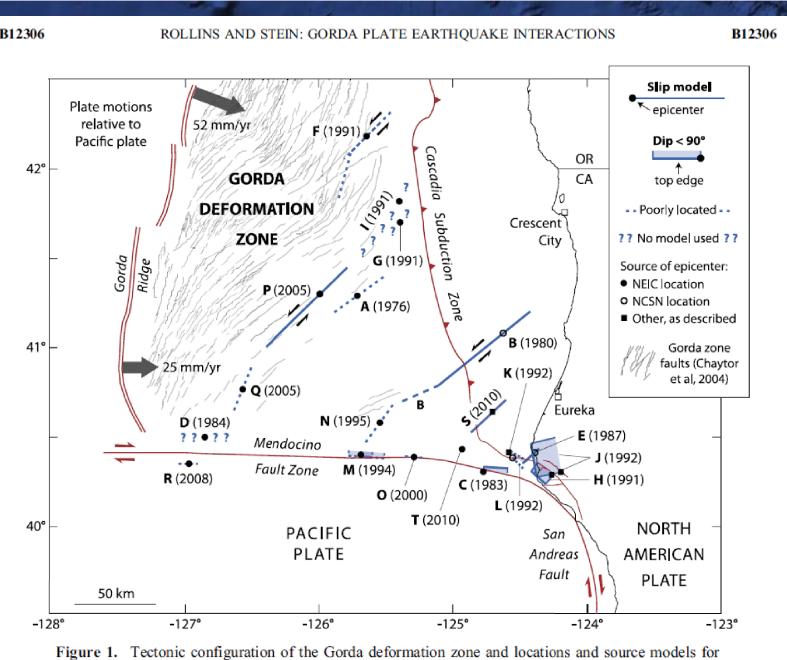
## **Earthquake Report:** 2016.12.08 M 6.5 Mendocino



1976–2010  $M \ge 5.9$  earthquakes. Letters designate chronological order of earthquakes (Table 1 and Appendix A). Plate motion vectors relative to the Pacific Plate (gray arrows in main diagram) are from Wilson [1989], with Cande and Kent's [1995] timescale correction.

Rollins and Stein, 2010

2016.12.08 /

M 6.5

Patton, 2016

Mendocino fault

**Pacific** 

plate

Dengler et al., 1995.

