

December 20, 2022 Northern California (Mw 6.4)

10:34:24 UTC / 02:34:24 at epicenter

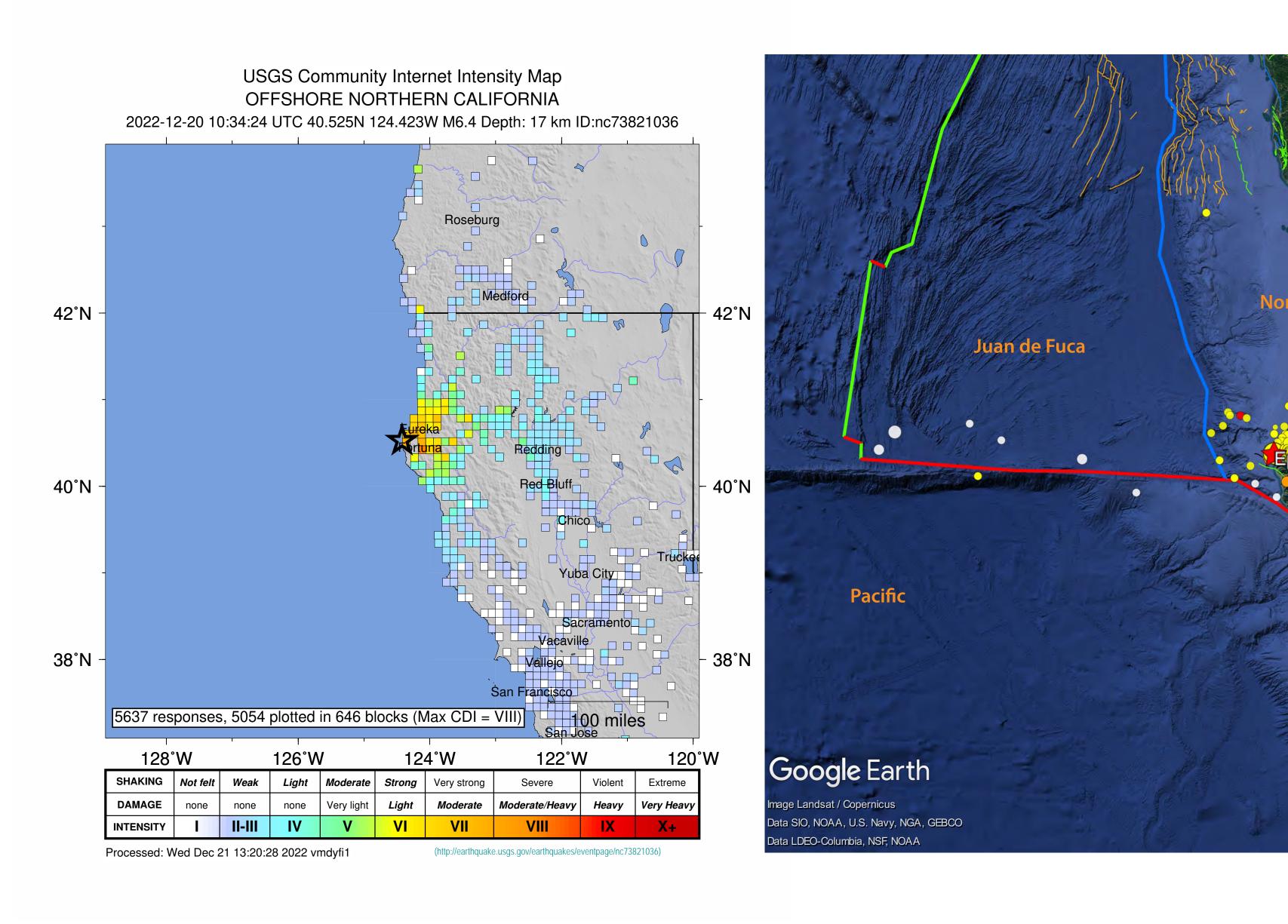
University of Kentucky



Kentucky Seismic and Strong Motion Network

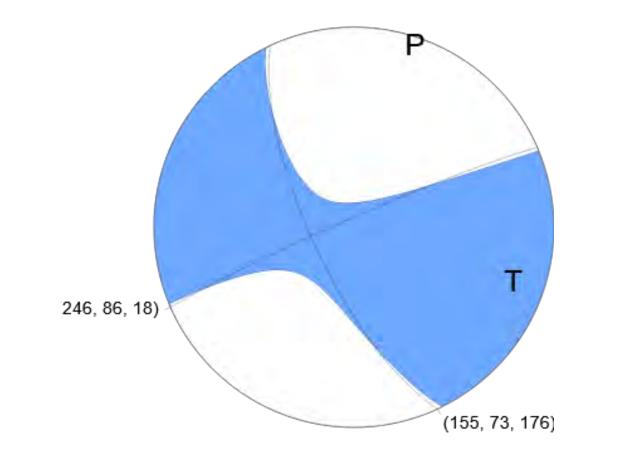
The December 20, 2022, moment magnitude 6.4 earthquake near Ferndale, California, occurred near the tectonically active Mendocino triple junction, where the Pacific, Juan de Fuca, and North American tectonic plates interact. Strike-slip faulting produced the earthquake, which may have occurred within the subducting Juan de Fuca plate based on the calculated location. Extensive damage and injuries resulted from the earthquake, particularly in nearby Humboldt County.

