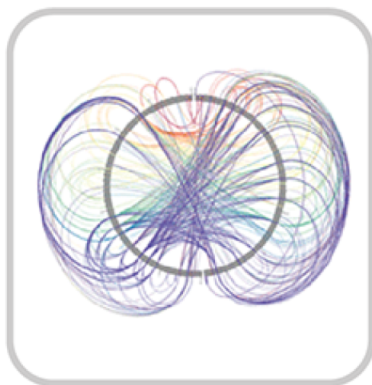

Visualizing EarthScope Science

for a public audience





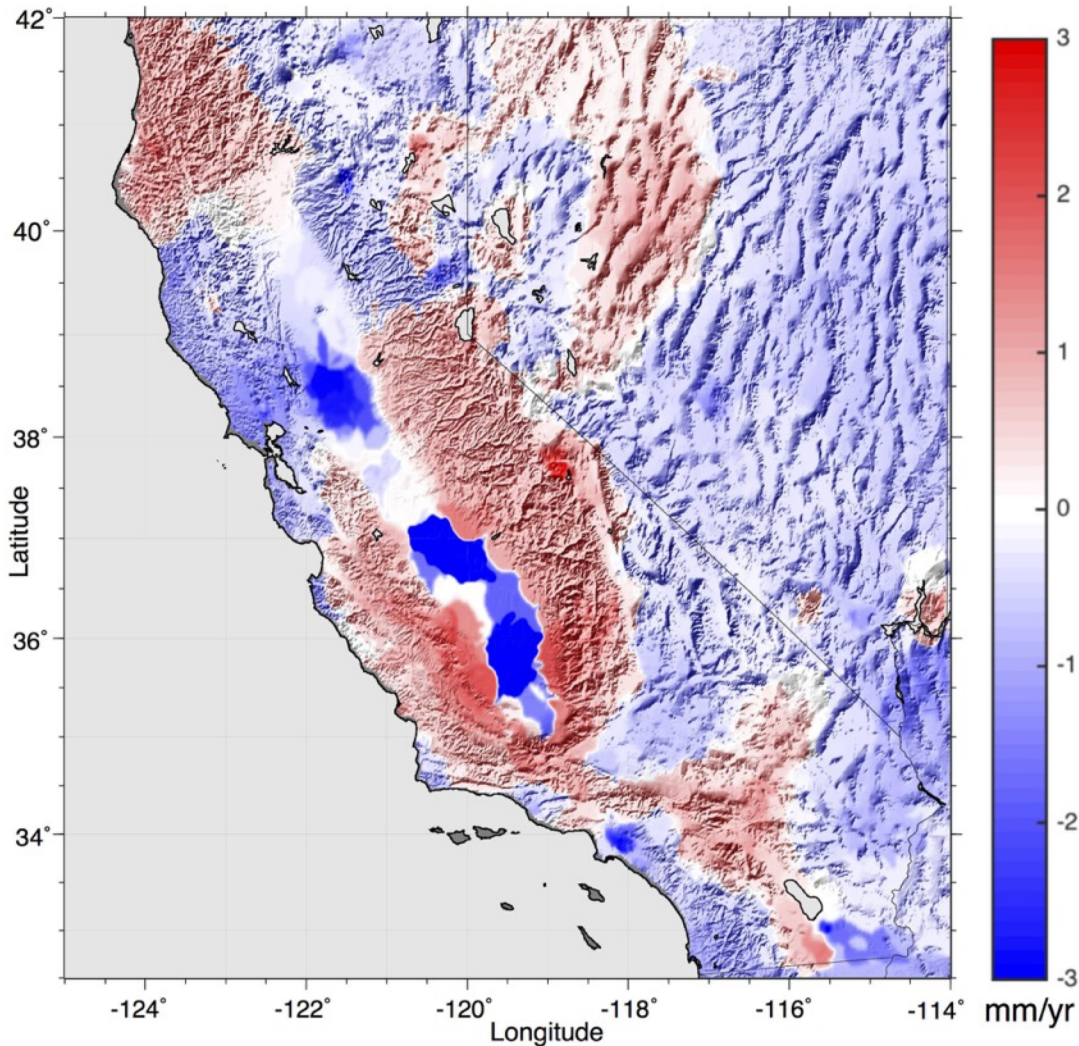
PHOTOGRAPHY







ILLUSTRATION



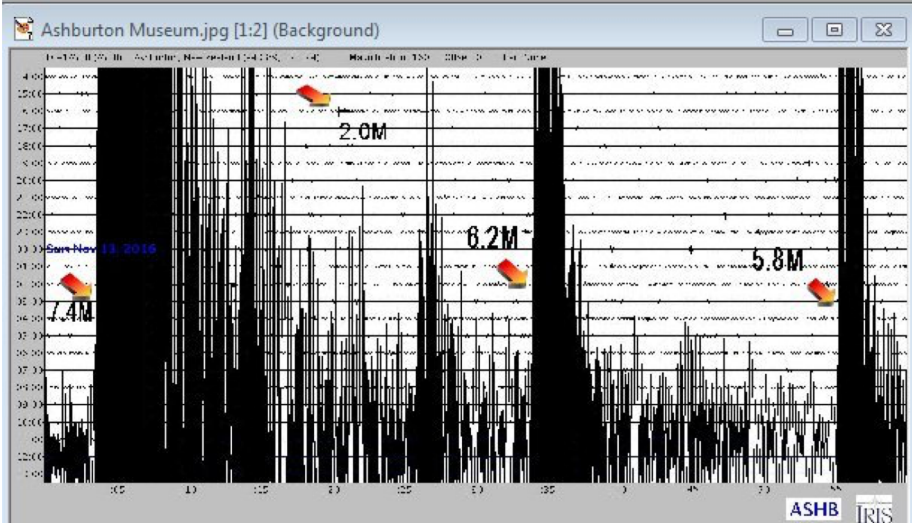
Earthquake ghosts and mountain uplift

