WATKINS

TR-148

UNIVERSITY OF RHODE ISLAND
KINGSTON • R. I. 02881

Graduate School of Oceanography • Narragansett Bay Campus

WATKINS/HUANG

May 5, 1974

CRUISE REPORT

R/V TRIDENT CRUISE 148

ITINERARY

The 18-day cruise began at Willemstad, Curacao at 1200 GMT, 19 February, 1974 and ended at Cristobal, Panama at 1200 GMT, 8 March, 1974.

FUNDING

Ship costs for this data-collecting cruise were paid by the National Science Foundation in support of the following grants: (1) GA41136 (16 days) entitled, "Geophysical research on the evolution of the central Caribbean Sea floor," E. Christofferson, principal investigator; (2) GA28853 (2 days) entitled, "Atmospheric transport of volcanic dust in deep-sea sediments," T.C. Huang, D.M. Shaw, and N.D. Watkins, co-investigators.

CRUISE SUMMARY

The TRIDENT steamed about 3000 nautical miles on various courses and speeds in the central Caribbean Sea between Haiti and Panama while continuously recording geomagnetic field intensity and water depth (track chart). The main intent of the geophysical survey was to determine the existence of a predicted late Cretaceous linear magnetic anomaly in the unmapped northern region of the Colombia basin. Sufficient data were collected to document its existence. Throughout the cruise the geophysical survey was conducted so as to ease the ship in rough seas generated by brisk northeast tradewinds. Six seismic reflection profiles totaling 130 NM: were made in selected regions of the Colombia basin. An uncharted seamount was crossed at latitude 13°48'N and longitude 74°48'W in the Colombia basin abyssal plain. Satellite navigation was utilized throughout the cruise.

Abyssal sediments were recovered at eight locations within the Colombia basin (track chart). Three box cores and five piston cores were taken (Table 1). The main intent of the coring program was:

- to collect traverses of deep-sea sedimentary piston cores in order to identify Arenal volcanic dust

TR-148

horizons in the deep-sea sediments downwind (upper atmospheric wind) from the eruptions. This volcanic dust which will be dated, can yield data relevant to the ancient eruptive intensities; atmospheric volcanic particulate transport, and detailed volcanic stratigraphy of the Arenal volcano (or other volcanoes). Specifically, the box coring was applied to obtain the sedimentary record of recent Arenal eruption in 1968. Several subsidiary topics such as biostratigraphic studies on this part of the Caribbean Sea are envisaged.

