**IG2408**
**Cruise Report**

This document combines two reports. The first report (pages 2-3) is a report for the cruise IG2408. The second report (pages 4-16) is a report for cruises IG2407, IG2408 and IG2409.

IG2408

THE UNIVERSITY OF TEXAS
MARINE SCIENCE INSTITUTE
GEOPHYSICS LABORATORY
GALVESTON, TEXAS 77550

*700 The Strand*
*713 765-2173*

14 September 1977

RESEARCH CRUISE REPORT

SHIP NAME:
*Ida Green*

OPERATING INSTITUTION:
University of Texas
Marine Science Institute

CLEARANCE COUNTRY:
Dominican Republic

DATES:
11 August - 18 August 1977

PROJECT TITLES:
Multichannel Investigation
Southeast of the Dominican Republic

PORT CALLS:
Santo Domingo 9 Aug.-11 Aug.
18 Aug.-21 Aug.

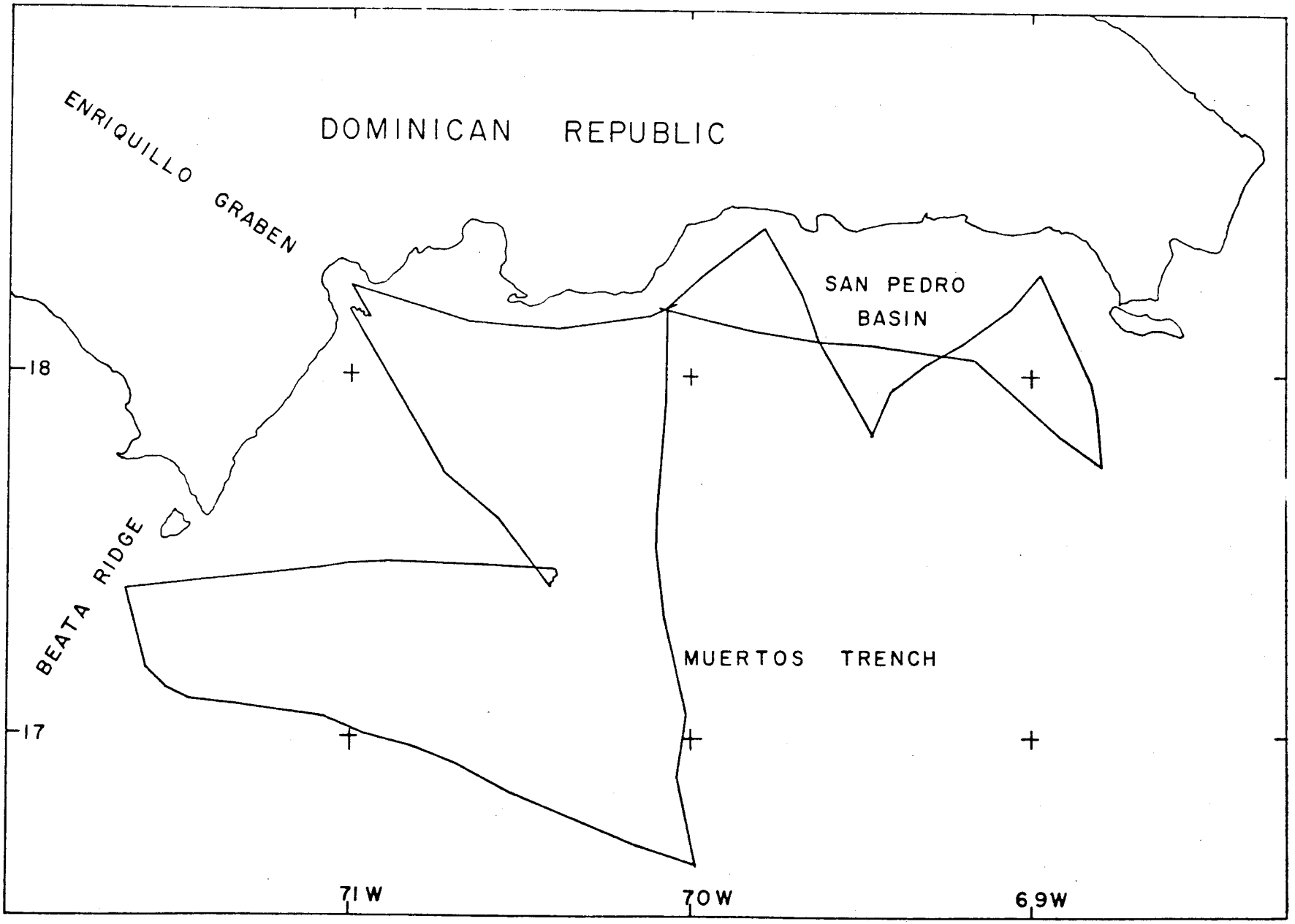
FOREIGN PARTICIPANTS:
Narciso Almonte, Dominican Navy
Francisco Xavier Arenemann, Instituto Dominicano de Tecnologia Industrial

SENIOR SCIENTISTS:
Mark Houston and John Ladd

DESCRIPTION OF SCIENTIFIC PROGRAM:
We undertook this marine geophysical survey off the southern coast of the Dominican Republic to investigate the geologic relations among major geologic provinces in the area, including the Beata Ridge, the Enriquillo Graben, the San Pedro Basin, the Muertos Trench, and the Venezuela Basin to the south. The San Pedro Basin is a structural depression that is filled with several kilometers of mildly deformed sediment that has apparently been ponded behind a structural high to the south. Southward from this structural high the sea-floor slopes down to the Muertos Trench. Both the San Pedro Basin and the Muertos Trench terminate westward against the Beata Ridge and its northward extension in the Dominican Republic. Several Late Cretaceous to Early Tertiary mountain ridges trend northwest-southeast on land in the Dominican Republic and may have influenced the development of the structural features to the south. The data gathered on this cruise, together with data gathered farther offshore on earlier cruises, will help to develop a clear picture of the present geologic structure and stratigraphy of this region and the tectonic development of this region through time.

OBSERVATIONS AND SAMPLES:
600 nautical miles of bathymetric, magnetic, and deep penetration seismic data collected simultaneously along entire track (see accompanying track chart).
Location of data: See letterhead above.

NAME AND ADDRESS OF CONTACT TO WHOM INQUIRIES REGARDING CRUISE SHOULD BE MADE:
John W. Ladd
(See letterhead address above.)