Map of California and Nevada with result of applying the GPS Imaging algorithm (Hammond et al., 2016) to the vertical MIDAS rates (Blewitt et al., 2016) superimposed on topography.

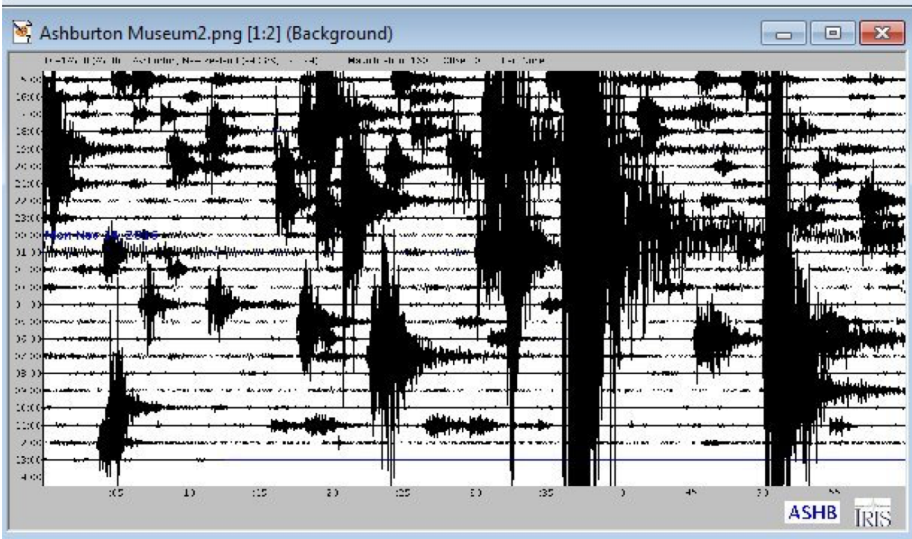
GPS data are from the NSF EarthScope Plate Boundary Observatory and other networks in the western United States.

