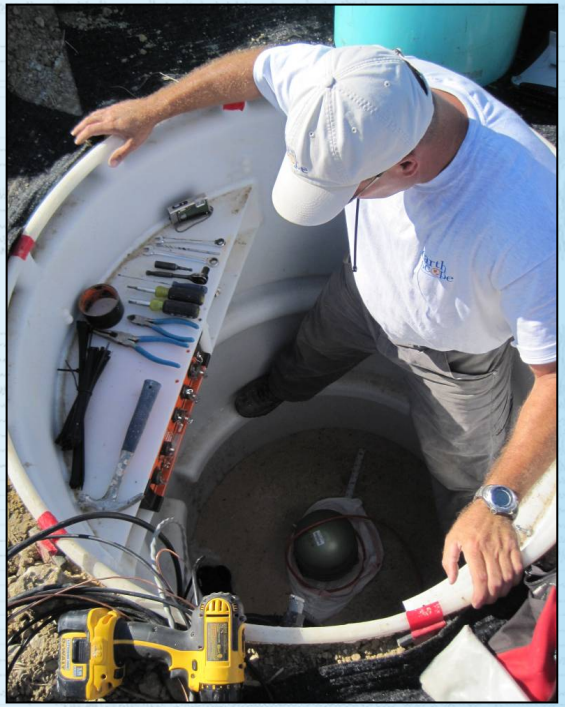
Instrumentation Services Overview

IRIS Instrumentation Services
Technical Interchange Meeting

Albuquerque, NM
April 27-28, 2015

A Wide Range of Instrumentation Activities

Temporary to Permanent



Vaults

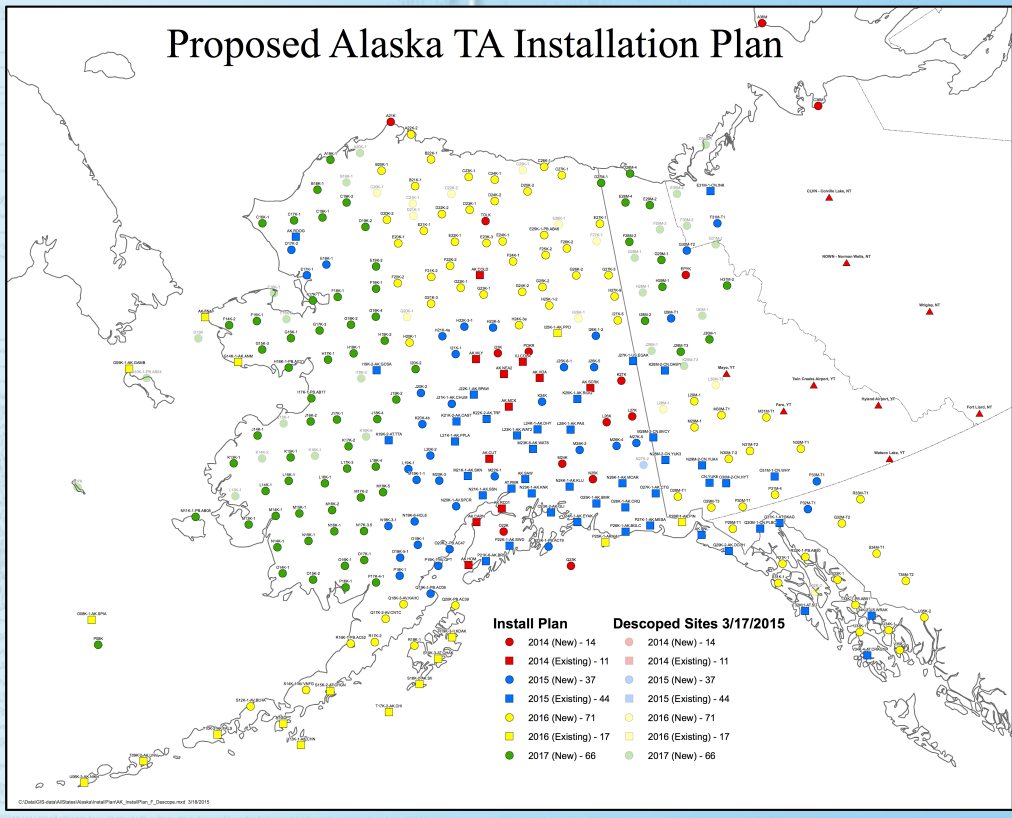
Temporary

Harsh Environments

Ocean Bottom

Alaska Transportable Array

- Beginning first major season in Alaska
- Key technologies
  - Power systems
  - Communications
  - Posthole sensor emplacement techniques

