66					30°03'N	137°23'E		SEVERAL AMPHIPODS A FISH LARVA (NOT IDENTIFIED)
									AND A SMALL Copepod.
20	Bottom	0600	0911	2410	2390	30°10'N	137°04.5'E	152	35 photos, Tails section to snows
JUNE	Bottom	0741		2440					
68	120								
20	Current	0600	0911	2410	2390	30°10'N	137°04.5'E	152	Good station, South East ~ 1.8 cm/sec.
JUNE	Net	0741		2410					
68	91								
20	Nephel	0600	0911	2411	2390	30°10'N	137°04.5'E	152	Experimental Attenuator, No layer present
JUNE	#120	0741		2410					
68									

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

249

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From Tokyo To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21 JUNE 68	MILLIGORE SAMPLE 146	0039				35° 51.7' N	137° 43.5' E	153	FILTERED 4 LITERS - WITH NO CLOGGING OF FILTER - LOW CONC. OF PLANKTON
									SRP.
21 JUNE 68	VERTICAL TOW 137	0044			0057	35° 51.7' N	137° 43.5' E	153	MEDIUM SIZE SAMPLE - GREAT ABUNDANCE OF MYXIDUS, A M. OYSAI AT A SPECIFIC DEPTH FOUND IN PREVIOUS SAMPLES, FISH LARVAE, AND SMALL PLANKTONIC ORGANISMS: COPEPODS, CHARTINATHIS, SIPHONOPHORES, AMPHIROUS FOUND IN THE SAMPLE. SDP.
21 JUNE 68	SURFACE TOW 140	0117			0132	35° 51.7' N	137° 43.5' E	153	LARGER THAN VERTICAL SAMPLE - MYXIDUS, A FEW COPEPODS, SIPHONOPHORES, A FEW SMALL LARVAE, COPEPODS, AMPHIROUS AND MANY SMALL CHARTINATHIS CAPTURED IN THIS SAMPLE. SRP.
21 JUNE 68	CORE 154	0103	0237	2237	2234	35° 51.7' N	137° 43.5' E	153	PENETRATION 320±10cm, TOTAL LENGTH 875cm, TRUE LENGTH 380cm CLAY, DARK YELLOWISH BROWN TO VERY DARK YELLOWISH BROWN (0-38cm); CLAY, BETWEEN MEDIUM DARK GRAY + BROWNISH GRAY (38-42cm); VERY ASH-RICH CLAY, MEDIUM BROWNISH GRAY (42-54 + 55-380cm); CLAY, MEDIUM DARK GRAY (54-352cm) HILLY, 20-40cm BROWN
21 JUNE 68	CURRENT M.T. #100	0250	0556	2237	2245	35° 51.7' N	137° 43.5' E	153	N. 114, ~ 3.4 cm/sec
									J.P.
21 JUNE 68	Bottom Climax #126	0250				35° 51.7' N	137° 43.5' E	153	2.6 with photo, fossils, minerals, sediment
									J.P.
21 JUNE 68	Nephel. #121					35° 51.7' N	137° 43.5' E	153	Experimental Atlantic, V. Nepheloid Layer
									J.P.

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG-6 From TOKYO To TOKYO

250

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21	TERAD	0103	0237	2228				153	1 PROBE IN MUD AND ON FILM AT 117. WT OK
JUNE 68	79	117	0140	117	2236				PRESS OK. (GOLD METS. COULD ATTEMPTING IN MY HAVE MOVED IN MUD.
									BOB C.
21	CORE	1147	1323	2259	2349	31°44'N	137°08'0"E	154	PENETRATION 397±10 cm TOTAL LENGTH 855 cm TRUE LENGTH 340 cm
JUNE 68	155	1224	HIT	2256					ASH-RICH CLAY, BETWEEN DARK YELLOWISH BROWN + VERY DARK YELLOWISH BROWN (0-16 cm) + BROWNISH GRAY (16-19 cm); ASH, PRE DOMINATELY MEDIUM BROWNISH GRAY TO MODERATE YELLOWISH BROWN (19-35 cm); CLAY, MEDIUM GENTLE SLOPE NEAR SEAWARD. BROWNISH DARK GRAY (35-36 cm); VERY ASH-RICH CLAY, MEDIUM GRAY-MEDIUM GRAY
21	Mud. Core	1229				31°44'N	137°08'E	154	FILTERED 100% LITER OF SEA WATER ALSO CLOCCING OF FILTER
JUNE 68	SAMPLE 149								SRP
21	VERTICAL	1224				31°44'N	137°08'E	154	CHARACTOCNATHS, MYSIDS, TELLINID RUDIDS
JUNE 68	Tow. 138		1233						SIPHONOPHORES, DOLIOLIDS, MANY COPEPODS AND SOME DIATOMS CAPTURED IN THIS TOW.
									SRP
21	SURFACE	1254				31°44'N	137°08'E	154	SEVERAL PTEROPODS, A FISH LARVAE, DIATOMS, AMPHIPODS, CHARACTOCNATHS, SIPHONOPHORES AND MANY COPEPODS IN THIS SAMPLE
JUNE 68	Tow. 141		1209						SRA
21	TERAD	1147	1323	2262				154	1 PROBE IN MUD AND ON FILM. WT ? PRESS OK.
JUNE 68	80	117	1224	117	2256				COM. IN MUD BOB C.
21	CORE	2053	2235	2304	2300	31°28'N	136°35'0"E	155	PENETRATION 562±10 cm TOTAL LENGTH 347 cm TRUE LENGTH 332 cm
JUNE 68	156	2135	HIT	2302					CLAY + ASH RICH CLAY, SHADES OF YELLOWISH BROWN + MEDIUM DARK GRAY (0-50 cm); ASH, BETWEEN MODERATE YELLOWISH BROWN + MEDIUM BROWNISH GRAY (50-59 cm); ASH + ASH-RICH CLAY MEDIUM DARK GRAY (59-337 cm) FRAGMENTS OF ASH LAYER AT 337 cm. LINDULATINE.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

251

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
21	VERTICAL	2203				32° 20' N	136° 35' E	155	LARGE PLANKTON CONTAINS A 4m long 1 segment
JUNE	Tow		2212						FRAG AND SOME FISH LARVAE, A 3m S. PHYLLOPOD, AND A 3m POLYCHAETE LARVA. ALSO COALITOMIDUS, COE P. 05, DOLICHOCEPHALUS, A. PHYLLOPOD, AND V. 05. SRP.
68	139								
21	SURFACE	2156				32° 20' N	136° 35' E	155	4m LONG PLANKTON - COALITOMIDUS, A 11m PHYLLOPOD, SYPHONOPHORES, FISH LARVAE, MYCTOPIDS, ANCHOVETTES, PTEROPODS AND COPEPODS - ALSO MANY COPEPODS & USUAL SRP.
JUNE	Tow		2151						
68	142								
21	HANDICOR	2333				32° 20' N	136° 35' E	155	FILTERED 4 LITERS OF SEA WATER AND CONCENTRATED LOW CONCENTRATION OF NANOPLANKTON SRP.
JUNE	SAMPLE								
68	150								
21	TRIPAD	2058	2235	2304				155	ON FILM AND IN MIND: TWO DOORS
JUNE	81	14	2135	14	2302				WT OK, PRESS OK, COND MENS.
68									BOOC.
21	CURRENT	2304	2335	2304	2335			155	FILM DIDN'T RELEASE, STARTING MIGHT HAVE BEEN
JUNE	METER	2203		2404					PULLED DOWN (BY DRAGGING) JUST ENOUGH SO THAT IT
68	#101A	2034	2335	2304	2303				WOULDN'T TRIGGER SWITCH BUT NOT ENOUGH TO EFFECT
									BOTH CURRENTS. I AM STARTING CABLE BETWEEN
									CAN AND BOTTOM CURRENT. SRP.
21	FTT	2034	2335	2304	2303			155	3 sample photos. EXTENSIVE DRAGGING, SOLI.
JUNE	(CONTINUED)	2203		2404					
68	#117								SRP.
21	NIGHT	2034	2335	2304	2303			155	No Nighted Layer present. very large 1st
JUNE	#122	2203		2404					ATTEMPT
68									SRP.

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

252

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 4 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
22 JUN 68	CORE	1423	1618	2545	2545			156	PENETRATION AT LEAST TO BASE OF CORE HEAD, ≈ 200 cm TOTAL LENGTH 305 cm TRUE LENGTH ≈ 305 cm CLAY, DARK YELLOWISH BROWN (0-8 cm); CLAY GRADING TO SANDY CLAY, MEDIUM TO DARK GRAY (8-33 cm); CLAY GRADING TO ASH, MEDIUM TO DARK GRAY (33-47 cm); CLAY WITH OCCASIONAL ASH RICH LAYERS, MEDIUM TO DARK GRAY.
22 JUN 68	TERRAD	1423	1618	2545				156	2 PROBES IN MUD AND ON FILM. W/ PRESS OK
22 JUN 68	82	1411	1504	1411	2545				COND MEAS
									SOPC.
22 JUN 68	MILLIPOR	1452				23°N 155°E		156	FOUR LITERS OF SEA WATER FILTERED - NO CLOGGING OF FILTER - BUT LOW. OF NANOPHANTHES IN THE SLURRY.
22 JUN 68	131								SRP.
22 JUN 68	VERTICAL	1427				23°N 155°E		156	SMALL BUBBLES MANY LONG CILIATES, SIPHONOPORES, MANY CILIATES, MOLLUSCS, AND DOLLOIDS.
22 JUN 68	TSD		1415						SRP.
22 JUN 68	140								SRP.
22 JUN 68	SURFACE	1436				23°N 155°E		156	LARGE BUBBLES DUE TO LOCAL GROUNDWATER AT PHTHOPHANTHES - ALSO MANY CILIATES AND MOLLUSCS.
22 JUN 68	TSD		1451						SRP.
22 JUN 68	143								SRP.
22 JUN 68	MILLIPOR	1427				23°N 155°E		157	FOUR LITERS OF SEA WATER FILTERED - NO CLOGGING OF FILTER - BUT LOW. OF NANOPHANTHES IN THE SLURRY.
22 JUN 68	124								SRP.
22 JUN 68	VERTICAL	1424				23°N 155°E		157	SMALL BUBBLES - MANY LONG CILIATES, SIPHONOPORES, MOLLUSCS, AND DOLLOIDS.
22 JUN 68	TSD		1412						SRP.
22 JUN 68	141								SRP.

