

Intro to EarthScope

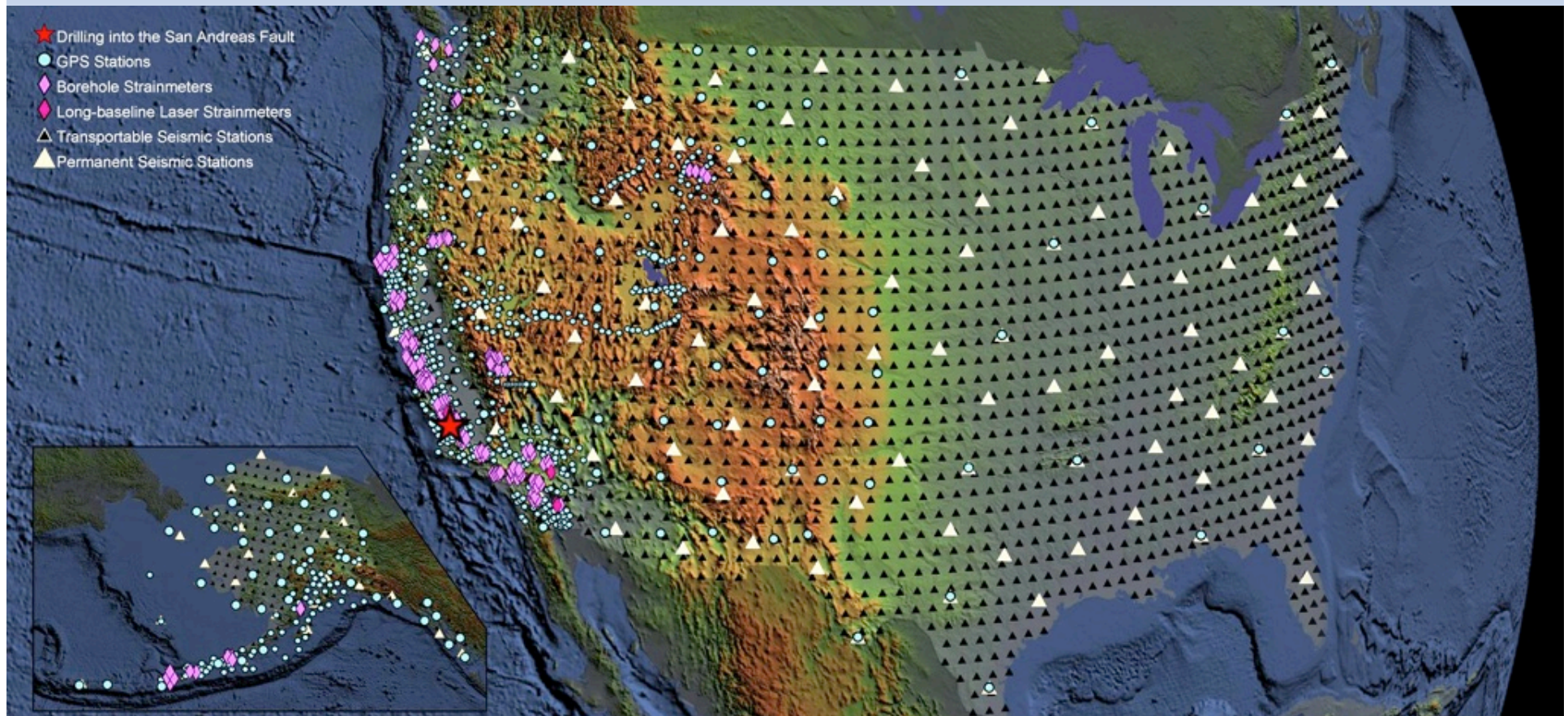


Sarah Robinson

Education and Outreach Program
Manager, EarthScope National
Office

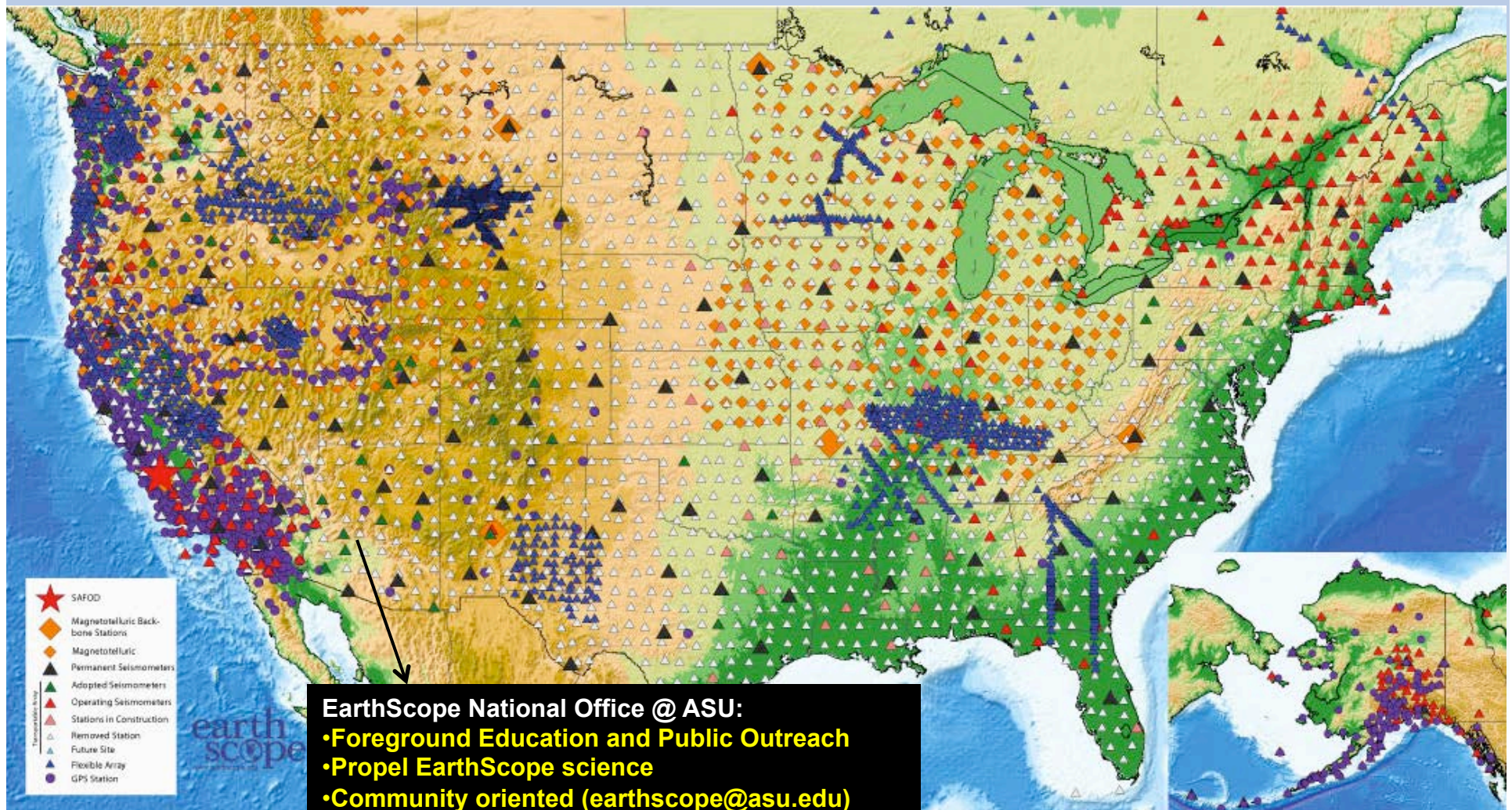
**Earth Sciences version of Hubble Space Telescope
Enables “survey mode” of continent**

