

# EarthScope Update

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EarthScope Program Director

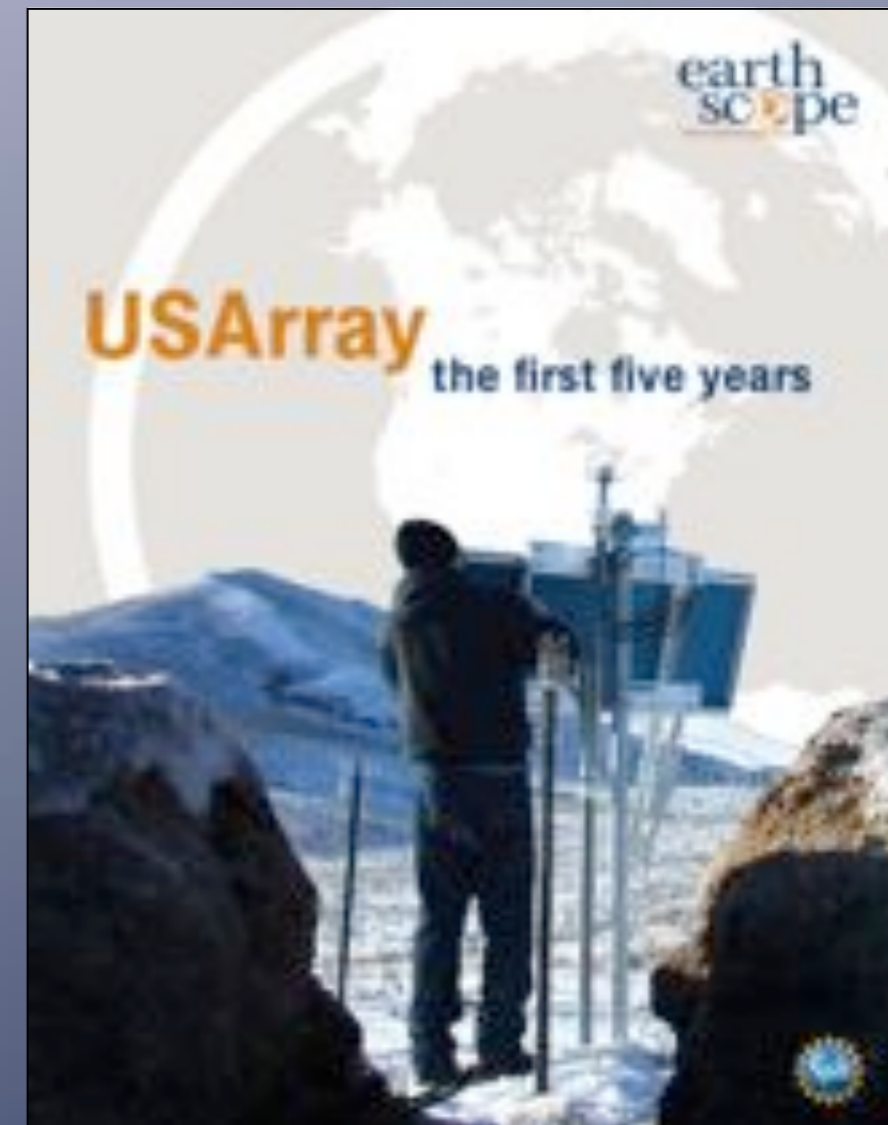