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE LEG ~~6~~ From

TOKYO To TOKYO

TIME ZONE

[illegible]

NO BY RECORD FOUND AT THE; EXHIBIT CLOSE TO RAGE OF DEATH.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

254

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23 JUNE 66	WILLIAMS 133	1413				31°37.7'N	137°06.5'E	156	THICK LITERS OF SEA WATER FILTERED NO COCCIDIA OF FISHES - LOW COUNT OF VIBRIO PARVUS & V. PARVUS IN FISHES.
									SRP.
23 JUNE 66	WILLIAMS 142	1407	1415			31°37.7'N	137°06.5'E	158	SMALL SAMPLE - CHL. TROCHANTS, STYLOPODOPHORES, MYXID, DOLLOIDS, NO MUREX, SOME CANTHAROPHORES, AND ALGAL COPEPODS.
									SRP.
23 JUNE 66	SURFACE 145	1410	1416			31°37.7'N	137°06.5'E	156	ALSO S.E. 1. BENTHIC SANDS - PRIMARILY COMPOSED OF E. BENTHIC SAND COPEPODS - ALSO PRESENT ARE M. T. EGG, DOLLOIDS, (F.C.) CHL. TROCHANTS, STYLOPODOPHORES, AND FISH LARVAE.
									SRP.
23 JUNE 66	JET NO. 1 167	1615	1646			31°35'N	137°25.5'E	156.1	SMALL SAMPLE - CONTAINS LARGE AMOUNT OF PHYTOPLANKTON, MANY CHL. TROCHANTS, & FEW FISH LARVAE, AND SMALL COPEPODS.
									SRP.
23 JUNE 66	CORE 160	1839	2010	2183	2186	31°31.4'N	137°46.7'E	159	PENETRATION: 1115 ± 7 cm. TOTAL LENGTH: 945 cm. TRUE LENGTH: 945 cm. CLAY, VERY DARK YELLOWISH BROWN GRADING WITH DEPTH TO DARK YELLOWISH BROWN (0-35 cm.); ASH-RICH CLAY, MEDIUM DARK GRAY (38-62 cm.); ASH PALE YELLOWISH BROWN TO OLIVE GRAY (65-71 cm.); CLAY, MEDIUM VERY GENTLY ROLLING, < 50 cm. RELIEF. 235-242 cm. DARK GRAY WITH BROWNISH GRAY ASH LAYERS BETWEEN 410-416 cm.
23 JUNE 66	T6 RAD 85	1839	2010	2183	2184			159	3 PROBES IN MUD, 2 ON FILM AT 1411. WT & PRESS OK. COND. MEAS.
									BOBC
23 JUNE 66	T6 RAD 84	1227	1411	2297				158	3 PROBES IN MUD AND ON FILM WT & PRESS

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

255

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23	CURRENT	1744	2047	2182	2185	31° 31' N	137° 47' E	9	floor station, ~ 7.6 cm/sec. Southward
June	meter	1925		2242					J.P.
68	#102								
June	Bottom	1744	2047	2182	2185	31° 31' N	137° 47' E	9	25-math photos, sediment, etc.
23	Camera	1925		2242					J.P.
1968	#130								
	#129								
23	Nephel	1744	2047	2182	2185	31° 31' N	137° 47' E	9	No Layer present
June	#125	1925		2242					J.P.
68	#124								
24	CORE	0950	1116	2030	2020	32° 14.9' N	138° 16.5' E	160	PENETRATION 746 ± 30 cm. TOTAL LENGTH 1028 cm. TRUE LENGTH ~ 850 cm.
JUNE	161	1035	HIT	2023					CLAY, PREDOMINATELY DARK YELLOWISH BROWN (0-74 cm); CLAY,
68									BETWEEN OLIVE GRAY + MEDIUM DARK GRAY (24-253, 273-603, +
									606-~850 cm); VERY ASH-RICH CLAY BETWEEN MEDIUM GRAY +
									MEDIUM OLIVE GRAY (253-273 cm); ASH-LIGHT GRAY (603-606 cm) (ENTIRE SURF
24	MILLIMETER	0907				32° 14.5' N	138° 16.5' E	160	FORCED TOOL LOOKS AT SEA BOTTOM: LIGHT
June	SAMPLE								(CON. OF NAUPLANKTON).
68	#154								S.R.P.
24	Vertical	0929	0938			32° 14.5' N	138° 16.5' E	160	
June	Tool								
68	#155								
24	Vertical	0749				32° 14.5' N	138° 16.5' E	160	
June	Tool		1004						
68	#156								

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

256

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE _____

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24	CHURCH	1132	1413	2032	2072	32° 14' N	165° 11' E	160	~ 6.5 cm/sec North West
JUNE	METER	0054		2074					
67	103								J.P.
24	BOTTOM	1132	1413	2032	2032	32° 14' N		160	20 usable photos, Sed. ... mounds
JUNE	CHURCH	0054		2074			165° 16.5' E		
68	130								J.D.
24	N. HILL	1132	1413	2032	2032	32° 14' N		160	~ 810 Fm Nephrite, 1 Lingule
JUNE	125	0054		2074			165° 16.5' E		
68									J.P.
24	T. GRAD	1950	1116	2030				160	3 PROBES IN MUD AND ON FILM. WT OK PRESS
JUNE	86	HIT	1125	HIT	2023				OK. COND. MESS.
68									BORC
24	T. GRAD	1914	2036	2160				161	3 PROBES IN MUD AND ON FILM. WT OK PRESS
JUNE	87	HIT	1948	HIT	2153				OK. COND. MESS.
68									BORC
24	CORIE	1914	2036	2155	2154	32° 14' N	165° 16' E	161	PENETRATION: 100% TOTAL LENGTH 901
JUNE	162	1948	HIT	2153					CLAY BETWEEN DARK YELLOWISH BROWN + VERY DARK YELLOWISH
68									BROWN (0-70-); CLAY BETWEEN MEDIUM DARK GRAY + OLIVE GRAY (7-11,
									90-301 + MOST OF 310-244 CM); ASH, PREDOMINATELY BETWEEN LIGHT
									OLIVE GRAY + MEDIUM LIGHT GRAY (11-90, 301-310, 340-341, + 421-432).
									GENTLE SLOPE.
25	T. GRAD	0104	0230	2143				162	2 PROBES IN MUD AND ON FILM. WT OK PRESS
JUNE	88	HIT	0137	HIT	2138				OK. COND. MESS.
									BORC

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

257

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 6 From TOKYO To TOKYO

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23	CORE	0104	0230	2142	2035			162	PENETRATION: 6252 ROCK TOTAL LENGTH: 252 CM TRUE LENGTH 23500
JUN	163	0137	HIT	2138					CLAY, DEPRESSING LARGELY ON HYDROCLITE CONTENT. RAPIDS
68									BETWEEN OLIVE GRAY, DARK OLIVE GRAY, DARK GRAY, CONTAINS
									SANDY LAYERS BETWEEN 50157, 57151, 57153, 57156, 57158
									REGION, 57159, 57160, 57161, 57162, 57163, 57164, 57165, 57166, 57167, 57168, 57169, 57170, 57171, 57172, 57173, 57174, 57175, 57176, 57177, 57178, 57179, 57180, 57181, 57182, 57183, 57184, 57185, 57186, 57187, 57188, 57189, 57190, 57191, 57192, 57193, 57194, 57195, 57196, 57197, 57198, 57199, 57200
24	MULTICORE	1809				32°51'S	176°02'E	161	FOR 2 LITERS SED. WARE FILTERED - M
JUNE	SAMPLE								CLONING OF FILTER - LOW CON. OF
66	155								NANOPHYTON.
									SRP
24	VERTICAL	1826				32°51'S	176°02'E	161	MEDIUM SIZE SAMPLE - SEVERAL LARGE (HABITUALLY
JUNE	TOW		1835						AND SEVERAL SMALLER, AMPHIROD, MYDIA, APOEAL
68	144								LARVAE, MANY COPEPODS, AN ANCHYLUS, A PTERODACTYL
									LARVAE, D. LULIDS, A SMALL SQUID AND PHYTOPLANKTON
									CAPTURED IN TWIN TOW.
24	SURFACE	1859				32°51'S	176°02'E	161	ALSO MEDIUM SIZE - SEVERAL COPEPODS, HABITUALLY
JUNE	TOW		1905						FISH LARVAE, MYDIA, SYPHOPOPHORES AND JAPINGOIDS
68	147								115. SOME PTERODACTYL (Copep.) - 100. WING
									100. LONG
									SRP
24	MULTICORE	1938				32°51'S	176°02'E	162	THAT W. FILTERS OF WATER - SAMPLE
JUNE	SAMPLE								CONTAINS HIGH CON. OF NANOPHYTON.
68	156								SRP
25	VERTICAL	0051				32°30'N	175°51'W	162	SAMPLE CONTAINS A SMALL LUTICULID F.M.,
JUNE	TOW		0102						MANY COPEPODS AND CRUSTACEANS, SOME
68	145								MYDIA, AND PHYTOPLANKTON.
25	SURFACE	0120				32°30'N	175°51'W	162	EXTREMELY LOW SAMPLE - 10 LITERS OF WATER
JUNE	TOW		0135						CRUSTACEANS, COPEPODS, AND PHYTOPLANKTON
68	148								CONTAINS A DEGREE OF 100. WING
									SRP

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG-From

To

TIME ZONE ____

258

[illegible]

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG—From

7010/0

To

ADAK

TIME ZONE

-9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	TKRAD	0802	0901	1344				163	2 PROBS IN MUD HAD ON FILM, WT & PRESS TRACKS OK.
JULY	89	Hit	0827	Hit	1246				CONDUCTIVITY NOT MEASURED: LINED CORE.
68									
5	CORE	0802	0901	1359	1232	36°27'N	141°53'E	163	PENETRATION: = 650cm (BASE OF HEAD) TOTAL LENGTH: 336cm. LINED CORE. OLIVE GRAY CLAY. GENTLE HILLS + LOW ANGLE SLOPES.
JULY	164	0837	HIT	1246					
68									
5	BOTTOM	0745	0431	1240	1236	36°27'N	141°53'E	163	11 double photos! soft mud and sediment. large mud clumps on hitting
JULY	CAMERA	0820		1253					
68	131								
5	WHEEL	0712	—	1240	1236	36°27'N	141°53'E	163	film wrongly rolled in camera. Therefore it did not advance, thus producing no exposures
JULY	METER	0820		1253					
68	177A								
5	CURRENT	0745	0431	1240	1236	36°27'N	141°53'E	163	No pictures at the bottom but while descending. Therefore camera runs out of film before reaching bottom.
JULY	METER	0820		1253					
68	104A								
5	GRAB	0814	0410					163	Empty Two 36# weights
JULY	SAMPLE	0814	0410						
68	112								
5	GRAB	0819						163	Lost Two 25# weights
JULY	SAMPLE								
68	114								

Peter Buhl
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From TOKYO

To AD AK

TIME ZONE -9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
5	MILLIPORE					36°27'N	141°53'E	163	NO DIFFICULTIES
JULY	157								
68									
5	VERTICAL	0710				36°27'N	141°53'E	163	INNER METER WHEEL APPEARS INCORRECT
JULY	TOW	0705	0721						
68	146								
5	SURFACE	0721	0751			36°27'N	141°53'E	163	NO DIFFICULTIES
JULY	TOW								
68	149								
3-6	CORE	2132	0045	3417	~3540	37°04'S	143°51'E	164	PENETRATION: 428-15cm TOTAL LENGTH: 382 cm. LINED
JULY	163	2235	HIT	~3450					CORE SANDY CLAY, DARK YELLOWISH BROWN + OLIVE GRAY
68									GENTLY UNDULATING SLOPE.
5	MILLIPORE							164	NO DIFFICULTIES
JULY	158								
68									
5	SURFACE	2107	2122					164	LIKE SAMPLE
JULY	TOW								
68	150								
6	VERTICAL	0056	0122					164	WINCH TROUBLE. NET AT SURFACE 15
JULY	PLANKTON								MINUTES
68	TOW								
	147								

Peter B. B.
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From TOKYO

To

ADAK

TIME ZONE

7-3

-9

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
25	TORAD	2132	0045	3420				164	2 PROBES IN MUD AND ON FILM. WT OK PRESS
JULY	90	HIT	2235	HIT	3450				OFF SLAVE. LINED CORE.
68									
3-6	BOTTOM	2101	0204	3412	3512	37°02.9'N	143°50.3'E	164	Too bottom exposures because tripod never reached the bottom. The water was too deep and the wire angle was too large = 45°.
JULY	CAMERA	no hit							
68	132 A								
5-6	NEEHEL	2037	0206	3412	3512	37°02.9'N	143°50.3'E	164	Exposure became gradually dimmer due to weak light. Also on nephelometer light. Therefore film is useless even for that section that appears to be properly exposed.
JULY	OMETER	no hit							
68	127 B								
5-6	CURRENT	2101	0204	3412	3512	37°02.9'N	143°50.3'E	164	Exposures while descending and not at bottom.
JULY	METER	no hit							
68	104 B								
6	CORE	2115	2333	2788	2792	38°19'N	145°45'E	165	PENETRATION: 250-500m TOTAL LENGTH: 840 LINED CORE. CLAY, OLIVE GRAY, APPARENTLY CONTAINING ASH LAYERS. ENTIRELY UNOCCUPYING, UP TO 70% RELIEF.
JULY	166	2207	HIT	2786					
68									
6	TORAD	2115	2333	2713				165	NO FILM ADVANCE. 2 PROBES LOST.
JULY	91 A	HIT	2207	HIT	2786				
68									
6	WILLIAMS	2040	2040	2714	2714			115	
JULY	159								
68									

Peter Buhl
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From TOKYO To ADAK

