

## Seafloor mapping around the epicenter of the great Antarctic earthquake

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The March 25, 1998 great Antarctic earthquake is one of the largest oceanic intraplate strike-slip events ever recorded. The mainshock occurred far from the nearest plate boundary and nearest recorded earthquake. The most of aftershock locations suggest E-W trending fault plane, which is almost perpendicular to the nearest fracture zones. However, the driving force of the great Antarctic earthquakes is still unknown and detailed marine geophysical surveys of the area are required for elucidating the cause of the earthquake.

A detailed swath bathymetry survey had been conducted around the main shock epicenter of the great Antarctic earthquake during Leg 2 of KH01-3 (R/V Hakuho-maru) in January 2002. The gravity and magnetic data had been also collected along the ship's track. We found a seamount with almost E-W trending lineaments in the south of the epicenter of the mainshock. While the main shock epicenter is located in the north of the seamount, the strike of the fault plane deduced from aftershocks almost coincides with the trend of the lineaments in the seamount. These E-W trending lineaments are possibly preexisting structures and the great Antarctic earthquake may occur along the same trending lineaments in the foot of the seamount covered by sediments.

Although almost EW trending positive magnetic anomalies are observed in the north of the seamount, prominent magnetic anomalies are not detected in the seamount. In the north of study area, NE-SW trending magnetic anomalies are also observed. The feature of the free-air gravity anomalies in the south, where the mainshock and aftershocks occurred, is different from that in the north bounded by the NE-SW trending magnetic anomalies. The character of oceanic crust where the mainshock and aftershocks occurred is possibly different from that in the north bounded by NE-SW trending magnetic anomalies.