



## **PBO Borehole Strainmeter Data Products and Data Quality Metrics**

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The Plate Boundary Observatory (PBO), funded by the United States National Science Foundation and maintained by UNAVCO, is designed to capture the full spectrum of tectonic transients that accommodates strain accumulation and release across the western U.S. plate boundary. Borehole strainmeters are an important part of the observatory as they have the ability to record strain transients on the order of tens of nanostrain over periods of hours to days. Currently the observatory includes 75 4-component Gladwin Tensor Strainmeters installed in arrays distributed between southern California and Vancouver Island, Canada. Strain, seismic, barometric, rainfall and temperature data are collected at all PBO boreholes while pore pressure, accelerometer and tilt data are collected at a subset of sites. Ensuring a complete, rapidly available and high quality data set is collected for the scientific community is an essential function of the Observatory. This presentation will focus on the data products of the PBO strainmeter network and the metrics that have been developed to monitor strain data quality. The metrics provide a way to quantify how well each strainmeter performs in the seismic, tidal and the long-term frequency bands. For each strainmeter we assess its ability to record seismic shear signals, the signal to noise ratio in the tidal band, the difference between the observed tides and those predicted by earth tide plus ocean load models, instrument self consistency, the magnitude of barometric response, the presence of steps in the data and the state of borehole compression. These metrics allow potential problems to be identified in network operations, plus give the scientific community a sense of which instruments perform well over the broad operating range of borehole strainmeters. More information on PBO strainmeters and all other instruments within the observatory can be found at <http://pboweb.unavco.org>.