

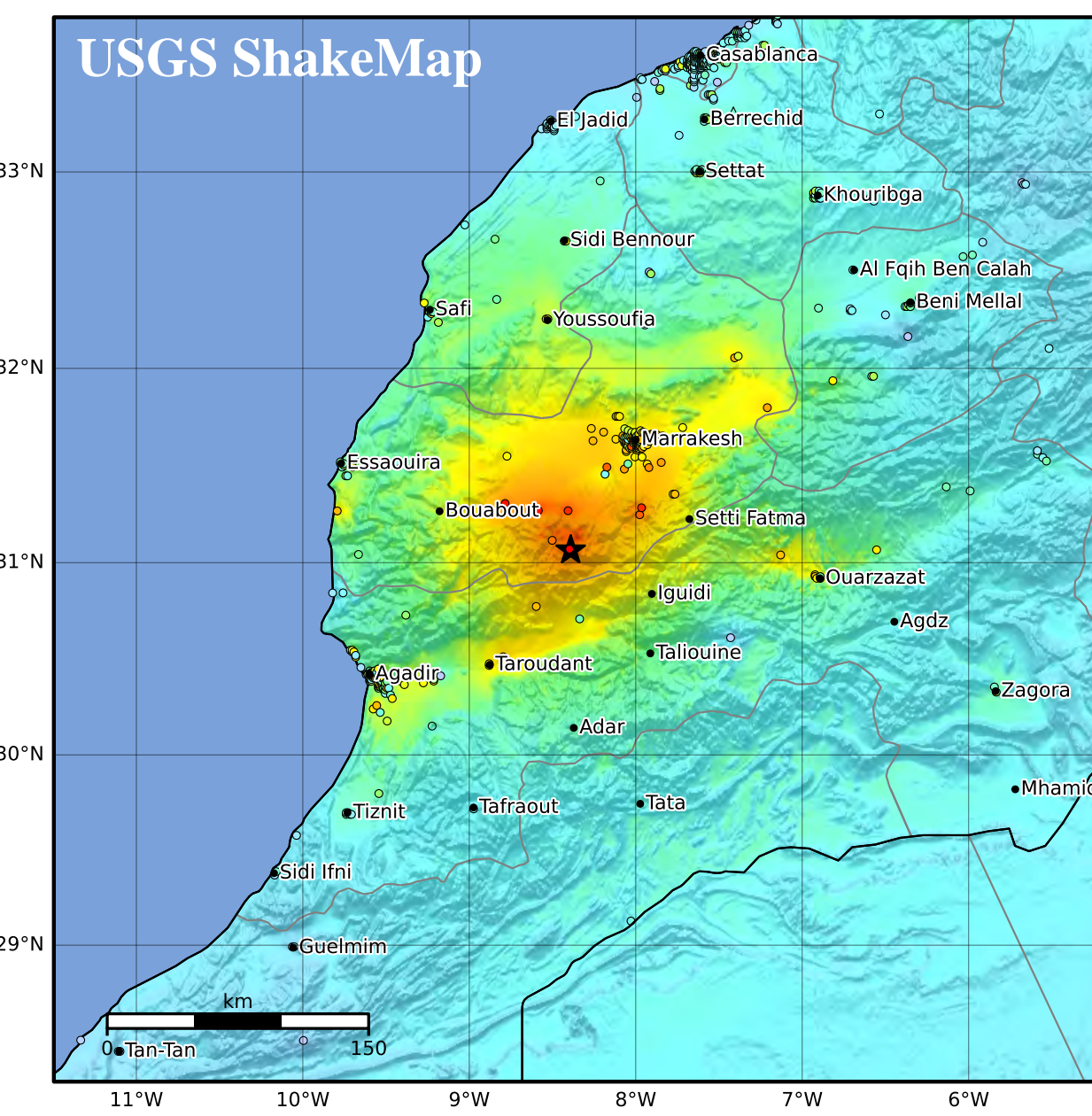