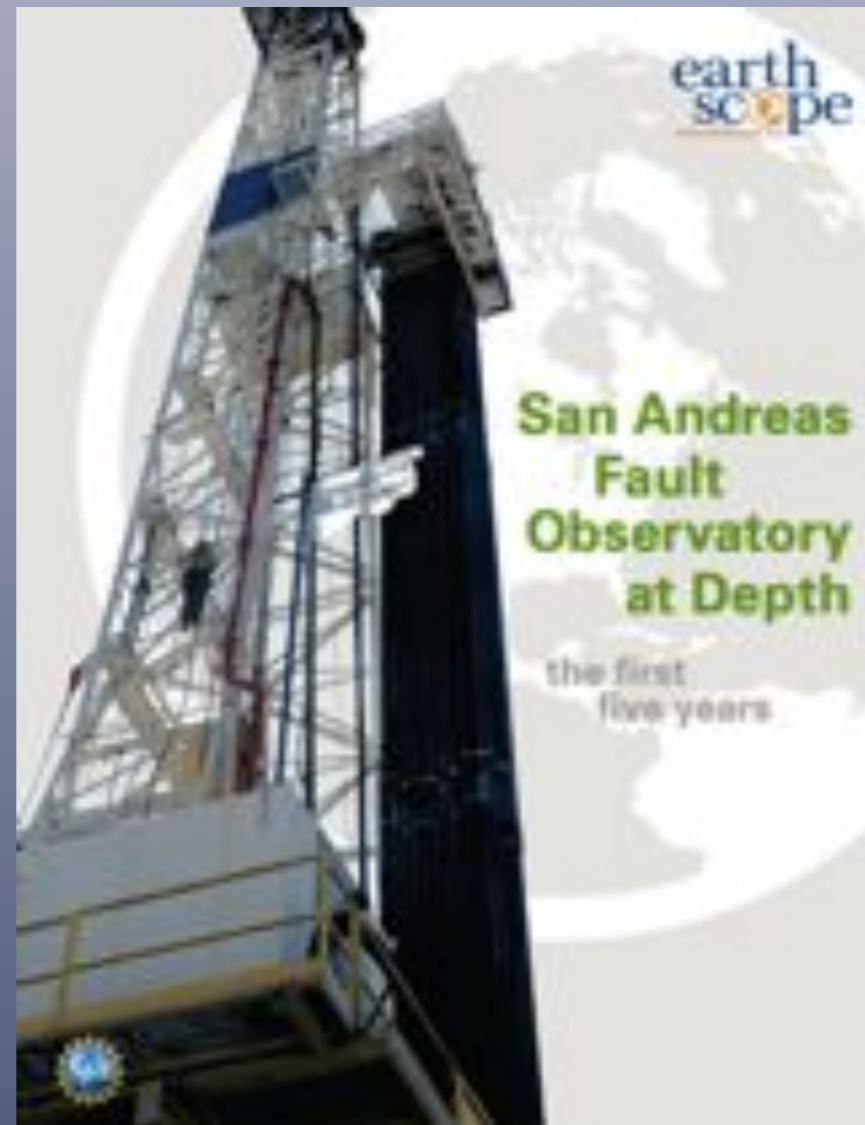
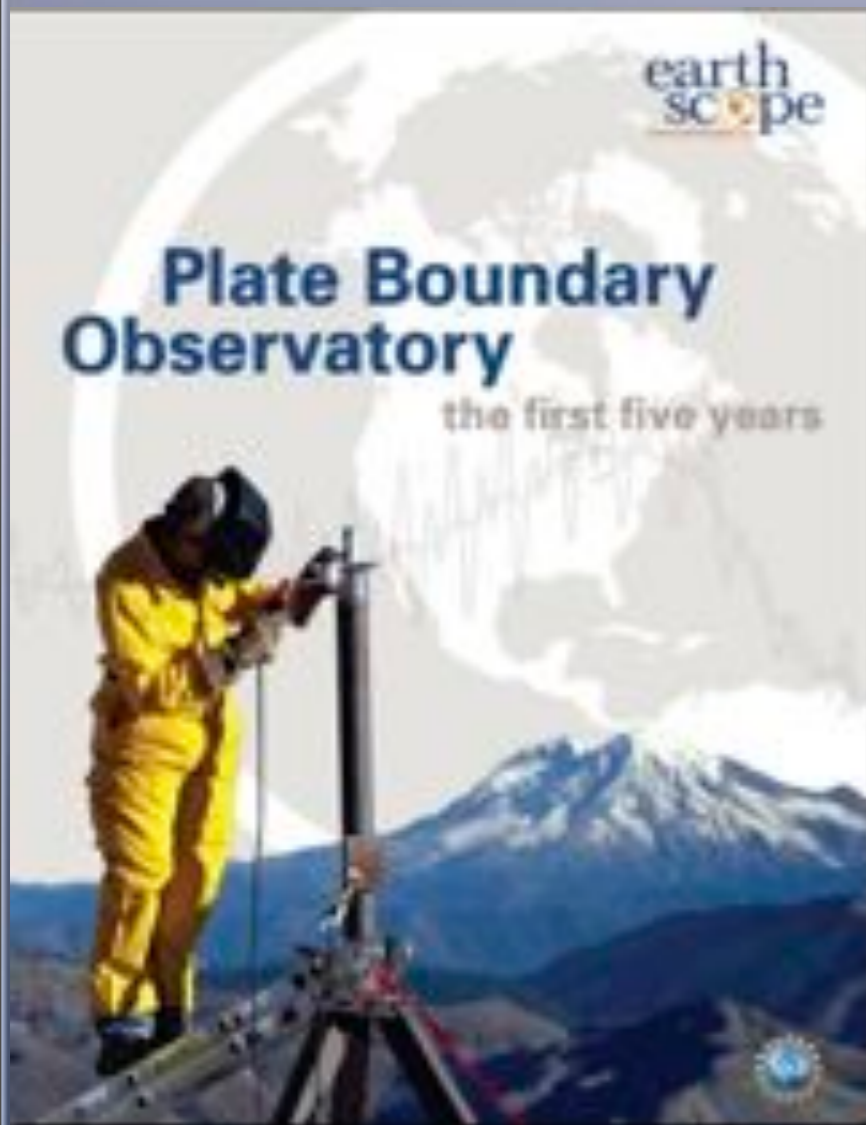
[cestabro@nsf.gov](mailto:cestabro@nsf.gov)

