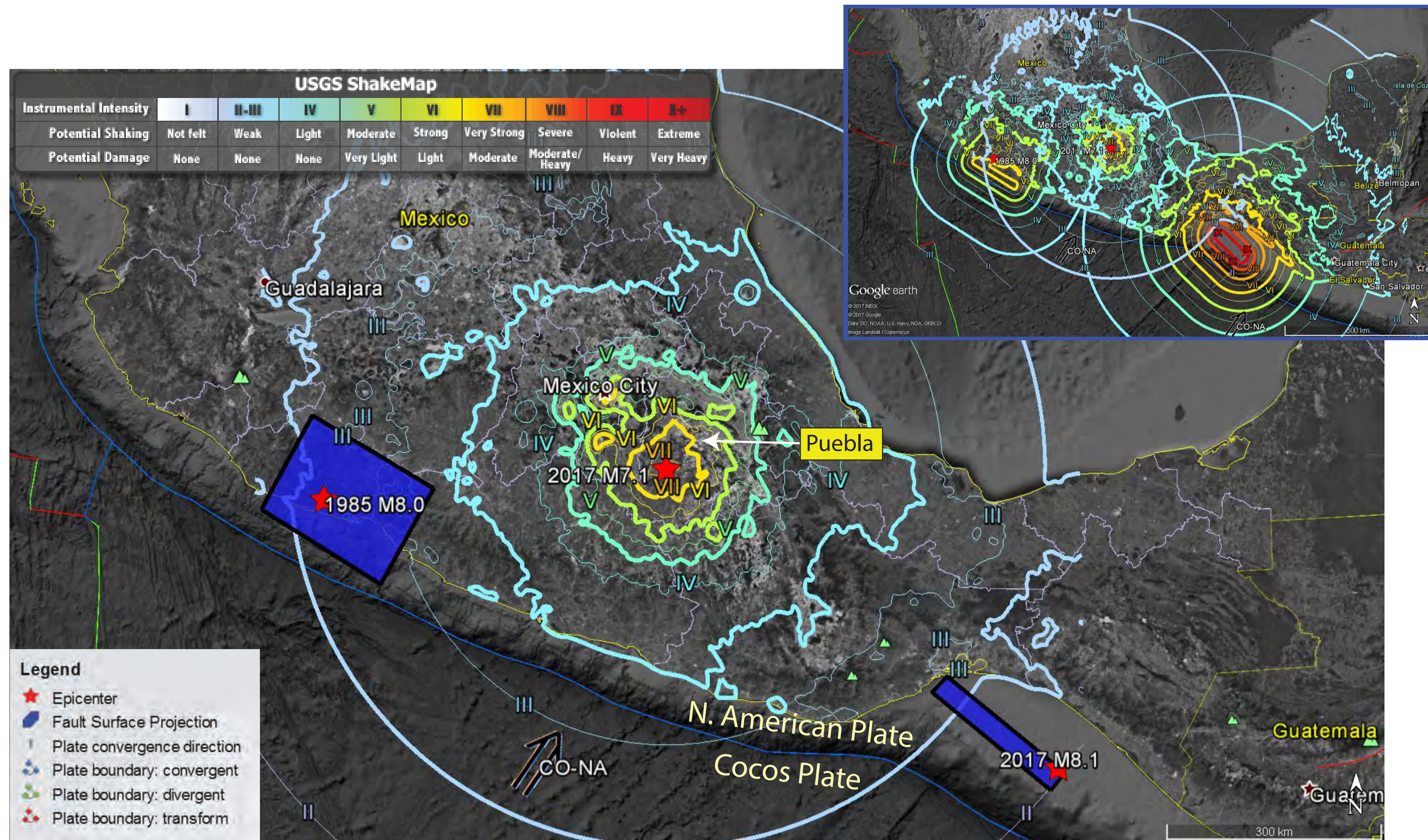
