

STRATEGIC INTELLIGENCE
fueled by  SCIENCE

New temporary broadband array with open public data set will facilitate new research IRIS PASSCAL, Sweetwater, TX

Project Partners:



Purpose:

To establish a temporary mixed phase broadband seismic array with publically open and available data that will facilitate new research. This was a 6 week study that began on March 11, 2014.

Photo: Katherine Aur, Staff Scientist, IRIS PASSCAL (left) and Zhingang Peng, Assoc. Prof., School of Earth and Atmospheric Sciences, Georgia Institute of Technology (right).



Mixed Phase Array – 25 Stations

PASSCAL provided:

- ▶ 5 x Trillium 120 Postholes
- ▶ 25 x Field enclosures
- ▶ 25 x Solar panels
- ▶ 4 x Personnel

Nanometrics provided:

- ▶ 20 x Trillium Compact Posthole 20 s Broadband Seismometers
- ▶ 25 x Centaur Digital Recorders
- ▶ 2 x Personnel

Performance · Convenience · Cost

Deployed in under 3 days using a direct burial technique, with a posthole auger, Nanometrics worked closely with the IRIS PASSCAL team to deploy a 25-station array. Nanometrics donated two field engineers, along with field equipment for 25 stations, to facilitate the speedy installation and provide training on the new direct burial technique. The direct burial technique was chosen for ease and speed of deployment. A limited amount of time was available, as the project had not originally been budgeted for by PASSCAL. Deploying the Trillium Compact Posthole seismometers using this direct burial technique saved significant time and resources, without loss of performance, over older, vault style techniques that are susceptible to thermal instability and water ingress.

Of note: Several noise sources were present in the area, consisting of hundreds of wind turbines, hydraulic fracturing activity and active vibroseis trucks. Additionally, there was a consistent 3Hz signal observed in the area. *Link to IRIS open data set:* <http://ds.iris.edu/gmap/XB?timewindow=2014-2014>