EarthScope’s Transportable Array Spans Alaska, the Last Frontier

Legacy of the Alaska Transportable Array

The Alaska Transportable Array (TA), funded by the National Science Foundation as part of the EarthScope program, was a dense network of 281 temporary seismic stations installed throughout Alaska and northwestern Canada to record earthquakes and other ground motions. Although network operations by the Incorporated Research Institutions for Seismology (IRIS) ended in September 2021, scientists will continue to use the free and publicly available data for years to come.

Fortunately, the Alaska Transportable Array legacy will live on. Over the last several years, the Alaska Transportable Array team assisted partner organizations by upgrading over 30 existing seismic stations, improving the overall quality of Alaska's permanent seismic network. Additionally, the team has successfully transitioned 117 temporary Alaska Transportable Array stations into permanent stations that are now operated and maintained by the Alaska Earthquake Center, Alaska Volcano Observatory, Canadian Hazards Information Center, and Geological Survey of Canada. By working with these organizations on permitting, transferring equipment, and establishing data collection, these stations continue to operate and record local earthquakes as well as those from other parts of the globe.

All Those Data

Data collected as part of the Alaska Transportable Array are publicly available. They include seismic (ground motion) data collected at all stations, in addition to meteorological (wind, temperature, precipitation), infrasound, and ground temperature at selected locations. The seismic data are ingested into real-time processing systems for detection, location, and characterization of earthquakes in Alaska and Canada as well as around the world. These data are also used by hundreds of researchers in a wide range of fields and projects. Hear what scientists are saying...

View the Data

To view seismograms from currently operating seismic stations, visit the IRIS Station Monitor at https://www.iris.edu/app/station_monitor/.

To view data from decommissioned stations, try IRIS Station QuickLook http://ds.iris.edu/ds/nodes/dmc/tools/station_quicklook/ or one of the other access tools available through the IRIS Data Management Center: http://ds.iris.edu/ds/nodes/dmc/tools/.

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| TA Legacy Station (117) |
| Upgraded Existing Station (32) |
| Existing Station (49) |
| TA Removed Station (80) |
Staff at the IRIS Alaska Operations Center were supported by the Array Operations Facility at New Mexico Tech, the Array Network Facility at the University of California San Diego, the IRIS Data Management Center in Seattle, Washington, and IRIS Headquarters in Washington, DC. Support from the Alaska Earthquake Center was also invaluable, along with the cooperation of the Alaska Volcano Observatory, Alaska Tsunami Warning Center, UNAVCO, Canadian Hazards Information Service, Yukon Geological Survey, Government of Yukon Wildland Fire Management, and Natural Resources Canada.

Researchers at the University of Massachusetts Amherst use Alaska Transportable Array data to learn more about plate tectonics in the region, particularly the controls on subduction zone segmentation and how volcanoes are distributed along this boundary.


Strong aurora-caused disturbances are recorded by the Alaska Transportable Array. Normally considered an undesired noise, in this study, scientists at the University of Alaska Fairbanks and US Geological Survey use seismic data to detect these magnetic signals.


Temporary seismic stations were fortuitously installed in time to capture a number of large and significant earthquakes in Alaska, including the 2016 M7.1 Iniskin and the 2018 M7.1 Anchorage earthquakes that shook the most populated areas of the state. Researchers at Cornell University study the mechanics of intra-slab earthquakes like these and how the local geology affects the intensity of ground motions.


We've known for some time that you occasionally do get big intra-slab earthquakes and there's been some concern they are underrepresented globally in hazard estimates in the places in the world where they occur. So, this is an opportunity to delve a little bit deeper to try to understand what was going on here.

– Geoff Abers, Cornell University

Information about the Alaska Transportable Array is available at: [www.usarray.org/Alaska](http://www.usarray.org/Alaska)