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	SURFACE	0037	0054					165	
JULY	PLANKTON								
68	TOW								
	151								
7	MILLIPORE	2250	2250					166	
JULY	160								
68									
7	SURFACE	2255	2310	3815	3877 F.			166	
JULY	PLANKTON								
68	TOW								
	152								
7-8	CORE	2354	3400	3900	3917	40°44'N	144°37'E	166	PENETRATION: 470? cm TOTAL LENGTH: 286 cm. LINED CORE
JULY	167	0057	HIT	3917					SANDY CLAY, BETWEEN OLIVE GRAY + DARK GREENISH GRAY
68									
8									GENTLE SLOPES, NEARLY FLAT AT STATION POSITION (BOTTOM OF JAPAN TRENCH)
JULY	VERTICAL	0404	0413	3818	3878 F.	40°45'N	144°37'E	166	
68	PLANKTON								
	TOW								
	148								
8	MILLIPORE	0738	0738	2232	2232 F.	40°52'N	144°47'E	167	
JULY	161								
68									
8	VERTICAL	0751	0901	2047 m.	2040 F.m.	40°58'N	144°57'E	167	
JULY	PLANKTON								
68	TOW								
	149								

Peter Buhl
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From To

To

ADAK

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
July 17/68	104D	2332	0424	3880	3898	48°44'N	144°37'E	166	Current meter for did not advance due to mechanical failure in the current.
July 17/68	128	2258	0123	3880	3898	48°44'N	144°37'E	166	Deep sounder. The sounder up to 2000 fms. and 1200 fms. The sounder is in good working order. The sounder is in good working order. The sounder is in good working order.
July 17/68	133	2332	0424	3880	3898	48°44'N	144°37'E	166	Deep sounder. The sounder up to 2000 fms. and 1200 fms. The sounder is in good working order. The sounder is in good working order. The sounder is in good working order.
July 17/68	127	2045	0217	2790	2792	38°41'N	145°45'E	165	Deep sounder. The sounder up to 2000 fms. and 1200 fms. The sounder is in good working order. The sounder is in good working order. The sounder is in good working order.
July 17/68	132	2054	0154	2790	2792	38°41'N	145°45'E	165	Deep sounder. The sounder up to 2000 fms. and 1200 fms. The sounder is in good working order. The sounder is in good working order. The sounder is in good working order.
July 17/68	141C	2054	0154	2790	2792	38°41'N	145°45'E	165	Deep sounder. The sounder up to 2000 fms. and 1200 fms. The sounder is in good working order. The sounder is in good working order. The sounder is in good working order.

Peter Buhl
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From

TOKYO To AOAK

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
8	SURFACE	0006	0921	2040	2041	40°59'N	144°58.3'E	167	
JULY	PLANKTON								
68	TOW								
	#153								
7-8	T. GRAB	2354	0318	3895				166	2 PROBES IN MUD AND ON FILM WT + PRESS OR LINED
JULY	91	HIT	0057	HIT	3917				CORE
68									
8	GRAB	0923	1057					167	Small ROCKS TWO 36" WEIGHTS
JULY	SAMPLER	ON BOARD	1450						
68	151								
8	GRAB	0929	1106					167	Small ROCKS + ONE piece purple FOUL 25" WEIGHT
JULY	SAMPLER	ON BOARD	1455						
68	#								
8	CORE	0919	1049	~2040	~2170	40°57'N	144°56'E	167	PENETRATION: ~360cm. TOTAL LENGTH: 427cm TRUE LENGTH: 427cm
JULY	168	0957	HIT	~2070					VERY ASH-RICH CLAY, DARK YELLOWISH BROWN TO OLIVE GRAY + DARK GREENISH GRAY (0-6cm); ASH, LIGHT GRAY (6-8cm); VERY ASH-RICH CLAY, RANGING BETWEEN OLIVE GRAY, DARK OLIVE GRAY + DARK GREENISH GRAY; Mn RICH CRST, BROWNISH BLACK (307-310cm) SAND + GRANULES OLIVE GRAY; Mn RICH CRST, BROWNISH BLACK (307-310cm) SAND + GRANULES OLIVE GRAY
68									
8-9	DREDGE	1711	0205					167	DREDGE: CROWN DREDGE WITH BOTTOM LINER WITH BURLAP
JULY	3	ON BOTTOM							BAG + PEEBLE DREDGE ATTACHED PERPLE DREDGE LOST
68		~2107 to ~0100		~2790	~2400	40°58.3'N	144°55.5'E		SAMPLE: ABOUT 50 lbs. of ANGLAR TO WELL ROUNDED FRAGMENT
									RANGING FROM GRANULES TO CORBLES 10cm in DIAMETER OLIVE GRAY
									BASALT PRE DOMINATES; Mn IS COMMON; SHALE + ALTERED ASH RARE
7	SURFACE	1702	1717	177FM	176FM	43°N	146°04'E	168	
JULY	PLANKTON								
68	TOW								
	154								

Pete Buhl
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From 1 July To 1 Aug

To

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10 July	Porter	0414	—	3788	—	42° 37' N	145° 11.8' E	167	Under 100 fathoms to 2000 fathoms, green mud.
11 July	Porter	0543	—	3105	—				Under 100 fathoms to 2000 fathoms, green mud.
17/68	134 B								100 fathoms to 2000 fathoms, green mud.
10 July	Porter	0414	—	3788	—	42° 37' N	145° 11.8' E	167	Under 100 fathoms to 2000 fathoms, green mud.
11 July	104 F	0543	—	3105	—				Under 100 fathoms to 2000 fathoms, green mud.
17/68									100 fathoms to 2000 fathoms, green mud.
10 July	Porter	0336	—	3788	—	42° 37' N	145° 11.8' E	167	Under 100 fathoms to 2000 fathoms, green mud.
11 July	129	0543	—	3105	—				Under 100 fathoms to 2000 fathoms, green mud.
17/68									100 fathoms to 2000 fathoms, green mud.
8 July	Porter	0840	—	2070	—	40° 51' N	144° 56' E	167	Under 100 fathoms to 2000 fathoms, green mud.
11 July	Porter	0936	—	2060	—				Under 100 fathoms to 2000 fathoms, green mud.
17/68	134 A								Under 100 fathoms to 2000 fathoms, green mud.
8 July	Porter	0840	—	2070	—	40° 51' N	144° 56' E	167	Under 100 fathoms to 2000 fathoms, green mud.
11 July	Porter	0936	—	2060	—				Under 100 fathoms to 2000 fathoms, green mud.
17/68	104 E								Under 100 fathoms to 2000 fathoms, green mud.
8 July	Porter	0733	—	2070	—	40° 51' N	144° 56' E	167	Under 100 fathoms to 2000 fathoms, green mud.
11 July	129 A	0936	—	2060	—				Under 100 fathoms to 2000 fathoms, green mud.
17/68									Under 100 fathoms to 2000 fathoms, green mud.

Peter Bull
Chief Scientist

Columbia University
in the City of New York

Research Vessel ROBERT D. CONRAD

CRUISE N°

CRUISE LEG—From TOKYO

To

ADAK

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
7	VERTICAL	1717	1731	776FM	772FM	43°N	146°04'E	168	
JULY	PLANKTON								
168	TOW								
	150								
9	MILLIPORE	1735		1005FM		43°N	146°04'E	168	
JULY	SAMPLE								
168	162								
9	CORE	1631	1711	1008	995	43°N	146°04'E	168	PENETRATION: 310cm. TOTAL LENGTH: 258cm. LINED CORE.
JULY	169	1651	HIT	999					SANDY CLAY, OLIVE GRAY + DARK GREENISH GRAY.
168									
									CONTINENTAL SLOPE, EAST OF HOKKAIDO; HUMMOCKY SLOPE
10	MILLIPORE	1340		3780FM		42°40'N	148°04'E	169	
JULY	SAMPLE								
168	163								
10	VERTICAL	0349	0358	3770FM	375FM	42°40'N	148°04'E	169	
JULY	PLANKTON								
168	TOW								
	151								
10	SURFACE	0405	0420	3778FM	3778FM	42°40'N	148°04'E	169	
JULY	PLANKTON								
168	TOW								
10	CORE	0431	0820	3800	3784	42°35'N	148°11'E	169	PENETRATION: 495cm. TOTAL LENGTH: 440cm. LINED CORE.
JULY	170	0539	HIT	3807					CLAY OR SANDY CLAY, PREDOMINATELY DARK GREENISH GRAY.
168									
									NEAR SEINFURT IN BURN TRENCH

Peter Buhl
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From TORNO

To

ADAK

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10 JUL 68	T6RAD 92	0431	0820	3783				169	2 PROBES IN MUD AND ON FILM. HIT & PRESS OK. LINED CORE.
10 JUL 68	T6RAD 93	1937	2127	2632				170	1 PROBE IN MUD AND ON FILM WTT PRESS OK LINED CORE
10 JUL 68	GRAB 115	1940	2147					170	EMPTY TID 26" height
	SAMPLER ON BOARD 2205								
10 JUL 68	GRAB 116	1945	2150					170	EMPTY FOUR 25" height
	SAMPLER ON BOARD 2210								
10 JUL 68	CORE 171	1937	2127	2632	2633	47°21'N	149°55'E	170	PENETRATION 300730 TOTAL LENGTH: 262 CM LINED CORE. CLAY OR SANDY CLAY, OLIVE GRAY TO DARK GREENISH GRAY
									VERY GENTLY UNDULATING, LESS THAN 20m RELIEF
10 JUL 68	MILLIPORE 164	1904		2632				170	
	SAMPLE								
10 JUL 68	VERTICAL 152	1924	1934	2632	2631			170	
	PLANKTON TOW								

Peter Birk
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From TOKYO

To ~~HONOLULU~~ ADAK

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10	SURFACE	1953	2008	2631	2632			170	
JULY	PLANKTON								
68	TOW								
	156								
11	TORAD	0615	0815	2705				171	2 PR. IN MUD & ON FILM, WT & PRESS ON
JULY	94	HIT	0658	HIT	2714				LINED CORE.
68									
11	MILLIPORE	0540		2706				171	
JULY	SAMPLE								
68	1165								
11	VERTICAL	0558	0607	2706	2706			171	
JULY	PLANKTON								
68	TOW								
	153								
11	SURFACE	0638	0643	2710	2713			171	
JULY	PLANKTON								
68	TOW								
11	GRAB	0631	0635					171	ONE SMALL FISH, ONE SMALL ROCK FISH, AND
JULY	SAMPLER	on board	0710						THREE CLOTH SPECIMENS (ONE SMALL FISH, ONE
68	117								SHRIMP, AND ONE JELLY TYPE MASS) FROM 20' DEPTH
11	GRAB	0634	0840					171	EMPTY
JULY	SAMPLER	on board	0915						
68	118								

Peter Buhl
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-7

CRUISE LEG—From TOKYO

To ADAK

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
11	CORE	0615	0815	2707	2724	42°07'N	151°36'E	171	PENETRATION: 575310 cm. TOTAL LENGTH 409 cm. LINED CORE.
JULY	172	0638	HIT	2714					DARK YELLOWISH BROWN CLAY AT TOP GRADING TO BETWEEN
68									CLAY GRAY + DARK GREENISH GRAY.
									GENTLY UNDULATING. UP TO 400. RELIEF PART GENERALLY LESS
									THAN 2/3 RELIEF
11	Bath	0557	0856	2706	2727	42°07'N	151°37'E	171	Core is oblique, fish on top e, bottom gray.
JULY	134	0709		2718					at bottom of core. This is a bit of a change
1968									from bottom to top of core.
11	130	0339	0932??	2706	2727	42°07'N	151°36'E	171	Core is oblique, fish on top e, bottom gray.
JULY		0719		2718					at bottom of core. This is a bit of a change
1968									from bottom to top of core.
11	104	0557	0856	2706	2727	42°07'N	151°36'E	171	Core is oblique, fish on top e, bottom gray.
JULY		0719		2718					at bottom of core. This is a bit of a change
1968									from bottom to top of core.
11	SONOBUOY	1037	1215	2726		42°06'N	151°50'E		FEL TRIPPING DIRECT A" WIRE DELAYED B" FAST TRAVERSE
JULY	73								CHNL 2 SPD 5.3 PROF. 910 HYDROPHONE 60FT NOT RECORDED
68									
12	SONOBUOY	0430	0613	2896		42°00'N	154°56'E		CHNL 2 SPD 6.9" SPEED ADJUSTED AT 0432. B DELAYED ON
JULY	74								A. 2 MINUTS AFTER BUOY IN WATER. FEL TRIPPING DIRECT A
68									B' 4 SEC DELAYED FAST TRAVERSE 60FT HYDROPHONE PROF 916
									NOT RECORDED
12	SONOBUOY	0617	0856	2955		42°00'N	155°15'E		FEL TRIP CHNL 2. SPD 5.5" DIRECT A' DELAYED B' 4 SEC.
JULY	75								HYDROPHONE 60FT. PROFILERS 917 & 918 FAST TRAV.
68									CONTINUE AT 0800 ON B CHNL 2 PROF 918. ONLY
									NOT RECORDED.