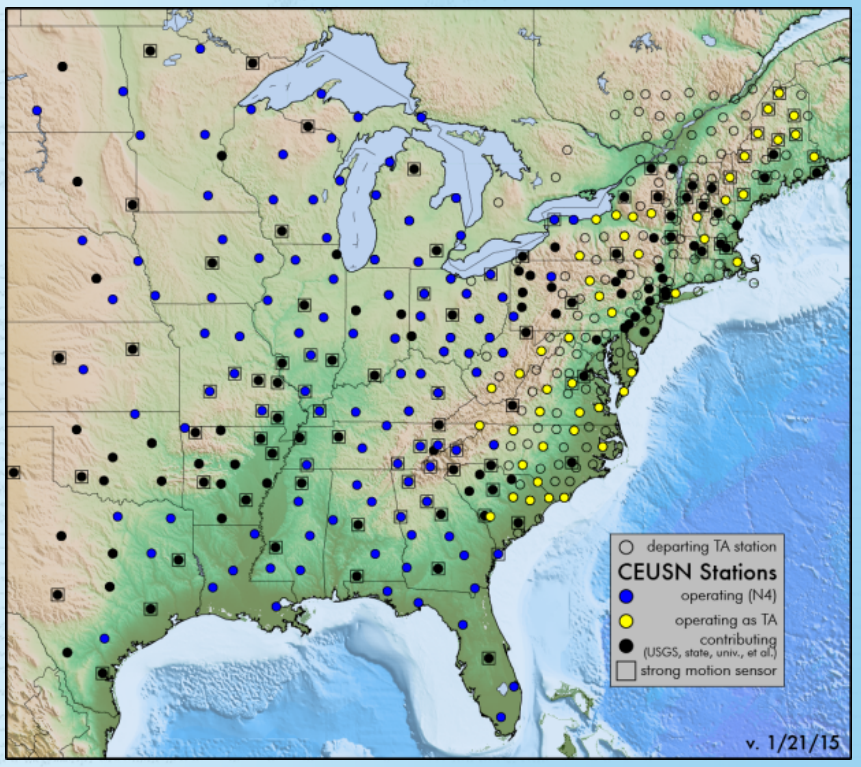


- Teams in Anchorage, New Mexico, and San Diego

IRIS

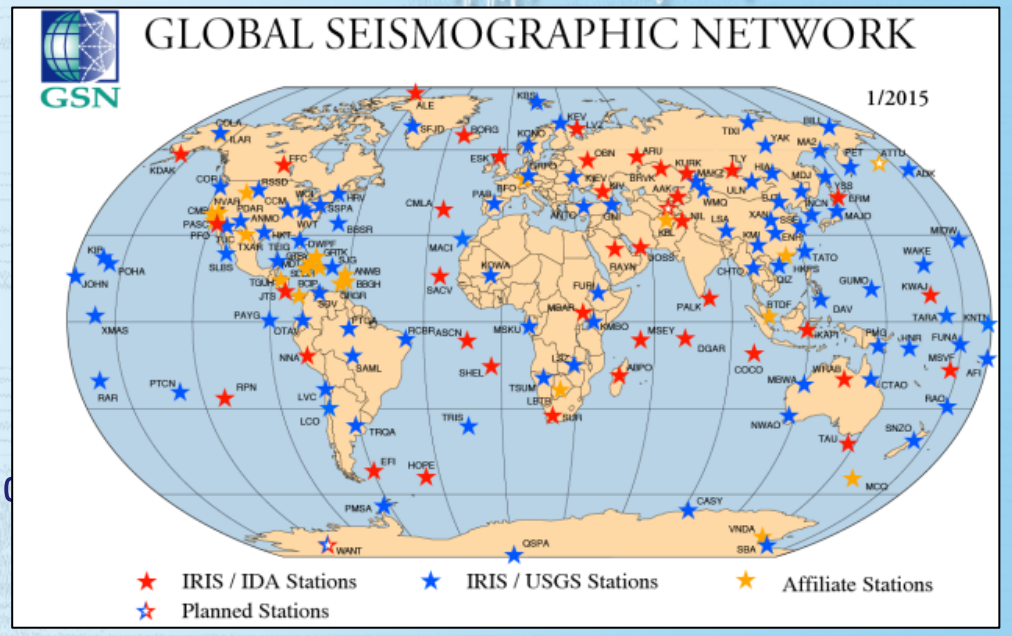
L48 and CEUSN

- Rolling up the final TA footprint in the northeast
- Converting ~159 stations to long term operation as part of the Central and Eastern US Network
  - Over 125 stations converted



