Alaska TA as Part of EarthScope

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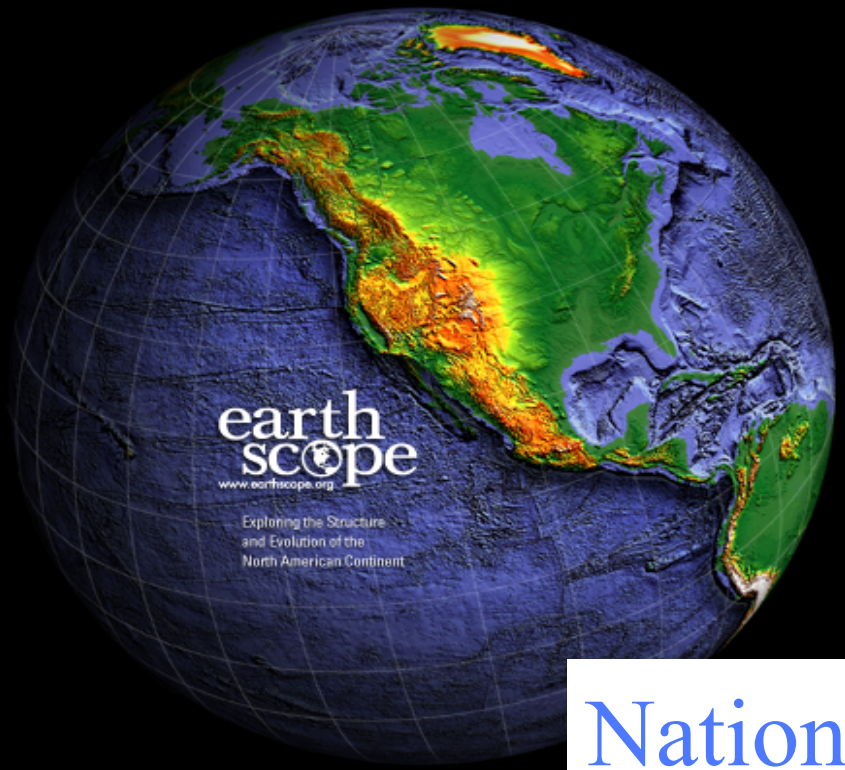