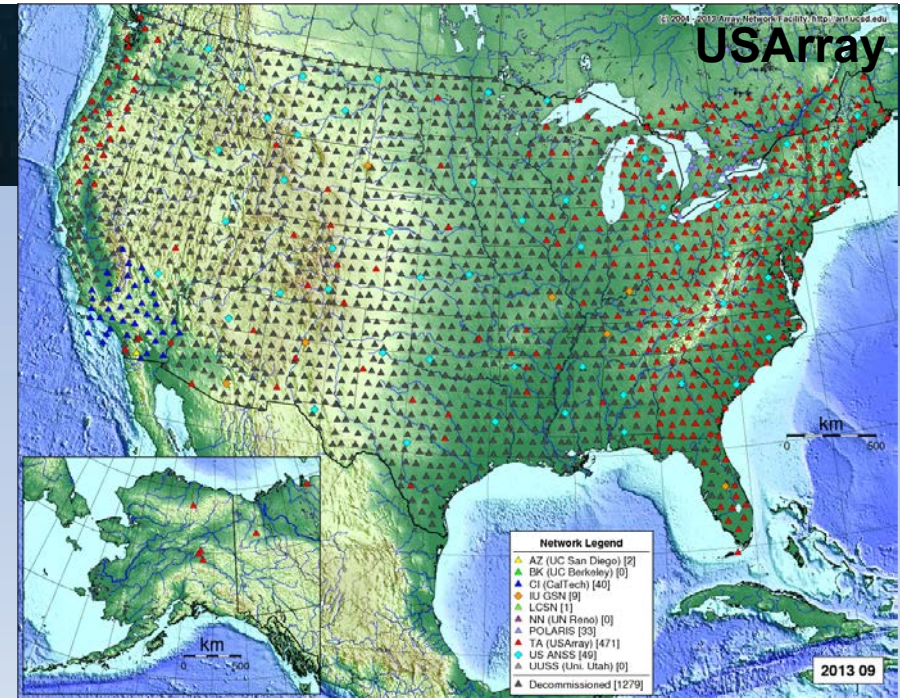
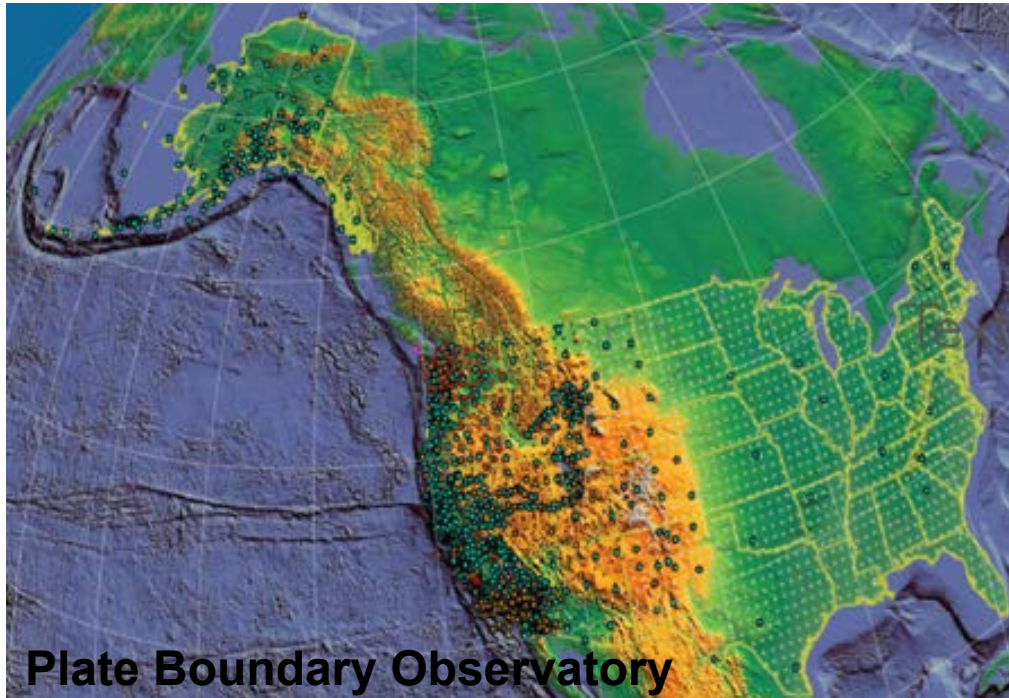
Named the #1 “Epic Project” by Popular Science in 2011



