

Geochronological study of the Western Pacific Seamount Province

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The eustatic sea level and global average temperature, increasing seafloor spreading rate, and voluminous volcanic activities occurred during the mid-Cretaceous period (e.g. Larson, 1991). Then most of seamounts of the western Pacific formed before 70 Ma in the so-called West Pacific Seamount Province (WPSP) which is characterized by relatively short seamount chains maybe indicating a significant short-lived hotspot system (Koppers et al., 2003). The basaltic rocks have been sampled from seamounts on the Marcus, Joba and Japanese Seamount Trails in the WPSP by Hydrographic and Oceanographic Department, Japan Coast Guard, and Ocean Research Institute, University of Tokyo, after 1980s. The rocks from eleven seamounts in the WPSP were dated by Ar-Ar method in this study in order to recognize Cretaceous hotspot trails and volcanic history of the WPSP.

The 120 to 95 Ma seamounts in the Joban Seamount Trail do not show a mid-Cretaceous hotspot trail, whereas the Japanese and Marcus Seamount Trails show a well-established ENE to WSW and WNW to ESE trends of hotspot trails in this age range. Moreover, western tip of the Marcus Seamount Trail was overprinted by the voluminous volcanisms of the Ogasawara Plateau and its related ridges on 104 and 60-50 Ma.