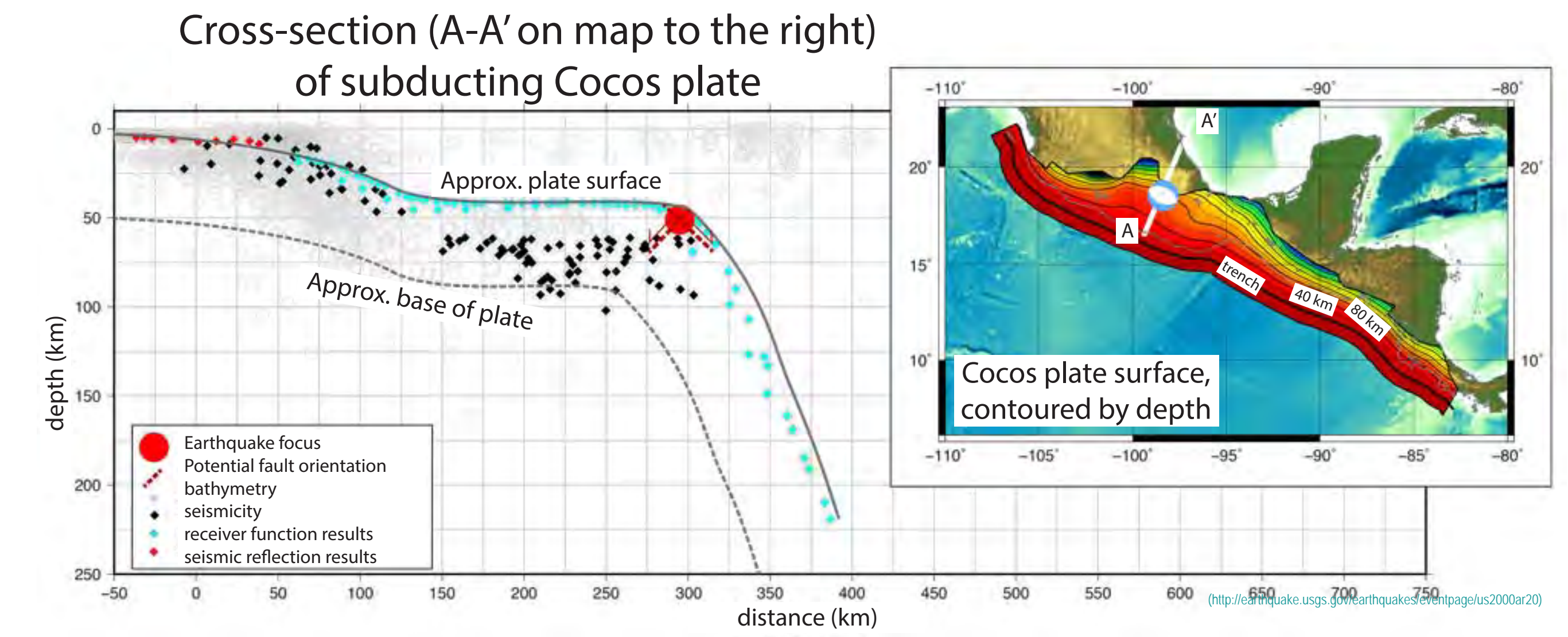