Peter Buhl
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG—From

TOKYO JAPAN

- Te

Ано А К

~~CONFIDENTIAL~~

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12 JULY 68	SONDUBOY 76	1053	1204	2940		47°00'N	156°00'E		RECEIV. CHNL 2 SPD 5 FELTRIP DIRECT A B 43RL DELAYED, HYDROPHONE GOFT. PROF 920 FAST TRAV.
									J.K.
12 JULY 68	MILLIPOKE SAMPLE 166	1751		2100				172	
12 JULY 68	VERTICAL PLANKTON TOW 154	2010	2019	2200				172	
12 JULY 68	BUREAKE PLANKTON TOW 158	2101	2116	2200				172	
12-13 JULY 68	CORE 173A	2057	1733 HIT	2875	2933	41°00'S	159°00'E	172	AT 237M FM OF WIRE CUT, AS THE CORING DEVICE WAS BEING LOWERED BY USE OF THE WATER BRAKE, THE DRUM STOPPED TURNING & COULD NOT BE MOVED, EVEN BY THE WINCH ENGINE. PROBLEM APPARENTLY MALFUNCTION OF PLANETARY GEARS. CORING DEVICE RAISED BY USE OF THE ANCHOR WINDLASS

Peter Bull
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12

CRUISE LEG 7 From

TOKYO

- To

~~Handwritten text, possibly "AOK" or "HAK" with a signature.~~

TIME ZONE -10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12	117	2107	2315	2107				172	Two 56" weights
11/68	119	13							
12	120	2111	2325					172	Four 55" weights
11/68	120	13							
12	124	2026	—	2105		41° 51.5'	158°	172	Two 56" weights
11/68	124	2141				N	00.5'E		
11/68	124								
12	124	2026	—	2105		41° 51.5'	158°	172	Two 56" weights
11/68	124	2141				N	00.5'E		
11/68	124								
12	124	2026	—	2105		41° 51.5'	158°	172	Two 56" weights
11/68	124	2141				N	00.5'E		
11/68	124								

Peter Burbi
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From

TOKYO

To

ADAK

TIME ZONE

-11

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14 JULY 68	SONOBUDY 77A	0028	0036	2977	42°03'N	159°27'E			RECEIVED CHNL #1 SPD 5 FEL TRIP DIRECT A 4 SEC. B DELAY FAST TRAV. FAILED PROF 925 NOT RECORDED J.K.
14 JULY 68	SONOBUDY 77	0042	0225	2980	-	42°03'N	159°27'E		CHNL #1 SPD 5 FEL TRIP. DIRECT A B 4 SEC DELAY FAST TRAV. PROF 926 HYDROPHONE 60 FT. NOT RECORDED J.K.
14 JULY 68	SONOBUDY 78	0234	0421	2976		42°03'N	159°44'E		CHNL #2 SPD 5 FEL TRIP DIRECT A 4 SEC DELAY B FAST TRAVERSE PROF 927 HYDROPHONE 60 FT. NOT RECORDED J.K.
14 JULY 68	SONOBUDY 79	0430	0609	2972		42°02'N	159°58'E		CHNL #2 SPD 5 FEL TRIP A DIRECT B 4 SEC DELAY. FAST TRAV PROF 928 HYDROPHONE 60 FT. NOT RECORDED J.K.
15 JULY 68	SONOBUDY 80	2329	0110	3076		44°57'N	169°25.5'E		CHNL #1 SPD 5 FEL TRIP DIRECT A 4 SEC B DELAY. FAST TRAVERSE 60 FT SE - HYDROPHONE. PROF. 941 NOT RECORDED J.K.

Peter B. Baker
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From TOKYO To AOKI

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
R/13	TORAD	2057	1733	2920				172	THE FAMOUS STUCK-WINCH FLAIL. NO HIT.
JULY	95A	2 TH	13 TH						TORAD RUN FOR 23 HOURS. SILVERCEUS HAVE
68		JULY							RECORDED (!).
									308 C.
17	MILLPOKE	1738						173	
JULY	SAMPLE								
68	167								
17	VERTICAL	2018	2026					173	
JULY	PLANKTON								
68	TOW								
	155								
17	SURFACE	2031	2046					173	
JULY	PLANKTON								
68	TOW								
	159								
17	6645	2011	2158					173	TWO 36 LB. WEIGHTS. 1/2 16 ROCK FRAGMENT
JULY	SAMPLE	ON BOARD	2345						
68	121								
17	6646	2006	2207					173	Four 25 lb. weights. 1/2 16 rock fragment
JULY	SAMPLE	ON BOARD	2355						
68	122								
18	SURFACE	1538	1553					174	
JULY	PLANKTON								
68	TOW								
	160								

Peter Buhl

Chief Scientist

C-12-7 TOKYO - AOKI
C-12-8 AOKI - HONOLULU

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From To

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

7-16
+11-17 JUL
+10-18 JUL

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17	Boston	14:43:00	23:11:01	2618	2576	41° 32' N	77° 04' W	173	
July	135			2613					
1968									
17	Highlander	11:51:00	—	2618	2576	41° 32' N	77° 01' W	173	
July	131			2613					
1968									
18	Boston	15:07:10	20:00:15	2618	2576	50° 23' N	77° 35' W	174	
July	136A			2613					
1968				3858	3815				
				3852					
18	Highlander	14:28:00	20:31:00	2618	2576	50° 23' N	77° 35' W	174	
July	132			2613					
1968				3858	3815				
				3852					
25	Boston	00:01:30	04:04:09	2673	2674	44° 02' N	164° 09' W	176	
July	136			2670					
1968									
25	Highlander	22:58:00	04:38:10	2673	2674	44° 02' N	164° 09' W	176	
July	133			2670					
1968									

AOKI

Peter Buhl
Chief Scientist

C-12-7 TOKYO - AOKI
C-12-8 AOKI - HONOLULU

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 7 From ~~TOKYO~~ To ~~HONOLULU~~

TIME ZONE

+10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 JULY 68	CAMERA CORE 1					50°23'N 177°30'W		174	CLAMP NOT IN PLACE ON BOTTOM OF PIPE WHEN CAMERA WAS RECENT TO SURFACE. HOWEVER, IT APPEARS THE SEDIMENT IN THE LIDER IS FROM ONLY ONE HIT. BASE OF THE "CLIP" FRAME PENETRATED THE BOTTOM SLIGHTLY & THE LIDER OVERFLOWED TOP 10.300 FT. TOTAL LENGTH 4100.
18 JULY 68	MILLIPORE SAMPLE 168	2020						174	
22 JULY 68	SOUNDING 81	1200	1317	1940		54°05'N 172°50'W			FELTRIP. DIRECT A' 400' B' DELAY, CAME 1 SEC 5' F.T. PROF # 9159 NOT RECORDED. BT H 77 TAKEN BECAUSE OF STRONG D WAVE BOLLY QUIT
23 JULY 68	GRAB SAMPLE 123	1558	1607					175	Two 26 lb. weights. Rock fragment at bottom weighing 1.5 lb. 1604 .2 lb.
23 JULY 68	GRAB SAMPLE 124	1625	1632					175	Four 25 lb. weights. Rock fragment at bottom weighing 1.5 lb. 1611. One 11 lb. fragment found below ocean floor.
23 JULY 68	MILLIPORE SAMPLE 169	1232						175	

Peter Buhl
Chief Scientist

CRUISE LEG HAKODATE - ADAR

Station Number	Date	Latitude	Longitude	Core	Core Head	T-Grid	Water Barrel or Suspended Muller	Camera	Neohelo-meter	Dredge	Sonobuoy	Millidore	Isaac or Jet Net	Current Meter	Tripod	Sonar and 35 cc Sounder	a. Core multiplicity b. Vertical position	Water Barrel	Free Fall Camera
423	13 July	40° 54.8'	144° 51'	400	195A			291						235					51
424	14 July	40° 49.8'	148° 08'	401	195B			292						236					52
425	15 July	40° 11'	150° 44'	402	195C	200								237A					53, 54A
426	16 July	36° 52'	152° 33'	403	195D	201		293A	292A					237					54
427	18 July	31° 16'	155° 30'	404		202		293						238					55A
428	19 July	28° 19'	156° 53'	405	195E	203		294						240					
429	20 July	25° 35'	154° 57'	406										239					
430	21 July	25° 44.5'	154° 58'	407	195F	204		295						241A					
431	22 July	27° 30.6'	156° 36'	408	195G	205		296						241					
432	23 July	30° 18'	159° 15'	409	195H	206		297						242					
433	24 July	32° 23'	161° 19'	410		207								243					
434	25 July	35° 48'	163° 43'	411		208		298						243A					
435	27 July	40° 40.8'	166° 59'	412	195I	209		299						244					
436	28 July	43° 17'	166° 54'	413				300						245					
437	29 July	44° 17'	163° 18'	414				301						246					
438	30 July	41° 17'	164° 09'	415				302						247					
439x	31 July	36° 24'	166° 44'	416		210		303						248					
440	1 Aug.	38° 06'	170° 04'	417, 418				293						249					
441	2 Aug.	40° 06'	171° 38'	419, 419		211								250					

CONRAD

CHIEF SCIENTISTS STATION INDEX LOG

CRUISE 12

CRUISE LEG HAKODATE - ADAK

Station Number	1969 Day	Latitude N	Longitude E	Core Number	Core Head Camera	T-Grad Number	Water Barrel or Niskin Bottle for Suspended matter	Camera	Nedhelm- meter	Dredge	Sonobuoy	Millidore	Isaac or Jet Net	Current Meter	Tripod T-Grad	Satnav and 35 lb. Sounder	a. Core multiple plankton b. Vertical plankton	GRABBER Geochemistry Water Barrel	FREE FALL CAMERA
423	13 JULY	40°54.8'	144°51'	400	195A			291						235				375B	51
424	14 JULY	40°49.8'	148°08'	401	195B			292						236				375	52
425	15 JULY	40°11'	150°44'	402	195C	200													
426	16 JULY	36°52'	152°33'	403	195D	201		293A	292A					237A				376	
427	18 JULY	31°16'	155°30'	404		202		293						237				378, 379	53, 54A
428	19 JULY	28°19'	156°53'	405	195E	203		294						238				380, 381	
429	20 JULY	25°35'	154°57'	406														382, 383	54
430	21 JULY	25°44.5'	154°58'	407	195F	204		295						239					
431	22 JULY	27°30.6'	156°36'	408	195G	205		296						240				384, 385	55A
432	23 JULY	30°18'	159°15'	409	195H	206		297						241A					
433	24 JULY	32°23'	161°19'	410		207													
434	25 JULY	35°48'	163°43'	411		208		298						241				386, 387	
435	27 JULY	40°40.8'	166°59'	412	195I	209		299						242				388, 389	
436	28 JULY	43°17'	166°54'	413															
437	29 JULY	44°17'	163°18'	414				300						243A					
438	30 JULY	41°17'	164°09'	415				301						243				390, 391	
439*	31 JULY	36°24'	166°44'	416		210		302	292					244				392, 393	
440	1 AUG.	38°06'	170°01'	417, 418														394, 395	
441	2 AUG.	40°06'	171°38'	419, 419		211		303	293					245				396, 397	