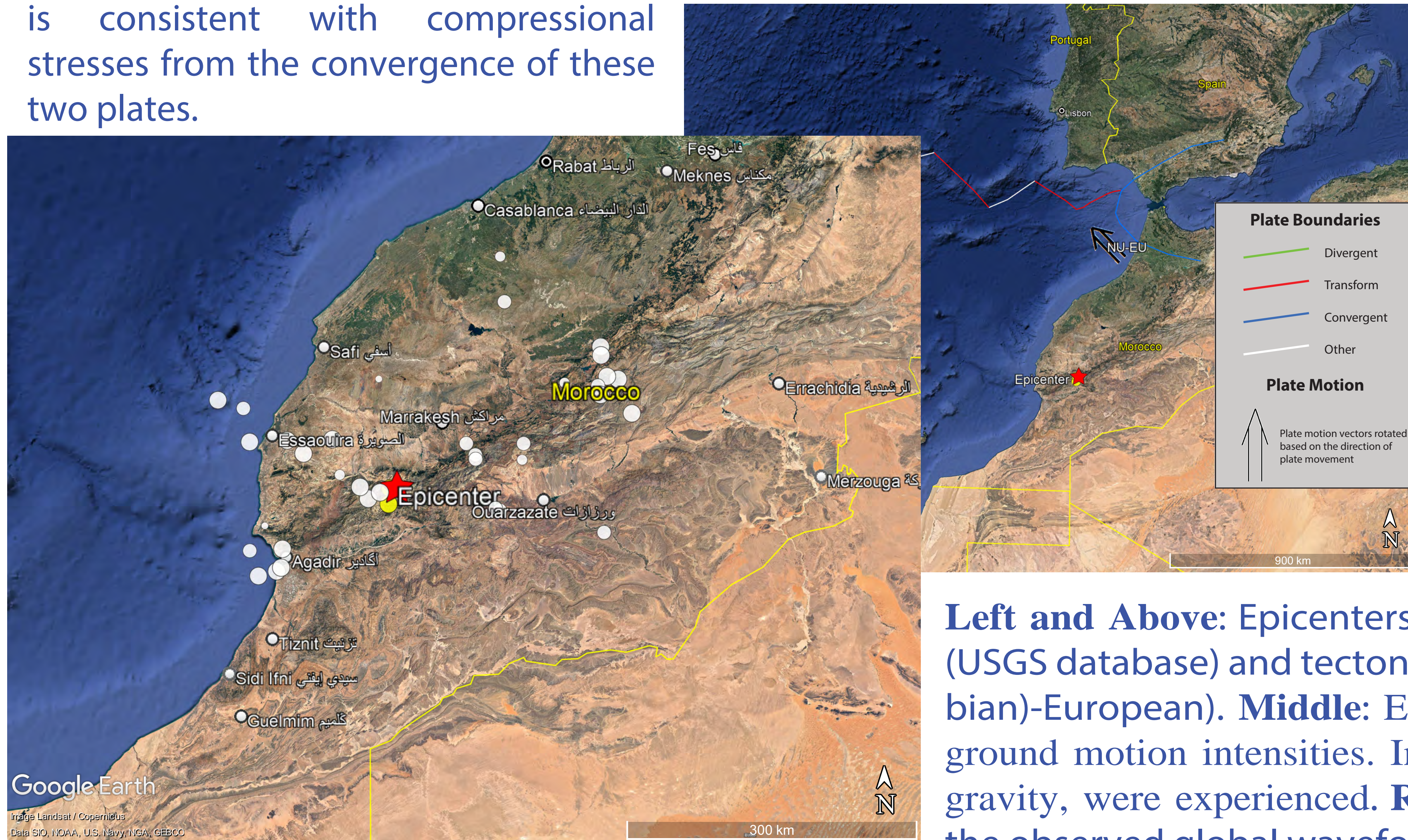
September 8, 2023 Morocco (Mw 6.8)