University of Kentucky Kentucky Seismic and Strong Motion Network

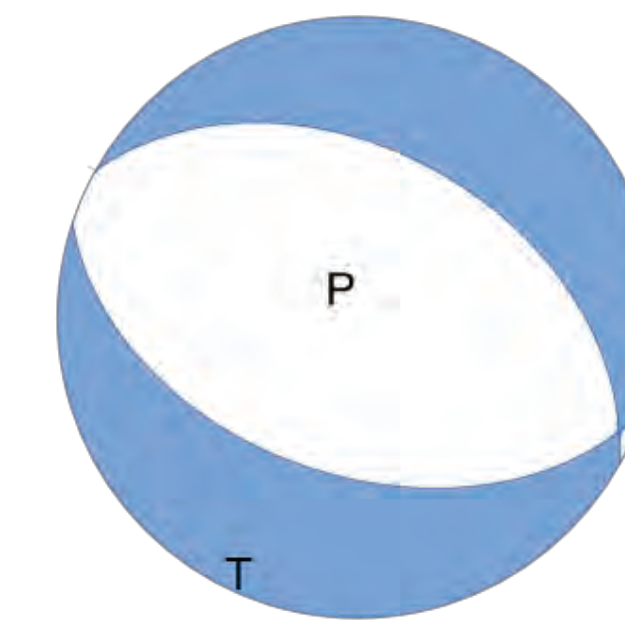


The Cocos (subducting) and North American (over-riding) tectonic plates converge in a northeast-southwest direction. The Sept. 19, 2017 earthquake occurred as a result of normal faulting at the top of the Cocos plate, and it bends and descends beneath North America (cross section, below).



Very strong shaking was experienced (see modeled intensity contours, above, and Felt Reports, far right) in some of the same regions shaken by the devastating Sept. 19, 