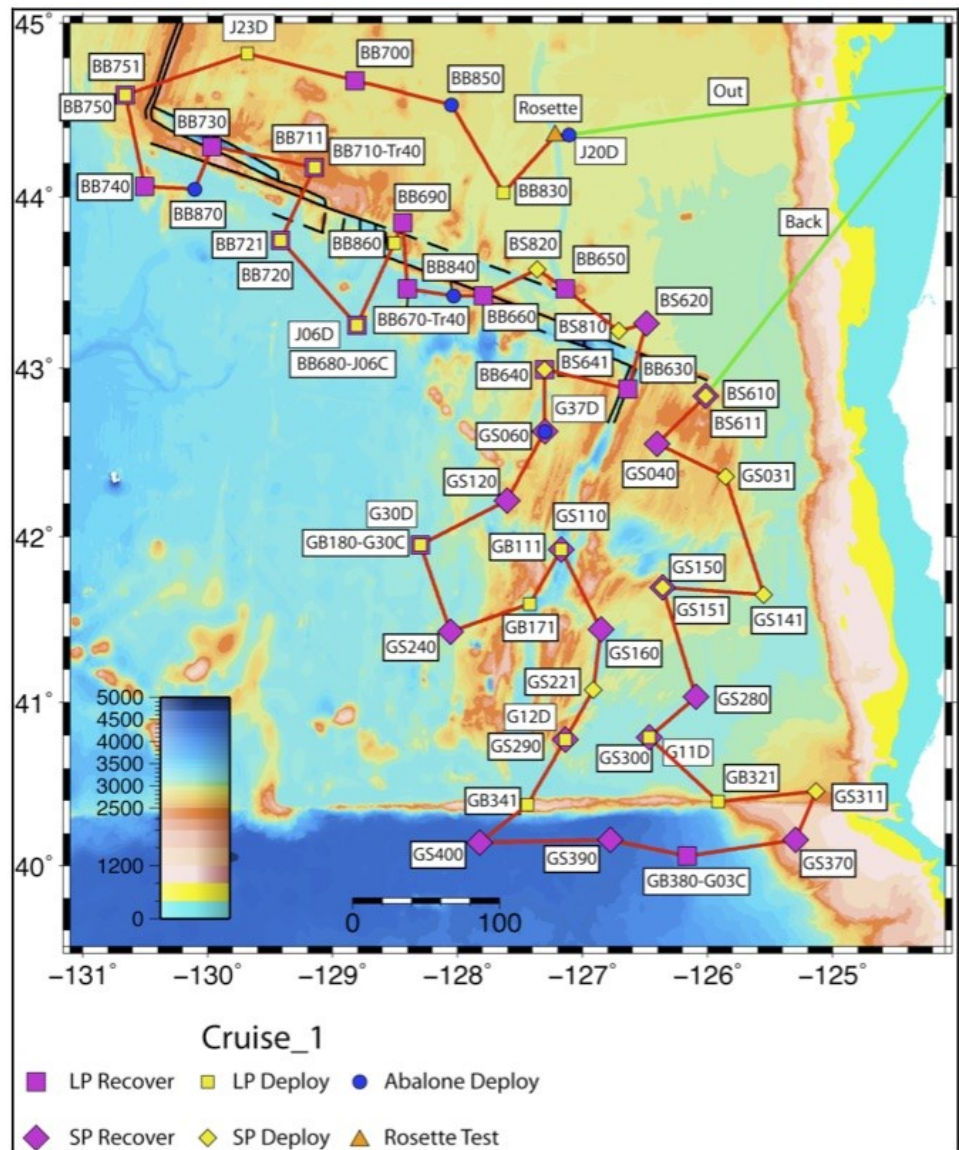


OBSIP Experiment Archive

Year:	2013
Experiment Name:	Seismicity, Structure and Dynamics of the Gorda Deformation Zone
Principal Investigator(s):	John Nabelek (OSU) Jochen Braunmiller (USF)

Experiment Summary: (Taken from NSF Award #[1131767](#) Abstract): Plate Tectonics is the notion that the Earth's surface is comprised of large plates that form at mid-ocean ridges and are consumed by the process of subduction, largely near the margins of ocean basins. The plate tectonic model explains many observable phenomena, including the distribution of great earthquakes and violent volcanic eruptions. A central assumption of plate tectonic theory is that the plates are rigid. This assumption applies to most of the Earth's surface, but there are exceptions. One exceptional region is the Gorda Basin, which is located west of northern California and southern Oregon. There is compelling evidence that the seafloor in this region is actively deforming - including the occurrence of numerous earthquakes - but just how the seafloor is deforming and why has eluded unambiguous interpretation for several decades. This deployment of Ocean Bottom Seismographs (OBS) has the objective of yielding a more detailed picture of earthquake seismicity in the Gorda Basin, and thereby resolving the manor and cause of the deformation.



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OBSIP Experiment Archive

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Experiment Name:	Seismicity, Structure and Dynamics of the Gorda Deformation Zone
Principal Investigator(s):	John Nabelek (OSU) Jochen Braunmiller (USF)

Experiment Summary: ...There is added interest in this problem because the Gorda Basin is being actively subducted beneath the adjacent continent, where major "megathrust"

earthquakes are known to have occurred. How deformation of the Gorda Basin affects the potential for large damaging earthquakes in this region is unknown, but of considerable societal interest. An added broader impact of this project is that the deployment of OBSs for this project will supplement the Cascadia Initiative, an amphibious deployment of OBSs offshore and seismic stations onshore. A principal aim of the Cascadia Initiative is to develop a better understanding of seismicity and of megathrust earthquake risk along the Cascadia margin, which extends from northern California to southern British Columbia.

Cruises:

10/9/2013 - 10/17/2013:

2 SIO broadband, 8 SIO short period, and 7 LDEO broadband ocean bottom seismometers were deployed on the R/V Oceanus.

10/28/2013 - 11/5/2013:

13 SIO broadband, 17 SIO short period, and 8 LDEO broadband ocean bottom seismometers were deployed on the R/V Oceanus.

7/24/2014 - 8/6/2014:

10 SIO short period ocean bottom seismometers were recovered on the R/V Oceanus, and 10 SIO broadbands were deployed.

8/9/2014 - 8/14/2014:

15 SIO broadband and 15 SIO short period ocean bottom seismometers were recovered on the R/V Oceanus, and 10 SIO short period and 5 SIO broadbands were deployed.

9/6/2014 - 9/25/2014:

15 LDEO broadbands were recovered on the R/V Oceanus, and 1 LDEO was deployed.

Cruises cont'd:

9/8/2015 - 9/22/2015:

15 SIO broadband and 10 SIO short period ocean bottom seismometers were recovered on the R/V Oceanus.

9/30/2015 - 10/15/2015:

1 LDEO ocean bottom seismometer was recovered on the R/V Oceanus.

Data:

Data from all instruments deployed are archived under temporary network code [Z5](#) at the IRIS DMC.

Downloads/Links:

None.