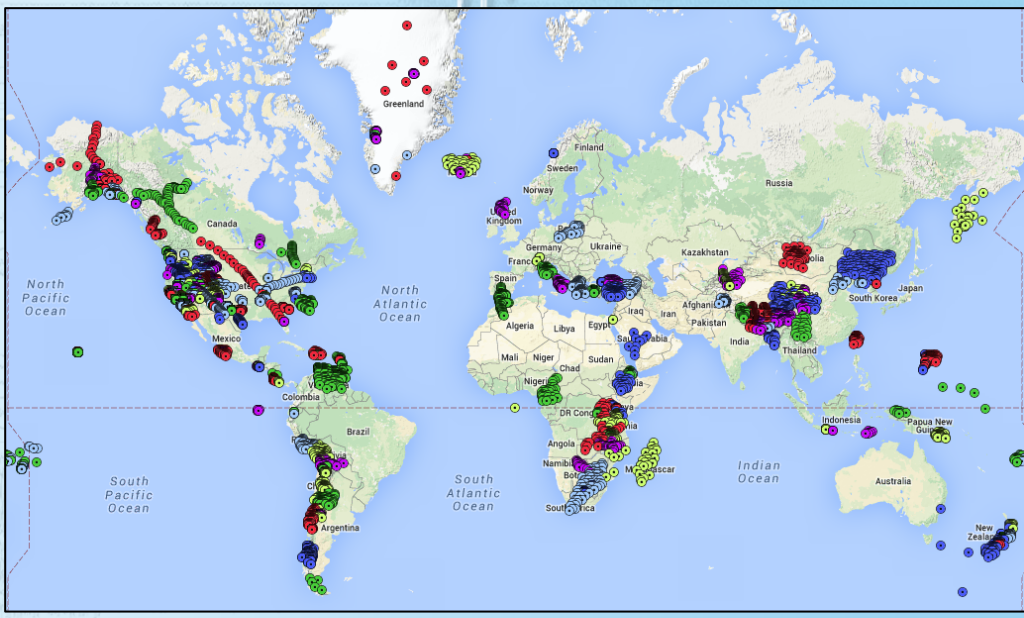
Global Seismographic Network

- 153 globally distributed stations
- Just completed major, decadal review
- A new generation borehole Streckeisen sensor being developed
- Completed a major upgrade of all dataloggers
- Key efforts at USGS Albuquerque Seismological laboratory and Project IDA at UCSD



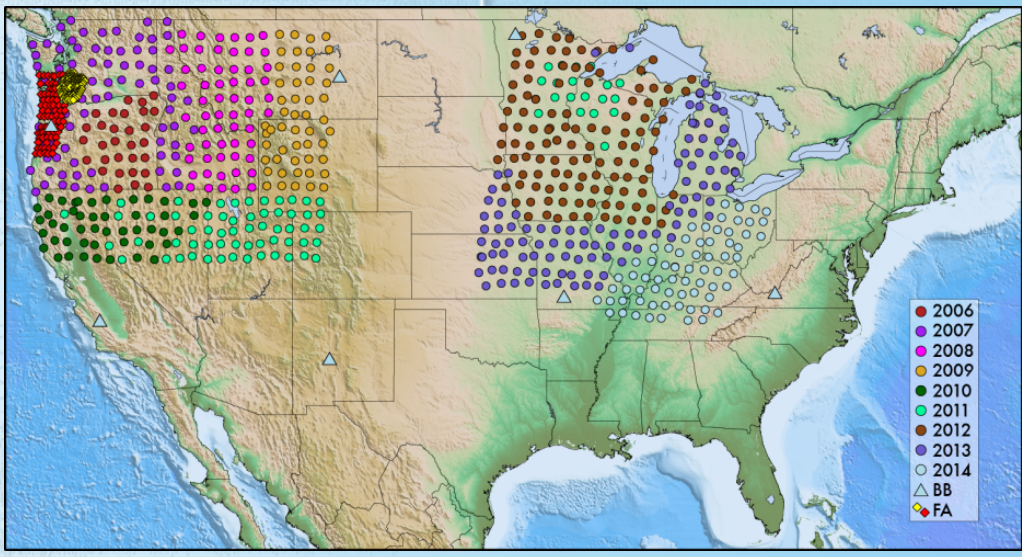
PASSCAL

- Deployments on every continent for three decades
- Support for wide range of experiments, from broadband to active source
- Specialized support for Polar deployments
- A key topic: Sustainability analysis of instrument pool
- Team at PASSCAL Instrument Center at New Mexico Tech