National Science Foundation

WHERE DISCOVERIES BEGIN

EarthScope Science Themes

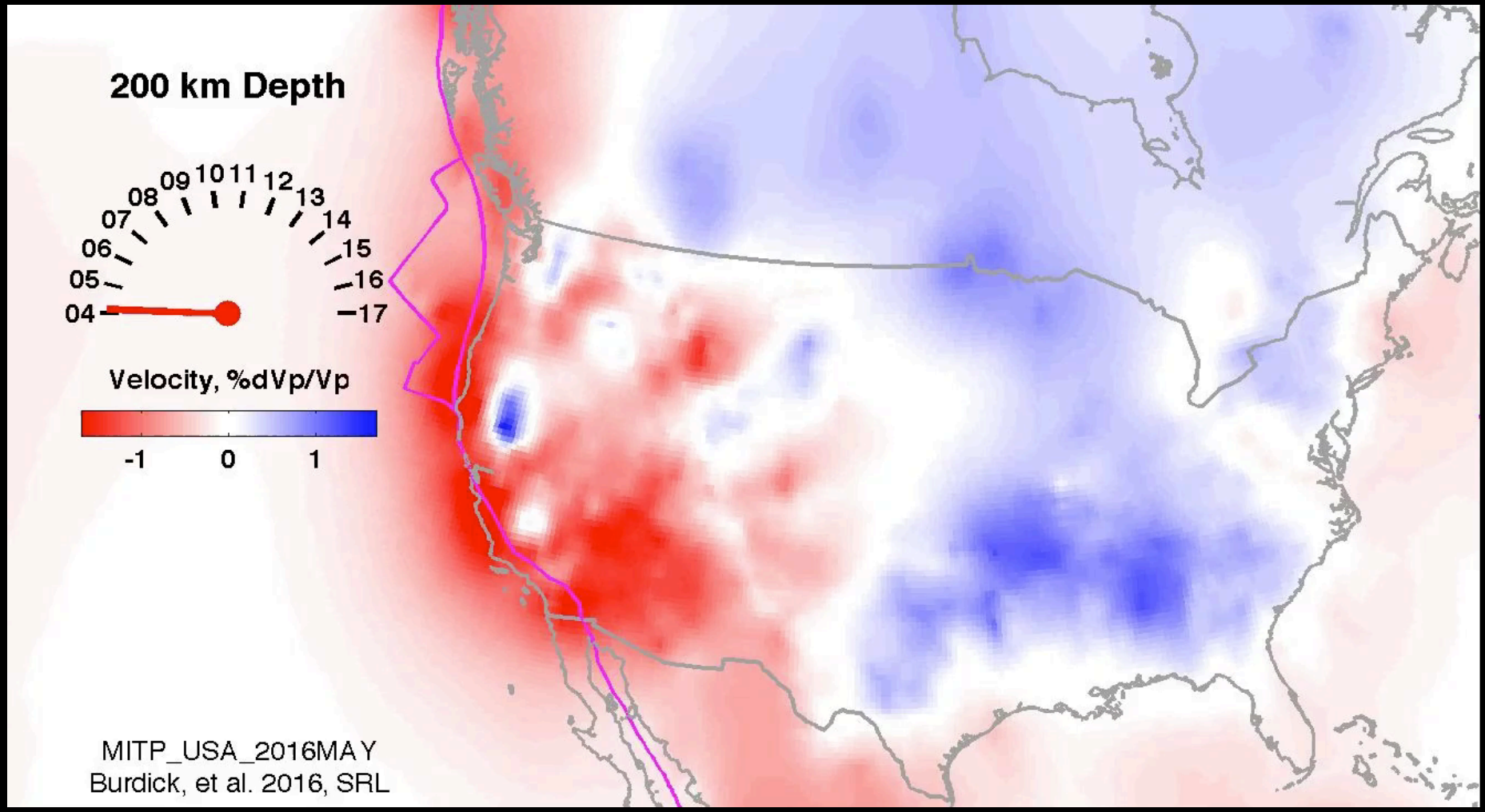
- Making and Breaking the Continent
  - Structure of the continent
  - How continent is deforming
  - How these are related
- Complete* continental coverage to enhance discovery
- All data open to everyone

Making the Continent

- Structure and tectonic evolution
- Lithospheric and mantle properties
- Evidence for past tectonic construction of North America