22:11:02 UTC / 23:11:02 at epicenter

University of Kentucky

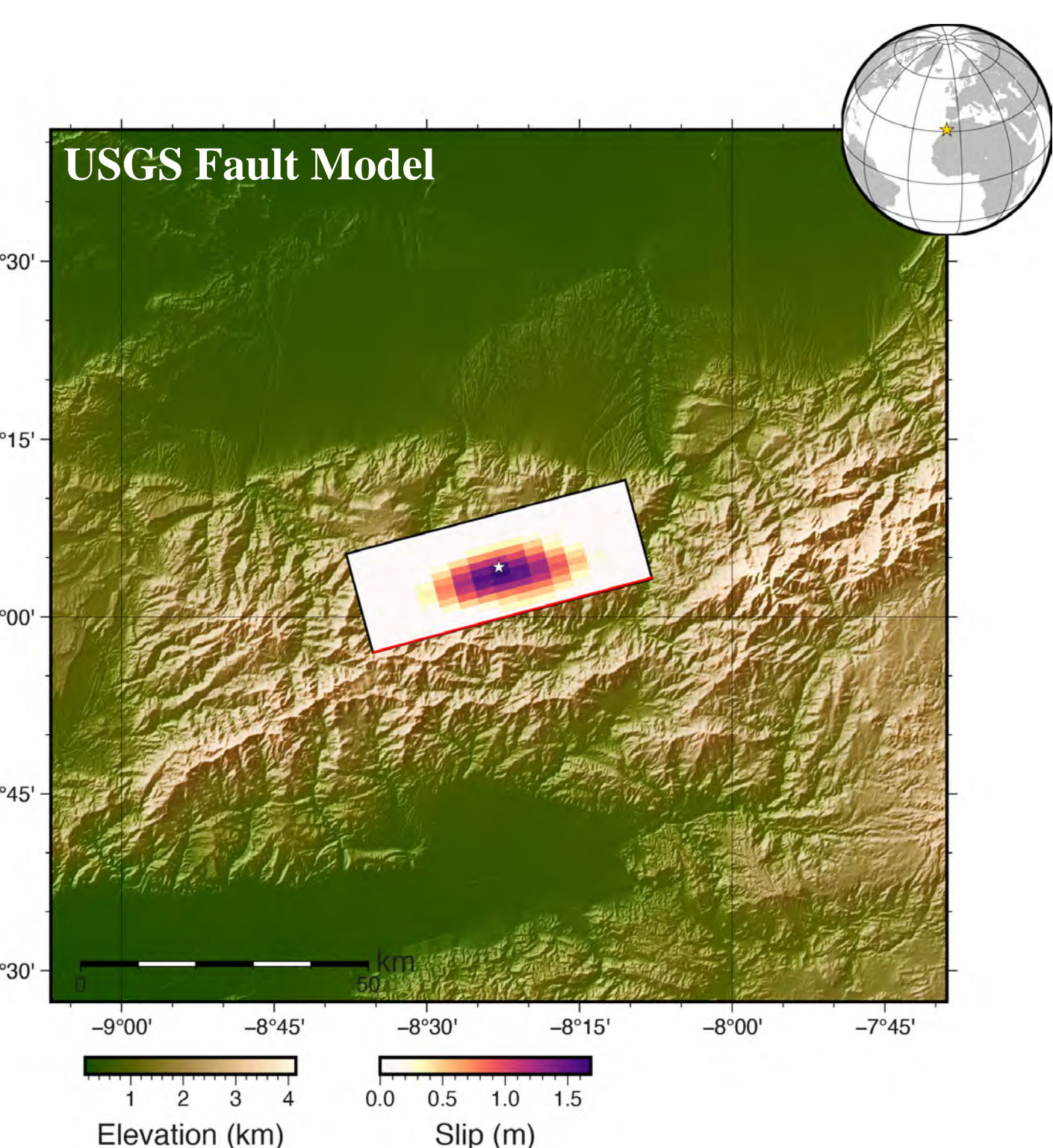
Kentucky Seismic and Strong Motion Network

The September 8, 2023, moment magnitude (Mw) 6.8 earthquake near Oukaïmedene, Morocco, resulted from oblique reverse faulting beneath the High Atlas Mountains. Severe damage and loss of life occurred near the epicenter due to insufficiently reinforced structures collapsing from the high intensity ground shaking. Although the earthquake was nearly 500 km from the nearest tectonic plate boundary, i.e., between African and Eurasian plates, its source mechanism is consistent with compressional stresses from the convergence of these two plates.



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy	>139
PGA(g)	<0.048	0.297	2.76	6.2	11.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.021	0.135	1.41	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