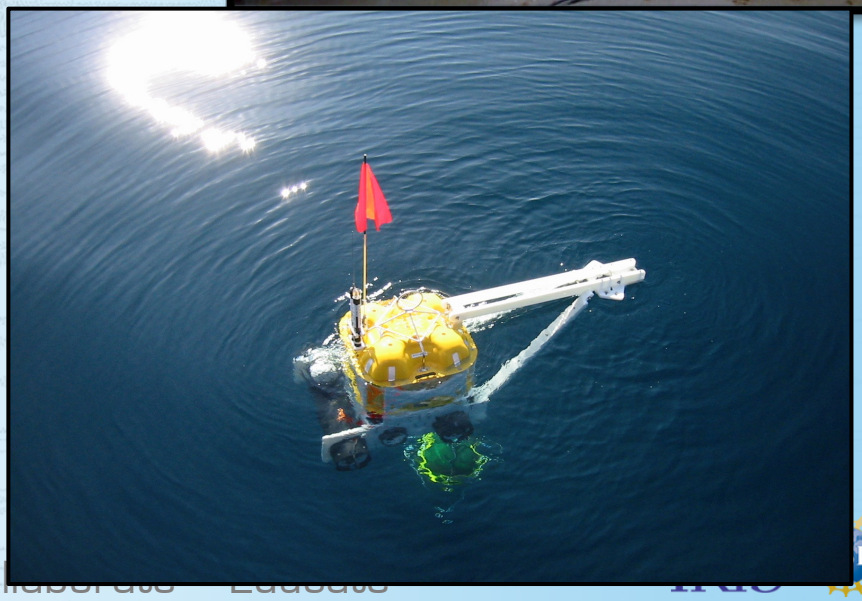
Magnetotellurics

- Support for both Transportable Array and Flexible Array MT activities
- MT-TA is continuing the SE US footprint
- Challenges with older instruments
- Team at Oregon State University