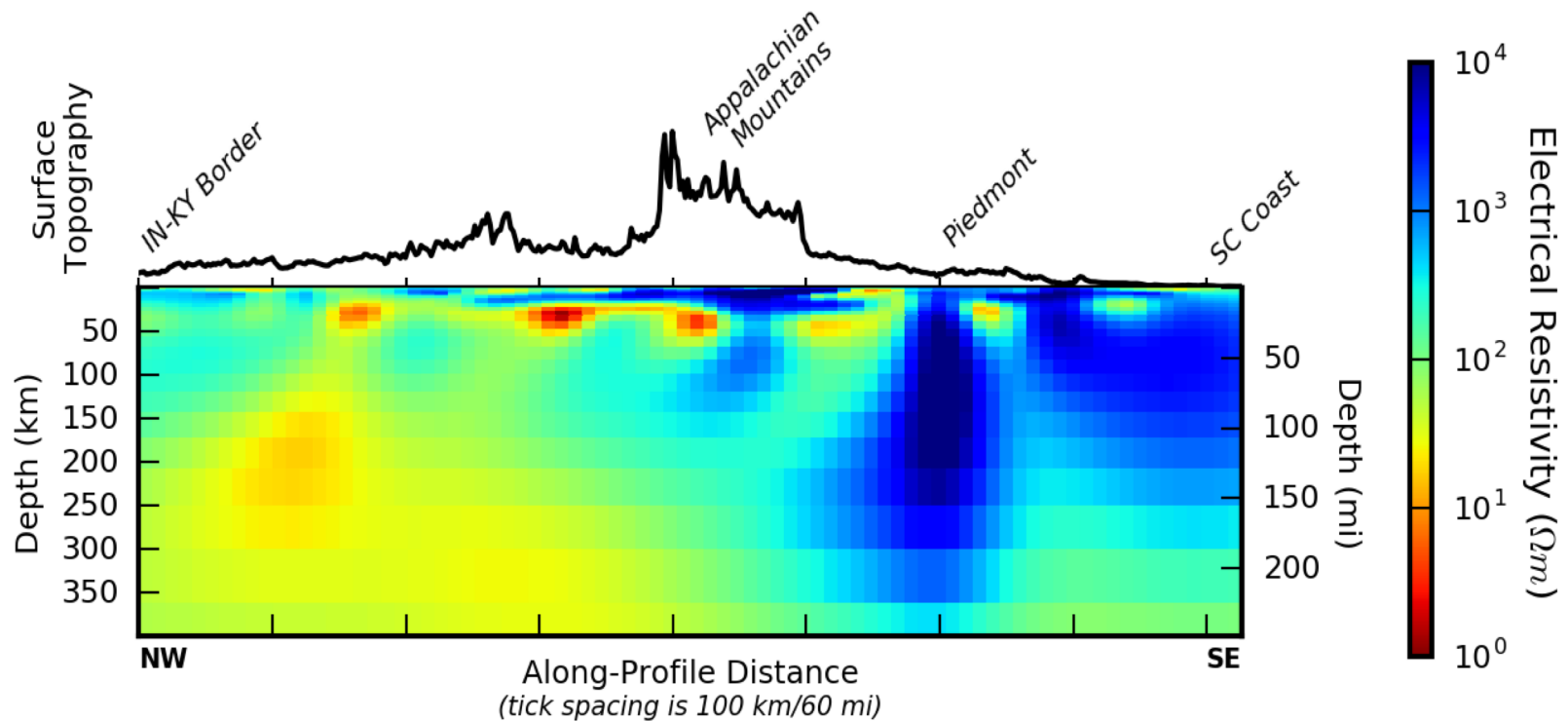
Color scale is in mm/yr, positive (red) upward, negative (blue) downward, saturated at color scale limits. Red area in north-central Nevada is the mantle relaxation signal of past earthquakes on the Central Nevada Seismic Belt that ruptured between 1915 and 1954.

Red between the Sierra Nevada crest and Central Valley of California shows active uplift of the range attributable to both tectonic forces and the loss of water load during drought conditions.



“A Busy Seismic Day in New Zealand, Nov. 13, 2016 ”





Using EarthScope magnetotelluric (MT) data from the southeastern United States, we found a highly anomalous electrically resistive region in the uppermost mantle beneath the Piedmont physiographic province. The northwestern edge of this unusual structure robustly corresponds to the sharp southeastern edge of the modern Appalachian Mountains, as shown here. We interpret this mantle anomaly as having played a significant role in the rejuvenation and persistence of modern Appalachian topography. (From Murphy & Egbert, *Earth Planetary Science Letters*, 2017.)