Plate Motion



Left: Tectonic plate boundaries, Quarternary faults (thin lines, colored by age of most recent rupture; warmer colors are more recent), the Mw 6.4 epicenter (red star), and aftershocks within two days of the mainshock (colored circles: orange, past day; yellow, two days ago). Older earthquakes are shown as gray circles. Data courtesy of USGS.

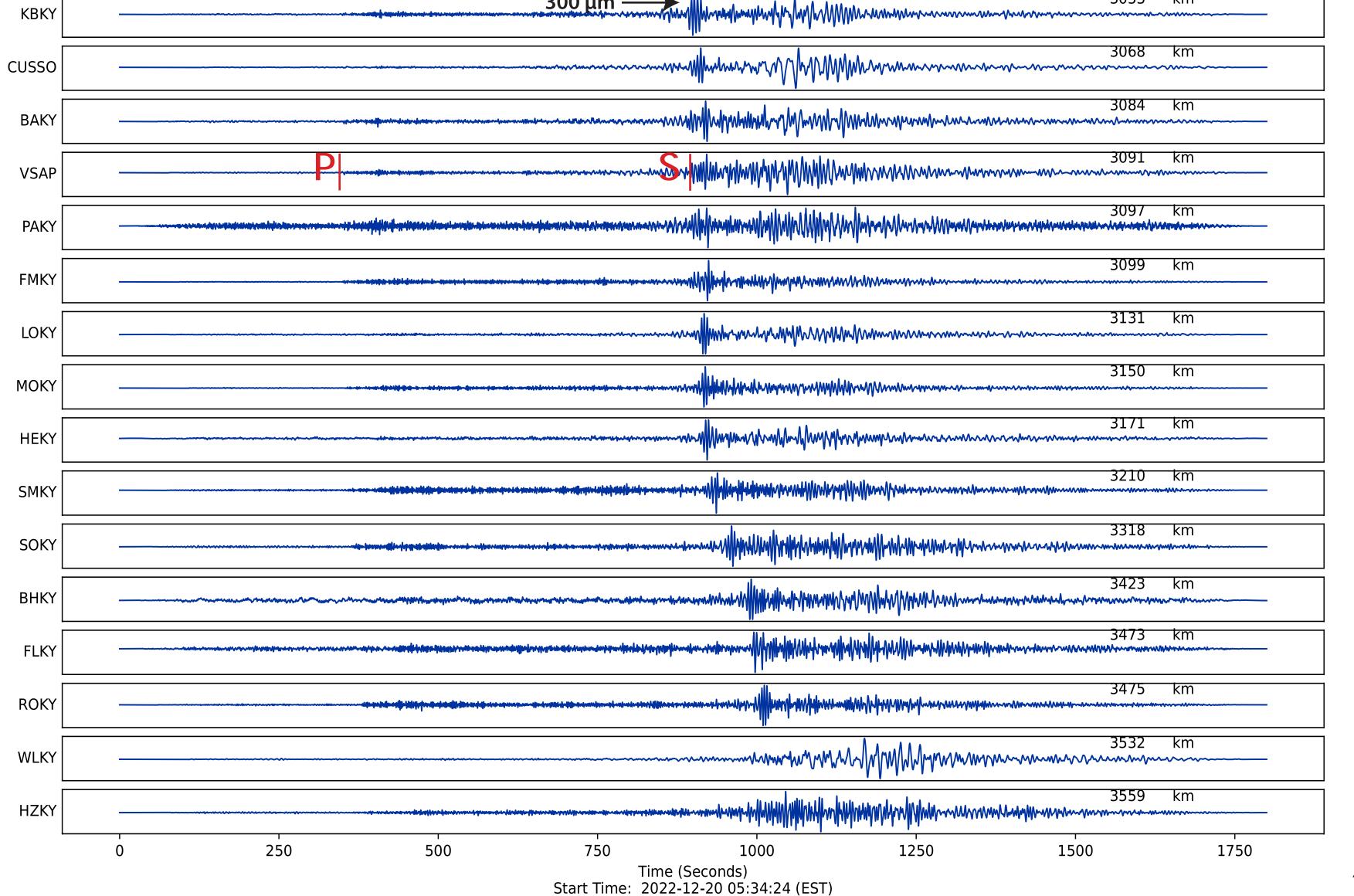
USGS Source Mechanism



This focal mechanism, derived from seismograms, shows that strike-slip faulting occurred on a steeply dipping fault plane striking WSW or SSE.

KSSMN Seismograms





"P" and "S" mark P- and S-wave arrival times, respectively, at station VSAP. Peak ground displacement recorded at KBKY (in the Kentucky Bend) is labeled. Some differences in waveform appearances are due to the different types of instruments operated by the KSSMN.

Legend Weak Motion Station (velocity sensor) **Strong Motion Station** (acceleration sensor) Weak & Strong Motion Station (velocity & acceleration sensors) Vertical Seismic Array (multiple down-hole sensors) ROKY BHKY **WLKY** HEKY MOKY **ŠMKY** SOKY LOKY HZKŸ PAKY **FMKY KSSMN Seismic Stations**

Stations with seismograms are labeled by name.