

GEOMAGNETIC ANOMALY FIELD VECTOR OFF WESTERN AUSTRALIA (ABSTRACT)

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Vector data of the geomagnetic anomaly field were obtained during the 32nd Japanese Antarctic Research Expedition (JARE-32) off Western Australia. The strikes of the magnetic boundaries at their position were derived from vector data of the geomagnetic anomaly field. These strikes were interpreted as the directions of magnetic anomaly lineations originated either by seafloor spreading (seafloor spreading anomaly) or by morphological structures (structural magnetic anomaly). Some strikes of structural magnetic anomaly are inferred to be of fracture zone origin.

The strikes of the seafloor spreading anomaly and fracture zone in the Argo Abyssal Plain are concordant with those previously found. Structural magnetic anomaly strikes in the continental rise off Western Australia coincide with the fracture zone trend in the neighboring basin, and locate in the extension of the fracture zone trends in the basin.

On the Naturalist Plateau, couples of NW-SE and NNW-SSE structural magnetic anomaly strikes with almost constant spacing are observed. These strikes are inferred to be from the fracture zone trend with an offset structure. NW-SE fracture zone trends have been reported in the Perth Basin neighboring the Naturalist Plateau, suggesting that these NW-SE fracture zone trends extended over to the Naturalist Plateau. The couples of NW-SE and NNW-SSE trend in the Naturalist Plateau probably indicate a change of direction of the fracture zone in time, namely NNW-SSE direction may show the initial breakup trend between India and Australia-Antarctica.

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