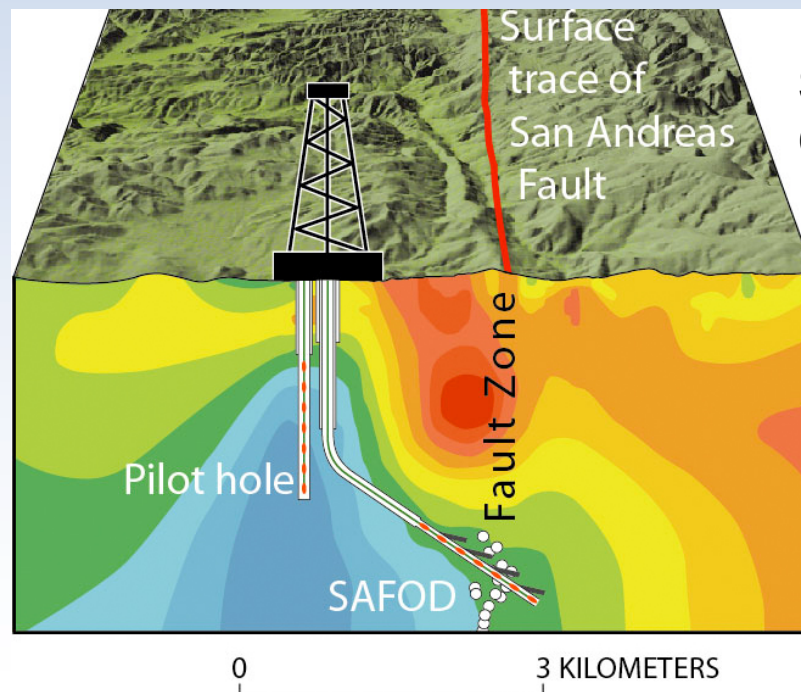
Exploring the Structure and Evolution of the North American Continent

The EarthScope scientific community conducts multidisciplinary research across the Earth sciences utilizing freely available data from instruments that measure motions of the Earth's surface, record seismic waves, and recover rock samples from depths at which earthquakes originate.





The three observatories of the EarthScope



San Andreas Fault Observatory at Depth

1. US Array: SEISMIC NETWORK

- Includes 400 Transportable Array (TA) Seismometers
- Each station occupies a site for 1½ to 2 years
- 10 years to leap-frog across the country

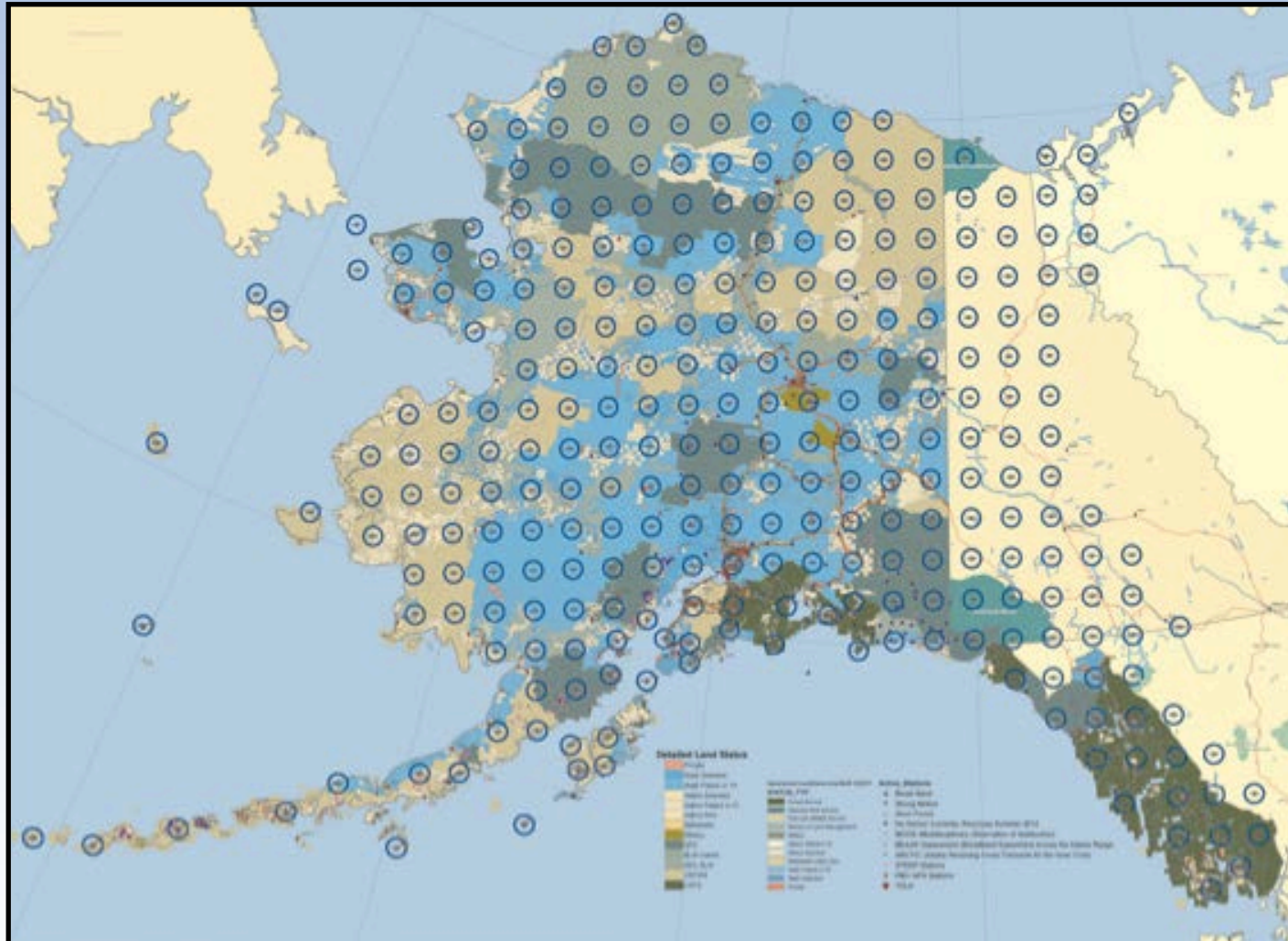
Transportable Seismic Stations:

