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Cruise Report

R/V Gyre 8212

Oct. 4-19, 1982

Mahlon M. Ball

U.S. Geological Survey

Woods Hole, MA 02543

February 22, 1983

Vessel:	R/V Gyre, Texas A&M. Department of Oceanography College Station, TX 77843
Cruise No:	82-G-12
Project:	Regional Structure and Stratigraphy of the Western Florida Shelf, Eastern Gulf of Mexico, MAFLA area. 9840-01798.
Area of Operations:	Western Florida Shelf-Eastern Gulf of Mexico
Date of Start and End of Cruise with Ports:	Oct. 4, 1982, Miami, FL; Oct. 19, 1982, Galveston, TX.
Names and Affliations of Scientific Crew and Ships Captain:	

A. Scientific Party:

	Name	Title	Affiliation
1.	Mahlon M. Ball	Cheif Scientist, Geophysist	U.S.G.S. (WH)
2.	Dave Nichols	Geophysicist	U.S.G.S. (WH)
3.	Jack Connell	Geophysicist	U.S.G.S. (WH)
4.	Jim Dodd	Geophysicist	U.S.G.S. (WH)
5.	Barry Irwin	Geophysicist	U.S.G.S. (WH)
6.	Dave Mason	Geophysicist	U.S.G.S. (WH)
7.	Eric Koelsch	Geophysicist	U.S.G.S. (CC)
8.	Jack Kindiger	Watch Stander	U.S.G.S. (CC)
9.	Ronnie Walls	Watch Stander	U.S.G.S. (CC)
10.	Linda Massingill	Watch Stander	U.S.G.S. (CC)
11.	Joann Taylor	Watch Stander	U.S.G.S. (WH)
12.	Sue Williams	Watch Stander	U.S.G.S. (WH)
13.	Dan Byrne	Watch Stander	U.S.G.S. (WH)
14.	Jeff Kozial	DFS-5 Tech	Consultant

B. Ship's Captain: Don Armand

Purpose of Cruise: Make geophyical measurements (CDP seismic, 3.5 bc, gravity and magnetic) to be used in regional structural and stratigraphic framework studies.

Navigation System:

The United States Geological Survey's Integrated Navigation/Gravity System is built around a Western Geophysical Survey and Data Management System. The Western system uses a Hewlett-Packard 2112 minicomputer and Western designed interface circuitry to take data from six navigation sensors and output the accurate position of the vessel. The sensors are of two types: 1) Velocity output--range-range loran, bottom lock (pulsed) sonar, doppler (continuous) sonar, gyroscope and 2) Position output -- Navy Navigation Satellite receiver, hyperbolic loran. The two usual methods of navigation are: 1) Dead reckoning between satellite fixes using one of the velocity sensors (the recommended mode, with range-range loran the recommended sensor) and 2) Using the continuous data from hyperbolic loran.

List of Scientific Equipment Employed:

A. Gravity System

A Bell Aerospace BGM-3 gravimeter is integrated with the navigation system. Roll and pitch signals from the gyroscope (Sperry MK-29) are used to keep a stable platform (designed by J. Dean of Woods Hole Oceanographic Institute) parallel to the earth's surface. The gravimeter is mounted on this platform and sends raw gravity data to a Hewlett-Packard 9825A calculator. A navigation/gravity interface unit (designed by P. Parks, formerly of U.S.G.S.) transfers navigation data to the HP 9825A.

B. Mulitchannel reflection seismic system with U.S.G.S. 1200m streamer and a 500 in^3, bolt air gun. The gun was 15m off the stern and the near phone was 230m astern. Shot point interval was 25m. The steamer is composed of alternating active and inactive segments 25m long. Twenty-four fold data were using a DSFV recorder.