ADAK

* CROSSED INTERNATIONAL DATE LINE, CLOCKS SETBACK ONE DAY (24 HOURS)

CONRAD

CHIEF SCIENTISTS STATION INDEX LOG

CRUISE 12

CRUISE LEG ADAK - HONOLULU

Station Number	1969 Day	Latitude N	Longitude W	Core	Core Head Camera	T-Grad 200-2000	Water Barrel or Niskin Bottle for Suspended matter	Camera	Medhelo- meter	Dredge	Sonobuoy	Millidore	Isaac or Jet Net	Current Meter	Tripod T-Grad	Satnav and 95 kc Sounder	a. Core multiple plankton b. Vertical plankton	GRABBER 200	Geochemistry Water Barrel	FREE FALL CAMERA
442	11 Aug	54°27.9'	179°54.5'	420	195 J															
443	11 Aug	54°26.3'	179°50.5'	421																
444	11 Aug	54°23.3'	179°39' E	422	195 K			304						246						
445	12 Aug	54°36'	175°46'	423	195 L			305	294A					247						
446	13 Aug	56°00.8'	172°56.7'	424		212A		306	294					248						
447	14 Aug	56°27'	170°27.5'	425				307	295					249						
448	16 Aug	57°36'	163°59'	426		212		308	296					250						
449	16 Aug	55°33'	165°28'	427				309A						251A						
450	16 Aug	55°26'	164°59'	428																
451	21 Aug	53°37'	179°42'	429																
452	24 Aug	47°23.5'	170°30.3'	430				309	297					251						
452	24 Aug	47°23.5'	170°30.3' W	430				309	297					251						
453	25 Aug	43°38'	167°49'	431																
454	27 Aug	38°51'	164°02'	432		213		310	298					252						
455	28 Aug	36°12.7'	162°39.2'	433, 434		214		311	299					253						
456	30 Aug	32°43'	160°34'	435				312	300					254						
457	30 Aug	31°12.5'	159°44.6'	436				313	301					255						
458	31 Aug	28°12.5'	158°07'	437																
H O N O L U L U																				

HONOLULU

398, 399

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-8

CRUISE LEG. From ~~PORT~~ ADAK To HONOLULU

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23	SURFACE	1402	1417					175	
JULY	PLANKTON								
68	TOW								
	161								
24	MILLPORE	2332						176	
JULY	SAMPLE								
68	170								
25	GRAB	0031	0237					176	Two 36" weights, 2 lb volcanic fragments
JULY	SAMPLER	in line 10347							
68	125								
25	GRAB	0043	0235					176	Four 25" weights, 2 lb volcanic fragments
JULY	SAMPLER	in line 10343							
68	126								
25	CAMERA					49°38.3'N 164°19'W		176	"CLAMP" IN PLACE ON END OF PIPE WHEN CAMERA SURFACED. TOP 2 OR 3 cm "OVERFLOWED" TOP OF LINER + WERE LOST. LENGTH 44 cm.
JULY	CORE								
68	2								
24	SURFACE							176	
JULY	PLANKTON								
68	TOW								
	162								
26	MILLPORE	0035						177	
JULY	SAMPLE								
68	171								

Pete Buhle
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-8

CRUISE LEG 7 From *Tide* ADAP To *Handwritten*

7-19

+10

TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26 July 1968	Bottom	00:49:25	03:49:40	2485	2445	51°36'N	140°17.5'W	177	Smooth undulating bottom surface with a few triple marks. Found and all life of green of the string off, a small greenish with the bottom the water is blue.
26 July 1968	134A			2471					
26 July 1968	134A	00:02:30	04:12:00	2485	2445	51°36'N	140°17.5'W	177	Two nightbird bluffs. Found a T-shaped rock exposed on the floor of rocky ground. It had bit of black in bottom the floor of black and did not seem to be green. The green is here that was in the way of bearing water by film spread.
26 July 1968	134A			2546	2545	53°18'N	158°26.8'W	178	When I do not see a greenish triple weight wire got stuck the the green of the black and it is not that can be seen to change approach point when a green T-shaped functioning.
26 July 1968	134B	18:01:00	22:00:00	2546	2545	53°18'N	158°26.8'W	178	When I do not see a greenish triple weight wire got stuck the the green of the black and it is not that can be seen to change approach point when a green T-shaped functioning.

Peter B. B.

Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-8

CRUISE LEG From ~~TOKYO~~ ADAK To HONOLULU

7-20
+10
TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	SURFACE	0058	0113					177	
JULY	PLANKTON								
68	TOW								
	163								
26	CAMERA					51°34'N	160°17'E	177	HALF OF CLAMP IN PLACE (AT BASE OF PIPE) BUT OTHER
JULY	CORE								HALF BENT (BEFORE STATION PIPE WAS MOVED TO HIGHER
68	3								POSITION ON SLED TO PREVENT OVERPENETRATION) CORE
									AGAIN OVERFLOWED TOP OF LINER BUT MAY CONTAIN SEDIMENT
									FROM MORE THAN ONE HIT. LENGTH 49 CM.
26	GRAB	0134	0256					177	Two 26 lb. weights. 2 lb. rock fragments.
JULY	SAMPLER	0134	0601						
68	128								
26	GRAB	0117	0308					177	Four 26 lb. weights. one weight fell off at level
JULY	SAMPLER	0117	0601						2/11 rock fragments.
68	128								
26	SURFACE	1745	2000					178	
JULY	PLANKTON								
68	TOW								
	164								
26	GRAB	1918	2115					178	Two 26 lb. weights. 2 lb. rock
JULY	SAMPLER	1918	2115						
68	129								
26	GRAB	1915	2115					178	Two 26 lb. weights with 1 gallon Van Duzee
JULY	SAMPLER	1915	2115						water bottle. 1 lb. with 100 ml. water. 1 lb.
68	130								Graber instrument 1 lb.

Pete Buhl
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-3

CRUISE LEG From FOKES ADAM To HONOLULU

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
26	GRAB	1920	2112					178	Four 25 lb weights. Small amount of sediment.
JULY	SAMPLER								Sh. 1. Group.
68	131								
26	CAMERA					5° 16' N	158° 26' W	178	LENGTH: 27 cm. DEVICE APPARENTLY WORKED PROPERLY
JULY	CORE								THOUGH PIPE WAS TWISTED ABOUT 30° ON ITS MOUTH.
68	4								
27	GRAB	0947	1141					179	Two 25 lb weights with 1 yellow Van Dorn. Under
JULY	SAMPLER								bottom. Water bottle successful. Under empty.
68	132								
27	GRAB	0950	1144					179	Two 25 lb weights. Under empty.
JULY	SAMPLER								
68	133								
27	GRAB	0958	1145					179	Four 25 lb weights. 2 lb of sediment, two sh.
JULY	SAMPLER								one bottle stuck and one fish.
68	134								
27	MILLIPORE	0905						179	
JULY	SAMPLER								
68	172								
27	SURFACE	1126	1041					179	
JULY	PLANKTON								
68	TOW								
	1105								

Peter B. ...
Chief Scientist

Columbia University in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-8

CRUISE LEG From 7-15-55 ADAX To HONOLULU

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	GRAB	1314	1518					180	Two 36 lb. weights with 1 gallon Van Dorn water bottle. 1-1/2 lb. of fine grained rock fragments.
JULY	SAMPLER	01600	1342						
68	135								Water bottle successful.
28	GRAB	1315	1522					180	Two 36 lb. weights. 1-1/2 lb. of fine grained rock fragments.
JULY	SAMPLER	01600	1444						
68	136								
28	GRAB	1322	1517					180	Four 25 lb. weights. 1-1/2 lb. of fine grained rock fragments.
JULY	SAMPLER	01600	1631						
68	137								
29	GRAB	0150						181	Two 36 lb. weights with 1 gallon Van Dorn water bottle. - Lost
JULY	SAMPLER								
68	138 A								
29	GRAB	0152	1402					181	Two 36 lb. weights. Approximately 1 lb. of rock fragments.
JULY	SAMPLER	01600	1423						
68	138								
29	GRAB	0958	1157					181	Four 25 lb. weights. Approximately 1 lb. of rock fragments.
JULY	SAMPLER	01600	1441						
68	139								
29	SOUNDING	1315	1426	2775		47°34'N	157°52'E		CHNL 2, SPD 5.3 KTS. FELTRIP. DIRECT A. B DELAY. F. TRAV. HYDROPHONE 60 FT. PROF 1011. PROF 1011 A. DEAD FOR 3 MINUTES AT BEGINING. NOT RECORDED.
JULY	82								
68									

Pet. Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-8

CRUISE LEG From ~~7-23~~ ADAK To Honolulu

7-23
TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
30	GRAB	0958	1150					182	Two 26" weights. Approximately 1/6 of rock
JUL	SAMPLER	0958	1250						Empty
08	140								
30	GRAB	0940	1201					182	Two 26 lb. weights. Approx 1/6 of rock frags.
JUL	SAMPLER	0940	1256						
08	141								
31	GRAB	0945	1154					182	Four 26 lb. weights. Approx 1/6 of rock frags.
JUL	SAMPLER	0945	1252						
08	142								
31	GRAB	0954	1210					183	Two 26 lb. weights. Approximately 1/6 of nodules.
JUL	SAMPLER	0954	1253						
08	143								
1	GRAB	0956	1212					183	Two 36 lb. weights. Approx. 1/6 of nodules plus
JUL	SAMPLER	0956	1257						one deep sea worm and two brittle stars.
08	144								
1	GRAB	1001	1207					183	Four 25 lb. weights. Approx 1/6 of nodules plus
JUL	SAMPLER	1001	1254						1/4 lb. of sediment
	145								
1	GRAB	0957	1022					184	Two 26 lb. weights. Empty
AUG	SAMPLER	0957	1112						
08	146								

Pete R. R.
Chief Scientist

7-24

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

~~FOIA b 7~~ ADAP To

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1 AUG 68	GRAB	0759	10 ²⁵ * 1144					184	TWO 36 lb weights. One hole of mud
AUG 68	SAMPLER	10 ²⁵ * 1144							
1 AUG 68	GRAB	0805	1219					184	Few 25 lb weights. Approximately 2 lb of nodules.
AUG 68	SAMPLER	1144							
3 AUG 68	CAMERA CORE 3					30°39'N 157°43'W		185	"CLAMP" DID NOT CLOSE TIGHTLY ENOUGH SEDIMENT APPARENTLY COLLECT FROM MORE THAN ONE HIT; CLAY "OVERFLOWED" TOP OF LINER; TOP 1 OR 2" LOST. LENGTH 74"
4 AUG 68	MILLIPORE SAMPLE	1048	1048					186	
4 AUG 68	SURFACE PLANKTON	1037	1052					186	
3 AUG 68	GRAB SAMPLER							185	TWO 36 lb weights
3 AUG 68	GRAB SAMPLER							185	TWO 36 lb weights 2 LBS MN NODULES

P. BURL
7 NOV 68

Pete Buhl
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-6

CRUISE LEG From ~~FAIR~~ AOK To HONOLULU

TIME ZONE

7-25
+10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
3	GRAB							185	Four 25 lb. weights
Aug. 68	SAMPLER								1 LB MN NODULES
	150								P. BUNK 11 NOV 68
									+10
4	GRAB							186	Two 25 lb. weights. Two nodules
Aug. 68	SAMPLER								
	151								
4	GRAB							186	Four 25 lb. weights. 1 1/2 lb. of nodules
Aug. 68	SAMPLER								
	152								
5	GRAB	0957	1153					187	Two 25 lb. weights. 1/2 lb. of nodules
Aug. 68	SAMPLER								
	153								
5	GRAB	1003	1150					187	Four 25 lb. weights. - empty
Aug. 68	SAMPLER								
	154								
3	CAMERA	11:18	14:26	3135	3108	30°39'	157°49.5'	185	4 usable frames; 10 hits; The bottom is completely covered with nodules. Quality of pictures is below average.
AUG. 68	STATION	12:46	approx.						
	BOTTOM								
	138								
3	Nephela-	10:13:00	15:05:—	3135	3108	30°39'	157°49.5'	185	There is no nepheloid layer. film is extremely clear.
AUG. 68	METER	1246							
	134								