TABLE 1

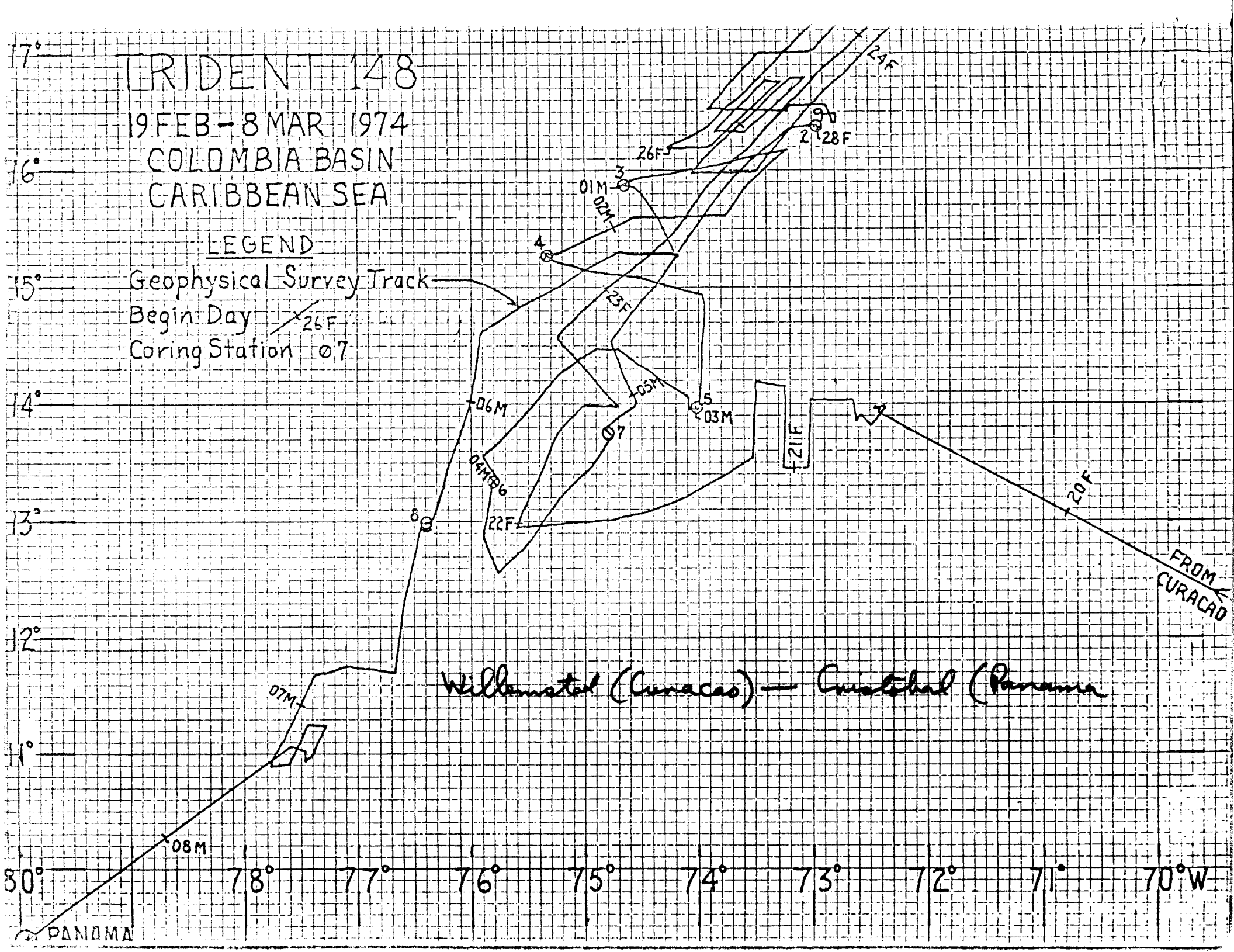
Station No.	Core No.	Lat. °N	Long. °W	Water Depth (m)	Total Core Length
1	1	17°28.5'	72°44.2'	2640	19 ft.
2	2(box)	16°21.7'	72°54.6'	4262	--
3	3(box)	15°51.2'	74°34.3'	4180	--
4	4(box)	15°17.0'	75°18.8'	4140	--
5	5	13°57.8'	74°02.8'	4020	34.5 ft
6	6	13°22.4'	75°45.81'	3949	31.5 ft.
7	7	13°45.2'	74°46.3'	4075	24 ft.
8	8	13°00.9'	76°23.9'	3865	32 ft.

SCIENTIFIC PARTY

Dr. E. Christofferson, Chief Scientist, URI
Dr. D.M. Shaw, co-investigator, URI and Brooklyn College
Dr. T.C. Huang, co-investigator, URI
Dr. R.K. Frohlich, Research Assistant, URI
Mr. M.R. Fisk, Graduate Student, URI
Mr. B.H. Corliss, Graduate Student, URI
Mr. C. Amerigian, Graduate Student, URI
Mr. J. Kenny, Graduate Student, URI
Mr. P.N. Fisk, Research Assistant
Mr. K. Christofferson, Research Assistant
Mr. P. Hendershot, Oceanographic Technician, URI
Mr. A. Buddington, Oceanographic Technician, URI

TRACK CHART TO BE APPENDED AT 1" = 1° SCALE TO SHOW:

1. Geophysical tracks
2. Core stations


TRIDENT 148
19 FEB - 8 MAR 1974
COLOMBIA BASIN
CARIBBEAN SEA
LEGEND
Geophysical Survey Track
Begin Day 26F
Coring Station 07
17°
16°
15°
14°
13°
12°
11°
80°
78°
77°
76°
75°
74°
73°
72°
71°
70°W
24F
28F
26F
01M
02M
23F
05M
06M
03M
07
04MTB6
22F
21F
20F
FROM CURACAO
07M
08M
PANAMA
Willemstad (Curacao) — Cristobal (Panama