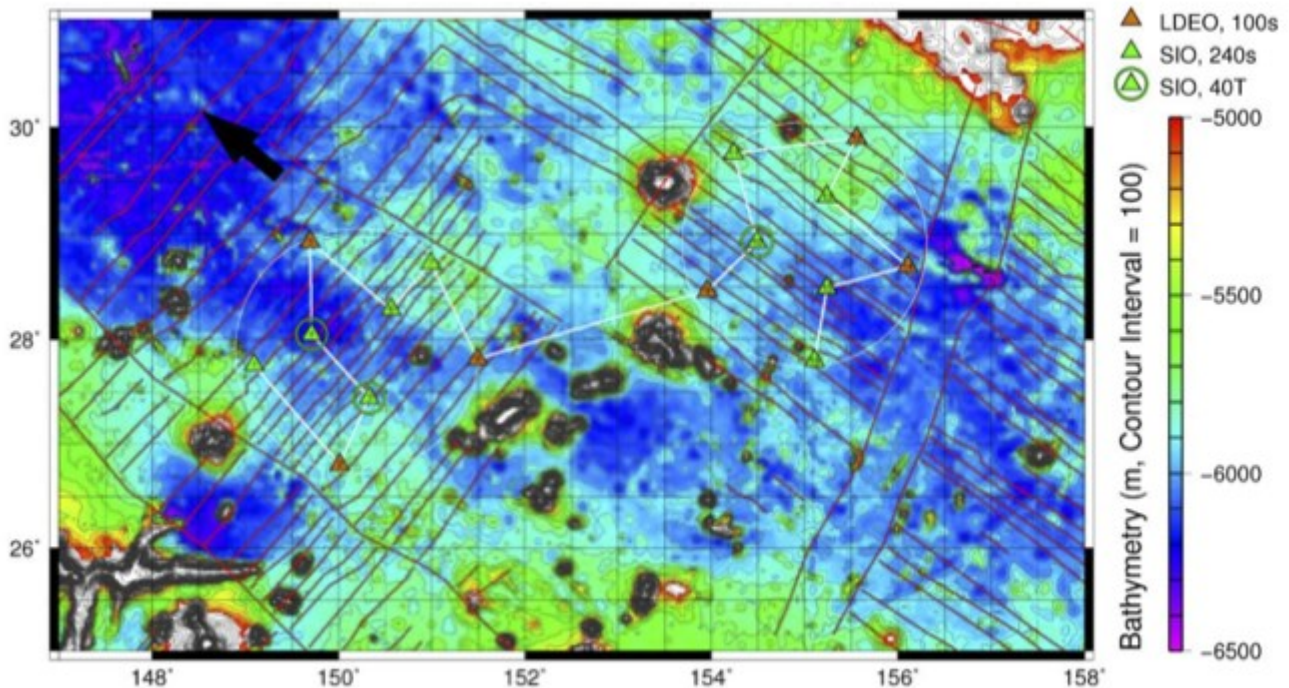


OBSIP Experiment Archive

Year:	2009
Experiment Name:	Pacific Lithosphere Anisotropy and Thickness Experiment (PLATE)
Principal Investigator(s):	Don Forsyth (Brown) Dayanthie Weeraratn (CSUN)

Experiment Summary: (Taken from NSF Abstract Award #[0648387](#)): The Earth's surface is divided into a small number of tectonic plates that move as units. The cold, upper part of the earth, called the lithosphere, is stiff, enabling the plates to move without significant internal deformation above a deformable, softer layer called the asthenosphere. Thus, it is the physical properties of the lithosphere that control the surface expression of convection within the Earth's interior, enabling plate tectonics. Despite its fundamental role in governing tectonics, the thickness of the lithosphere is difficult to measure. We propose to measure the azimuthal anisotropy of Rayleigh wave propagation within two ocean-bottom seismometer (OBS) arrays in the western Pacific as a means of unambiguously determining the thickness of the old oceanic lithosphere.



Stations deployed as part of PLATE, figure from Sotirov, 2014.

Continued Next Page

OBSIP Experiment Archive

...Continued

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Cruises:

10/9/2009 - 11/4/2009:

6 LDEO broadband and 10 SIO broadband ocean bottom seismographs were deployed via the R/V Revelle.

10/15/2010 - 11/12/2010:

Recovered 12 OBS aboard the R/V Kilo Moana, 4 instruments not recovered. Station 3 (SIO) did not record data and Station 12 (LDEO) recorded poor data that was not uploaded.

Data:

Data from all OBSIP instruments deployed is archived under temporary network code [Z6](#) at the IRIS DMC.

Downloads/Links:

[GJI Publication](#)