C. High resolution reflection seismic system: 3.5 Hz.

D. Varian magnetometer

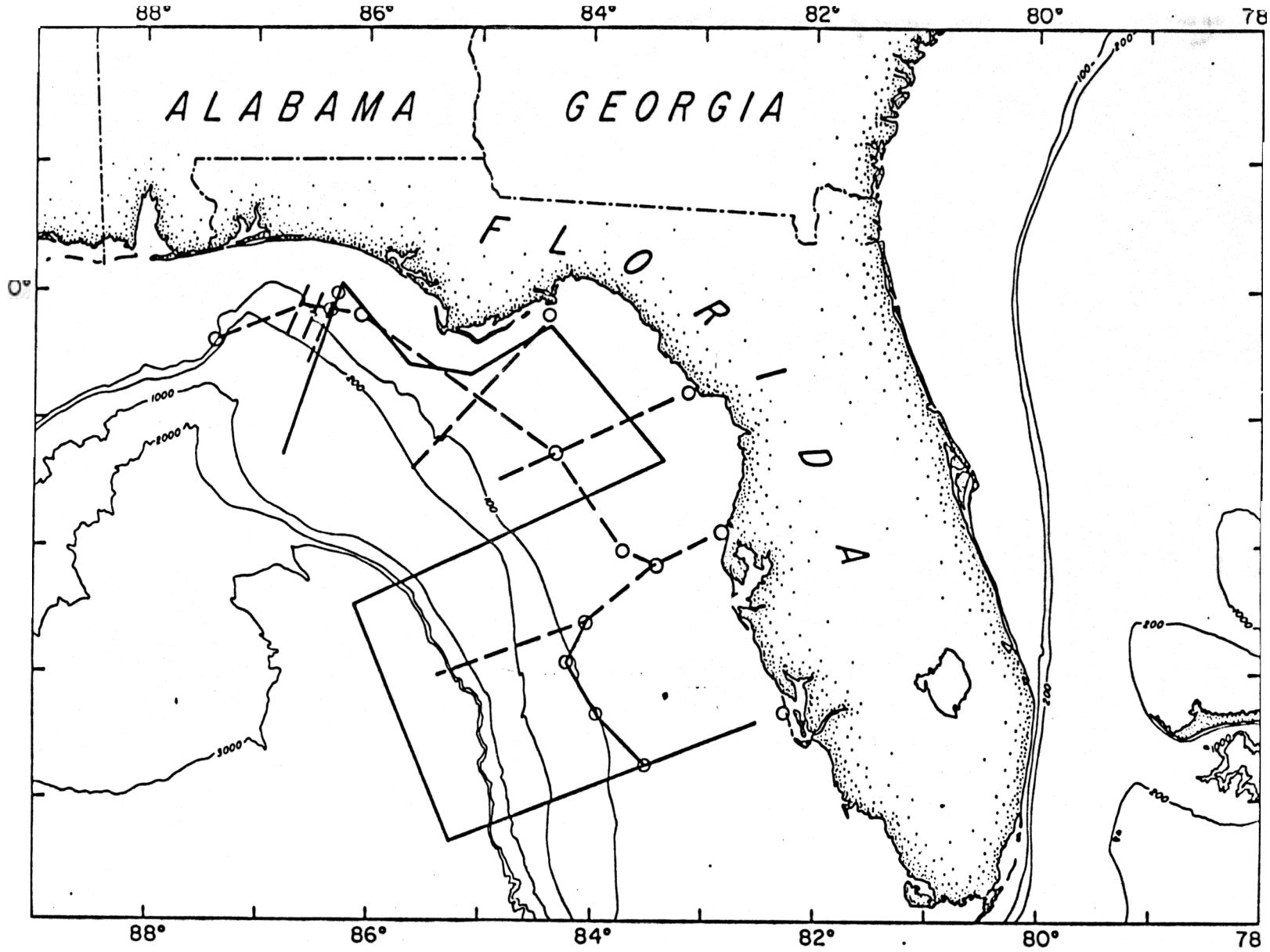
Tabulated Information

A. Number of days at sea -16

B. Number of Km
   1. Gravity Data = 1500
   2. Magnetic Data = 1500
   3. Reflection Seismic Data = 1500

Track Chart Caption

Solid line is track for 82-G-12. Dashed line is track for 1979 Seismic explorer cruise. Circles are locations of key wells.


88°
86°
84°
82°
80°
78
ALABAMA
GEORGIA
FLORIDA
0°
1000
2000
3000
100
200