

Preliminary report of Kairei KR03-01 cruise: lithospheric composition of the Parece Vela Basin

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The seafloor formed over the Miocene in the Parece Vela Basin (PVB) is characterized by chaotic topography and the well-developed mullion structures, indicating a weak magma supply and mantle exposure at the intermediate spreading rate (full rate = 8.8-7.0 cm/yr) system due to an unusual cold underlying mantle. The recent studies by Ohara and others reported a large, 55*125 km Godzilla Mullion and petrological characteristics of peridotite from the Parece Vela Rift (PVR), the extinct spreading center of the basin. During KR03-01 cruise in January 2003 (R/V Kairei), we conducted 18 dredge hauls and geophysical mapping in order to understand the amagmatic tectonics and the lithospheric composition of the region.

We recovered mantle peridotite from the off-axis Chaotic Terrain, confirming the terrain was formed by a magma-starved event. We also recovered mantle peridotites from the whole Godzilla Mullion surface extending ~ 125 km along the plate flow line, suggesting the possible largest mantle exposure in the world's ocean floor.