Kentucky Geological Survey

January 12, 2023 Burgin, Kentucky (ML 1.8)
08:07:27 UTC / 03:07:27 EST
University of Kentucky
Kentucky Seismic and Strong Motion Network

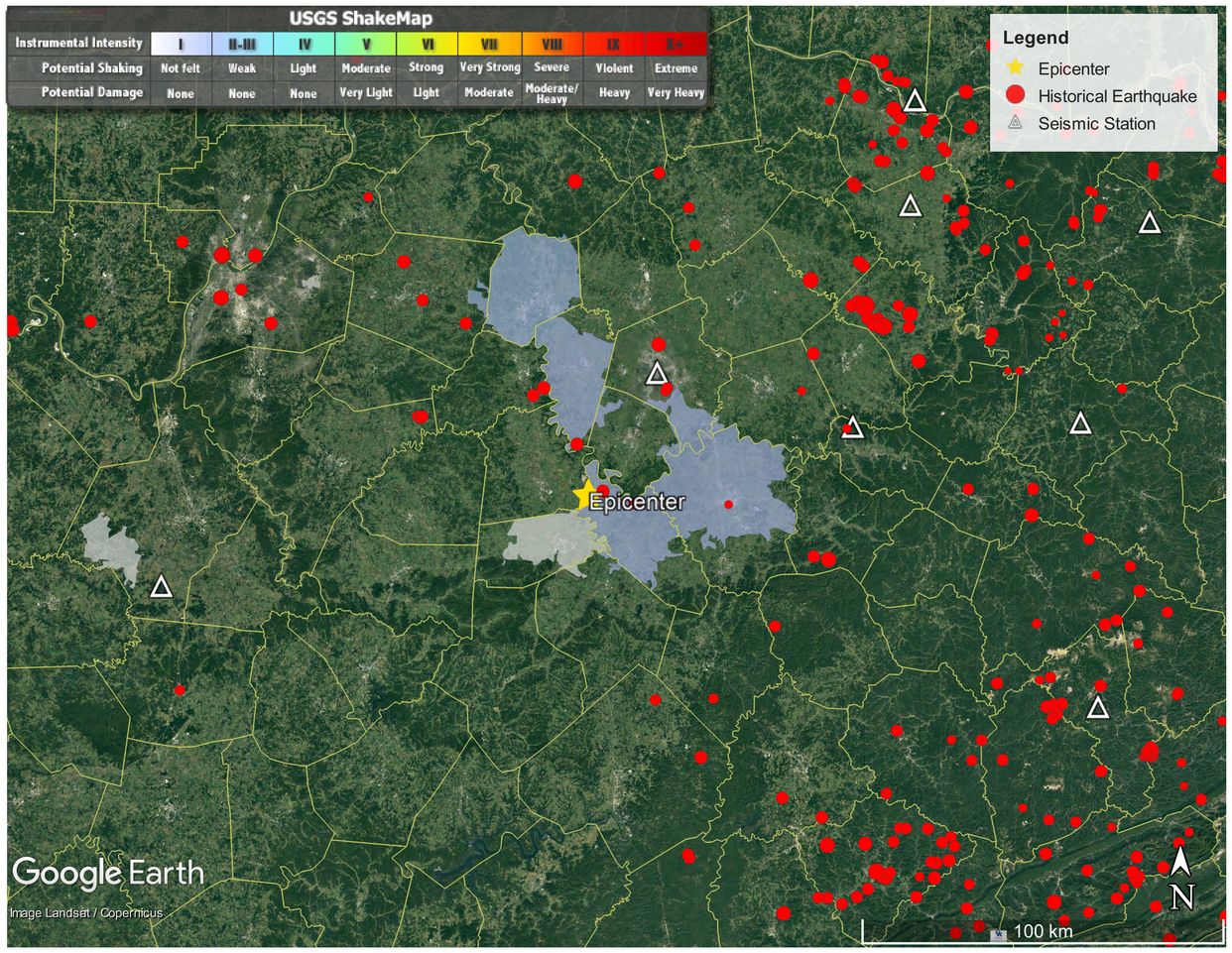
College of Arts and Sciences
Department of Earth and Environmental Sciences

The local magnitude (ML) 1.8 earthquake on January 12, 2023, near Burgin, Kentucky, occurred 33 km (20 miles) deep below the surface. Although earthquakes in this part of the state are rare, as the map to the right shows, the focal depths of the occasional events in this region commonly are deeper than surrounding regions.