Spectrum of Fault Slip Behavior

Portland, Oregon

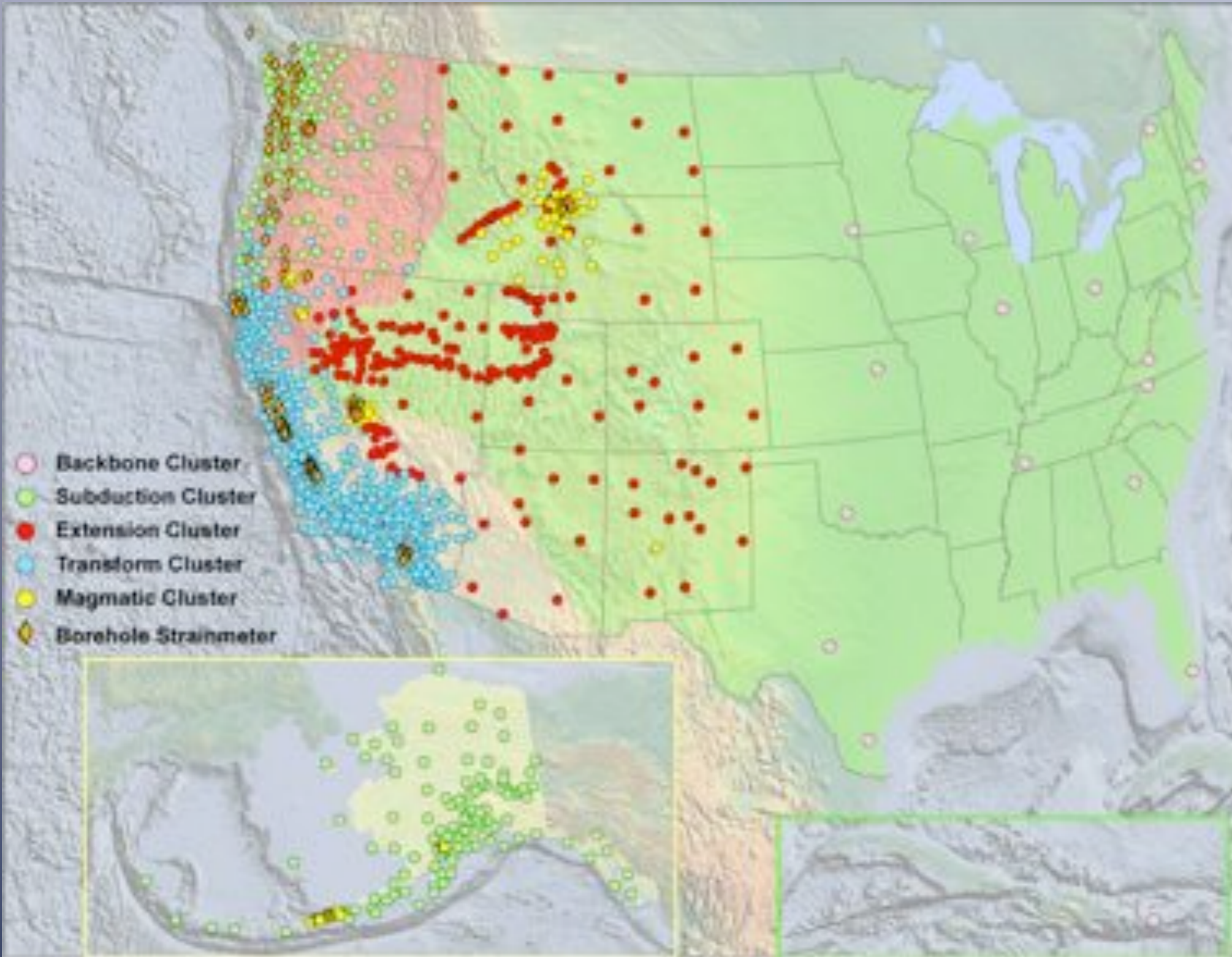
13 October 2010