DOMINICAN REPUBLIC
ENRIQUILLO GRABEN
SAN PEDRO BASIN
BEATA RIDGE
MUERTOS TRENCH
18
17
71W
70W
69W

THE UNIVERSITY OF TEXAS
MARINE SCIENCE INSTITUTE
GEOPHYSICS LABORATORY
GALVESTON, TEXAS 77550

*700 The Strand*
*713 765-2173*

16 September 1977

# RESEARCH CRUISE REPORT
Leg: IG 24-7
IG 24-8
IG 24-9

SHIP NAME:
R/V *Ida Green*

OPERATING INSTITUTION:
University of Texas
Marine Science Institute

PROJECT TITLES:
1) Geophysical Investigations of the Middle America Trench (MAT)
2) Multichannel Investigation Southeast of the Dominican Republic

PORT CALLS:
Puntarenas, Costa Rica 18 July - 19 July
Balboa, Panama 28 July - 2 Aug.
Santo Domingo, Dominican Republic
9 Aug. - 11 Aug.
18 Aug. - 21 Aug.

CHIEF SCIENTIST:
Dr. M. H. Houston

GENERAL SCIENTIFIC PROGRAM:
Cruise IG 24 of the R/V *Ida Green* was directed toward geophysical and geological investigations of the MAT. Delineation of the detailed structure and geologic history of the MAT is vital to our understanding of an "active" continental margin in the light of plate tectonics.

## Leg IG 24-7

CLEARANCE COUNTRIES:
Nicaragua
Costa Rica
Panama

DATES:
18 July - 28 July

FOREIGN SCIENTISTS:
None.

SCIENTIFIC PROGRAM:
The general track for IG 24-7 is shown in Figures 1 and 2. Over all tracks continuous measurements of bathymetry and magnetics were recorded. The dashed lines indicate multichannel seismic profiles of 120 n.m. Figure 3 indicates the position of 4 refraction shots to an array of seismometers located on Nicoya Peninsula. Figure 4 shows the location of 5 piston-core samples. Figure 5 shows the location of a 90 n.m. multichannel seismic survey off the coast of Nicaragua; Figure 6 indicates a 250 n.m. seismic survey off Panama.

## Leg IG 24-8

CLEARANCE COUNTRIES:
Panama
Nicaragua
Dominican Republic

DATES:
2 Aug. to 18 Aug.

FOREIGN SCIENTISTS (R.D. only)
Narciso Almonte, Dominican Navy
Francisco Arnemann, INDOTEC

SCIENTIFIC PROGRAM:
The general track for the first part of IG 24-8 is shown in Figure 7. The dashed lines in Figures 7 and 8 indicate a multichannel seismic profile of 120 n.m. Figure 9 shows the locations of two other seismic lines of 105 n. m. shot in the area on IG 24-1. The general track of 600 n.m. for the second part of IG 24-8 is indicated in Figure 10. (See detailed Research Report for Dominican work by project scientist Dr. John W. Ladd.)

## Leg IG 24-9

CLEARANCE COUNTRIES:
None

DATES:
21 Aug. to 29 Aug.

FOREIGN SCIENTISTS:
None

SCIENTIFIC PROGRAM:
Only underway geophysics (bathymetry and magnetics) data were collected along the track of IG 24-9 as indicated in Figure 11.

KEY CONTACT:

Dr. M. H. Houston
University of Texas
Marine Science Institute
Geophysics Laboratory
700 The Strand
Galveston, TX 77550

