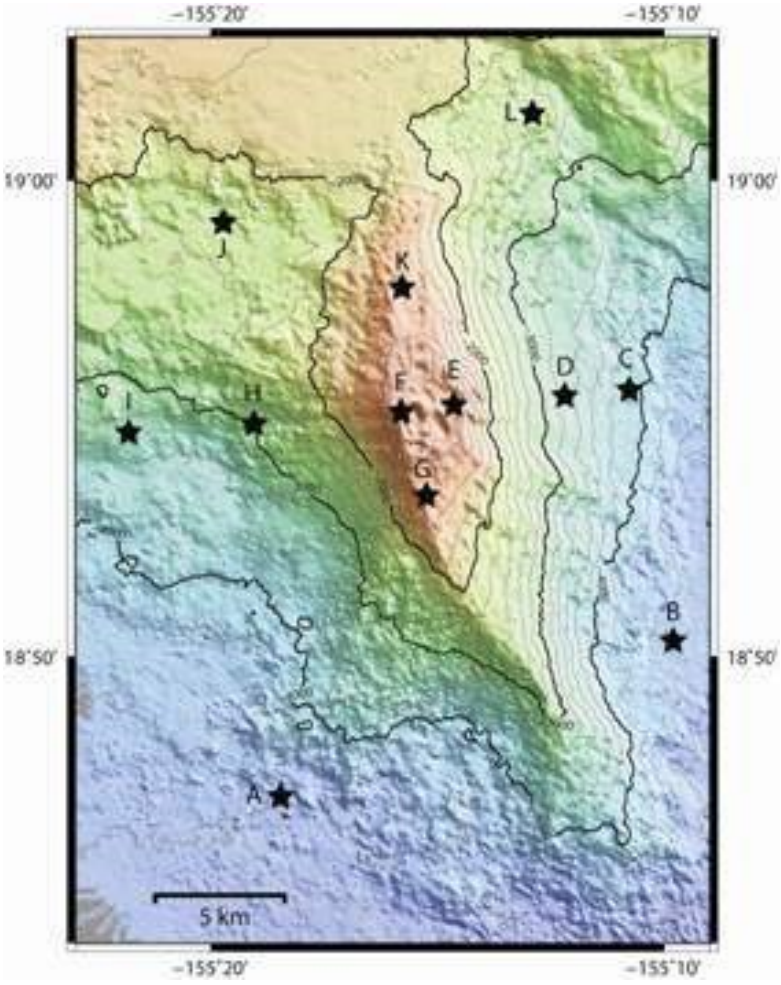
OBSIP Experiment Archive

Year:	2010
Experiment Name:	Lo'ihi Volcano Seismicity and 3-D velocity structure of Lo'ihi submarine volcano
Principal Investigator(s):	Jackie Caplan-Auerbach (WWU)

Experiment Summary: (Taken from NSF Abstract Award #0851128): Lo`ihi is an active submarine volcano and the newest volcano in the Hawaiian Chain. As the only example of the submarine phase of Hawaiian volcanism, Lo`ihi represents an excellent opportunity to understand the evolution and activity of a young hot spot volcano. However, while a great deal has been learned about Lo`ihi's morphology, petrology, chemistry and microbiology, previous studies of Lo`ihi seismicity and internal structure have been hindered by poor data quality or a lack of instrumentation. Consequently, there is a major gap in our understanding of what has been described as one of the world?s best-studied submarine volcanoes. The primary goal of this project is to investigate earthquake activity and the internal structure of the undersea Lo`ihi volcano by installing a network of ocean bottom seismometers on the volcano to perform the first high resolution study of Lo`ihi's seismicity, including a detailed 2-D tomographic image of its internal structure. The project is a pilot study to learn more about Lo`ihi with the goal of eventually performing a combined active and passive source seismic study of the region to perform a full 3-D tomographic study of Lo`ihi and the surrounding area and image the connection between this submarine volcano and the Hawaiian plume, a rising column of hot material that is thought to be the cause of volcanism in Hawaii.



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Cruises:

9/16/2010 - 9/23/2010:
12 WHOI short period ocean bottom seismographs were deployed on board the R/V Kilo Moana.

7/24/2011 - 7/30/2011:
12 WHOI short period ocean bottom seismographs were recovered on board the R/V Kilo Moana.

Data:

Data from all instruments deployed are archived under temporary network code 9A at the IRIS DMC.

Downloads/Links:

Lo'ihi Website