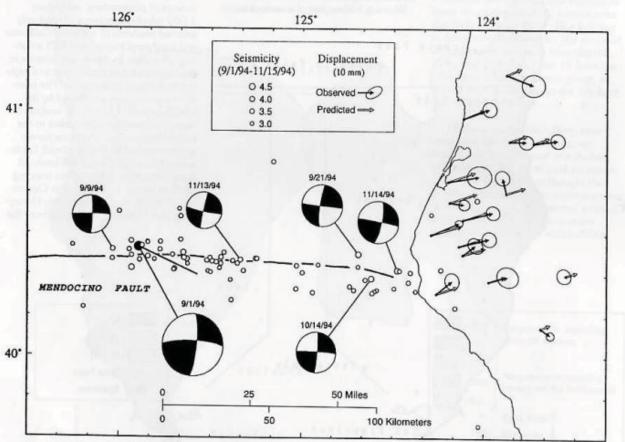
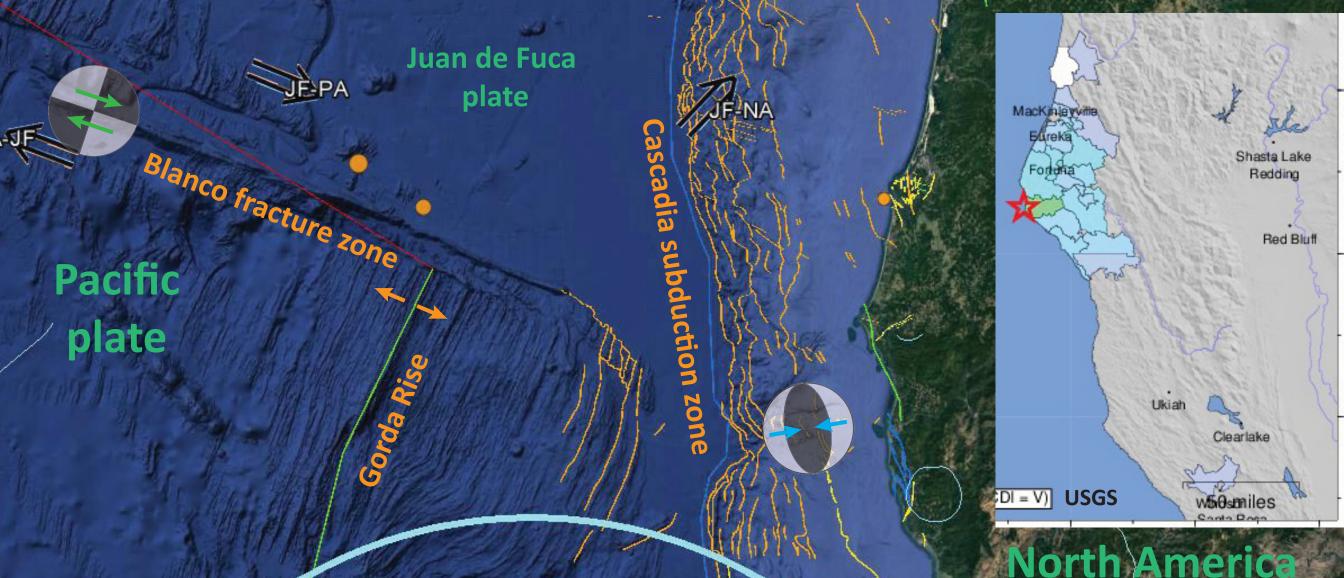


Figure 2. Seismicity from September 1, 1994 through November 15, 1994, and movements of the earth's crust produced by the Mendocino Fault earthquake. Focal mechanisms for the main shock and five of the largest aftershocks indicate fault strikes from 91 to 102 degrees, consistent with the strike of the Mendocino Fault. Solid arrows show the change in station position between the pre- and post-earthquake surveys. The ellipses represent the 95 percent confidence interval. The open arrows are the predicted displacements produced by the best-fitting geodetic fault model.



Gorda

plate

Strike-Slip Fault

INTENSITY

Shaking

Damage

Peak Acc

Peak Vel

Not felt

None

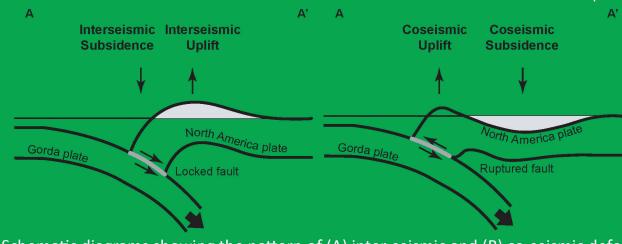
None

Light Moderate Strong Very Strong Severe Violent Extreme Light Moderate/heavy Moderate Very heavy Heavy 9.2-18 18-34 34-65 >124 65-124 8.1-16 16 - 31 31-60 60-116 >116 Peak Acc = Peak ground acceleration (g), Peak Vel = Peak ground velocity (cm/s) Cascadia subduction zone Nelson et al. (2004)

Thrust fault at plate boundary **CALIFORNIA** 

Plate configuration for the Cascadia subduction zone (CSZ). The Juan de Fuca and Gorda plates are subducting northeastwardly oblique beneath the North America plate at ~36 mm/yr in the Humboldt Bay region. Paleoseismic core sites (marine and terrestrial) are plotted as circles.

## **Vertical Motion: Coseismic vs. Interseismic**



Schematic diagrams showing the pattern of (A) inter-seismic and (B) co-seismic deformation associated with a subduction zone earthquake during an earthquake deformation cycle. Adapted from Plafker (1972) to reflect the spatial pattern of tectonic deformation during the earthquake cycle in Cascadia.

Jason R. Patton earthjay.com © 2016