# EarthScope Facility





# PBO



GPS: 1100

Strain: 80

Seismic: 78

Tilt: 26

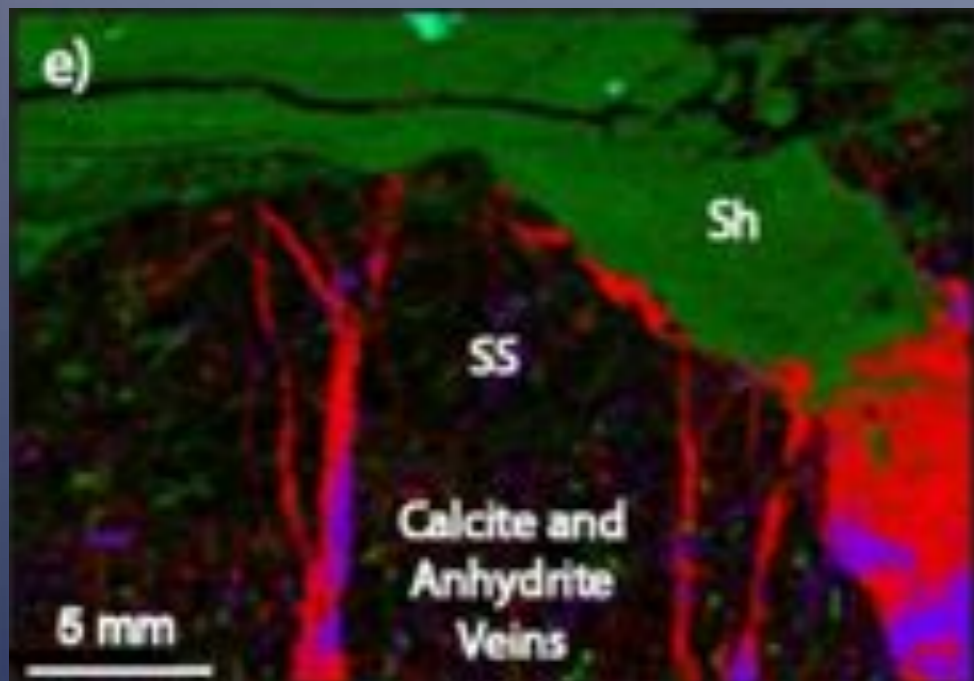