Scott Burdick
University of Maryland

Mantle Beneath the Continent



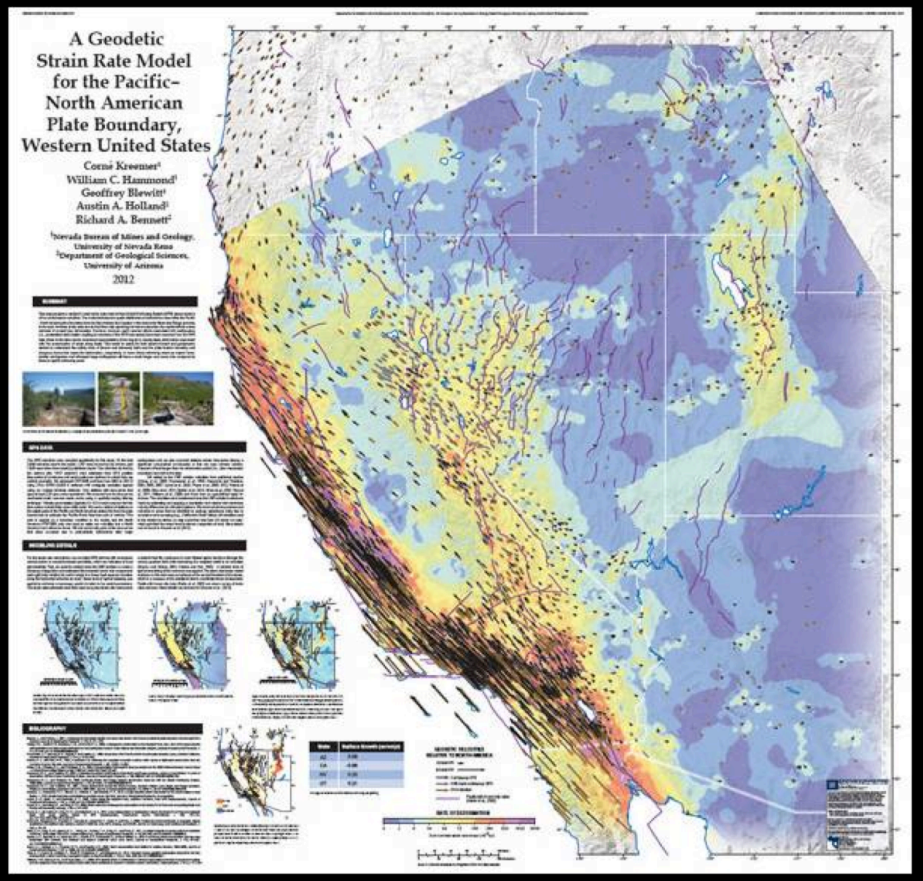
Breaking the Continent

- Steady and transient deformation
  - Tectonics
  - Earthquakes
  - Volcanism
- Probe mechanical properties of fault zones, crust and mantle
- Active deformation to understand the past

Corne Kreemer
University of Nevada Reno

Strain rate and earthquake hazard

- Rate of earthquakes is related to rate of deformation
- Incorporated into earthquake hazard maps for California and soon for Alaska



UNAVCO

Geodetic
Seismic
Imagery
Plate Boundary Observatory

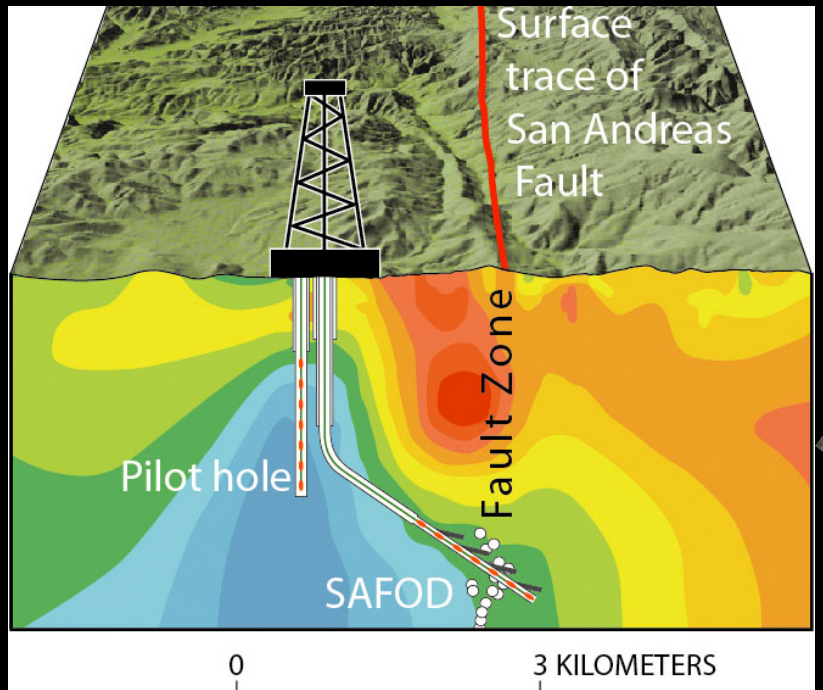
IRIS

USArray
Seismic
Magneto-
telluric

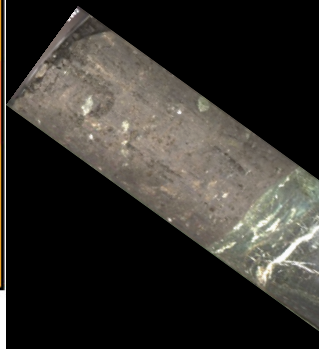
The three observatories of the EarthScope

Ambitious, successful!