1985 magnitude 8.0 Michoacan earthquake (32 years ago, to the day) and by the magnitude 8.1 earthquake, which occurred on Sept. 8, 2017 (inset map, above). All three earthquakes were related to ongoing convergence between the Cocos and North American tectonic plates and both of the Sept. 2017 earthquakes occurred within the Cocos plate.

USGS Source Mechanism



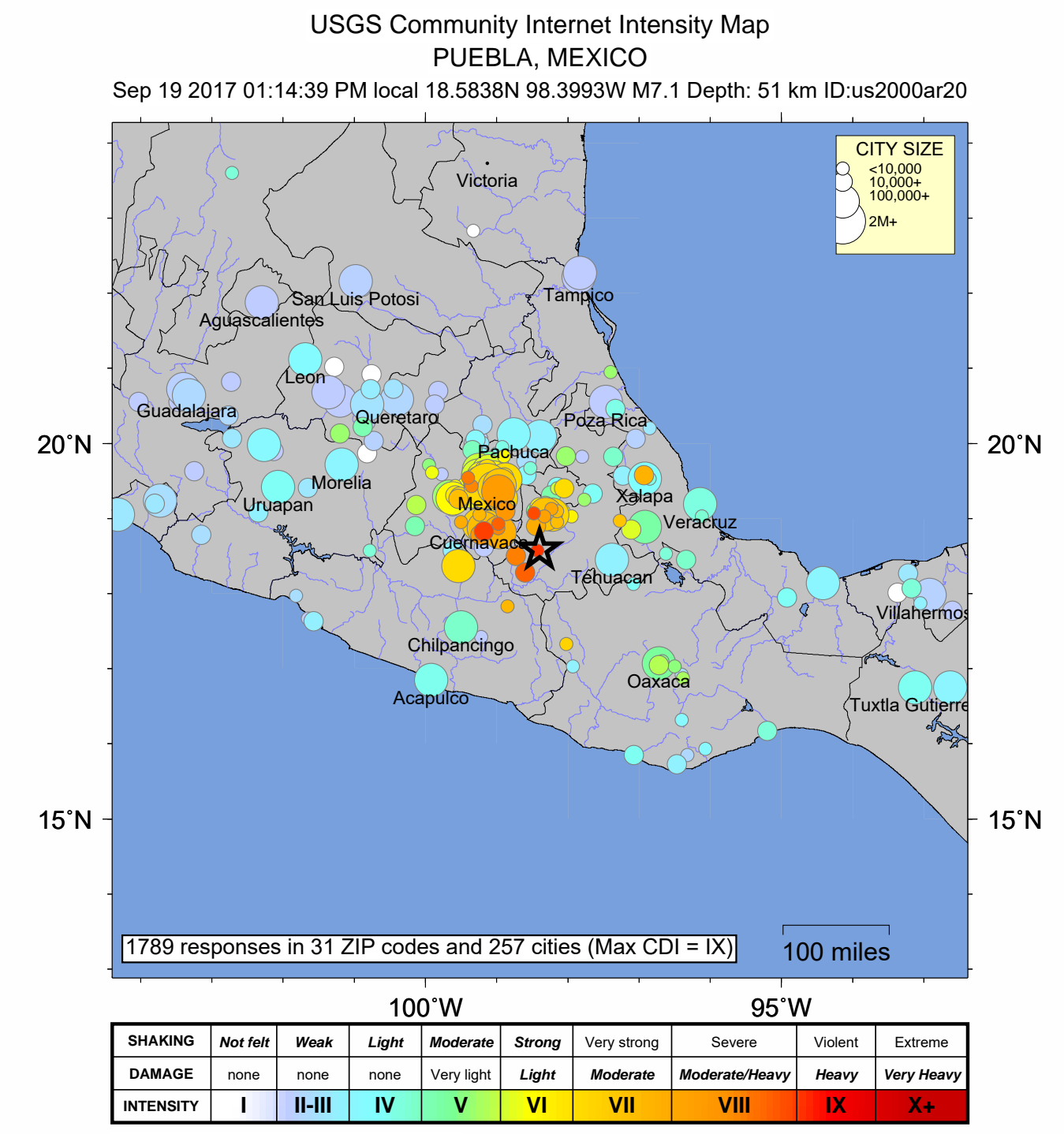
W-Phase Moment Tensor (M_{ww})
 Moment 6.381e+19 N-m
 Magnitude 7.1 Mw
 Depth 50.5 km
 Percent DC 100 %
 Half Duration 9.94 s
 Catalog US
 Data Source US
 Contributor US