Tel. (713) 765-2915

IG 24-7 Trackchart - Part I

Nicaragua Multichannel Profiling

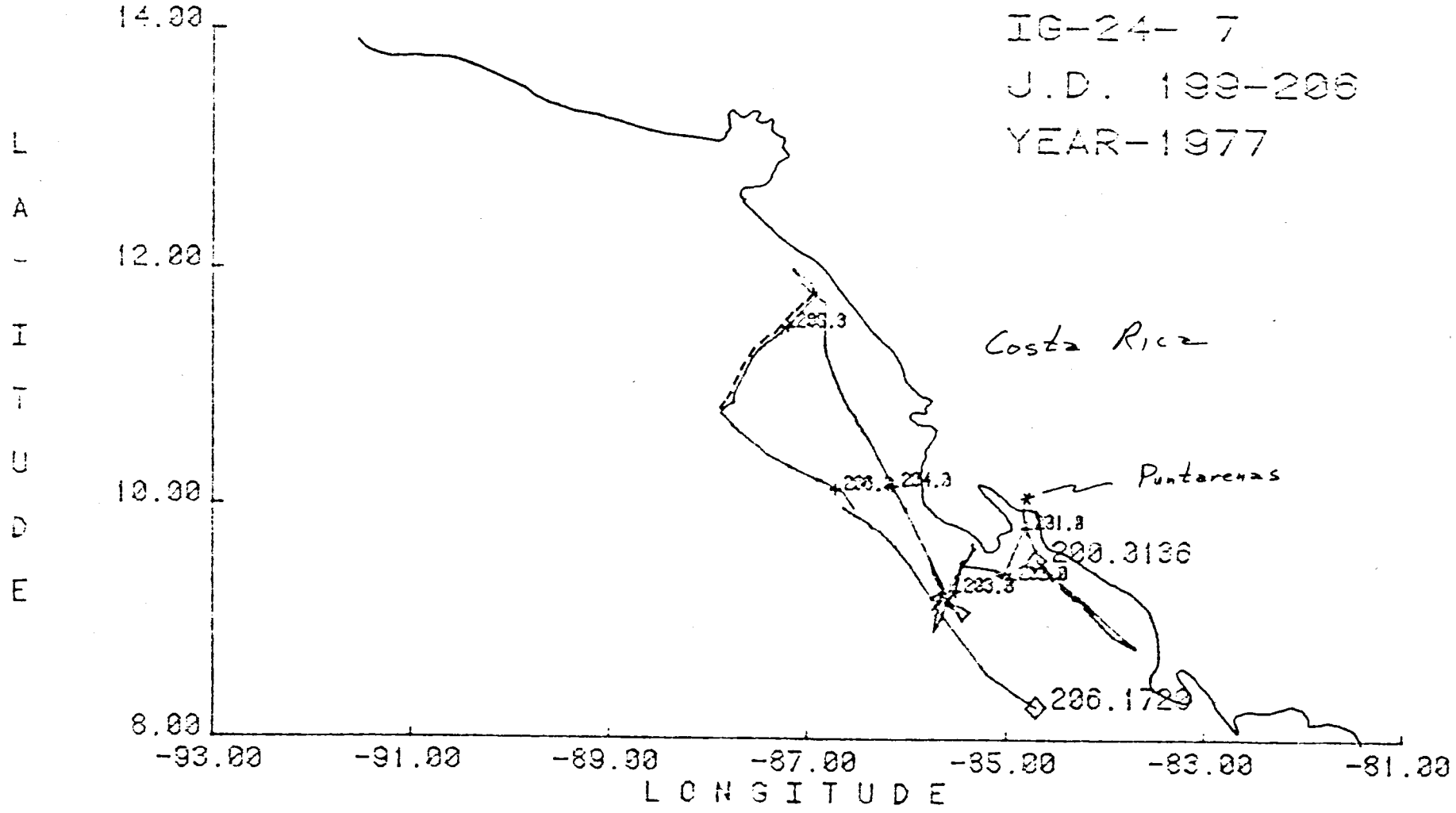



Fig. 1

IG 24-7 Trackchart - Part II

Panama Multichannel Profiling

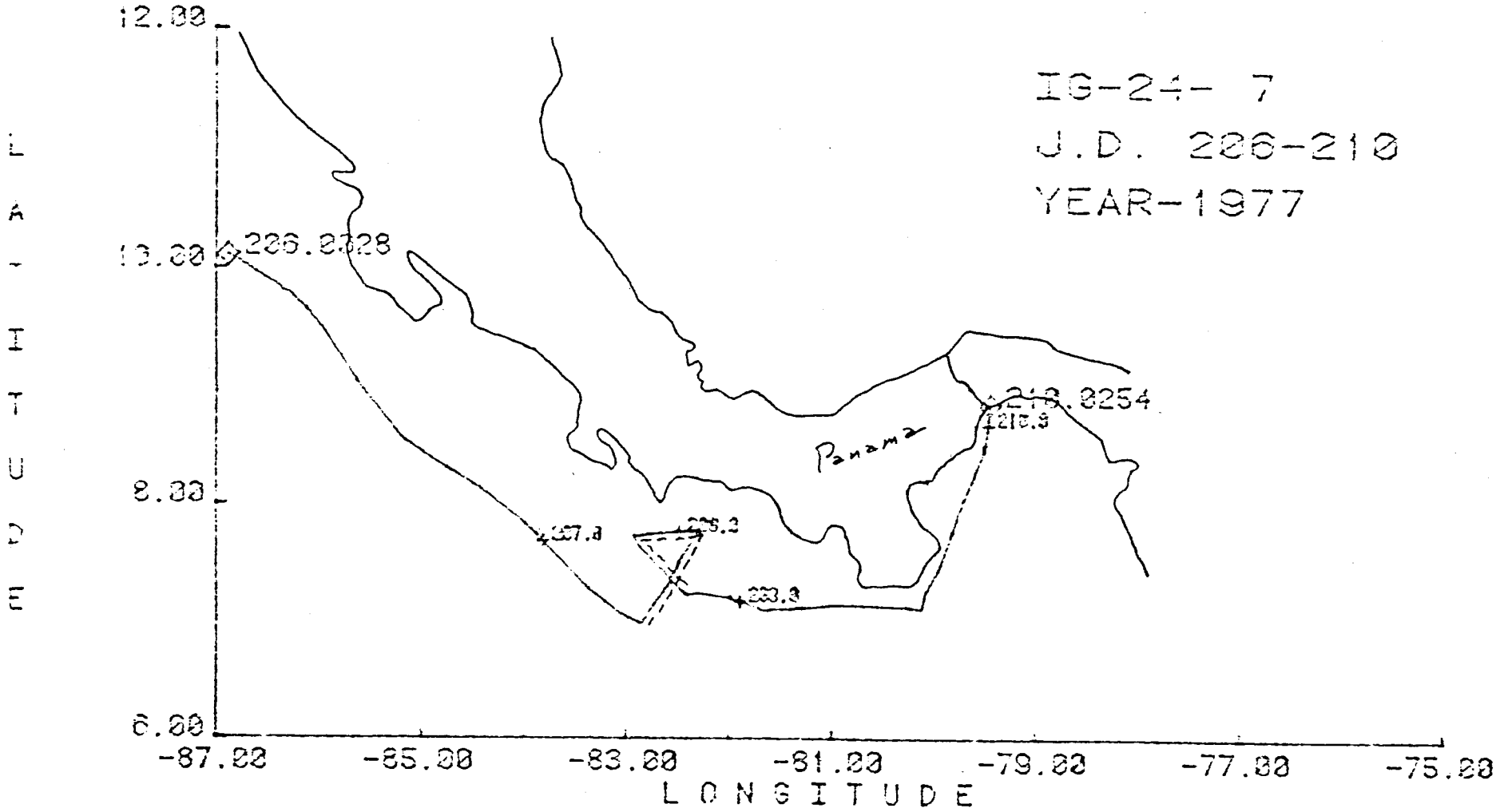



Fig. 2

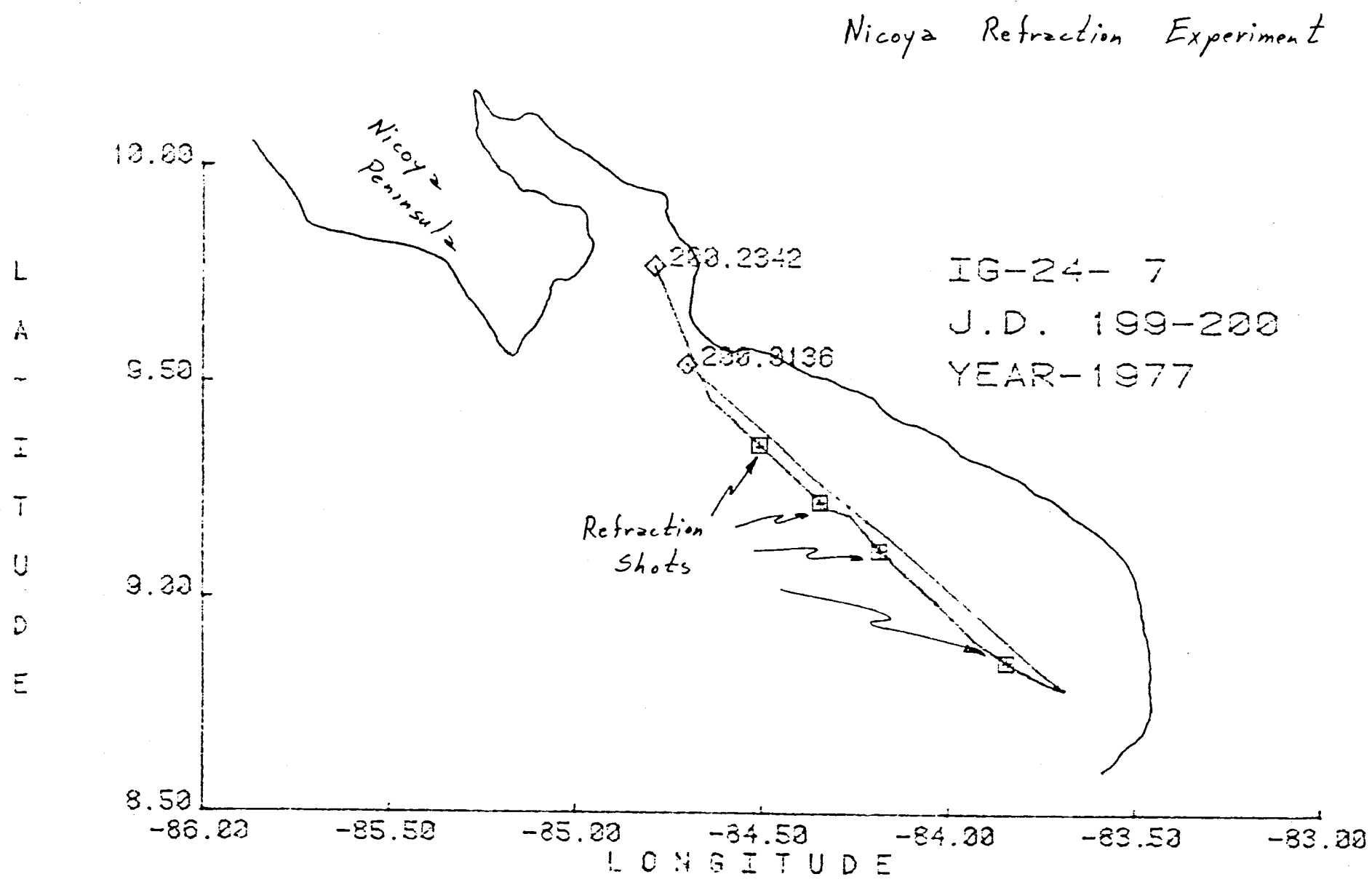

Nicoya Refraction Experiment
Nicoya Peninsula
258.2342
258.3136
IG-24- 7
