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Experience with EarthScope's Transportable Array in the United States

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The Transportable Array (TA) component of the EarthScope USArray facility has now installed over 500 stations in the western United States and continues its multi-year migration towards the Atlantic coast. The stations use a grid-like deployment with 70 km separation between stations. At any given time there are approximately 400 stations operational occupying a nominal 1500 km by 1500 km "footprint," with a small number (30-40) in transit. Each station is operated for two years.

TA stations consist of three component broadband seismometers, with a few sites in the westernmost United States also including three component strong motion instruments. The instruments are installed about two meters below the surface, in thermally stable vaults. All stations transmit data in near-real-time, via the TA Array Network Facility, for archiving and distribution via the IRIS Data Management Center. Network-average station uptime has exceeded 90% since inception.

The geographical extent of the TA allows unprecedented observation of the seismic wave-field over large regions, and the resultant data have fueled a wide range of research studies. In addition, a number of standardized data products are (or will be) produced from the TA data, including phase picks and wave-field animations. In many cases the phase picks identify events that otherwise do not appear in any local or regional bulletins.

We present a review of the current status of the TA, with a focus on lessons learned in the design and operation of a large network as well as advances in data telemetry, station standardization, and sensor orientation pioneered by the TA effort. Techniques for data recovery and archive updates are described and a variety of performance as-

sessments are presented.