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Cruise Report

R/V STARELLA

23 October - 8 November 1979

David Twichell
U.S. Geological Survey
Woods Hole, MA

Vessel: R/V STARELLA

Areas of Operation:

1. Continental slope and upper rise seaward of Georges Bank between Northeast Channel and Alvin Canyon.
2. Continental slope and upper rise seaward of the middle Atlantic states between Hudson Canyon and Baltimore Canyon.
3. Base of continental slope from Cape Hatteras to 33°N off North and South Carolina.
4. Blake Escarpment

GLORIA data was also collected along the lines connecting these 4 study areas.

Dates: Leave Woods Hole, MA, 1300, 23 October 1979
Arrive Jacksonville, FL, 1100, 8 November 1979

Personnel:

| | |
|----------------|---|
| P. Teleki | U.S.G.S., Reston, VA |
| F. Keer | U.S.G.S., Reston, VA |
| F. Musialowski | U.S.G.S., Reston, VA |
| D. Twichell | U.S.G.S., Woods Hole, MA |
| P. Collins | U.S.G.S., Woods Hole, MA |
| K. Kent | U.S.G.S., Woods Hole, MA |
| K. Cashman | U.S.G.S., Woods Hole, MA |
| K. Scanlon | U.S.G.S., Woods Hole, MA |
| A. Goodman | U.S.G.S., Woods Hole, MA |
| D. Roberts | Institute of Oceanographic Sciences, U.K. |
| M. Somers | Institute of Oceanographic Sciences, U.K. |
| J. Revie | Institute of Oceanographic Sciences, U.K. |
| S. Smith | Institute of Oceanographic Sciences, U.K. |
| M. Beney | Institute of Oceanographic Sciences, U.K. |
| R. Robinson | Institute of Oceanographic Sciences, U.K. |
| R. Lloyd | Institute of Oceanographic Sciences, U.K. |

Purpose of Cruise:

GLORIA side-scan sonar profiles and seismic-reflection profiles were collected and will be used to map the morphology of the continental slope and upper rise in the four study areas.

Navigation Techniques

Loran C
Satellite navigation

Scientific Equipment:

GLORIA side-scan sonar
10 kHz echo sounder
40 in³ airgun seismic profiling system
Gravity meter

Tabulated Information:

Days at sea: 17

Amounts of data collected:

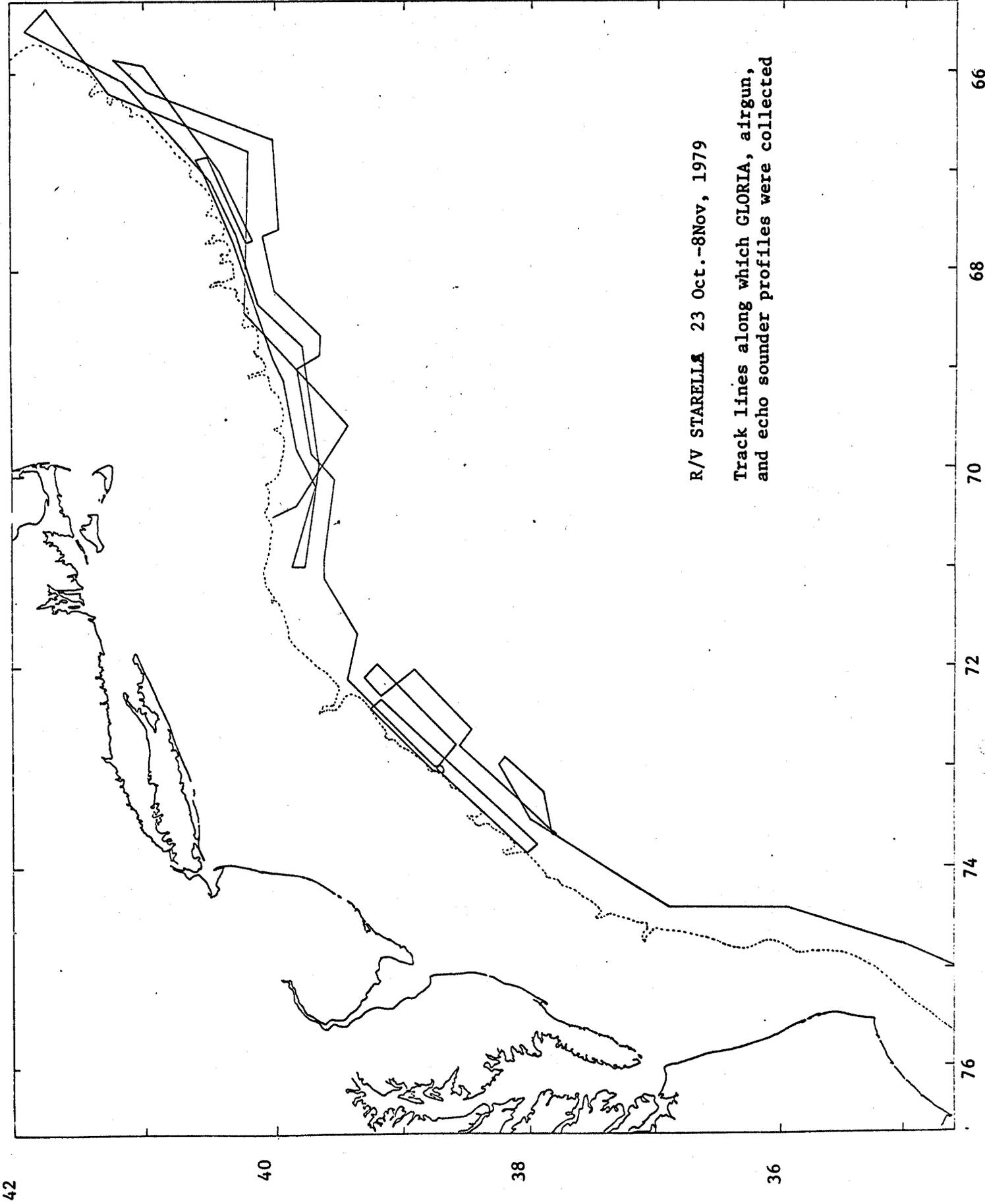
| | |
|---------|---------|
| GLORIA | 5543 km |
| 10 kHz | 5543 km |
| Airgun | 5450 km |
| Gravity | 5907 km |