Peter Bunker
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-8

CRUISE LEG From 2

ADAK

To HONOLULU

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat. N	Long. W		
23-JUL	STD-1	1301	1552	2780		50°31'	169°53'	175	STD taken to 5 fm. from bottom. paper tape, mag tape recording. surface salinity sample top 80 m. analog salinity trace off-scale due to low surface salinity
27-JUL	STD-2	0926	—	2523		53°28'	157°52'	179	STD/SAMS 5 fm off at deepest. mag tape malfunction. salinity discriminator malfunction. Temp and depth analog record only. paper tape recording OK. 1 surface sample bottle & reversing thermometer
28-JUL	STD-3	1253	—	2638		50°11'	157°43.8'	180	STD/SAMS 7 fm off at deepest. mag tape recording paper tape (downtrace only). Analog record OK. 1 SAMS bottle (surface)
29-JUL	STD-4	0918	1223	2775		47°38.5'	157°50'	181	STD/SAMS 7 fm off. mag tape, analog record. 1 SAMS bottle (surface)
30-JUL	STD-5	0921	1218	2875		44°31.9'	157°44'	182	STD only. 10 fm off bottom. mag tape, analog record. Test of SAMS electrical leakage resistance
31-JUL	STD-6	0934	1237	2860		41°12.1'	157°49.6'	183	STD only. Pinger not functioning. Approx. 7 fm off bottom at deepest. Test of SAMS leakage resistance: fault revealed. mag tape, analog recording.
01-AUG	STD-7	0738	1132	2960		38°11.5'	157°50.6'	184	STD/SAMS ~ 90 fm off bottom. Outboard block shackle broke away at this point. Putting down block fell down wire, hit pinger. Turning it off. All equipment retrieved. analog, mag tape record. 2 SAMS samples

Peter Bell
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12-8

CRUISE NO. 126
CRUISE LEG 2 From ~~TO~~ ADAK To HONOLULU

TIME ZONE +10

[illegible]

Peter B. H.
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 12-3

CRUISE LEG—From ~~FOUR~~ ADAK To HONOLULU

TIME ZONE +10

[illegible]

Pete Bull
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 9 From Honolulu

To Kodiak

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
12 AUG. 68	CORE 173	0722	0817	747	845	20°32'N	157°35'W	189	PENETRATION: 145 ± 5 cm. TOTAL LENGTH: 126 cm. TRUE LENGTH: 126 cm. FORAMINIFERAL CLAY OR MARL, MODERATE YELLOWISH BROWN TO BETWEEN 10-44 cm. LIGHT BROWNISH GRAY + PALE YELLOWISH BROWN; FORAMINIFERAL MARL + FORAMINIFERAL MARL OOZE, SHADES OF PALE + MODERATE YELLOWISH BROWN (44-126 cm). CORAL + RX. FRAGMENTS COMMON IN BASAL 30 cm. STEEP SLOPE
26 AUG. 68	CORE 174	1234	1431	2614	2604	50°06'N	157°19'W	190	PENETRATION: ≈ 1175 cm. TOTAL LENGTH: 1030 cm. TRUE LENGTH: 1030 cm. PREDOMINATELY SANDY (ASH-RICH) CLAY, SHADES OF YELLOWISH BROWN, BROWNISH GRAYS + RARELY OF OLIVE GRAYS; STRONGLY BURROWED; ESPECIALLY RICH IN ASH BETWEEN 183+184, 224-228, 305+307+528-535 cm. ASH LAYER, MODERATE YELLOWISH BROWN (840-854 cm) NEARLY FLAT.
26 AUG. 68	BOTTOM CAMERA 139	1215	0305	2618	2607	50°05'N	157°15'W	190	Compass broke & had to be removed previous to lowering. Bottom is composed of mud or sediment. No rocks or nodules visible & no ripple marks. <i>[Signature]</i>
26 AUG. 68	Neptelo-METER 135	1100	0326	2618	2607	50°05'N	157°15'W	190	No nepteloid layer. <i>[Signature]</i>
26 AUG. 68	Cone Camera	1234	1431	2614	2604	50°05'N	157°15'W	190	Film advanced but stroke light did not flash. Therefore no exposures resulted. <i>[Signature]</i>
27 AUG. 68	CORE 175A	1555	1722	2766	2766	48°31'N	157°21'W	191	WATER-BRAKE HEAT EXCHANGER MALFUNCTIONS WITH 454 fm of WIRE OUT. DEVICE RAISED TO SURFACE.
27 AUG. 1968	T-GRAB 95B	1555	1722	2766	2766			191	WATER-BRAKE HEAT EXCHANGER MALFUNCTIONS IN WATER-BRAKE ON TRAWL WINCH. AT 454 FMS. RESULTED IN DEVICE RAISED TO SURFACE.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Honolulu To Kodiak

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28	12	0152	0625	2603				190	Electrical problems caused two
08	STD								aborted starts. After the machine
68									was back in order the station went
									smoothly. All bottles except #6 tripped
21	13	2053	0125	2765				191	Very few delays were incurred because
08	STD								of electrical problems. Bottle #6 did
68									not Trip.
28	14	2245	0240	2835				192	No major delays because of mechanical
08	STD								failure. The Salinity Trace on the way down
68									had many spikes of unknown origin. The
									problem was mainly on Depth Scale #R
									Bottle #6 did not trip at 5000 M.
29	15	1849	2117					193	The only good trace was the down
08	STD								trace from 0-1000 M. After this depth
68									was reached the salinity sensor went as
									did the rest of the system. Since there
									was no usable depth record, no bottles were
									tripped.
30	16	0434	0511						This station was a complete abort.
08	STD								The salinity sensor went out of
68									order almost immediately. Nothing could
									be done to fix it.
25	SB	0158	0300	45	2603	55-16.8	157-47.1		Apparently only one refraction relay - not too
Aug. 68	83	0158	~0300	2603		55-16.8	157-47.1		high.
26	SB	2236	2344	2632		47-46.2	157-20.4		Buoy quit after 7 mi. no apparent refraction
Aug. 68	84								
27	SB	0851	~1000			48-24	157-23		Very indistinct refraction apparently tangent to
Aug. 68	85								basement on profile
28	86	0721	1037	2804		46-10	157-21		Very Good buoy - possibly basement and
Aug. 68									ocean layer refractions

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 9 From Honolulu To Kodiak

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
28 Aug 68	CORE 175	1625	1859	~2800	2535	45°43'N	157°14'W	192	PENETRATION: 333±2cm. TOTAL LENGTH: 828cm. TRUE LENGTH: 8290cm. CLAY, PREDOMINATELY VERY DARK YELLOWISH BROWN (0-125cm); CLAY, DARK YELLOWISH BROWN TO DUSKY YELLOWISH BROWN (125-255cm); LITHIFIED LAYER OF ALTERED ASH COMPOSED LARGELY OF PHILLIPSITE (255-290cm). MANGANESE CONTENT OFTEN HIGH. SIDE SEAMOUNT.
28 Aug 68	CORE CAMERA 61	1625	1859	2800	2535	45°43'N	157°14'W	192	No true picture of bottom: mg appears to have been lifted up. Camera looks blind down. Only picture of phyllant. CMA
28 Aug 68	STD							193	
29 Aug 68	CORE 176	2105	2325	2965	2880	42°59'N	157°49'W	194	PENETRATION: 1018±5?cm. TOTAL LENGTH: 1066cm. TRUE LENGTH: 1015cm. CLAY, PREDOMINATELY DARK YELLOWISH BROWN IN TOP TWO METERS GRADING TO MODERATE YELLOWISH BROWN + PALE YELLOWISH BROWN WITH DEPTH; CONTAINS DARK BROWNISH GRAY ASH-RICH LAYERS BETWEEN 194+195, 234+230 AND 252+257cm; BURROWED HILLY, UP TO 70cm RELIEF.
28 Aug 68	T-GRAD 95C	1625	1859	~2800	2535	45°43'N	157°14'W	192	CORE PNE BENT P ₂ ONLY ONE TO PENETRATE. AT SURFACE PRESSURE CASE WAS FOUND TO LEAK. FILM STUCK TOGETHER AND BROKEN DEVELOPING TANK LED TO NO USABLE RECORD.
29 Aug	T-GRAD 95D	2105	2325	2865	2880			194	GOOD PENETRATION, GOOD WAIT IN SEDIMENT. AT SURFACE P ₂ & P ₃ BADLY BENT AND IN NEED OF REPLACEMENT. LEAK ONCE AGAIN IN PRESSURE CASE AND NO RECORD OF MAIN VALVE
31 Aug 31 Aug	SB 87 SB 88	1324	1419	2759		48-20	158-18		Busy quit before refraction - should be ok. For refraction. Good refraction - at least one line.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 7 From Honolulu To Kodiak

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
29 Aug 68	Bottom	2008	2406	2840	2883	42°58'N	157°50'W	194	Soft mud or sediment with ripple marks, burrows, trails, worms, possibly mollusks. Compass not visible. <i>CHL</i> 11 usable frames + 20 hits
29 Aug 68	Camera 140	2212		2853					
29 Aug 68	Rephelo-meter 136	1928	0156	2840	2883	42°58'N	157°50'W	194	See nepheloid layer. <i>CHL</i>
29 Aug 68	Camera 62	2105	2325	2865	2880	42°58'N	157°50'W	194	Hard or sediment - very smooth. Orientation north. <i>CHL</i> 25 usable frames.
29 Aug 68	Camera 177	2152	hit	2853					
1 SEPT 68	CORE	0954	1140	2572	2582	51°25'N	158°14'W	195	PENETRATION: 744 ± 15 cm TOTAL LENGTH: 843 cm TRUE LENGTH: 843 cm. PREDOMINATELY SANDY CLAY, CONSISTS OF MANY POORLY DEFINED LAYERS BOUNDED BY BURROWED CONTACTS WHICH ARE MARKED BY SLIGHT COLOR CHANGES, SHADES OF GRAY, BROWNISH GRAY + OLIVE GRAY; INCLUDES ASH, VERY DARK YELLOWISH BROWN (455-465 cm). DIATOMS OFTEN ABUNDANT. BOTTOM NEARLY FLAT.
1 SEPT 68	T-GRAD					51°25'N	158°14'W	195	
2 SEPT 68	CORE	1330	1758	3374	3360	53°54'N	158°24'W	196	PENETRATION: 395 ± 15 cm TOTAL LENGTH: 859 cm TRUE LENGTH: ~350 cm. INTERBEDDED SANDY CLAY, SAND + ASH RICH CLAY, SHADES OF MEDIUM + DARK GRAY; COARSE FRACTION HIGHLY VARIABLE, REPRESENTS <10 TO >80%; ROCK FRAGMENTS, GLASS, QUARTZ + DIATOMS PREDOMINATE (0-208 cm); VERY SANDY CLAY (208-~350 cm). NEARLY FLAT. BOTTOM ALEUTIAN TRENCH
3 SEPT 5	SB 91	0104	0211	104		54-48.7	158-28.3		Weak refr. One vel. 3-4 km/sec.
3 SEPT 5	SB 92	0547	0729	60		55-15.5	158-04.5		Good refr. One vel. > 5 km/sec.
3 SEPT 5	SB 93	1104		2450		53-27.1	155-49.5		Poor profile, Started at full speed, changed to 1/2, some refr.
3 SEPT 5	SB 94	1413	1639(?)	2365		53-27.5	155-10.5		Excellent, thin basement, very good organic, maybe Moho refl.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 7 From Honolulu To Godiak