Nodal Planes
 Plane Strike Dip Rake
 NP1 108° 47° -98°
 NP2 299° 44° -82°

Principal Axes
 Axis Value Plunge Azin
 T 2.153e+21 N-m 28° 49°
 N -0.165e+21 N-m 6° 316°
 P -1.988e+21 N-m 61° 215°

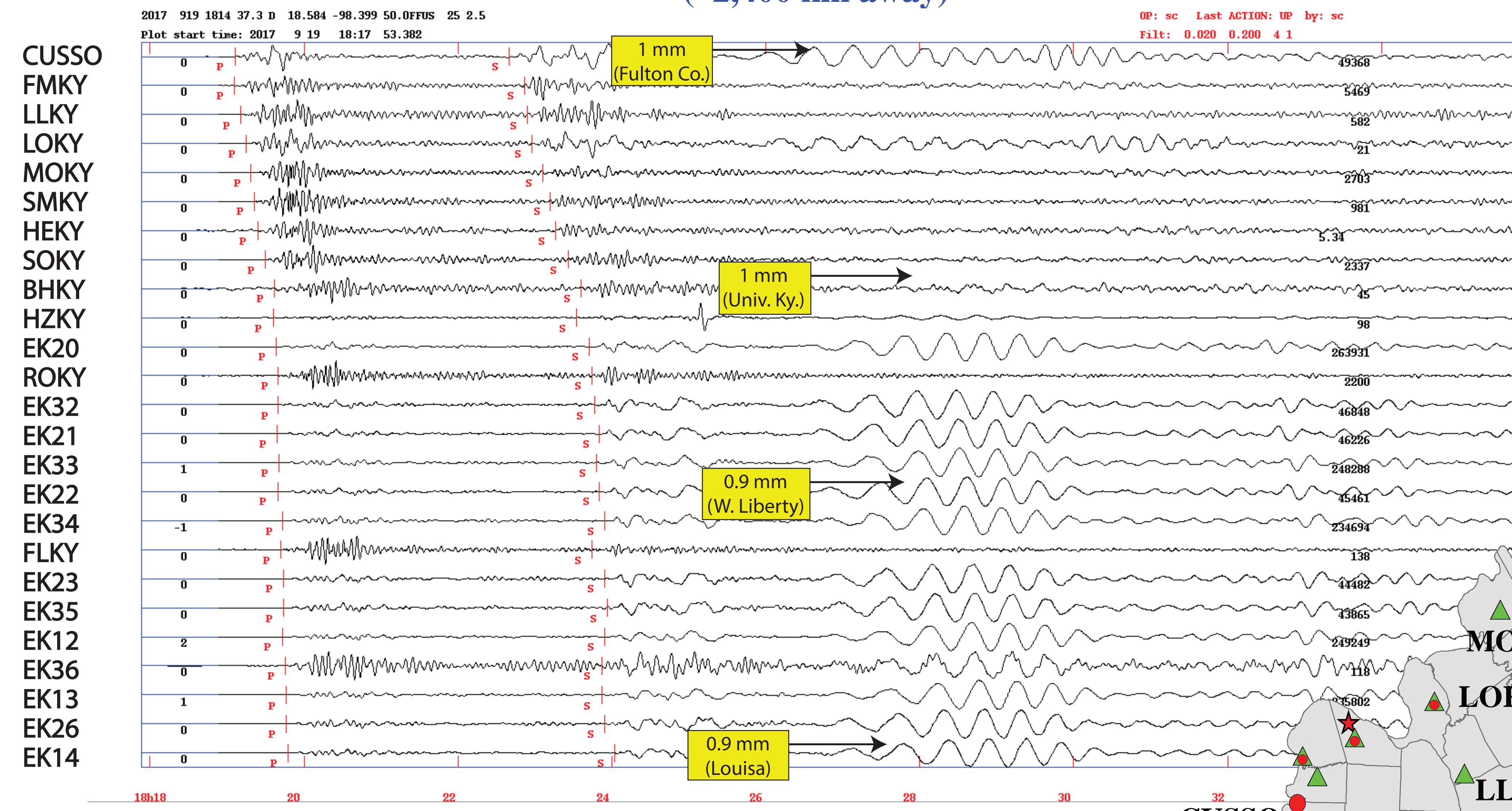
This mechanism indicates normal faulting on a deep, southwest- or northeast-dipping fault plane.