J.D. 199-200
YEAR-1977
Refraction Shots
10.00
9.50
9.00
8.50
LATITUDE
-86.00
-85.50
-85.00
-84.50
-84.00
-83.50
-83.00
LONGITUDE

Fig. 3

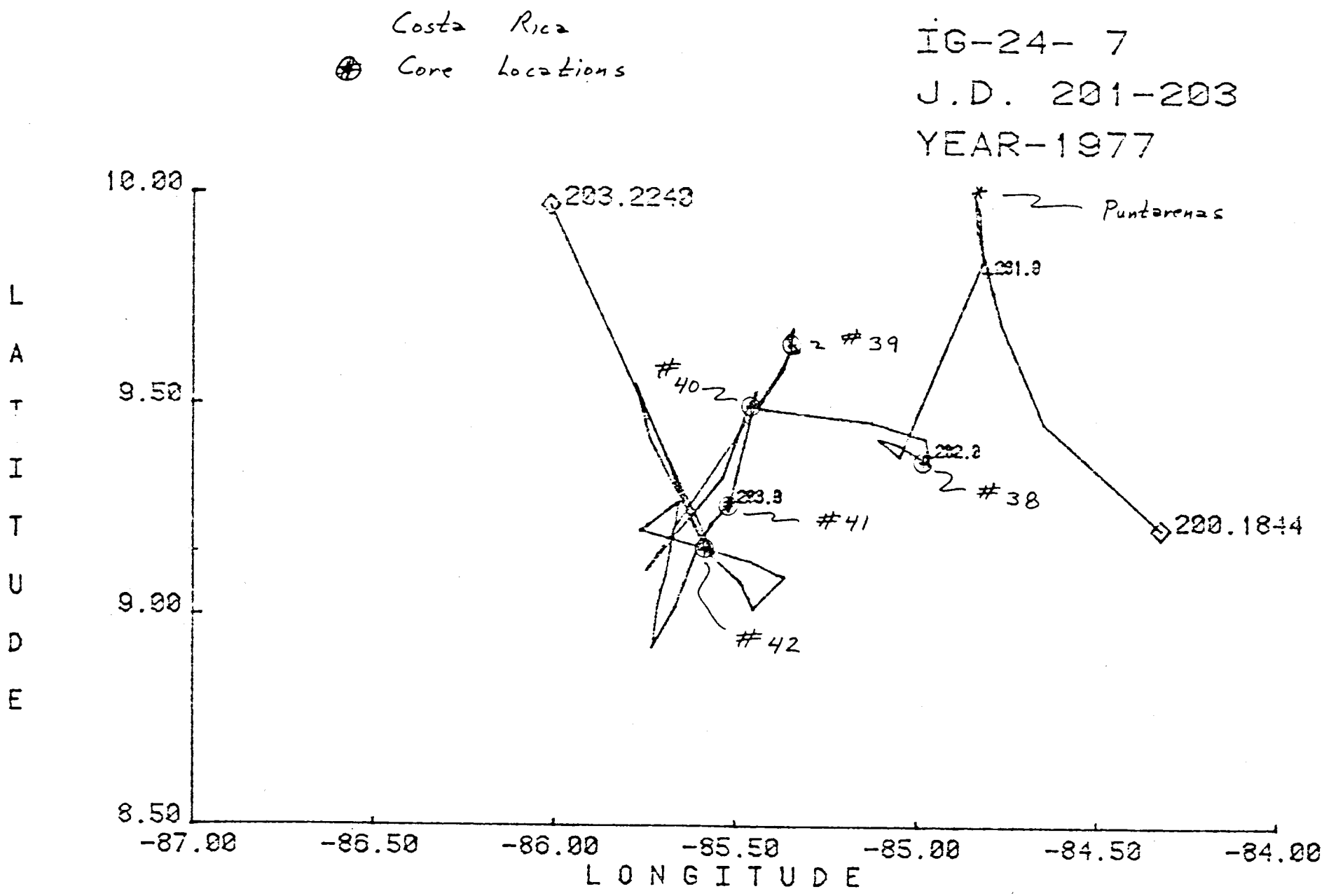

Costa Rica
Core Locations
IG-24- 7
J.D. 201-203
YEAR-1977
10.00
9.50
9.00
8.50
LATITUDE
-87.00
-86.50
-86.00
-85.50
-85.00
-84.50
-84.00
LONGITUDE
203.2248
Puntarenas
#39
#40
#38
#41
#42
200.1844

