

V. GEOMAGNETIC ANOMALIES NORTHEAST OF HACHIOJIMA ISLAND

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Total magnetic intensity was measured with a GeoMetrics G801 Proton Precession Magnetometer. Magnetic anomaly values were obtained by subtraction of the IGRF 1975.0 from the total magnetic field values. Satellite and dead reckoning fixes were used for navigational control, although more accurate navigational data was available from the Decca system.

Characteristics of magnetic anomalies

Magnetic anomalies are shown in Figure V-1. It is apparent from this figure that the IGRF 1975.0 is approximately 200 nT lower than the average of the observed total intensity values in this area.

Large amplitude anomalies were observed along the volcanic front in the western part of the survey area. Negative anomalies occur around Hachiojima Island, but only in the coastal area. Paired high amplitude anomalies were observed about 20 km north of Hachiojima Island. No corresponding bathymetric feature was found, and so these anomalies can be attributed to a normally magnetized, small volcano which is of rather small dimensions (of the order of 5 km in diameter). The existence of this volcano was confirmed by the simultaneous seismic reflection survey (NAKAMURA *et al.* in this report). Paired anomalies also occur southeast of Mikurajima Island. They appear to continue northwestward to the island and can be attributed to the normally magnetized basaltic and andesitic volcanic material which forms the island. North of these anomalies, a belt of positive anomalies was observed. It continues northwestward to Miyakejima Island. Two prominent maxima were found to exist around the Nakanokurose Bank. One is just over the bank and the other is southwest of the bank. The rather high amplitude of these anomalies suggests that the Nakanokurose Bank is composed of magnetically different material from that of the Shinkurose or Kitakurose Banks.

Anomalies of long wavelength and of rather low amplitude were observed east of the volcanic front in the central part of the survey area. These anomalies were negative northwest of the Kitakurose Bank, positive over the Shinkurose Bank, positive east of Hachiojima Island and negative northeast of Hachiojima Island. They are probably attributable to deeper source bodies.

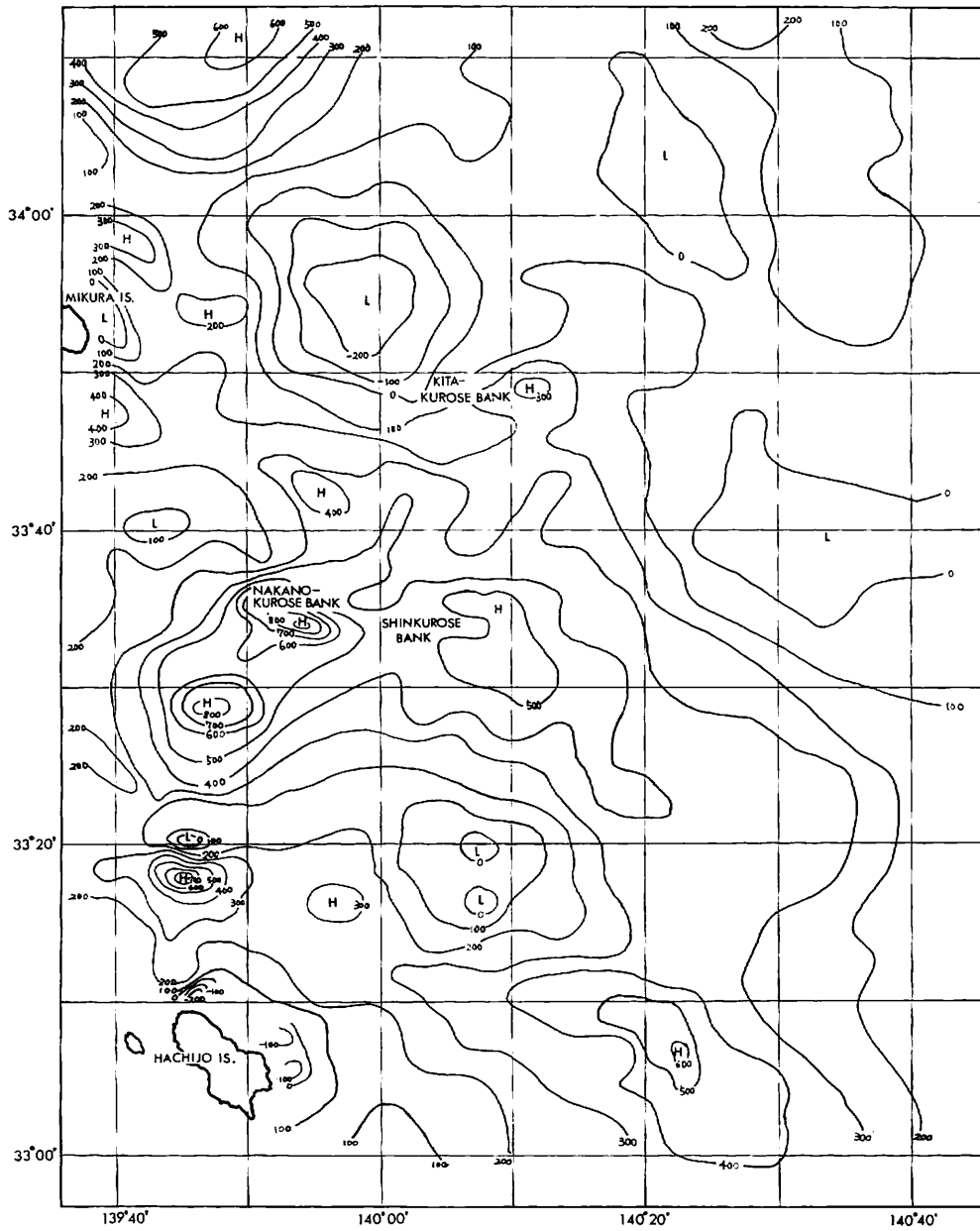


Fig. V-1 Magnetic anomaly map contoured at intervals of 100 nT.