- ▲ FY04
- ▲ FY05
- ▲ FY06
- ▲ FY07
- ▲ FY08
- ▲ FY09
- ▲ FY10
- ▲ FY11
- ▲ FY12
- ▲ FY13



Operated by IRIS for EarthScope

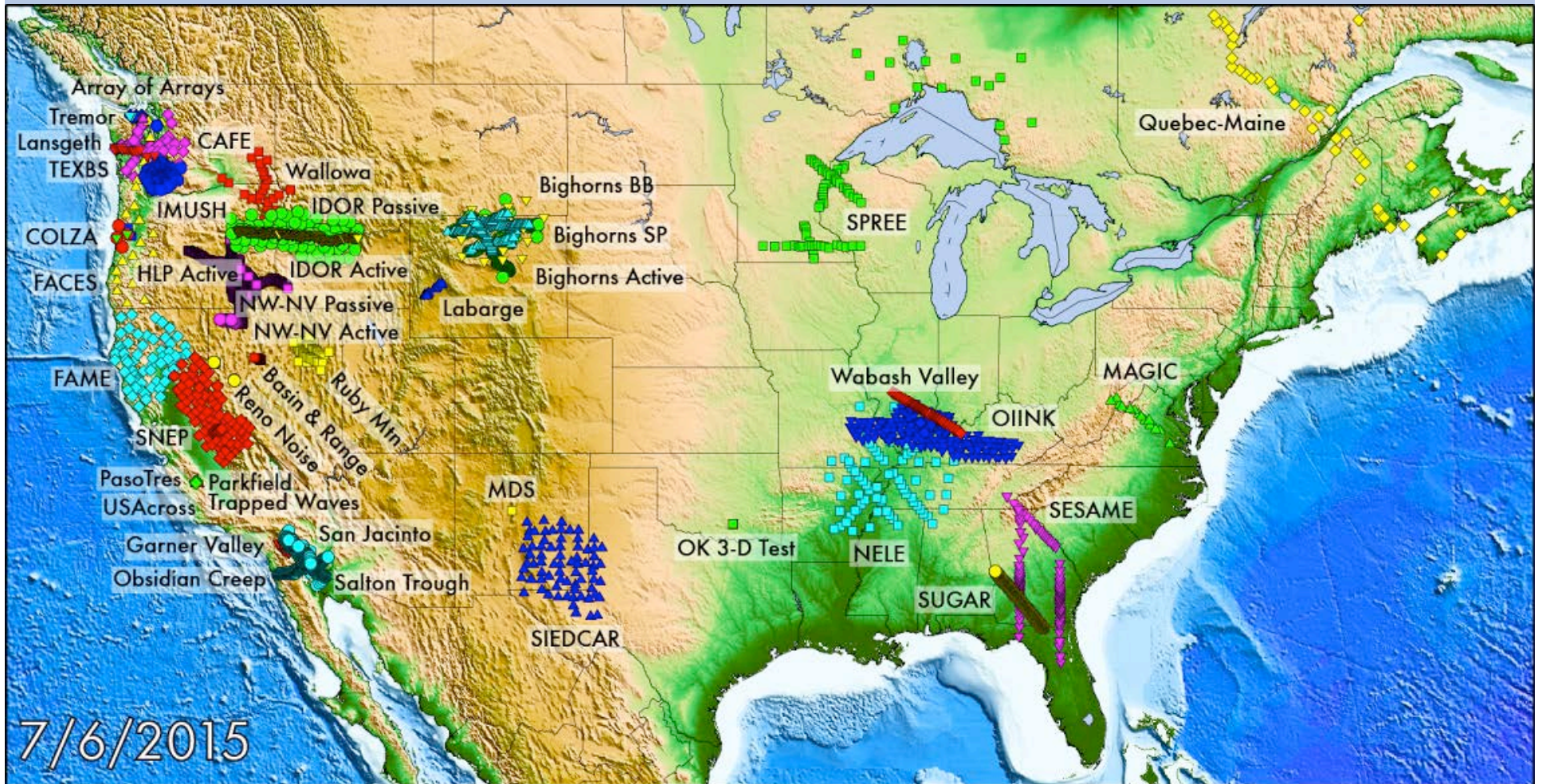
Alaska 2014-2018

