

Wide angle seismic experiments in the Western Pacific in 2006 (2)

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We conducted four series of wide-angle seismic experiments and reflection experiments by S/V Shoyo and S/V Takuyo, Hydrographic and Oceanographic Department, JCG in 2006. The target areas are the bathymetric high to the west of the Oki-Daito Ridge, the seamounts in/around trenches, the apparently flat sea bottom to the south of the Ogasawara Plateau and the area around Minami-Tori Shima. The total length of the survey lines were 3,433 km, and 350 Ocean Bottom Seismographs (OBS) were deployed at an interval of every 5-10 km. We used a non tuned 6,000 inch³ airgun array shooting every 200 m (90 sec) for refraction and reflection experiments. 240 channel or 48 channel multi channel streamer cable and single channel streamer cable are used as the reflection seismic receivers.

The area to the west of the Oki-Daito Ridge

There is a bathymetric high (submarine elevation) directing to the south at the west end of the Oki-Daito Ridge. We set two survey lines to grasp the seismic crustal structure of the submarine elevation. The first line is set along the submarine elevation with N-S direction and another parallel survey line is 25 km eastern area from the first line.

The seamounts in/around trenches

Three lines were set across the Erimo Seamount at the conjunction area between the Kuril Trench and Japan Trench, Daiichi-Kashima Seamount at southern end of the Japan Trench and around Mogi Seamount near the Izu-Ogasawara Trench. We try to grasp the structure of the seamount sinking under the trenches, so these lines were planed to cross the trenches. In addition, we carried out the reflection experiment with multi channel streamer. That makes clear the detailed sedimental structure around this area.

The area to the south of the Ogasawara Plateau

The area south of the Ogasawara Plateau has a thick sedimental layer which derives from the Ogasawara Plateau. The main purpose of the profile is to reveal the thickness of this sedimental layer. Another purpose is to obtain basic data for the future experiments in this area in 2007.

The area around Minami-Tori Shima on the western Pacific Basin

We had carried out a several wide angle seismic experiments around Minami-Tori Shima, but we did not have the survey line crossing the transition between a normal oceanic crust and the low Bouguer anomaly area beneath seamount chains. So we set lines at east and at west of Minami-Tori Shima.