Fig. 4

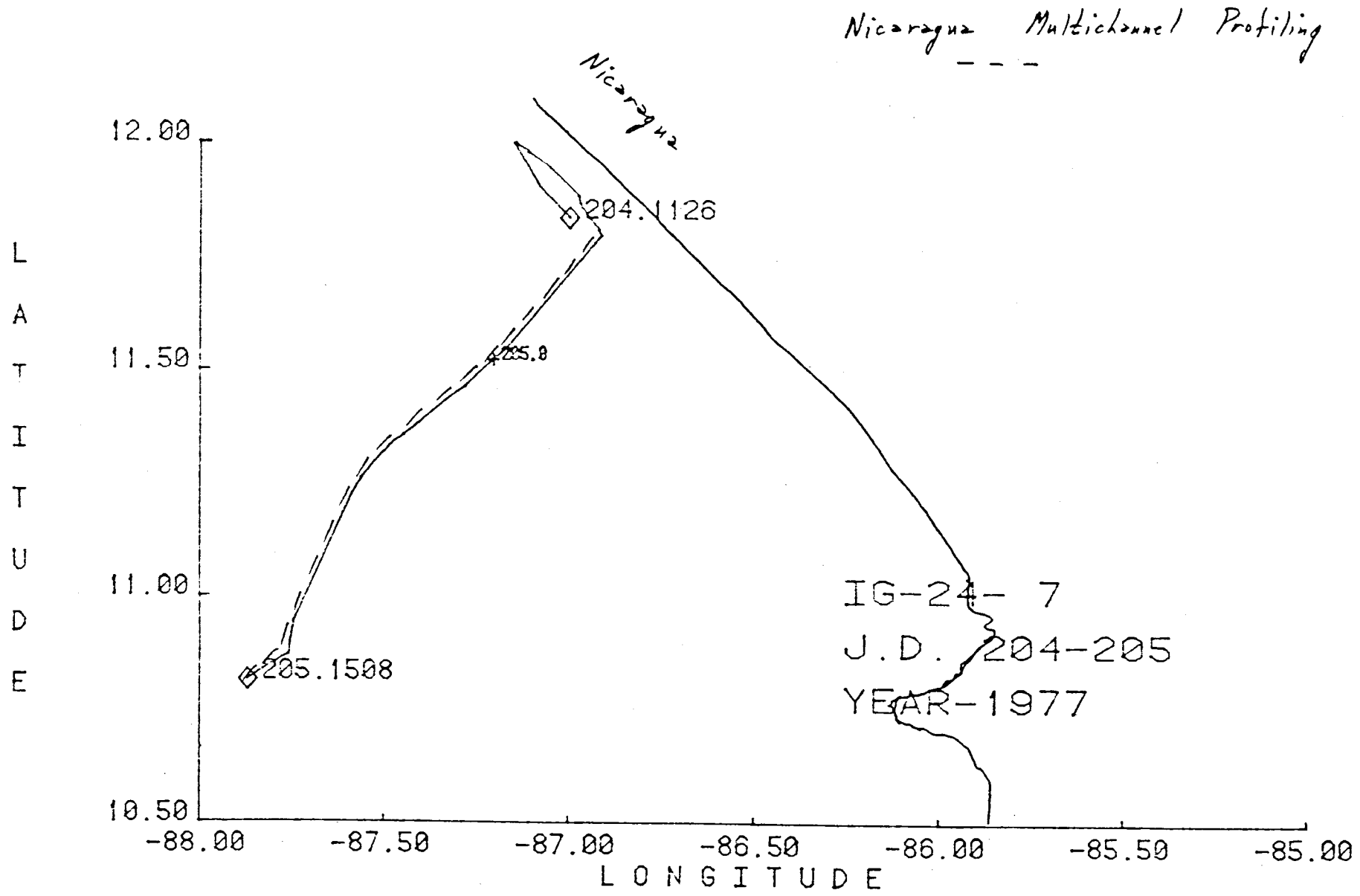

Nicaragua Multichannel Profiling
Nicaragua
204.1126
205.8
205.1508
IG-24- 7
J.D. 204-205
YEAR-1977
12.00
11.50
11.00
10.50
LATITUDE
-88.00
-87.50
-87.00
-86.50
-86.00
-85.50
-85.00
LONGITUDE