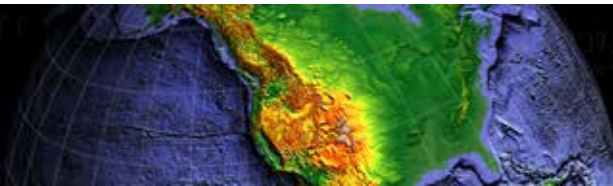


291 stations, 85 km grid

**Courtesy
IRIS**

Flexible Array

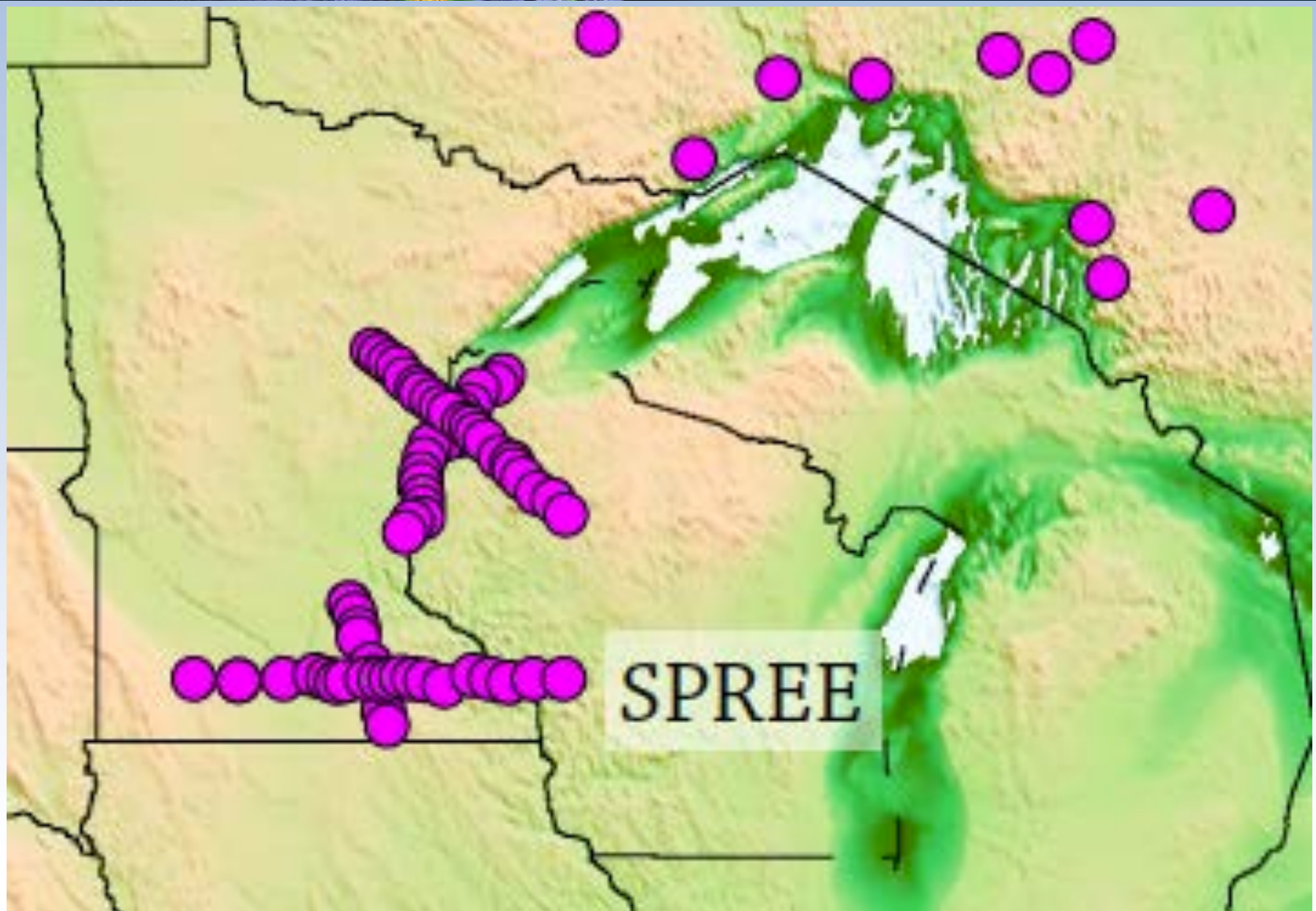