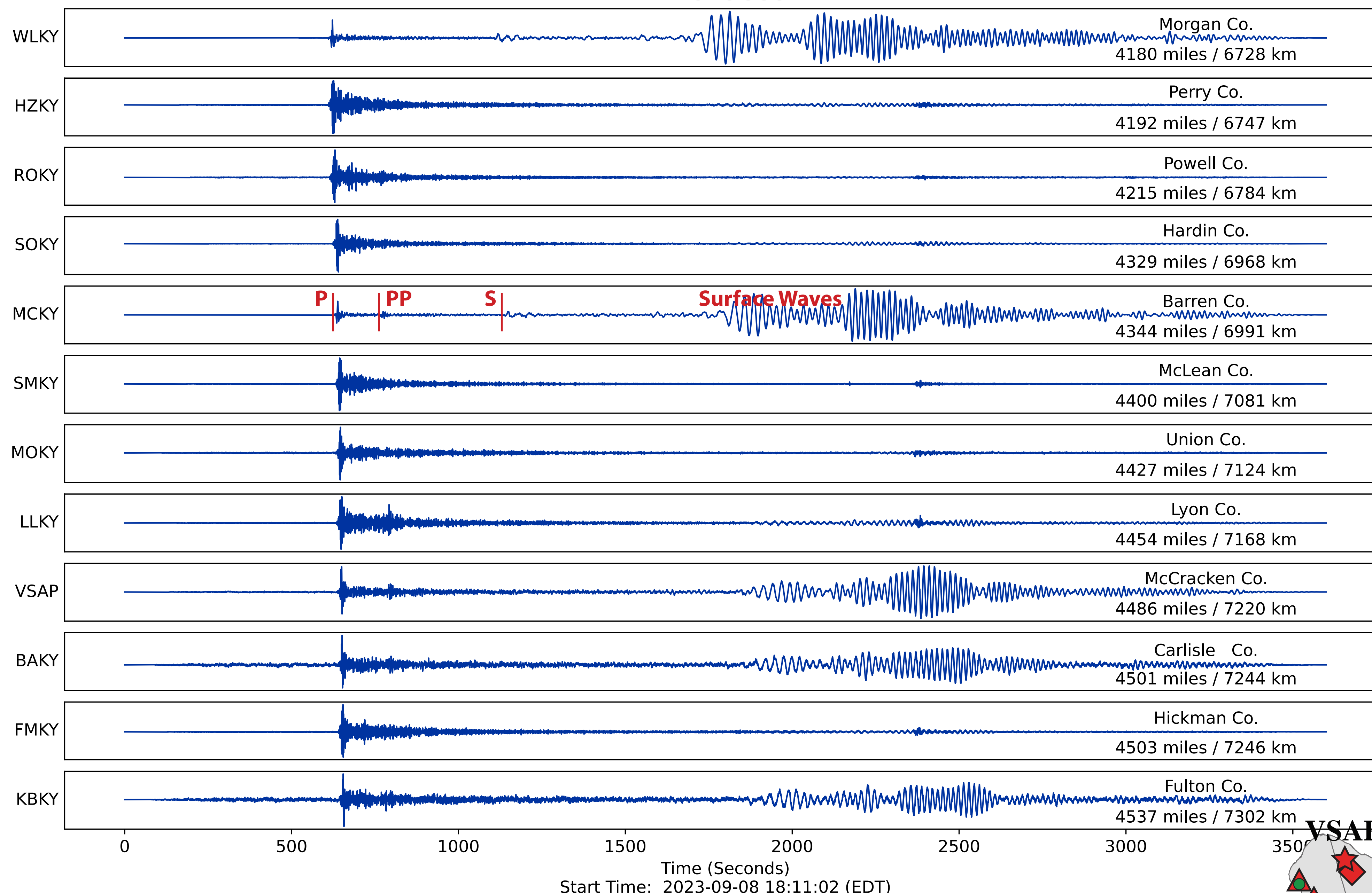
Scale based on Worden et al. (2012) Version 7. Processed 2023-09-10T01:43:12Z
▲ Seismic Instrument ● Reported Intensity ★ Epicenter



Left and Above: Epicenters of the Mw 6.8 earthquake with the past 50 years of earthquakes (USGS database) and tectonic plate boundaries with plate motion vectors (NU-EU=African (Nubian)-European). **Middle:** Expected (background) and observed (colored circles and triangles) ground motion intensities. Intensity IX, corresponding to accelerations greater than that due to gravity, were experienced. **Right:** North-northwest dipping fault and slip model that explains the observed global waveforms. Surface trace is the red line; warmer, darker colors on the gridded slip model indicate increasing displacement in the subsurface.

KSSMN Seismograms

Morocco



“P”, “PP” and “S” mark body-wave arrivals at monitoring station MCKY in Mammoth Cave National Park. “Surface Waves” labels the large-amplitude, later-arriving, long-period waves that travel across the earth’s surface and are seen on broadband stations.

Ray paths through the earth followed by the seismic waves labeled on the seismogram from MCKY.