Fig. 5

Panama Multichannel Profiling

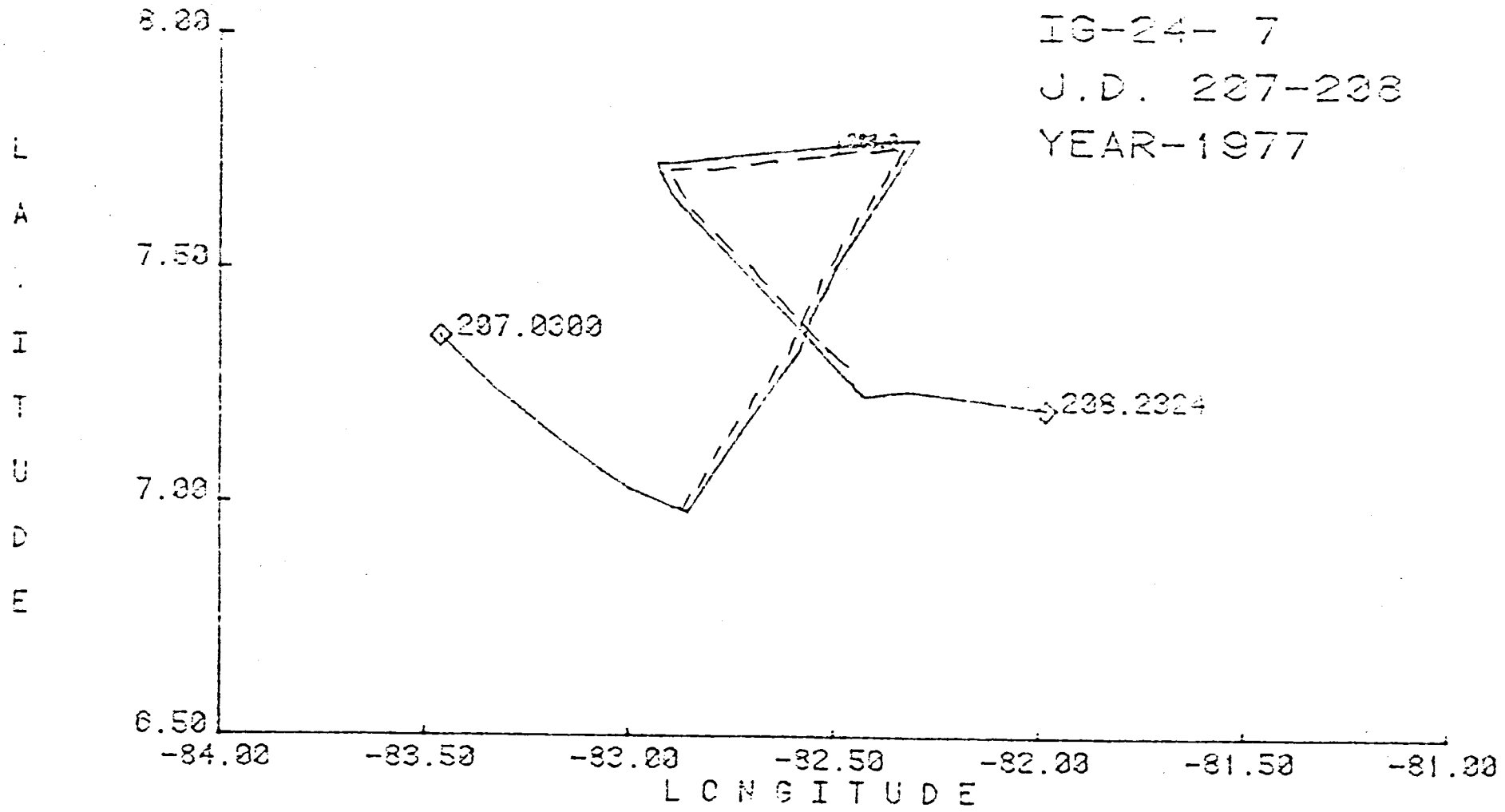



Fig. 6

IG 24-8 Trackchart Part I

Panama. Nicaragua Multichannel

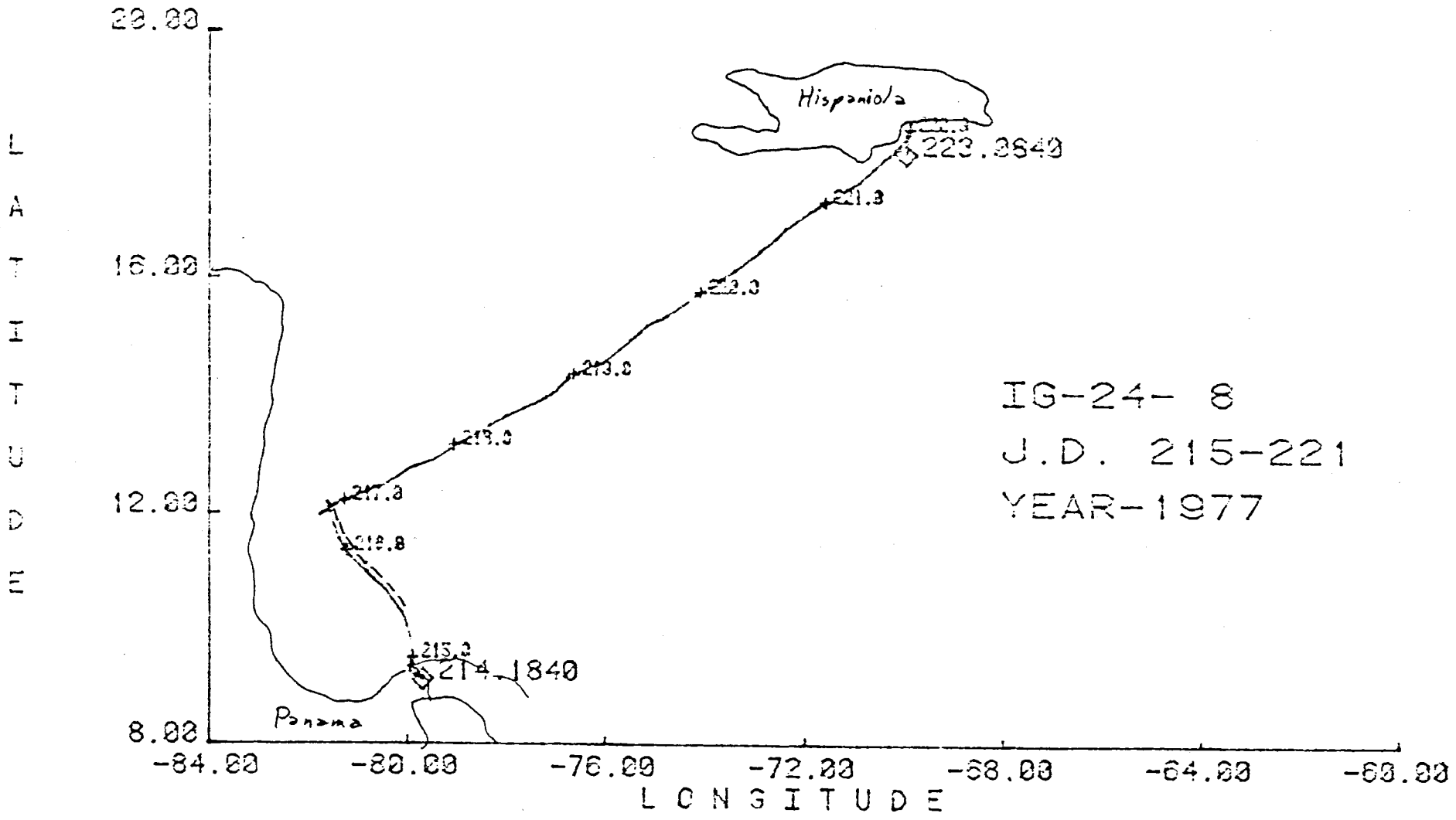



Fig. 7

Panama - Nicaragua Multichannel

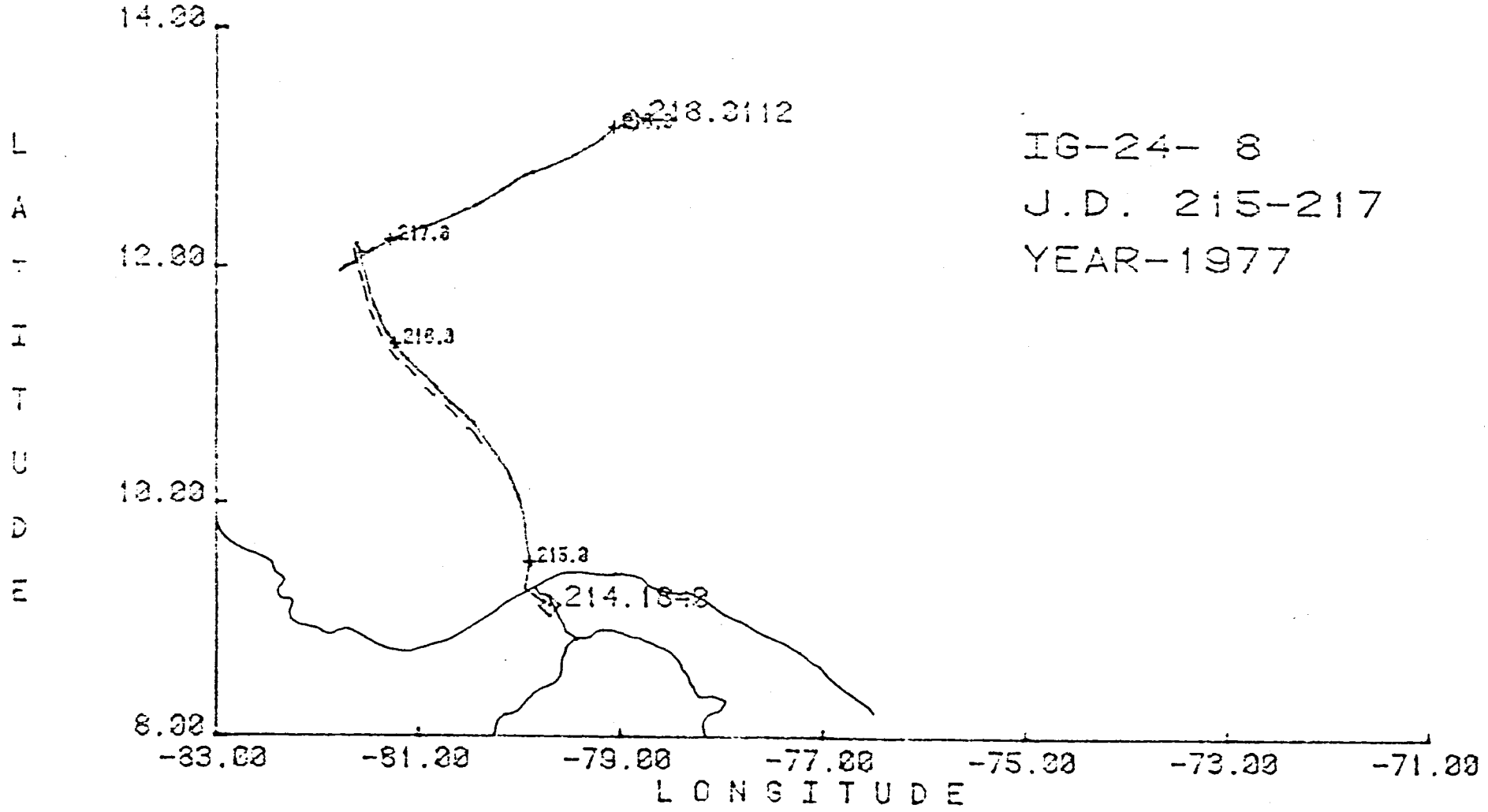



