BATHYMETRIC MAP OF THE ATLANTIS II FRACTURE ZONE, SOUTHWEST INDIAN RIDGE

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This map incorporates SeaBeam data collected on *Cruise 27, Leg 9*, of the *Robert Conrad*. Bathymetric data were gridded at 0.11879 min (approximately 220 m) and edited at the NECOR SeaBeam processing center at the School of Oceanography, University of Rhode Island, using a minimum curvature spline interpolation algorithm (Tyce et al., 1987). Color map preparation with the assistance of G. M. Purdy and additional processing and plotting by D. Dubois and R. Goldsmith of the Department of Geology and Geophysics, Woods Hole Oceanographic Institution, using Uniras software. 100-m contour interval with color changes every 200 m, major color changes every 500 m, with darker shades with increasing depth. Mercator projection corrected for the WGS-72 spheroid.

At deep ocean depths in the gridded data, interpolated data points may be generated within SeaBeam swaths because the separation of the beams' footprints on the seafloor exceeds the grid interval (Purdy et al., 1990). In this gridded data set, this effect was prevalent at depths greater than 3500 m. At the Woods Hole Oceanographic Institution, two depth ranges were established: 0–3500 and >3500 m. Within these depth ranges, interpolated data points were treated in one of three ways: as observed, interpolated, or missing. On this map, data treated as observed are contoured with black lines and color, interpolated values are contoured with color only, and data points treated as missing are left blank. The criterion for converting interpolated data points to observed (validation) or missing (nibbling) is proximity to data points within a search radius of grid intervals. In the event that both nibbling and validation operations are performed on a data set, nibbling takes place first. For the combined depth ranges, any interpolated data points that have no observed data point with a radius of 5 grid intervals are treated as missing data. Below 3500 m, interpolated data points that have an observed data point within a radius of 2 grid intervals are treated as observed data. Above 3500 m, no interpolated data are treated as observed data.

SeaBeam swaths were edited prior to gridding to eliminate most overlaps. This was done to eliminate gridding errors that can produce erroneous small-scale lineaments or highs where the swaths overlap. These appear in a few places as small strings of low topographic highs or narrow ridges parallel to track, where they have not been completely eliminated by editing, along the steepest slopes where greater than 100% coverage was obtained because of overlapping.

REFERENCES

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