

## アデン湾の磁気異常縞模様

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### Magnetic Anomaly Lineations in the Gulf of Aden

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We present the magnetic anomaly lineations in the Gulf of Aden. The Gulf of Aden has slow spreading ridges between the Arabia and Somalia plates. The Arabian plate moves away from Somalia Plate in an NE direction, at a rate of about 2 cm/yr. Previous works indicate that seafloor spreading started about 20 Ma in the eastern part of the Gulf of Aden (Fournier et al., 2010) and then propagated westward (Manighetti et al., 1997). It reached the Afar hotspot area about 10 Ma (Audin et al., 2001). The spreading system continues to interact with the hotspot up to the present. The spreading axis changes in strike from E-W to N60 W around 46 E.

We examined magnetic data acquired in the cruises by R/V L'Atalante in 1995, R/V Hakuho-maru from 2000 to 2001, R/V Maurice Ewing in 2001, and Shackleton in 1975 and 1979. We also used available data obtained from several databases. We calculated magnetic anomalies using the latest International Geomagnetic Reference Field (IGRF-11).

Elongated negative magnetic anomalies, which amplitudes are more than 500 nT, are dominant over the spreading centers. Most of the elongated anomalies over the spreading centers east of 46 30'E are parallel with the spreading centers. Those west of 46 30'E have E-W trend. Several discontinuities in the magnetic anomaly contour map illustrate the position of the fracture zones concealed by sediments.

We identified magnetic lineations from 43 E to 52 E. Magnetic lineations west and east of 46 30'E have N-E and N60-65 W strikes, respectively. The oldest lineations are C3r (5.48~5.74 Ma) between 43 10'E and 44 E and C5Ar (12.4~12.7 Ma) east of 44 E. Our identification of magnetic anomaly lineations indicates a symmetric seafloor spreading with a spreading rate of about 1.0 cm/yr, although Leroy et al. (2004) showed an asymmetric seafloor spreading of the Sheba Ridge, east of our study area. Several previous works proposed the change in motion of the Arabia plate changed about 5 Ma, but our results did not show any coeval change in spreading rates of the spreading system.