Fig. 8

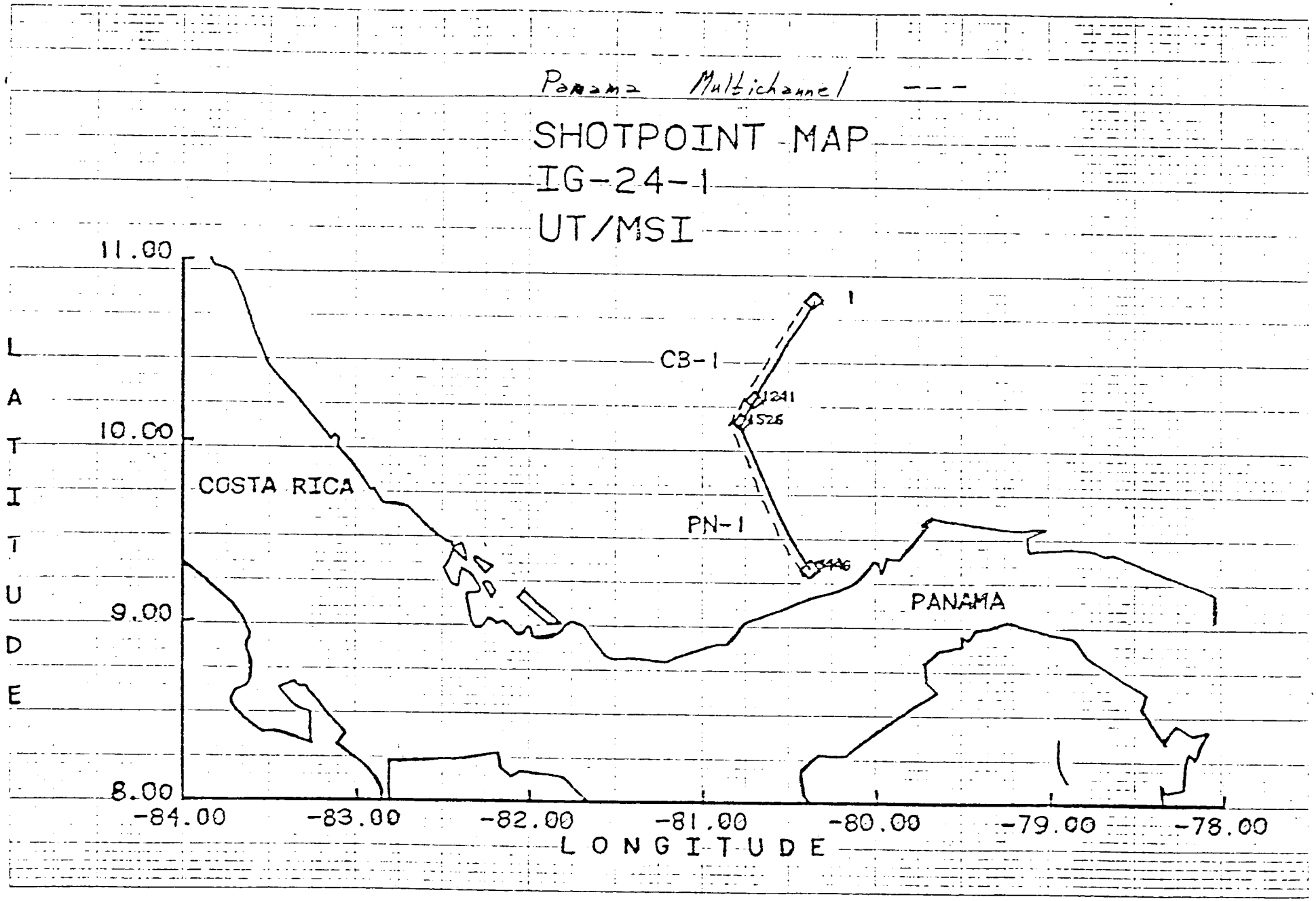

Panama Multichannel
SHOTPOINT MAP
IG-24-1
UT/MSI
11.00
10.00
9.00
8.00
LATITUDE
COSTA RICA
CB-1
1241
1526
PN-1
1446
PANAMA
-84.00
-83.00
-82.00
-81.00
-80.00
-79.00
-78.00
LONGITUDE

Fig. 9.