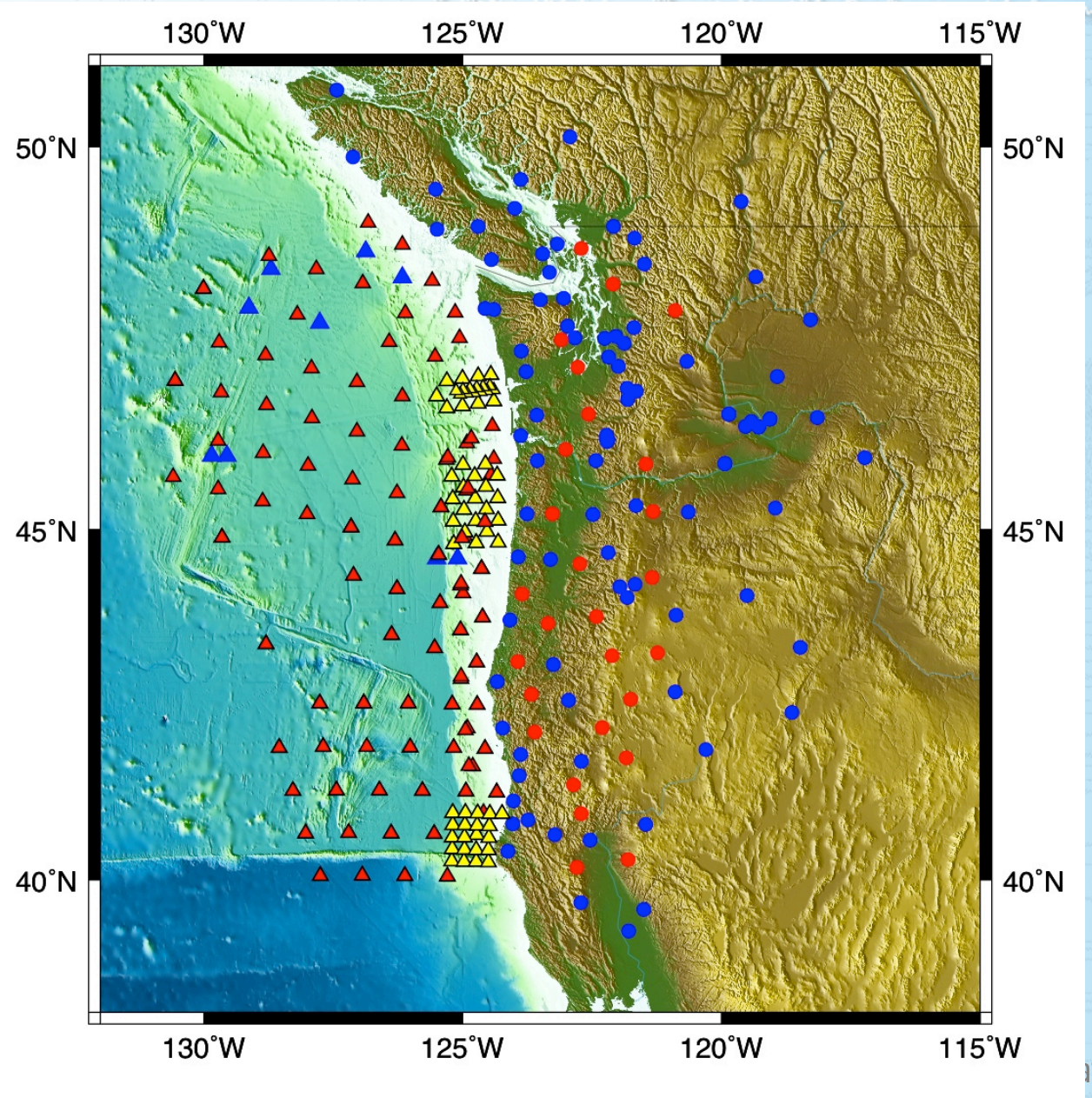


Ocean Bottom Seismograph Instrument Pool

- Support experiments worldwide
- Broadband and short period
- Just completed 3rd year review of OBSIP Management Office
- Key technologies
  - Packaging
  - Power systems
  - Timing



Cascadia Initiative

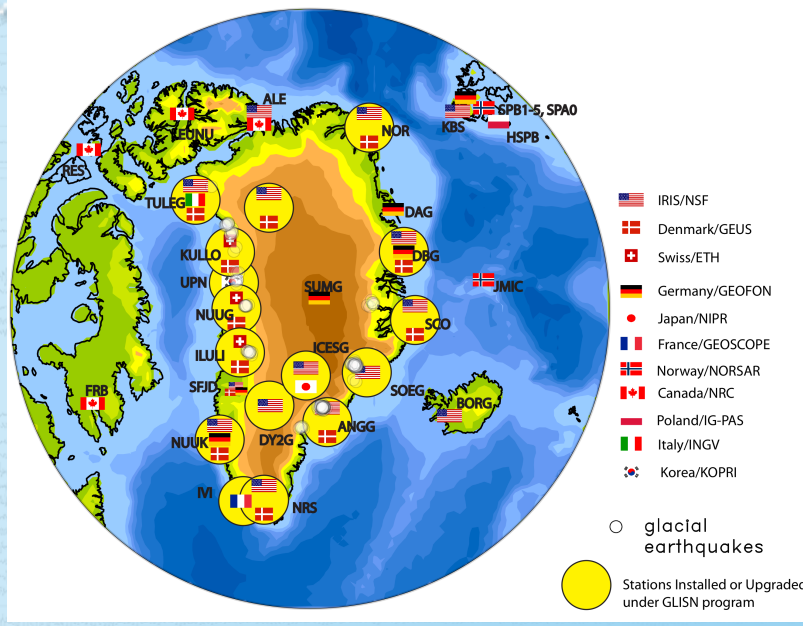


- 27 TA stations on shore
- Four years of OBS campaigns
- Follow-ons in other parts of the world?

IRIS

Other IS Activities

- Greenland Ice Sheet Monitoring network (GLISN)
  - Ongoing O&M of six stations
  - Highly leveraged – data from 32 stations



- GEOICE
  - Important project – developing Large N / Wavefields enabling technology
  - Testing in the lab and field (Antarctica)
  - Testing sensor-datalogger combo

Emerging Activities

- Large N / Wavefields
  - Deploying instruments in larger numbers (large N) to observe wavefields without aliasing
  - Prototype activities underway
- Amphibious Array Future
  - Possible follow-on deployments to Cascadia Initiative
- Subduction Zone Observatory
  - Targeting a workshop in winter 2016
- RAMP
  - Exciting new technologies are out there

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' first face-to-face Technical Interchange Meeting
- Goal: Share knowledge and experience
  - Gain efficiency
  - Enhance quality
- Contribute open and freely
- Meet your colleagues
- Provide feedback on how we should maintain momentum

Summary

- Collectively executing a wide-range 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!