

Movement of Philippine Sea Plate since Eocene inferred from new paleomagnetic data

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A paleomagnetic study was conducted on drill cores taken from the northwestern part of the Philippine Sea plate (PHS) including the northern part of the Kyushu-Palau Ridge, Daito Ridge, Oki-Daito Ridge, and Amami Plateau. The cores were taken using a benthic marine drilling system (BMS). Paleolatitudes of Eocene to Miocene ages were obtained at nine sites. It was revealed that the northwestern part of PHS around the Daito Ridge was near the equator in the Eocene, and the paleolatitude increased about 20 degrees by 30 Ma. The speed of the northward component decreased since then. Together with previous works, I propose the following model of PHS motion since the Eocene; PHS rotated about 90 degrees from 50 to 15 Ma with an Euler pole near the Palau Islands. This can explain the larger northward shift in older times. Since ca. 15 Ma, PHS has moved northward at about 3 cm/year without significant rotation.