Instrumentation Services Overview

IRIS Instrumentation Services
Technical Interchange Meeting

Palm Spring, CA April 12-13, 2016



A Wide Range of Instrumentation Activities

Vaults



Temporary to Permanent





Harsh Environments

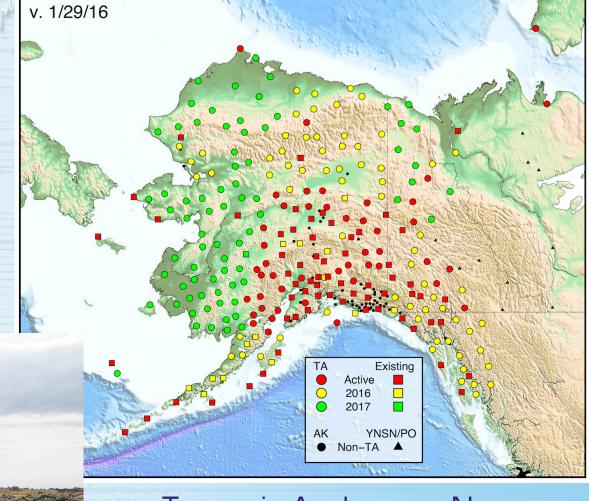




ate - Educate

Status of IS Programs - TA

- Starting 3rd season
 - Over 30 stations complete
 - Targeting ~70 this season
- Key technologies
 - Power systems
 - Lithium rechargeable
 - Communications
 - Inmarsat and Iridium
 - Sensor emplacement
 - Posthole

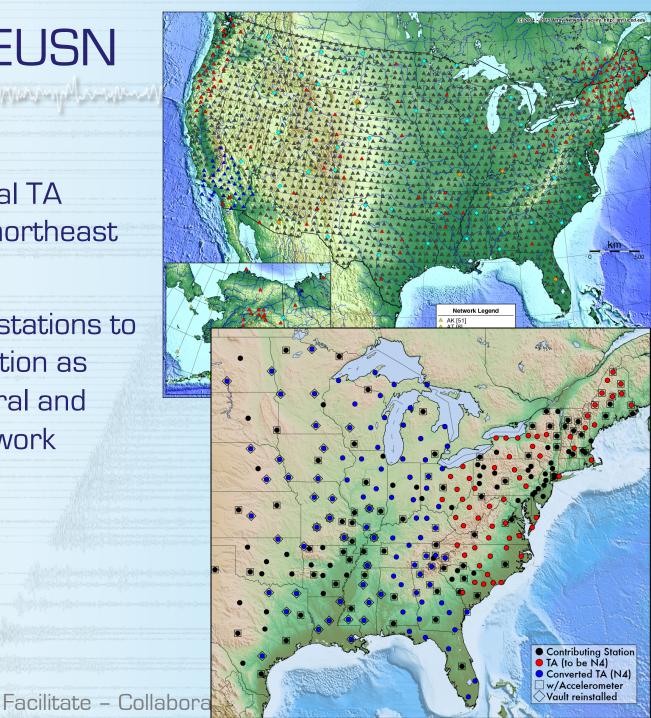


 Teams in Anchorage, New Mexico, and San Diego



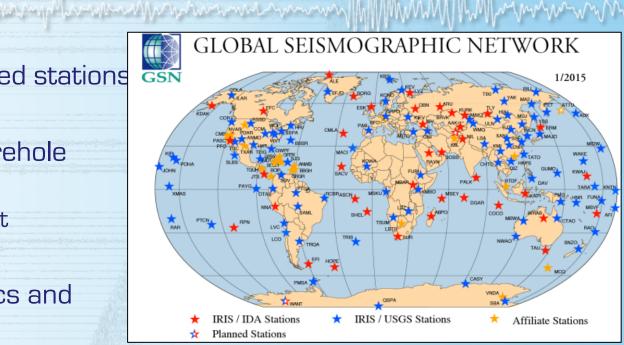
L48 and CEUSN

- Rolled up the final TA footprint in the northeast
- Converted 158 stations to long term operation as part of the Central and Eastern US Network



