

## II. MAGNETIC ANOMALIES OF THE GH80-5 SURVEY AREA IN THE CENTRAL PACIFIC BASIN

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Total magnetic force was measured with a marine proton magnetometer, Geo-Metrics Model G801 during the GH80-5 research cruise. Magnetic anomalies were calculated at 5-min.-interval by subtracting IGRF 1975.0 from the measured total magnetic force. Magnetic anomaly profiles obtained along the ship's tracks are shown in Fig. II-1.

Well developed magnetic anomaly lineations are observed in both the detailed survey areas. TAMAKI *et al.* (1979) identified them as M-sequence magnetic anomalies of early Cretaceous age, and named them the Magellan lineation set. The Magellan lineation set is fan-shaped opening to the east-southeastward, identified from M9 (121 Ma) to M11 (126 Ma) of early Cretaceous age with a symmetric axis at the Magellan Trough, which is a fossil spreading center at M9 time.

The data obtained during the present cruise confirmed that the previous identification was correct.

In the detailed survey area I, anomalies M10 (122 Ma), M10N (124 Ma), M11 (126 Ma) and M12 (128 Ma) are observed from the south to the north. Eastward opening fan-shape is recognized. Peak to peak amplitude of the magnetic anomalies is 300 nT to 500 nT, increasing eastward. One way spreading rate of the early Cretaceous sea floor is calculated to be 1.5 cm/yr.

In the detailed survey area II, anomalies M9 (121 Ma) just above the Magellan Through and symmetric M10 are observed. The lineations show slightly fan-shaped pattern diverging east-southeastward. Peak to peak amplitudes of the anomalies are 500 nT. The larger spreading rate compared to that in the survey area I is observed in the survey area II, depending on the fan-shaped lineations pattern. One way spreading rate is 2.5 cm/yr.

Magnetic anomaly data around the survey area have been obtained in our past cruise, GH76-1, GH77-1, and GH80-1. All these data indicate strongly the fan-shaped lineations. The data have been compiled and displayed in Fig. II-2. The spreading rate increases to the east and amplitudes also increase to the east. The fan-shaped pattern is bented at the northwestern part of the Fig. II-2 by a seamount.

### Reference

- TAMAKI, K., JOSHIMA, M., and LARSON, R. L. (1979) Remanent early Cretaceous spreading center in the Central Pacific Basin. *J. Geophys. Res.*, vol. 84, p. 4501-4510.

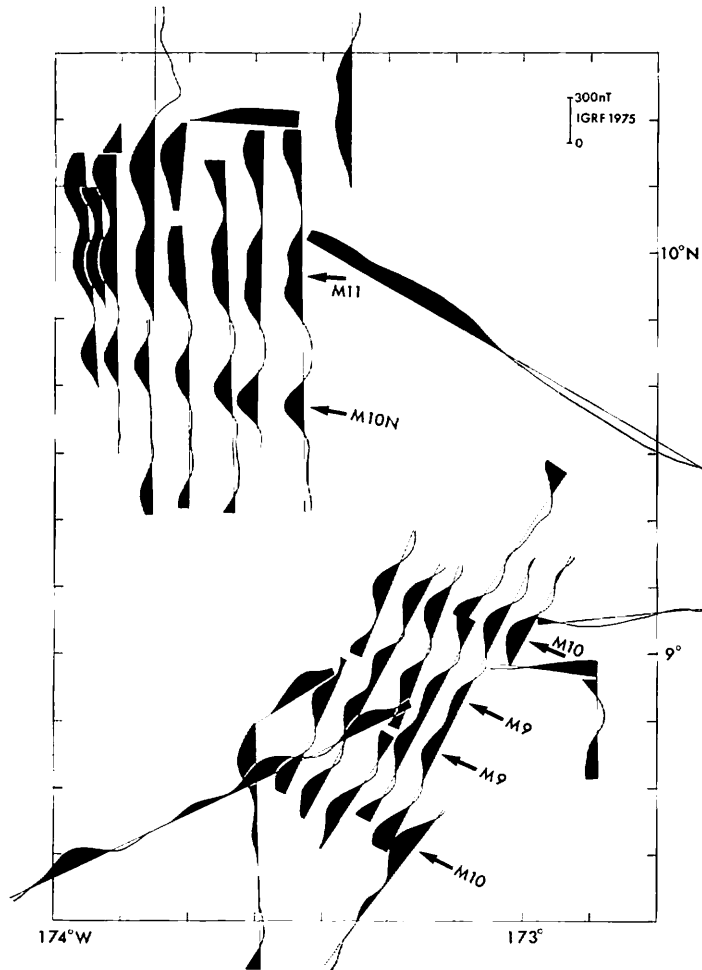


Fig. II-1 Magnetic anomaly data along ship's tracks. Positive anomalies are shown in black. Arrows show magnetic anomaly identification.