USGS Felt Reports

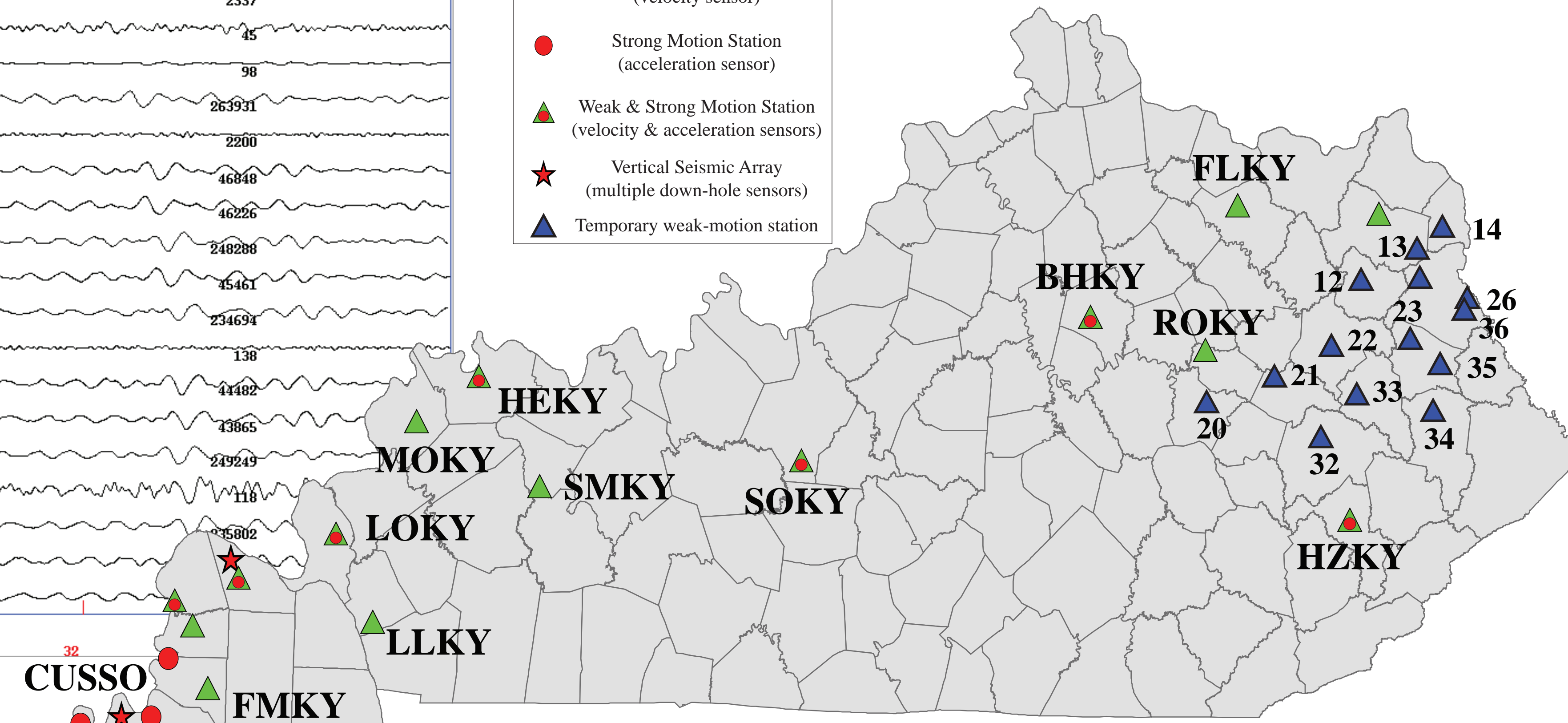
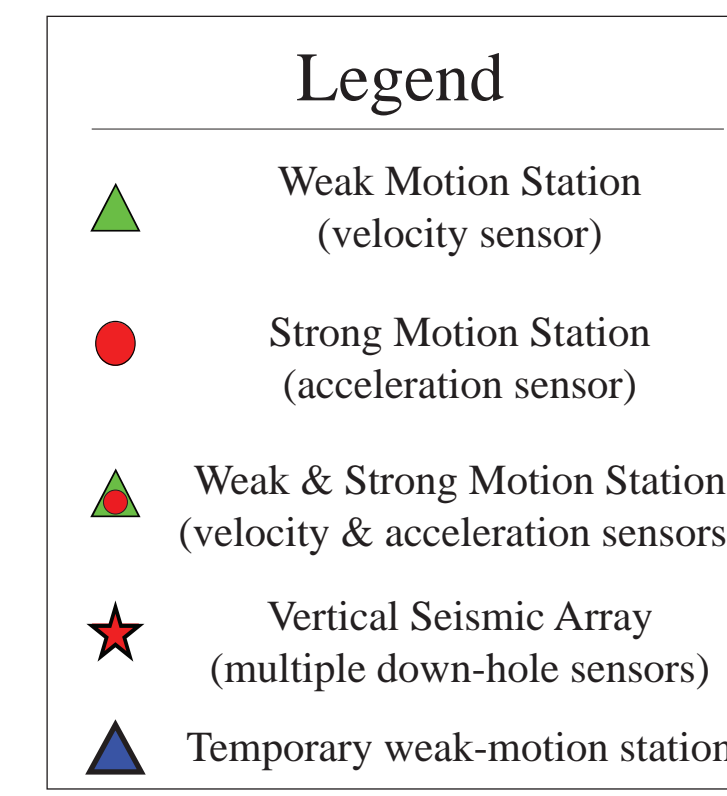


Heavy shaking was experienced and deaths and significant damage have been reported.

KSSMN Seismograms (~2,400 km away)



"P" and "S" mark arrival times of primary and secondary waves across Kentucky. Up-and-down surface-wave displacements in mm are labeled at selected locations.



KSSMN Seismic Stations Stations with seismograms are labeled by name.