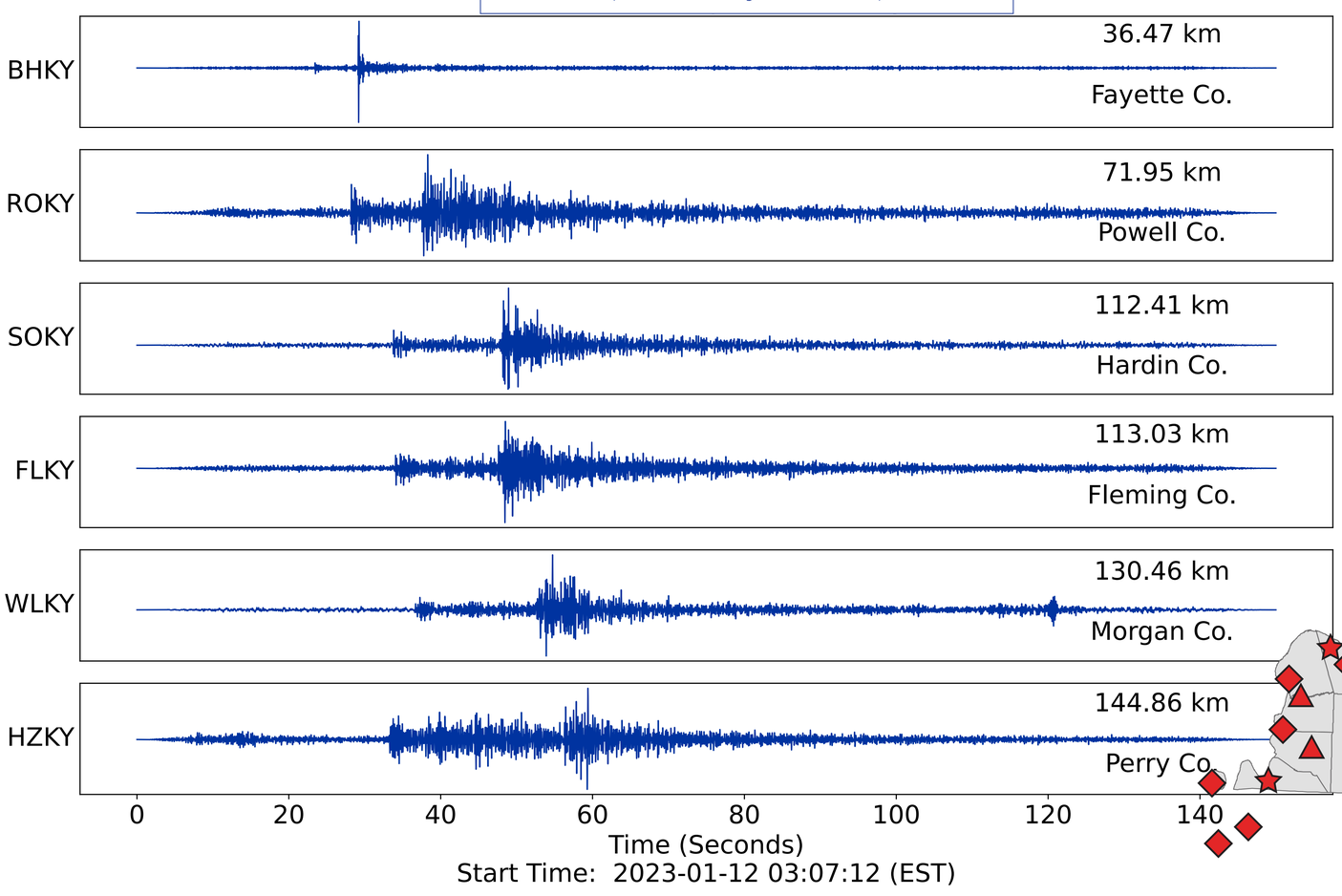
Because the event occurred during nighttime hours and because it was both small and deep, reports of it being felt were sparse: the strongest shaking experienced was Modified Mercalli Intensity II, which relates to weak shaking.