IG 24-8 Trackchart Part II

Dominican Republic Multichannel

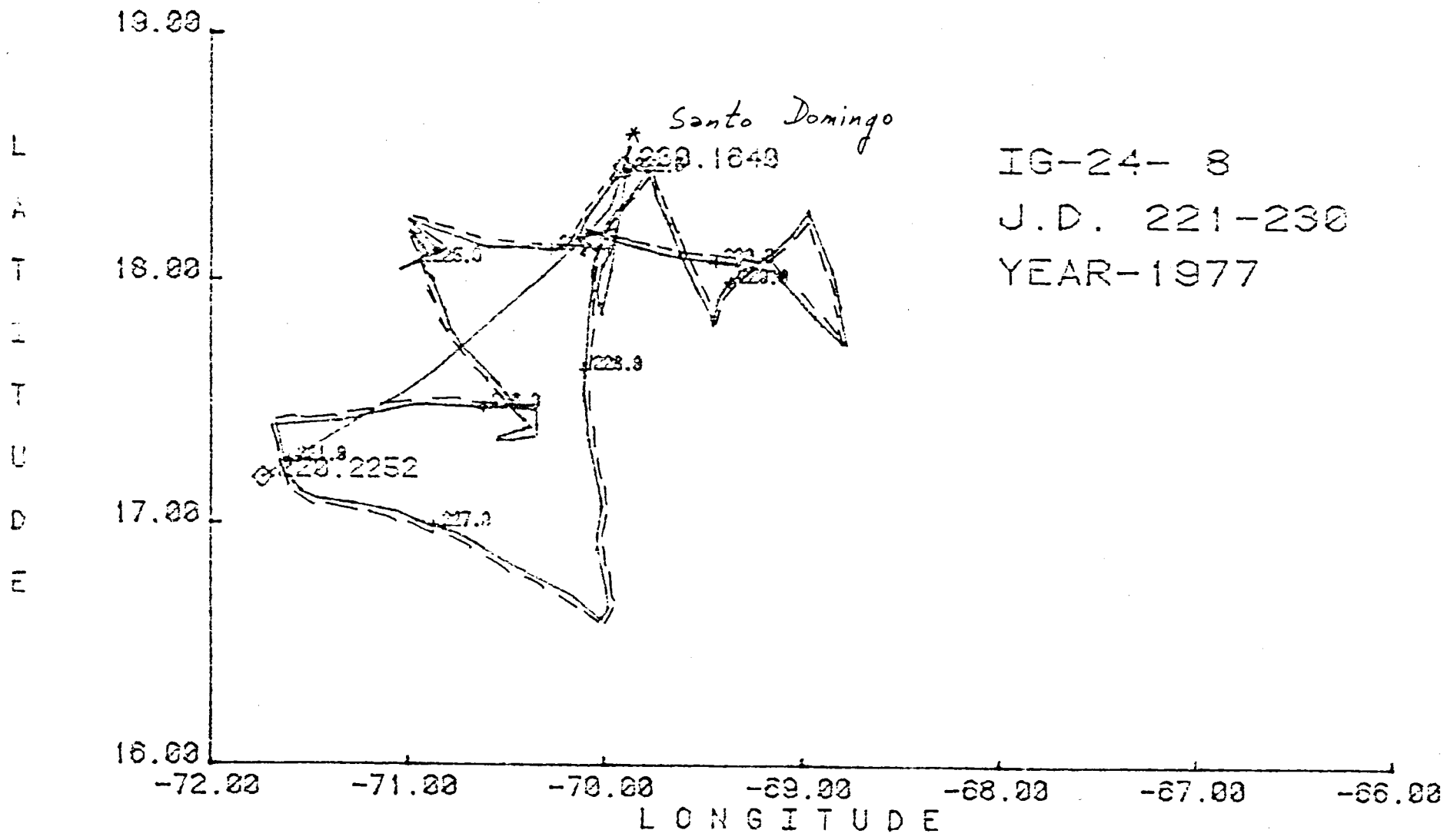



Fig. 10

IG 24-9 Trackchart

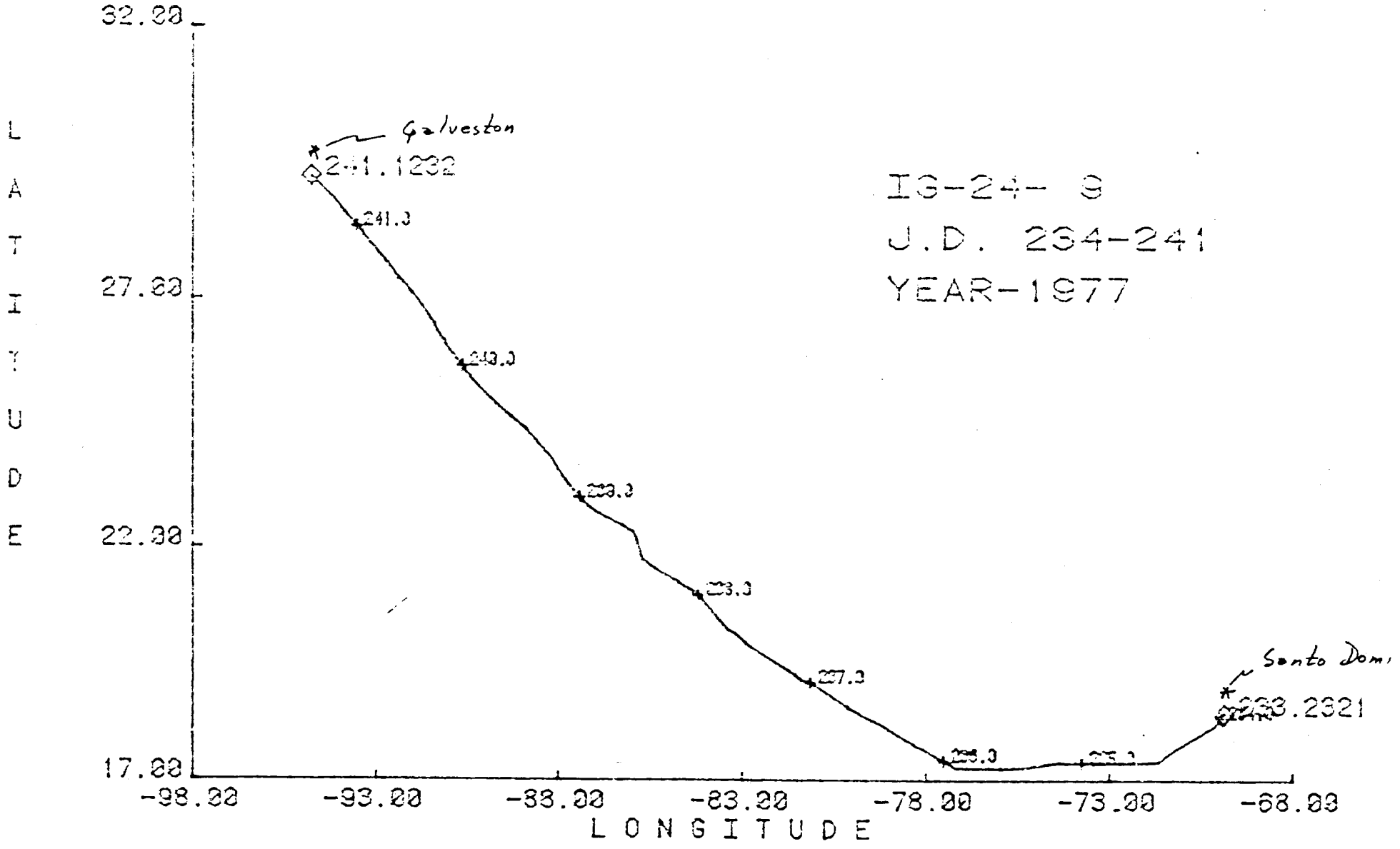



Fig. 11