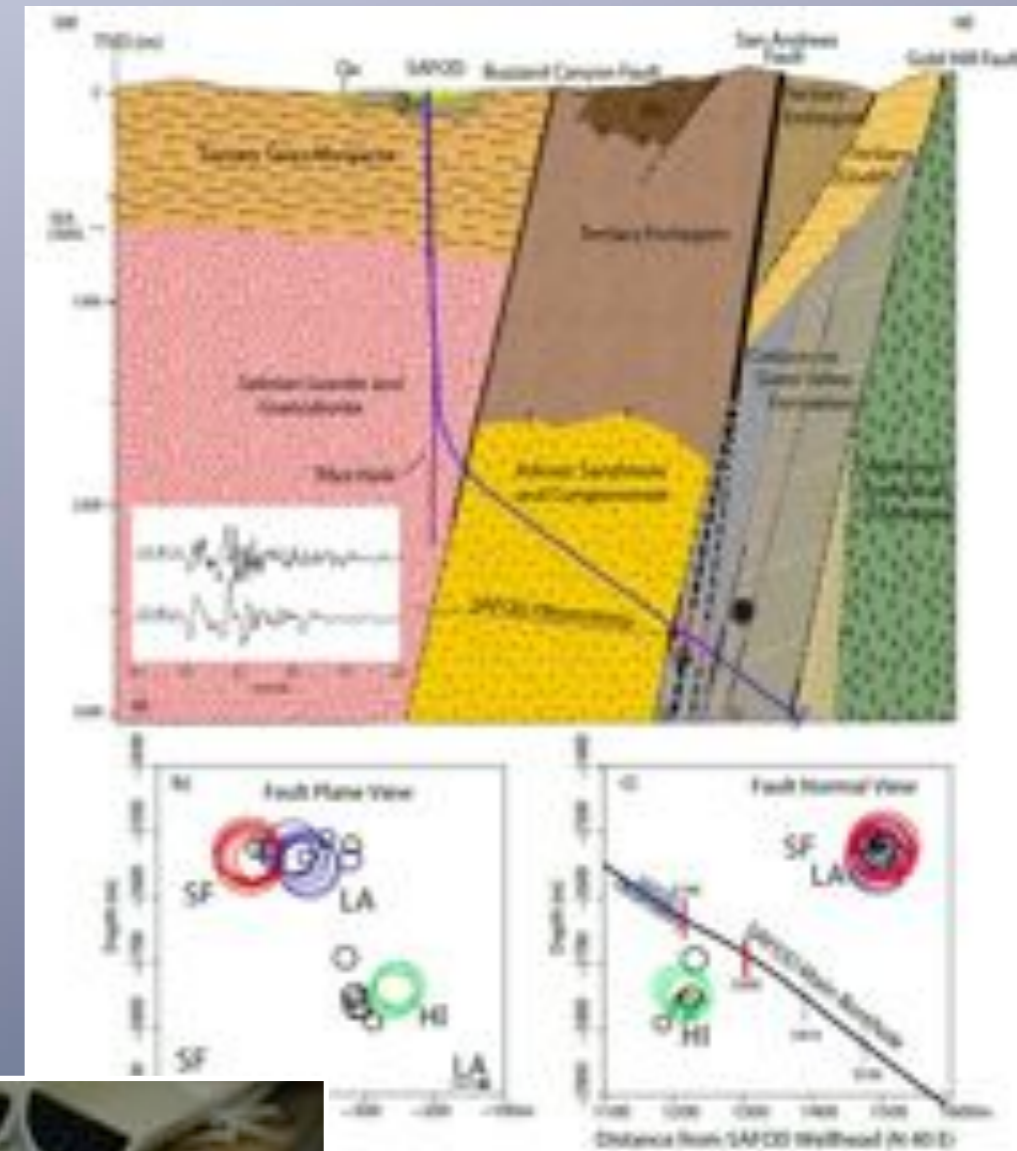
Weather: 100



# SAFOD

Zoback et al. (2009, EOS sub.)