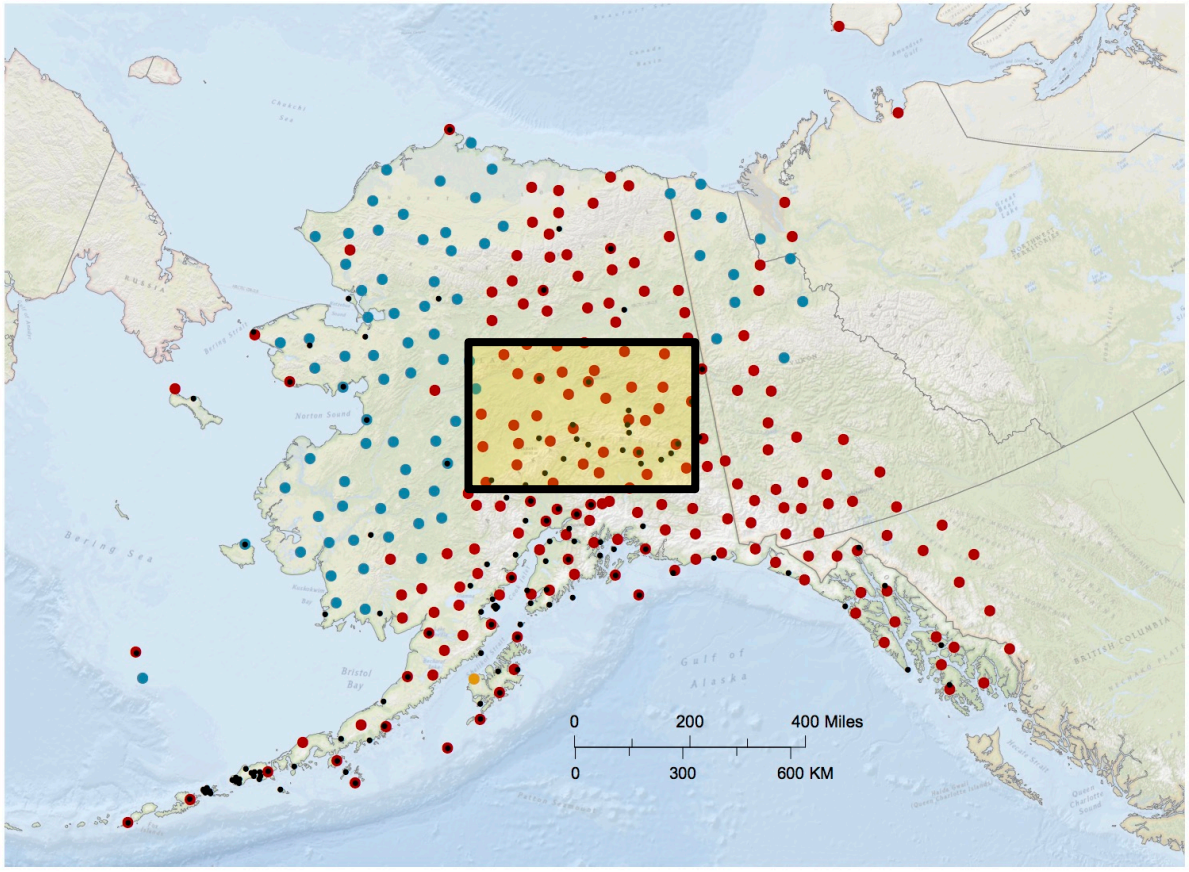
Facilities for EarthScope have successfully built a powerful apparatus for doing science and did so on time and on budget