MOTION

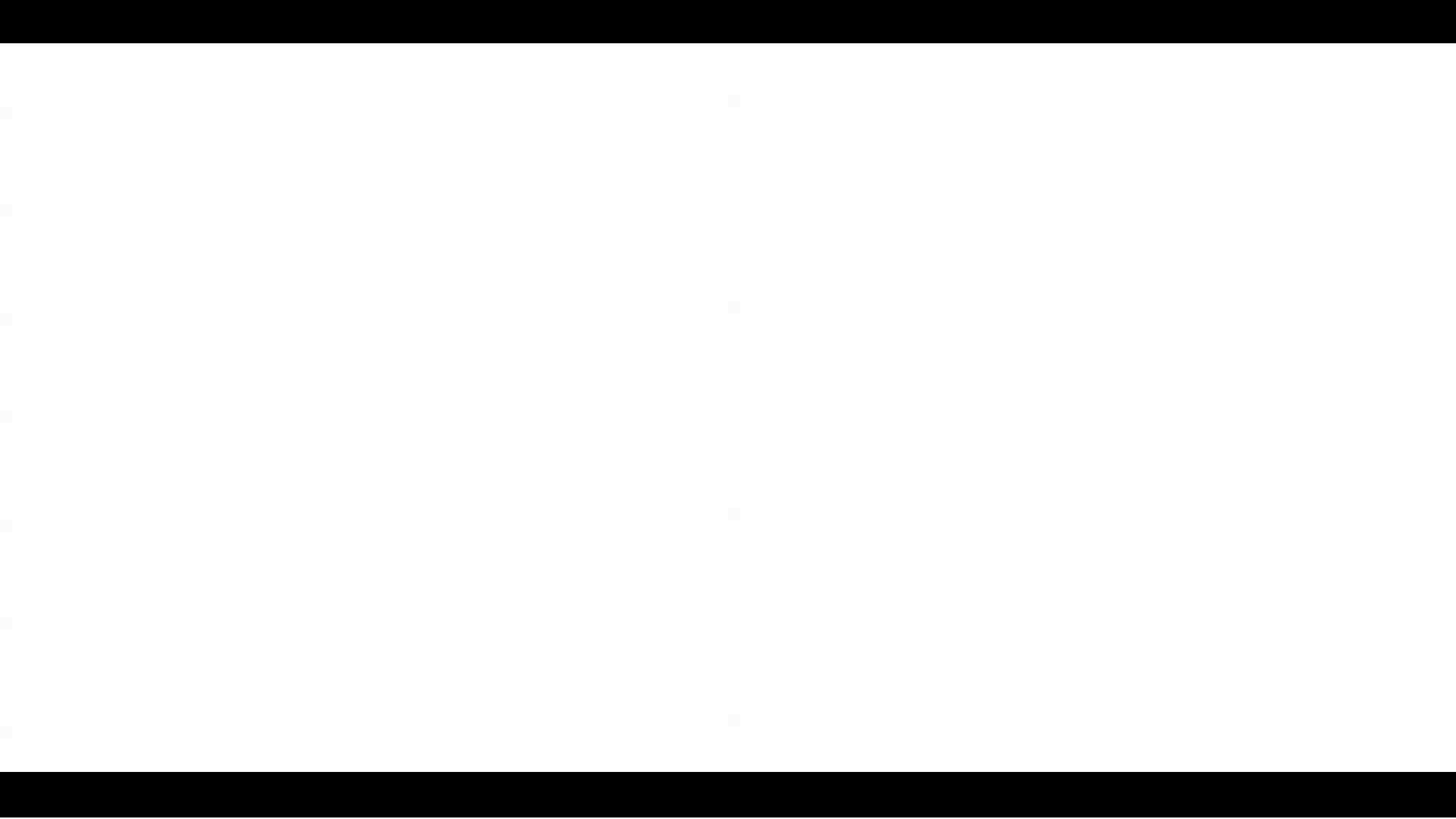
The background of the slide is a composite image. The top portion shows a curved horizon of the Earth with green land and blue oceans. Along the horizon, several red, conical shapes represent volcanoes, with small orange and yellow flames or smoke rising from them. Below the Earth's surface, the image transitions into a cross-section of the Earth's interior. This section is composed of concentric, semi-circular bands of color. The outermost band is a bright yellow-green. Below this is a band of cyan and light blue. The bottom-most band is a solid, vibrant orange. The overall effect is a visual representation of the 'Ring of Fire' and the internal structure of the Earth.

A Journey Around of the Ring of Fire with Seismic Tomography

Created by Scott Burdick



“Receiver-function wavefield in the contiguous United States”
Chengping Chai, Pennsylvania State University



THANK YOU