- ▶ 11 research groups using 400+ Phase 3 core samples
- ▶ SAFOD Advisory Committee established by UNAVCO
- ▶ Observatory restoration plans in final development.
- ▶ Observatory was removed



Mitterpergher et al., 2009



# USArray





# USArray





# USArray

TA: 900 stations down, ~750 to go





# USArray

RefNet: 115 stations from multiple networks





# USArray

FA: 326 BB, 120 SP, 1700 active source; 15 ES+9 other expts





# USArray

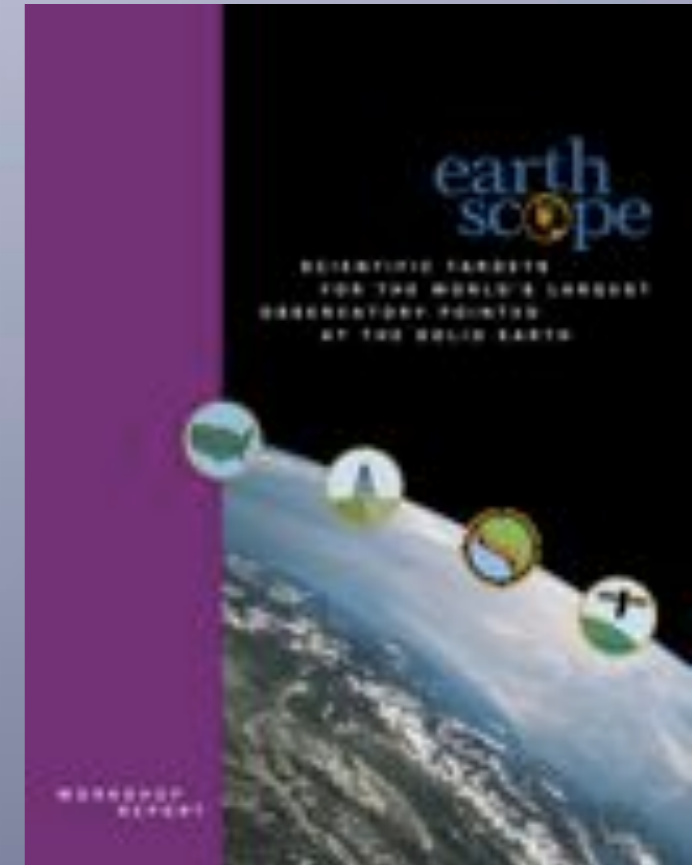
Magnetotellurics: 7 BB sites, 221 temp, ~50/year





# EarthScope Research

- ▶ Broad, integrated studies across the Earth sciences
  - ▶ Crustal/lithospheric structure
  - ▶ Active deformation of North America
  - ▶ Continental evolution through geologic time
  - ▶ Deep Earth structure and dynamics
  - ▶ Earthquakes, faults, and lithospheric rheology
  - ▶ Magmas and volatiles in crust and mantle
  - ▶ Topography and tectonics
  - ▶ Hydrosphere, cryosphere, atmosphere
- ▶ Using techniques from...
  - ▶ Geodesy, Seismology, Geology, Geodynamics, Potential fields, Geochronology, Rock Mechanics, etc.





# EarthScope Science Program

- ▶ EarthScope Science Program (2009 – 30% success rate)
- ▶ NSF budget for 2011 is 7% above 2010, but still in congressional committee
- ▶ In 2010 there were about 100 proposals for the 17 July 2010 deadline. Decision should be in January 2011.
- ▶ 2011 solicitation by 16 April 2011 with full proposal deadline of 16 July 2011



# Additional Opportunities

([www.nsf.gov](http://www.nsf.gov))

- ▶ Geophysics: two solicitations per year (Nov-Dec, May-June). Next submission 5 Nov. – 5 Dec. 2010.
- ▶ Continental Dynamics: one solicitation in November. Next deadline 15 November 2010.
- ▶ Tectonics: two solicitations per year (Dec-Jan, Jun-Jul). Next submission 6 December – 6 January 2011.
- ▶ Petrology and Geochemistry: two solicitations per year (Dec-Jan, Jun-Jul). Next submission 6 December – 6 January 2011.
- ▶ GeoPRISMS (Geodynamic Processes at Rifting and Subducting Margins): deadline 1 July 2011.