

北西太平洋中生代磁気異常縞模様図の更新

中西 正男 [1]
[1] 千葉大・理・地球

Improved Mesozoic magnetic anomaly lineation map in the northwestern Pacific Ocean

Masao Nakanishi[1]
[1] Grad. Sch. Sci., Chiba Univ.

We present the improved Mesozoic magnetic anomaly lineation map in the northwestern Pacific Ocean, which also includes the tectonic features such as fracture zones and abandoned spreading centers exposed by multibeam bathymetric data. Nakanishi et al. (1989; 1992) made the sophisticated map of the Mesozoic magnetic anomaly lineations in the northwestern Pacific Ocean. The map includes several blank areas where no magnetic anomaly lineations were identified because of lack of geomagnetic data.

Using geomagnetic and satellite-derived gravity data, Nakanishi and Winterer (1998) identified magnetic anomaly lineations between chrons M21 to M14 and discovered the abandoned spreading centers south of the Mid-Pacific Mountains. Nakanishi et al. (1999) revised magnetic anomaly lineations on and around the Shatsky Rise by geomagnetic data collected after Nakanishi et al. (1989). Comprehensive geomagnetic survey in the exclusive economic zone (EEZ) of Japan by Hydrographic and Oceanographic Department, Japan Coast Guard, revealed the magnetic anomaly lineations in the EEZ (e.g., Nakanishi 2011). The geomagnetic surveys by R/Vs Mirai, Hakuho-maru, and Yokosuka, adjacent to the SW flank of Shatsky Rise enabled us to identify the magnetic anomaly lineations and exposed the tectonic event just before the formation of the Shatsky Rise. (Nakanishi et al., accepted).

Measurements of the total force by towed magnetometers are not very often conducted in recent years. Thus, we are trying to identify magnetic anomaly lineations with geomagnetic data obtained by the shipboard three component magnetometer (STCM) mounted on deck of several research vessels of Japan Agency for Marine-Earth Science and Technology (JAMSTEC). The results of STCM will be shown in the poster presentation by Matsumoto and Nakanishi in this meeting.

The increase of multibeam bathymetric data make us possible precise identification of fracture zones and abandoned spreading centers so that we can exposed tectonic history in detail. Nakanishi (2011) and Nakanishi et al. (accepted) found the abandoned propagating rift near the Izu-Ogasawara Trench and adjacent to the SW flank of Shatsky Rise, respectively. Multibeam bathymetric data also reveal the topographic expression of Nosappu and Kashima fracture zones identified by Nakanishi et al., (1989) and Nakanishi (1993).