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
1	Bottom	0918	1235	2572	2572	51°25'N	158°14'W	195	Smooth bottom - mud or sediment. Tracks +
Sept. 168	Camera 141	1037		2572					Tracks visible. No appreciable ripple marks
									C.M.U.
1	Nephelometer	0828	—	2572	2572	51°25'N	158°14'W	195	no nepheloid layer
Sept. 168	137	1037		2572					C.M.U.
1	Core	0954	1140	2572	2572	51°25'N	158°14'W	195	Cannot see bottom. Core pipe had bent
Sept. 168	Camera 63A	1031	hit	2572					C.M.U.
2	Bottom	1252	1630	3335	3364	53°54'N	158°24'W	196	Soft bottom - Tracks + Tracks
Sept. 168	Camera 142	1530		3335	3364	N			C.M.U.
				3335	3364				
				3374					
2	Nephelometer	1217	1651	3335	3364	53°54'N	158°24'W	196	Nepheloid layer = 600 fathoms at bottom
Sept. 168	meter 138	1530		3374		N	W		C.M.U.
2	Current	1252	1630	3335	3364	53°54'N	158°24'W	196	Current direction - 200°
Sept. 168	meter 104	1530		3374		N	W		Velocity - 5 cm/sec. = displacement 1.8 to 2 mil.
									C.M.U.
2	Core	1330	1758	3374	3260	53°54'N	158°24'W	196	No bottom exposure - Pipe was bent or
Sept. 168	Camera 63B	1418	hit	3374		N	W		camera was buried.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEC-¹⁸ From Kodiak To Honolulu

TIME ZONE 10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat. <i>N</i>	Long. <i>W</i>		
4	CORE	1459	1652	2461	2460	53°29.5'N	157°02.6'W	199	PENETRATION: 567±10cm TOTAL LENGTH: 497cm TRUE LENGTH: 497
SEPT	179	1540	HIT	2460					CLAY, VERY DARK YELLOWISH BROWN (0-7cm); ASH-RICH CLAY, DUSKY YELLOW
68									ISH BROWN (7-12cm); DIATOMACEOUS CLAY, SHADES OF YELLOWISH BROWN (12-
									50cm); SANDY CLAY, BETWEEN MEDIUM GRAY + MEDIUM BLuish GRAY (50-260, 274-
									NEARLY FLAT BOTTOM (260-274, 433-450, 477-9)
									433, 453-477cm); DIATOMACEOUS CLAY Ooze, BETWEEN MEDIUM GRAY + MED. OLIVE GRAY
3	Bottom	1726	2120	3150	3150	54°04'N	157°25'W	197	Soft mud or sediment with widely scattered nod
Sept	Camera	1921		3150					There are tracks + perhaps a wide ripple mark
168	143								indicative of a current. <i>CMH</i> 11 marks photo
3	Septhometer	1638	2135	3150	3150	54°04'N	157°25'W	197	light unit went out - no exposure
Sept	1139A	1921		3150					<i>CMH</i>
168									
3	Current	1726	2120	3150	3150	54°04'N	157°25'W	197	film did not advance
Sept	meter	1921		3150					<i>CMH</i>
168	105A								
4	Cone	1459	1652	2461	2460			199	all film advanced before reaching bottom. On
Sept	Camera	1540	hit	2460					holding magnet in off position fell off by some
168									mysterious manner. <i>CMH</i>
5	SB 95	2042	2350	2465		53-29.2	153-44.0		Good profile - basement, organic layer, rough topo
Sept									note - this description is for SB 94 + vice versa
6	SB 96	1451	1700	2271		55-37.0	153-15.0		Believe good data but bad geology. Shot parallel to trench
									about 5 mi N. of axis - Only low-rel. refs or crossovers
4	SB 97	2205	2343	57		56-30.0	152-44.8		Excellent shallow water profile S. of Kodiak, several retroarcous
Sept									
7	SB 98	0248	0429	46		57-08	152-10.5		Fair profile just NE of #97 - shot at full speed
Sept									and data not as clear.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12-10

CRUISE LEG—From KODIAK To HONOLULU

+10
TIME ZONE

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
10-11 SEP 68	CORE 180	2357 0041	0210 HIT	2937 2937	2935	54°30'N	155°52.2'W	201	PENETRATION: 340±10 cm. TOTAL LENGTH: 293 cm. TRUE LENGTH: ~283 cm. CLAY BETWEEN BROWNISH GRAY + OLIVE GRAY (0-30 cm); CLAY BETWEEN MEDIUM GRAY + MEDIUM DARK GRAY CONTAINING SANDY LAYER BETWEEN 82+86 cm (30-~110 cm); SAND DARK GRAY (~110-117 cm); SANDY CLAY BETWEEN NEARLY FLAT, BOTTOM OF ALEUTIAN TRENCH NEAR BASE, N. WALL. MEDIUM GRAY + MEDIUM DARK GRAY (117-278); + SAND, MM GR-M.D.GR (278-283)
10-11 Sept 68	Bottom Camera 144	2315 0046	0214 hit	2937 2936	2935	54°30'N	155°52.2'W	201	Ripples of considerable undulations. Nature of bottom is mud or sediment. Tracks and trails appear. Compass indicates an approx. direction for ripple of S.E. C.M.U. 22 double frames.
10-11 Sept 68	Nephelometer 139	2107 0046	0313 hit	2937 2936	2935	54°30'N	155°52.2'W	201	1300 fathoms of very noticeable nepheloid layer beginning at approx. 1600 fathoms of depth. C.M.U.
10-11 Sept 68	Cone Camera 63D	2357 0041	0210 hit	2937 2937	2935	54°30'N	155°52.2'W	201	Top exposure of bottom due to sudden weakening of batteries. One exposure, however, of compass shows a N/E over- turn with respect to arm holding compass. C.M.U.
10-11 Sept 68	Current meter 105	2315 0046	0214 hit	2937 2936	2935	54°30'N	155°52.2'W	201	Tripod hit side of ship quite violently thus breaking wire. Supporting current meter. There were many heavy seas. South West current direction. Velocity reading unreliable C.M.U.
14 SEPT 68	CORE 181	0927 1012	1125 HIT	2742 2736	2726	41°08.8'N	158°57'W	202	PENETRATION: 680 cm. BASE OF CORE HEAD. TOTAL LENGTH: 593 cm. TRUE LENGTH: ~582 cm. CLAY, VERY DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN (0-58 cm); ASH-RICH CLAY, DUSKY YELLOW- ISH BROWN (58-64 cm + 576-582 cm); CLAY + SANDY CLAY, GENERALLY NEARLY FLAT. DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN (64-576 + 582-593 cm)
14 Sept 68	SB 99	1836	2024	2807		46°14.5'N	158°05'W		Good collection, weak volcanics - moderately rich siliceous. Small conifers.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° ¹²~~10~~

CRUISE LEG—From Kodiak To Honolulu

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
15 Sept. 1968	Bottom Camera 146A	1617	1815	2804	2804	44° 07' 2" N	157° 47' 5" W	204	Top film advanced: electrical difficulties C.M.H.
15 Sept. 1968	Rephotometer 141	1532	1748	2804	2804	44° 07' 2" N	157° 47' 5" W	204	A medium strength layer of 60 fms. thick- ness C.M.H.
15 Sept. 1968	Current meter 107A	1617	1815	2804	2804	44° 07' 2" N	157° 47' 5" W	204	Same as for bottom camera. Current meter depends on bottom camera for it to work. C.M.H.
16 Sept. 1968	Bottom Camera 146	1135	1429	2904	2902	43° 59' 5" N	159° 02' 2" W	205	Fondly: Soft sediment C.M.H.
16 Sept. 1968	Rephotometer 142	1043	1508	2904	2902	43° 59' 5" N	159° 02' 2" W	205	60 fathoms thick layer of medium strength C.M.H.
16 Sept. 1968	Current meter 107B	1135	1429	2904	2902	43° 59' 5" N	159° 02' 2" W	205	Weak batteries. Some poor exposures. Also aperture has to be increased. C.M.H.
16 Sept. 1968	Cone Camera 63F	1135	1429			43° 59' 5" N	159° 02' 2" W	205	Camera seems to start shooting at surface due to lack of wire slack to avoid premature starting pulling of magnet pin. C.M.H.

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 19 From Kohab

To Honolulu

TIME ZONE 10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
14	Bottom	0904	1208	2747	2726	47°08'N	158°57'W	202	8 movable frames: much bottom agitation caused by very slight tripod movements which I was unable to detect at/with. Bottom mud very soft. 2 frames show respective halves of a pycnocline. No ripple marks appear. C.M.H.
Sept	Camera	1023		2742	Shit				
168	145								
14	Refractometer	0818	1223	2747	2726	47°08'N	158°57'W	203	No very noticeable nepheloid layer right at the bottom 60 to 70 fathoms thick. C.M.H.
Sept	140	1023		2742	Shit				
168									
14	Cone	0927	1125	2742	2726	47°08'N	158°57'W	203	No bottom or compass exposures because cone lead was completely mired in mud. C.M.H.
Sept	Camera	1012	hit	2736					
168	63E								
14	Current	0904	1208	2747	2726	47°08'N	158°57'W	203	Direction: South to South East Velocity: 5 cm/sec. C.M.H.
Sept	Meter	1023		2742	hit(5)				
168	106								
15	CORE	1630	1828	2799	2800	46°02'N	157°47'W	204	PENETRATION: 1300 ± 5 cm. TOTAL LENGTH: 1145 cm. TRUE LENGTH: 1145 cm. CLAY, DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN (10-419 cm); ASH-RICH CLAY, MODERATE YELLOWISH BROWN (419-428 cm); CLAY, PREDOMINANTLY MODERATE YELLOWISH BROWN (428-782 cm); ASH-RICH CLAY, BROWNISH BLACK (782-789); RADIOLARIAN CLAY (789-1145). BOTTOM GENTLY UNDULATING.
SEPT	182	1708	HIT	2800					
168									
16	CORE	1212	1413	2900	2889	43°59'S	159°02'W	205	PENETRATION: 1725 ± 10 cm. TOTAL LENGTH: 1633 cm. TRUE LENGTH: 1623 cm. CLAY, DARK YELLOWISH BROWN PREDOMINATES IN TOP 3 METERS BUT MODERATE YELLOWISH BROWN BECOMES ABUNDANT WITH DEPTH & PALE YELLOWISH BROWN IS COMMON BELOW 1150 cm. MODERATELY COMPACTED; GENERALLY HOMOGENEOUS. GENTLY UNDULATING WITH OCCASIONAL HILLS.
SEPT	183	1255	HIT	2898					
168									

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Kodiak To Honolulu

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
17	Bottom	0925	1236	2812	2810	41°00.8'	159°00.3'	206	Soft mud with a few rocks. 41 moultle frames
Sept. 168	Camera 147	1041		2810		N	W		C.M.H.
17	Refractometer	0830	1310	2812	2810	41°00.8'	159°00.3'	206	No nepheloid layer
Sept. 168	143	1041		2810		N	W		C.M.H.
17	Current	0925	1236	2812	2810	41°00.8'	159°00.3'	206	Direction: 285°
Sept. 168	Tach 107	1041		2810		N	W		velocity: questionable reading
18	Bottom	1022	1305	2960	2960	38°00'N	158°57.2'	207	Interglacial nodules. 25 moultles.
Sept. 168	Camera 148	1128	5h10	2968			W		C.M.H.
18	Refractometer	0956	1321	2960	2960	38°00'	158°57.2'	207	no nepheloid layer
Sept. 168	144	1128		2968		N	W		C.M.H.
18	Current	1022	1305	2960	2960	38°00'	158°57.2'	207	Direction 280°
Sept. 168	meter 108	1128	5h10	2968		N	W		velocity: 9 cm/sec. 25 moultles
18	Cone	1037	1238	2940	2990	38°00'	158°57.2'	207	One moultle frame of bottom as evidence of having hit.
Sept. 168	Camera 63	1128	hit	2967		N	W		Good orientation heading