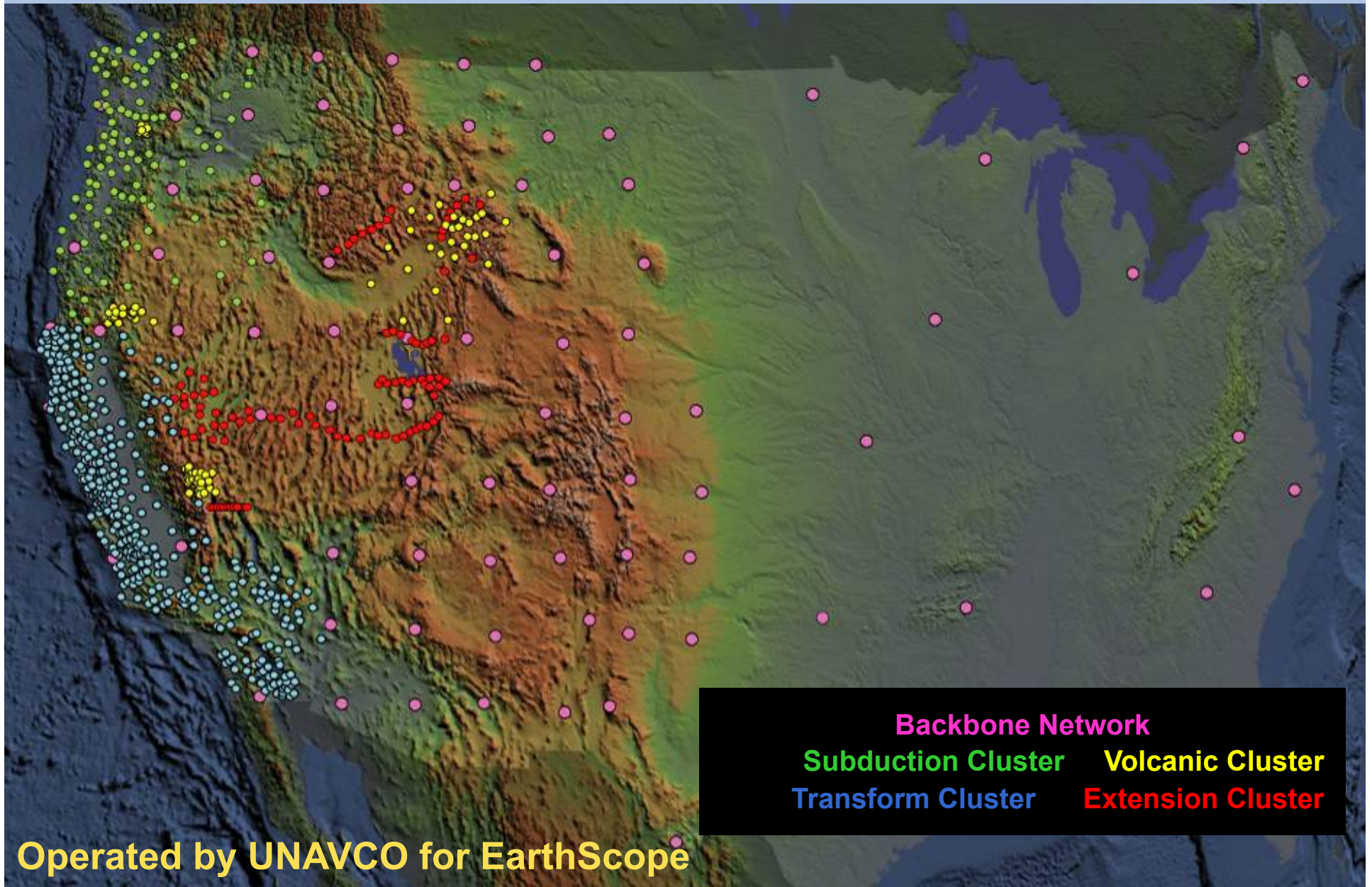
10.53°N 1.00°E 12.00°W

0.00°N 1.00°E 12.00°W

0.00°N 1.00°E 12.00°W

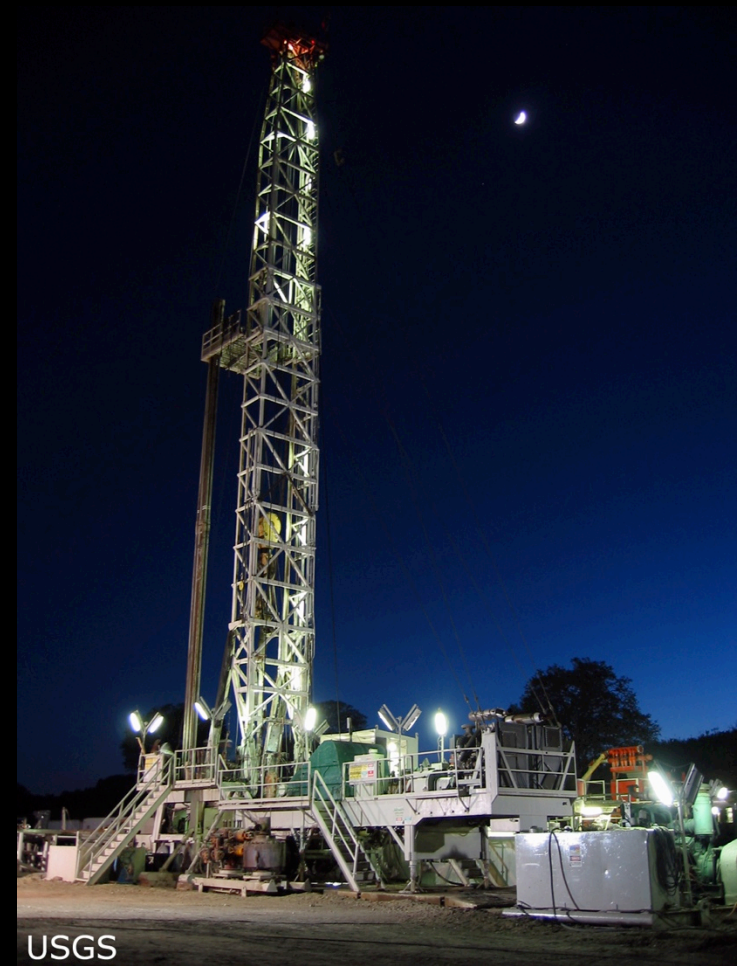
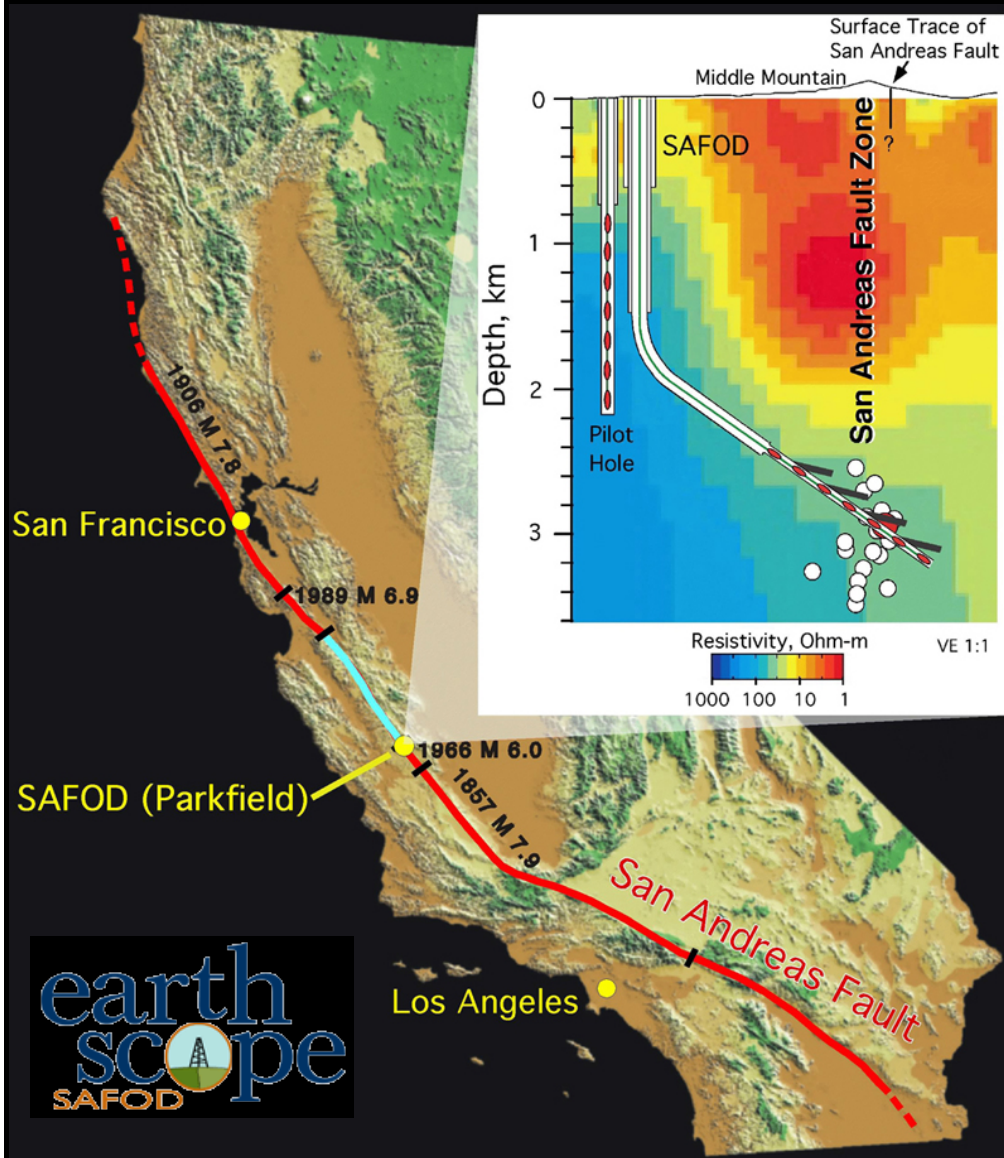