Global Seismographic Network

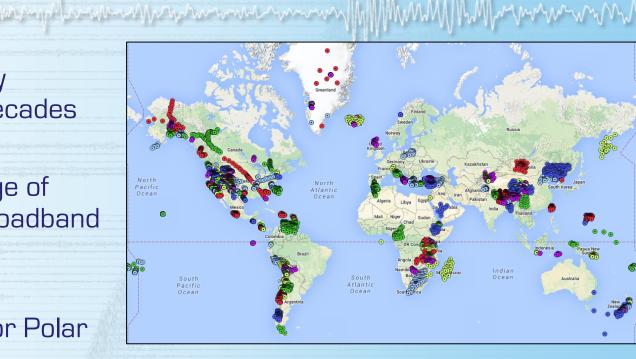
- 153 globally distributed stations
- A new generation borehole
 Streckeisen sensor
 - Initial units under test
- Push on use of metrics and MUSTANG
- Key efforts at USGS
 Albuquerque Seismological
 laboratory and Project IDA at UCSD





PASSCAL

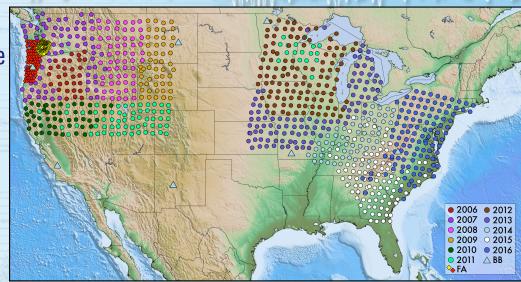
- Deployments on every continent for three decades
- Support for wide range of experiments, from broadband to active source
- Specialized support for Polar deployments
- High volume: Testing, calibration, packaging
- Team at PASSCAL Instrument Center at New Mexico Tech





Magnetotellurics

- Support for both Transportable Array and Flexible Array MT activities
- MT-TA is continuing on mid-Atlantic footprint
- Challenges with older instruments
 - Workarounds of every sort
- Team at Oregon State University





Facilitate - Collaborate - Educate

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Ocean Bottom Seismograph Instrument Pool

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- Support experiments worldwide
- Broadband and short period
- Completed a major 4 year experiment
 - Stress on people and HW
- Key technologies
 - Packaging for pressure
 - Packaging for shipping and handling
 - Power systems
 - Timing





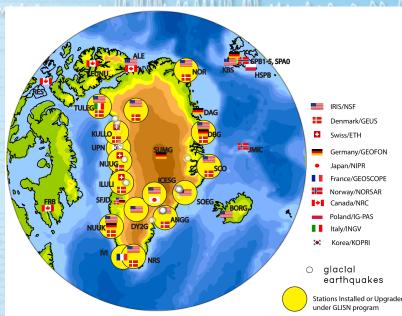
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Other IS Activities

- Greenland Ice Sheet Monitoring network (GLISN)
 - Ongoing O&M of six stations
 - Highly leveraged data from 32 stations
 - Evaluating Iridium Pilot high bandwidth system

GEOICE

- Developing Wavefields technology
- Testing in the lab and field (Antarctica)
- Testing sensor-datalogger combo





Emerging Activities

Wavefields

- Deploying instruments in larger numbers (large N) to observe wavefields with minimal aliasing
- Demonstration experiment this spring
- Subduction Zone Observatory
 - Workshop in September 2016
- Sustainability
 - Analyzing what we have, how many, how old, when it needs to be replaced and how much money we need!

More activities highlighted in the presentations



Our Funding and Support

- SAGE, OBSIP, GLISN, GEOICE all at different stages of multi-year awards
- Funding generally strong, but generally flat (trend in federal funding)
- Although flat funding is stressful, we (IRIS) are still funded at over \$30 million / year of public funding
- Solid expectation of stable funding through 2018





Technical Interchange Meeting

- IRIS' second face-to-face Technical Interchange Meeting
- Goal: Share knowledge and experience
 - Gain efficiency
 - Enhance quality
- Contribute open and freely
- Meet your colleagues
- Enjoy



Summary

- Collectively executing a widerange of instrumentation activities
- A mix of stable, well established activities and new activities
- Your efforts and your expertise are key to the success of the activities highlighted here – Thank You!