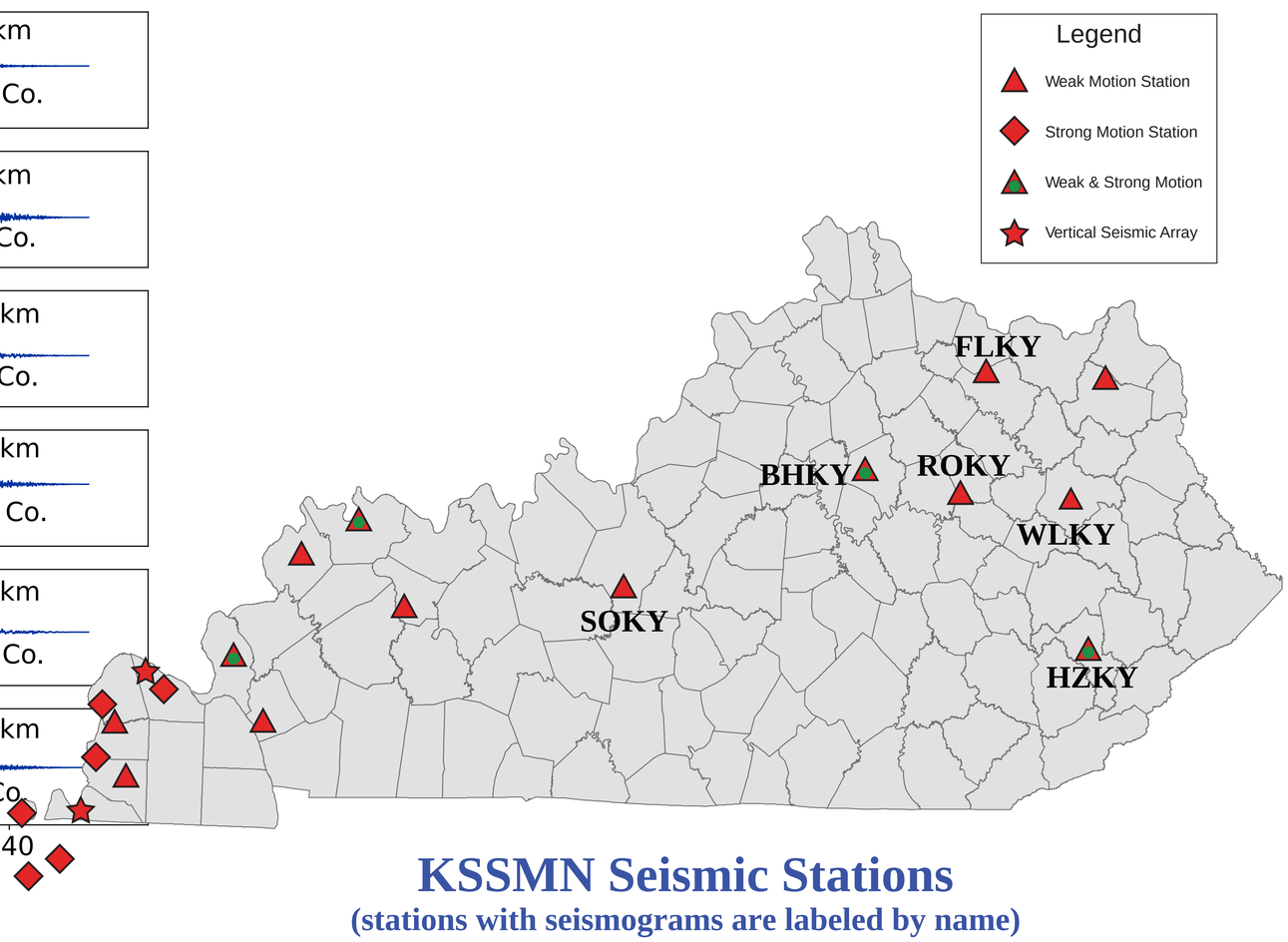
Although the shaking was weak, sensitive seismic instruments in the Kentucky Seismic and Strong-Motion Network recorded the earthquake well and allowed seismologists at KGS to determine the event's location, depth and magnitude. Seismograms from six stations are shown below.

The magnitude determined by KGS of 1.8 differs from the magnitude reported by the USGS of Md 2.6 in part because of differences in the magnitude scales used: KGS used a "local magnitude" scale while the USGS magnitude was calculated with a duration-based scale. Nevertheless, the small size of the earthquake is supported by both magnitude estimates.



KSSMN Seismograms
(ordered by distance)





KSSMN Seismic Stations
(stations with seismograms are labeled by name)