Narrative:

Departed Woods Hole 0900 GMT, 23 October 1979; commenced surveying 0530 GMT, 24 October, 1979. The GLORIA side-scan sonar and 10kHz echo sounder ran continuously for the entire survey with no breakdowns. Airguns for the seismic-reflection system were down only 5 hours during the cruise. Gravity was measured from port to port with no interruptions. The survey was done at ship speeds of 8-10 knots. Surveying ceased and the gear was hauled aboard at 2100 GMT, 7 November, 1979, and the STARELLA docked at Jacksonville, FL at 0700 GMT, 8 November 1979.

Four areas of interest were surveyed, although the equipment was also operated along the lines connecting these areas. The first survey area was the slope and rise seaward of Georges Bank where 2482 km of tracklines were run between 0530 GMT, 24 October, 1979 and 1500 GMT, 30 October, 1979. The side-scan mosaic shows almost complete coverage of this area was achieved. The only exceptions are some small gaps on the upper rise. The second survey area was the middle Atlantic slope and rise where 1222 km of data were collected between 1500 GMT, 30 October, 1979 and 1300 GMT, 2 November 1979. Complete side-scan coverage was obtained of the slope and rise between Hudson and Baltimore canyons. The string of diapirs at the base of the slope seaward of North Carolina and South Carolina was the third area of interest. Here one line, 250 km long, was run along the base of the slope between 1500 GMT, 3 November 1979 and 0600 GMT 4 November 1979. The final survey was of the Blake Escarpment between 0900 GMT 4 November 1979 and 1300 GMT 6 November 1979 where 870 km of data were collected. Two lines were run along the escarpment from the north side of the Blake Spur south to 27°40' N. One line was run seaward of the escarpment, and the other was along the top of the scarp.

The GLORIA side-scan sonar was operated at either a 40-sec sweep or 20-sec sweep, giving maximum slant range distances of 22 and 11 km to each side of the towed fish respectively. Because of water depth and thermal structure of the water, ranges in excess of 10-12 km to each side of the fish were rarely achieved. Airgun profiles were collected at both 8- and 4-second sweep rates and echo sounding profiles at a 2-second sweep rate.



R/V STARELLA 23 Oct.-8 Nov, 1979

Track lines along which GLORIA, airgun,
and echo sounder profiles were collected

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Track lines along which GLORIA, airgun, and
echo sounder profiles were collected

34

32

30

28

80

78

76

74

