[JJ] Evening Poster | S (Solid Earth Sciences) | S-CG Complex & General

[S-CG61]Ocean Floor Geoscience

convener:Kyoko Okino(Atmosphere and Ocean Research Institute, The University of Tokyo)
Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)
Most of Earth's volcanism and much of its tectonic activity occur on and beneath the seafloor. Various phenomena on the seafloor are closely linked to plate tectonics, Earth structure and dynamics, and also related to Earth's environments through the hydrosphere and atmosphere. Seafloor rocks and sediments record Earth's evolution and heat and material fluxes on the Earth. Ocean Floor Geoscience session covers a broad range of research on seafloor such as mid-ocean ridge process, subduction dynamics, arc magmatism, hot spot and LIPs, crustal movement and structure etc. Every field of researches and every approaches are welcomed. The session aims to encourage discussion among scientists from different study fields and to integrate our understanding of ocean floor. The session is co-dhaired by K. Tadokoro (Nagoya Univ.), O. Ishizuka (AIST), T. Toki (Univ. Ryukyu), and N. Takahashi (JAMSTEC).

[SCG61-P12]Magnetic anomaly lineations of the Jurassic Pacific Plate

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Keywords:Jurassic, Pacific Plate, magnetic anomaly lineations

We present the magnetic anomaly lineation map of the Jurassic Pacific plate. The study area is bounded to the west by the Izu-Ogasawara and Mariana trenches. The Marcus Island is located in the central portion of the study area. The Jurassic Pacific plate was formed at the plate boundaries between Pacific and Izanagi plates and Pacific and Farallon plates. Magnetic anomaly lineations younger than M29 (159 Ma) in the study area were identified by Nakanishi et al. (1989) and (1992), but those older than M29 have been not clearly identified. The ambiguity of the older magnetic anomaly lineations are mainly due to the small amplitude of magnetic anomalies and that the vagueness of the Jurassic geomagnetic polarity time scale. Several studies proposed the geomagnetic polarity time scales, but no conclusive timescale has been established (e.g., Sager et al. 1998; Tivey et al., 2006).

The geomagnetic data used for this study were acquired by the Hydrographic and Oceanographic Department of the Japan Coast Guard for the Extended Continental Shelf Survey (e.g., Fujisawa, 2009). Additional shipboard geomagnetic data were obtained from the databases of National Oceanic and Atmospheric Administration/National Centers for Environmental Information (NOAA/NCEI) and Japan Agency for Marine-Earth Science and Technology (JAMSTEC). We also used unpublished data obtained by Geological Survey of Japan (GSJ) and Ocean Research Institute, the University of Tokyo (ORI, UT). We used the leveling method proposed by Ishihara (2015) to reduce crossover differences of geomagnetic data.

Our magnetic anomaly map revealed the lineated magnetic anomalies in the areas where previous works did not identify any magnetic anomaly lineations. The strikes of the lineated magnetic anomalies are the same as that of the lineation younger than M29. Our temporary identification indicates the age of the lineated magnetic anomalies is older than Lineation M29. We found several magnetic bights in the study

area, implying the configuration of the Pacific-Izanagi-Farallon triple junction was a ridge-ridge-ridge before M29.