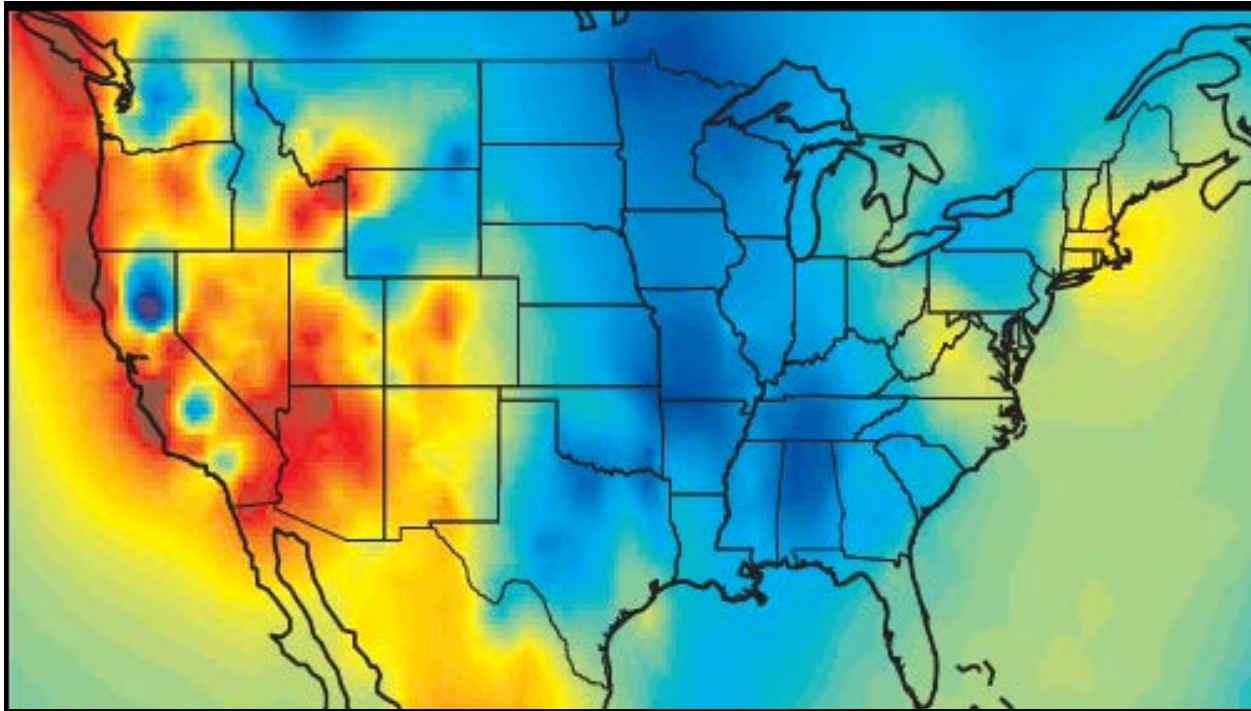
2. Plate Boundary Observatory (PBO): GPS GEODETIC NETWORK



Operated by UNAVCO for EarthScope

3. San Andreas Fault Observatory at Depth (SAFOD): SCIENTIFIC DRILLING

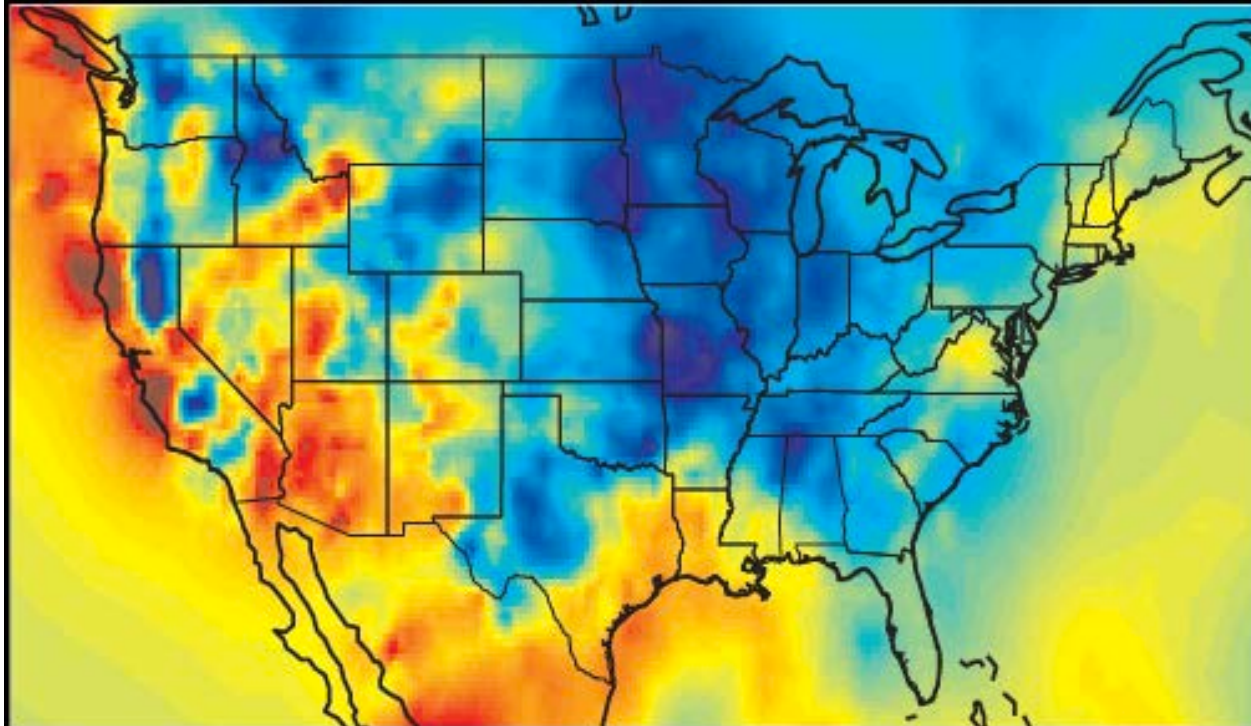
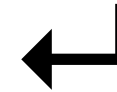