John Ewing
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 10

from Kodiak

To Honolulu

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
18 SEPT 68	CORE 184	1037 1122	1238 HIT	2940 2967	2990	38°00'N	158°52'W	207	PENETRATION: 2965 cm. TOTAL LENGTH: 1058. TRUE LENGTH: ≥ 1049 cm. CLAY, GENERALLY MOTTLED DARK YELLOWISH BROWN, MODERATE YELLOWISH BROWN + PALE YELLOWISH BROWN BUT QUITE HOMO- GENEOUS DARK YELLOWISH BROWN BELOW 880 cm. COARSE FRACTION REPRESENTS $\leq 5\%$ + GENERALLY $\leq 1\%$ HILLY, 20 TO 300 fm RELIEF.
19 SEPT. 68	CORE 185	1037 1121	1241 HIT	3126 3136	3132	35°16'N	159°00.2'W	208	PENETRATION: 1135 \pm 5 cm. TOTAL LENGTH: 1559 cm. TRUE LENGTH: 1016 \pm 5 cm. CLAY, GENERALLY MODERATE YELLOWISH BROWN BUT DARK YELLOWISH BROWN BETWEEN ~500-1600 cm (0-676 cm); CLAY, GRADING IMPERCEPTIBLY WITH DEPTH FROM DARK YELLOWISH BROWN TO DUSKY YELLOWISH BROWN, HIGH MA HILLY, 10-40 fm RELIEF. (1013-1016 cm) CONTENT (1016-1013 cm): EXTREMELY PEBBLE-RICH OR FRAGMENTED CRUST.
19 Sept. 1968	Bottom Camera 149	1014 1128	1322 5 min	3130 3136	3130	35°16'N	159°0.1'W	208	Manganese nodules: 12 no abn frames C.M.U.
19 Sept. 1968	Rephelometer 145	0925 1128	approx. 1345	3130 3136	3130	35°16'N	159°0.2'W	208	Weak nepheloid layer 260 fms. thick at bottom C.M.U.
19 Sept. 1968	Current meter 109	1014 1128	1322 5 min	3130 3136	3130	35°16'N	159°0.2'W	208	direction: very slight current apparently towards the south. velocity: .08 cm/sec to 0.1 cm/sec. C.M.U.
19 Sept. 1968	Core Camera 64	1037 1121	1241 4 min	3126 3136	3132	35°16'N	159°0.2'W	208	Unusually exposed bottom but evidently core had settled quickly there giving us 4 nodules frames with compass pointing from there. C.M.U.
20 SEPT. 68	CORE 186	0918 0956	1111 HIT	3170 3170	3168	32°25'N	158°58.5'W	209	PENETRATION: 680 \pm 5 cm. TOTAL LENGTH: 1072 cm. TRUE LENGTH: 672 cm. CLAY, MODERATE YELLOWISH BROWN (0-66 cm); SANDY CLAY, DUSKY BROWN TO MODERATE BROWN, ASH LAMINATIONS BETWEEN 1041-107, 186+187 + 292-294 cm (16-590 cm); MANGANESE NODULE FRAGMENTS, GRAYISH BLACK (590-609 cm); SANDY

CLAY+CLAY, MOTTLED DUSKY BROWN + MODERATE BROWN, CONTAINS WHITISH LAMINATION (658-659) WITH FINE FRACTION
COMPOSED LARGELY OF HEXAGONAL PLATES OF UNKNOWN COMPOSITION-APPARENTLY SOLUBLE IN HCL. MAY BE A VERY
OLD CORE, 2 Eocene BUT FORAMS VERY RARE + NO POSITIVE IDENTIFICATIONS WERE MADE. VALLEY BETWEEN 1601-1300 fm. HILL

John E. Murray
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 10 From Hodiak To Honolulu

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
	Bottom	1510	1752	2830	2863			210	very soft bottom with some manganese nodules
Sept. 168	Camera 151	1611		2830		N.	N.		plaster bottom pictures with actually 19 months. C.M.H.
	21 Repeating	1430	1830	2830	2863	28° 19' S	158° 19' W	210	a very weak nepheloid layer.
Sept. 168	147	1611				N.	N.		C.M.H.
	21 Current	1515	1752	2830	2863	28° 19' S	158° 19' W	210	South west direction for current
Sept. 168	meter 111	1611		2830		N.	N.		velocity from 2.5 cm/sec. to 5.33 cm/sec. C.M.H. 22 months.
	21 Core	1323	1458	2158	2100	28° 19' S	158° 19' W	210	direction: a bit west of south. 11 months.
Sept. 168	Camera 66	1358	1458	2158		N.	N.		C.M.H.
	Grab	1630	-	2830		28-19	158-20	210	Used 4 25# weights*. Sampler must have stuck in mud - no radio or visual contact * + 3 FLOATS.
Sept 168	157A								
16/09	Millipore							205	100 ml filtered, dark filter Temp + Sal
17/09	Millipore							206	500 ml filtered, light color on filter, Temp No Sal.
18/09	Millipore							207	500 ml filtered light color on filter, Sal. No Temp.
23 SEPT 68	CORE 188	1323	1458	2158	~2100	29° 16' N	157° 56' W	211	PENETRATION: 19712 cm TOTAL LENGTH: 736 cm TRUE LENGTH: 190 cm MANGANESE CRUST, GRAYISH BLACK (0-1cm + 186-188cm); SANDY CLAY, DARK YELLOWISH BROWN (0-12.5cm) + VERY DARK YELLOWISH BROWN TO DUSKY YELLOWISH BROWN (12.5-186cm); ALTERED ASH, DARK YELLOWISH BROWN (52.54 + 188-190cm). HILLY BOTTOM.

John E. ...
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG 10 From Kodiak To San Luis

TIME ZONE +10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
20 Sept 1968	Bottom Camera 150	0904	1220	3170	3161	32°25'18" S	158°58'5" W	209	Manganese nodules; 32 reliable frames. C.M.H.
20 Sept 1968	Rephotometer 146	0844	1245	3170	3161	32°25'18" S	158°58'5" W	209	No nepheloid layer. C.M.H.
20 Sept 1968	Cement Meter 110	0904	1220	3170	3161	32°25'18" S	158°58'5" W	209	Direction: general trend of direction is N.W. Velocity: a negligible velocity of from 0° to .6 cm./sec. C.M.H.
20 Sept 1968	Core Camera 65					32°25'18" S	158°58'5" W	209	Bottom not in focus, but reliable orientation marking is 15° east of north. C.M.H.
21 SEPT 1968	CORE 187	1531	1734	~2850	~2845	28°19.5' N	158°20' W	210	PENETRATION: 935 ± 3 cm TOTAL LENGTH: 1139 cm TRUE LENGTH: >750 cm. CLAY, BETWEEN DARK YELLOWISH BROWN + MODERATE BROWN IN TOP ~450 cm + GRADING IMPERCEPTIBLY TO MODERATE BROWN WITH INCREASING DEPTH; VERY HOMOGENEOUS; VERY SLIGHTLY BURROWED; COARSE FRACTION = <1%. TOP 200 fm SEAMOUNT
21 SEPT 1968	T GRAD 95	1512	1803			28°19.5' N	158°19.5' W	210	ALL PROBES (3) PENETRATED AND ALL 3 RECOVERED. ONLY TWO PROBE TRACES ON FILM. 5 CONDUCTIVITY MEASUREMENTS
18 Sept	SB 100	1521	1745	3000		31-44	158-54		1/4" blocks, good refraction, bad topography Failed
19 Sept	SB 101	0030	0040	3074					
19 Sept	SB 102	0052	0300	3105		36-43.8	158-59		10 kts, good for refractions only, big structure
19 Sept	SB 103	1858	2053	3180		34-28	158-59.5		Small gas + 1/4" blocks, good refraction with gas, shot's poor
20 Sept	SB 104	2327	0028	3118		30-45.8	158-39.2		Small gas, good refraction, 4.5 over 6 km/sec.

John E. ...
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From Reber

To Sancti Spiritus

TIME ZONE +0

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
24 SEPT 68	CORE 190	1339	1529	2621	2620	22°26'N	158°22.5'W	213	PENETRATION: ~600 cm. TOTAL LENGTH: 389 cm. TRUE LENGTH: 389 cm. CLAY, SHADES OF DARK YELLOWISH BROWN, CONTAINS THIN LAYER + LAMINATIONS OF BROWNISH BLACK ASH (MOST PROMINENT BETWEEN 228 + 232 cm). JUVENILE FORMS ABUNDANT + COCCOLITHS COMMON. BOTTOM UNULATING: 5-10 cm RELIEF. BETWEEN 232 + 307 cm. COARSE FRACTION GENERALLY <5%.
24 SEPT 68	GRAB SAMPLE 159					22°26'N	158°22.5'W	213	3 FLOATS, 2 LARGE WEIGHTS - ~75 lbs. CAME UP EMPTY
24 SEPT 68	Bottom Camera 153	1316	1535	2620	2620	22°26'N	158°22.5'W	213	According to how much dissolves after hitting by target plus well to assume a present effect. direction a bit east of south. Sedimentation bottom with scattered - widely spaced - manganese lumps. J.H.H.
24 SEPT 68	Depthmeter 149	1245	1607	2620	2620	22°26'N	158°22.5'W	213	A medium strength layer of approximately 300 fms. thickness at the bottom. C.H.H.
24 SEPT 68	CURRENT Meter 113A	1316	1535	2620	2620	22°26'N	158°22.5'W	213	No readings! Camera casing leaked. No damage to camera. J.H.H.
24 SEPT 68	Cone Camera 67B	1339	1529	2621	2620	22°26'N	158°22.5'W	213	Bottom not in focus. No orientation because compass was buried in the mud. J.H.H.

John E. ...
Chief Scientist

Columbia University
in the City of New York

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

Research Vessel ROBERT D. CONRAD

CRUISE N° 12

CRUISE LEG From

Kohib

To

Hauscher

TIME ZONE

+10

Date	STATION and N°	TIME		SOUNDING		POSITION		LOG	REMARKS
		Start	End	Start	End	Lat.	Long.		
23 Sept 68	Bottom	1303	1522	2100	2100	24°16'	157°42'	211	
23 Sept 68	Camera	1402	5 hits	2160		N	W		
23 Sept 68	152								
23 Sept 68	148	1231	1553	2100	2100	24°16'	157°56.3	211	No nepheloid layer
23 Sept 68	148	1402	hit	2160		N	W		
23 Sept 68	112	1303	1522	2100	2100	24°16'	157°56.3	211	Drift: 290° for all hits Velocity: from 3.7 to 4.5 cm/sec.
23 Sept 68	112	1402	5 hits	2160		N	W		
23 Sept 68	Core	1323	1458	2158	2100	24°16'	157°56.3	211	No exposures of bottom: pipe was bent
23 Sept 68	Camera	1358	hit	2120		N	W		
23 Sept 68	67A								
23 Sept 68	Core	2022	2155	2361	2360	23°53'N	157°51.8'W	212	PENETRATION ~ 200cm TOTAL LENGTH: 603cm. TRUE LENGTH: ~ 245cm
23 Sept 68	189	2058	HIT	2361					CLAY, SHADES OF DARK YELLOWISH BROWN, GRADUALLY BECOMES SLIGHTLY DARKER WITH DEPTH; HOMOGENEOUS; CUTTING EDGE VERY BADLY BENT. VERY SLIGHTLY BURROWED; COARSE FRACTION = 10.2%.
23/09	Millipore	1303	1522	2100	2100	24°16'	157°51'	212	500 ml filtered very light Temp & Salinity BOTTOM HILLY-UP TO 150m REEF.
23/09	Grabs	1400	1600	2100	2100	24°15'	157°56'	211	3 FLOATS; 2 LARGE WEIGHTS - ~ 75lb TOTAL No sample, Ribs popped on end of one jaw
24/09	SB 105	0004	0149	2383		23-49	152-55		Weak refraction, fairly smooth basement
24/09	SB 106	0153	0317	2415		23-42	158-06		No apparent refraction, why not??
24/09	SB 107	0323							Failed
24/09	SB 108	0332	0530	2166		23-35	158-10		Fair refraction, but faint
23/09	Grab 158	2030	2230	2361		23-53	157-52	212	Small sample of piece of crust. One cutting edge

3 FLOATS, 2 LARGE WEIGHTS - ~ 75lb. TOTAL. SAMPLE: DARK GRAYISH FRAGMENTS OF A MANGANESE CRUST. FRAGMENTS ~ 1/2cm THICK; LARGEST IS 1/2 x 5/4 cm; COVER AREA OF ~ 81 sq cm; WEIGHT ~ 20g.

John Ewing
Chief Scientist

DEPARTMENT OF GEOLOGY
LAMONT GEOLOGICAL OBSERVATORY
PALISADES

CRUISE N° 10

CRUISE LEG-4 From

Ref: To _____

TIME ZONE 110

[illegible]

John Essing
Chief Scientist