San Andreas Fault Observatory at Depth
(built by Stanford/ USGS)

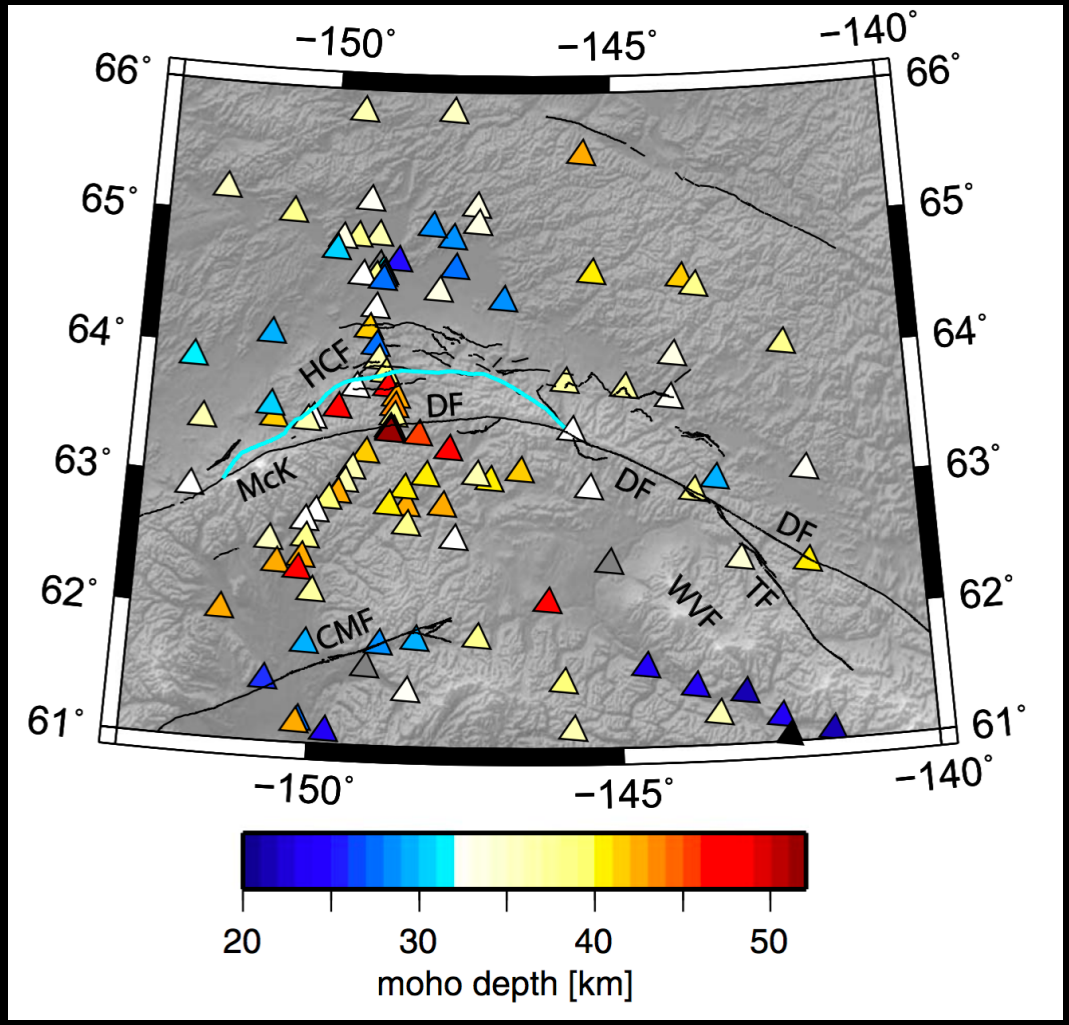


USArray: Transportable Array



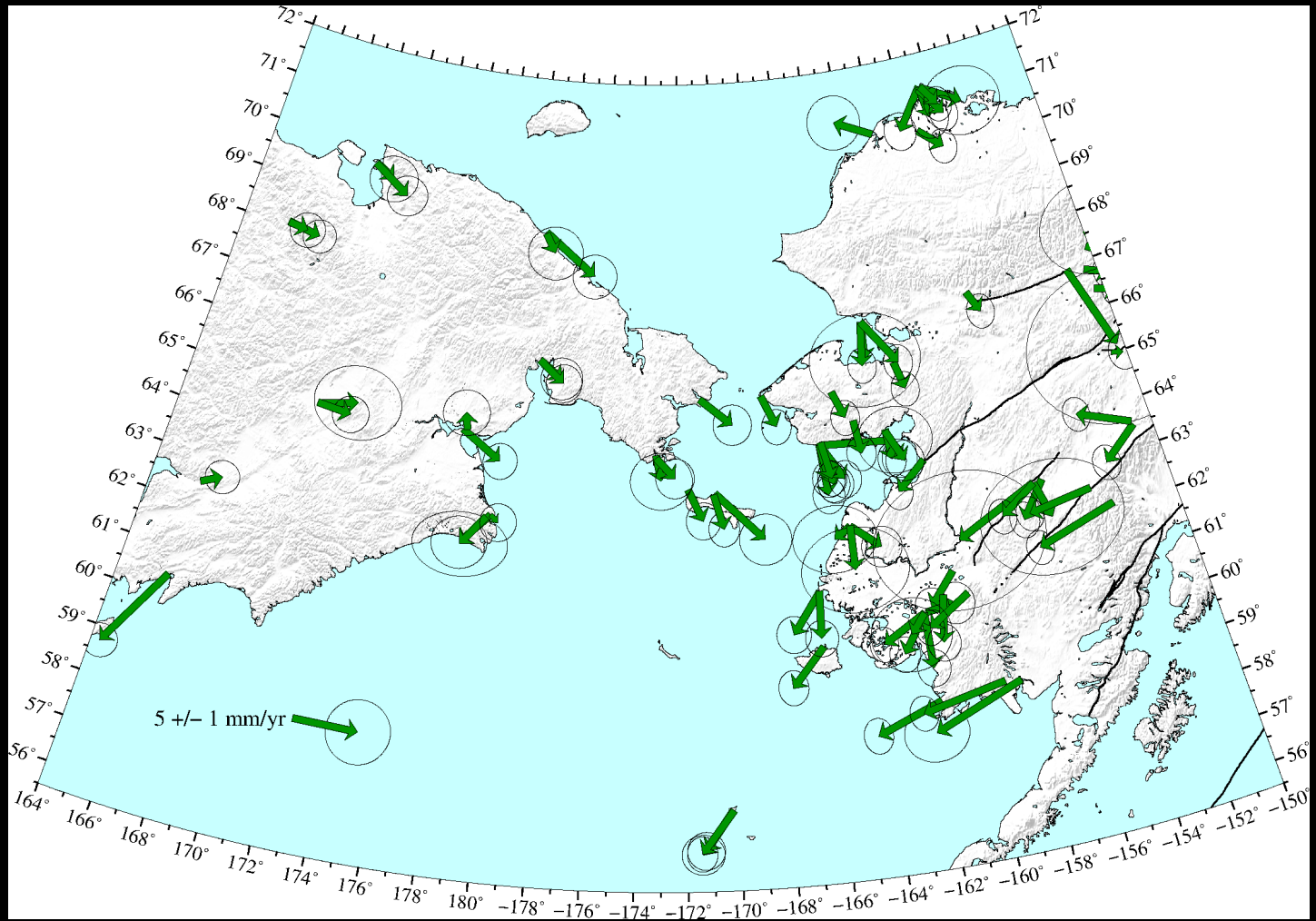
Allam et al. (2017)
Seismology

Crustal Thickness



Jeff Freymueller
University of Alaska Fairbanks

Alaska Crustal Motions from PBO



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