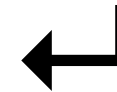
**Tomography images
at 200 km depth**

Red=slow waves/hot
Blue=fast waves/cold

WITHOUT EarthScope data

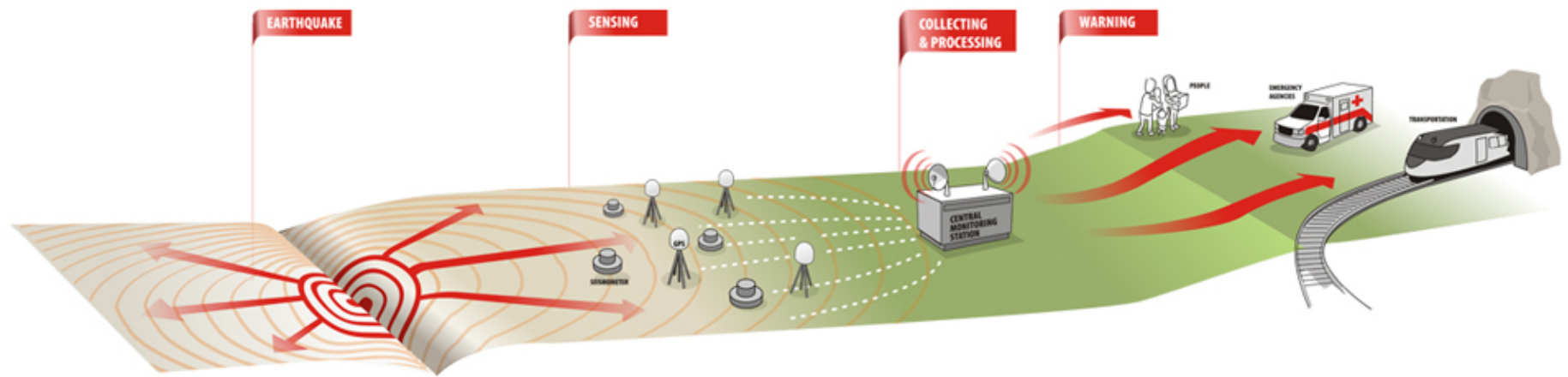


**WITH EarthScope data
(much better)**



Burdick, 2015

Earthquake early warning





Mapping fault traces: Denali 2002 earthquake rupture



Image © 2009 TerraMetrics

©2009 Google

63°04'18.18" N 144°13'26.71" W elev 0 m

Eye alt 1.14 km

For Students

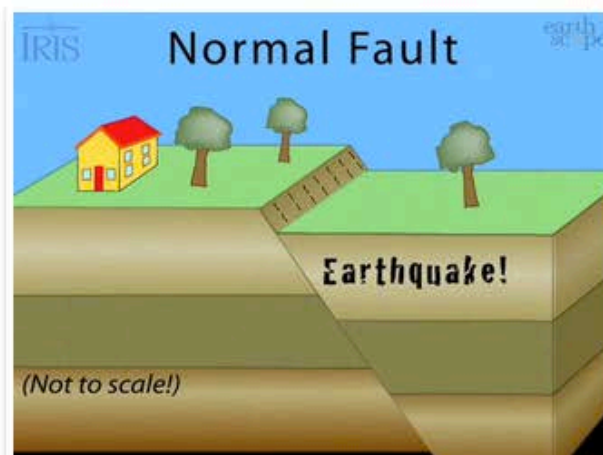
For Educators

For Researchers

For News Media

EarthScope Resources for Educators

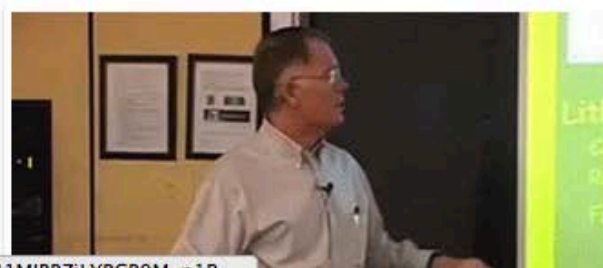
Below are a few links to excellent Earth Science educational animations, video lectures, and other electronic resources for Educators.



Earth Science Animations

Animations from EarthScope partners to help teach Earth science:

- **Earth Science Animations from IRIS** contain text, graphics, animations, and videos to help teach Earth Science fundamentals. Topics include hazards, plate tectonics, Earth structure, earthquakes and volcanoes.
- **Animations and videos from UNAVCO** on topics such as GPS & earthquakes, earthquake early warning, measuring glacial ice loss
- **Wave Visualizations** - Animated ground movement of seismic waves. The visualizations show how the ground moves as seismic waves sweep across about 400 earthquake recording stations in EarthScope's Transportable Array.



Earthquake and EarthScope Science Videos and Articles

- **Recent GeoEvents from EarthScope** - highlight recent Earth Science related events such as large or significant earthquakes, volcanic eruptions, landslides, meteor impacts, etc.. with explanations, maps, photos, and videos.

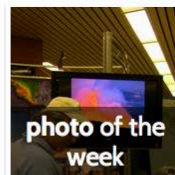
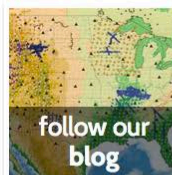
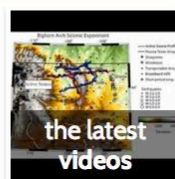
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<http://www.earthscope.org>



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Thank You!**



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The aftermath of @EarthScopeInfo's

27 Apr

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