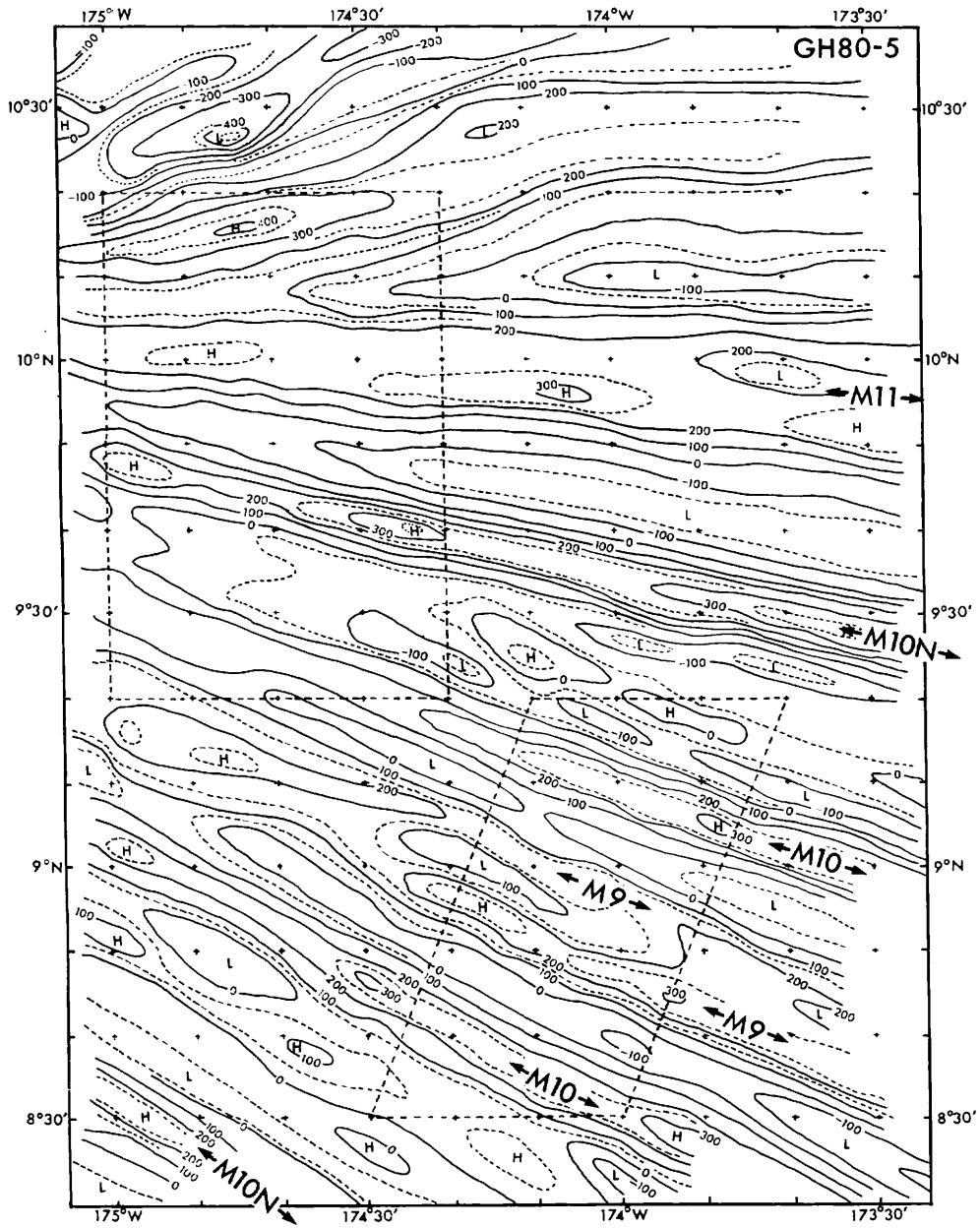


Fig. II-2 Magnetic anomaly contour map. Detailed survey areas I and II are restricted in the squares by broken lines. Magnetic anomaly identification are shown along the center of anomalies.