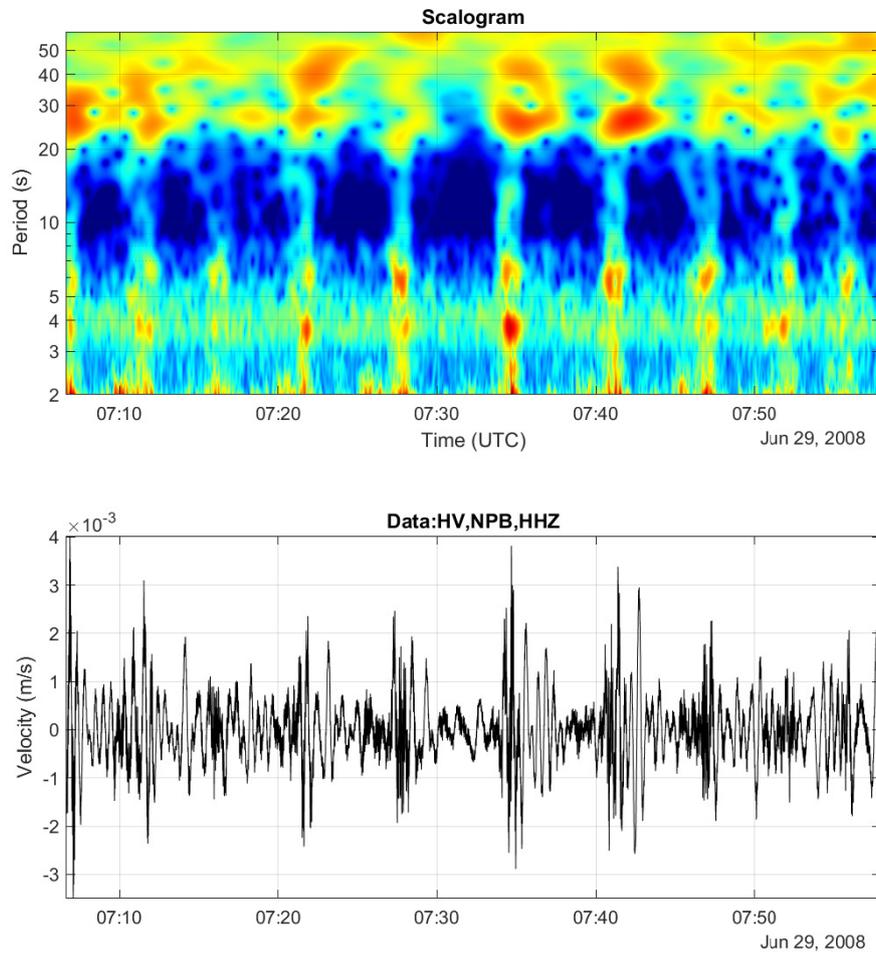
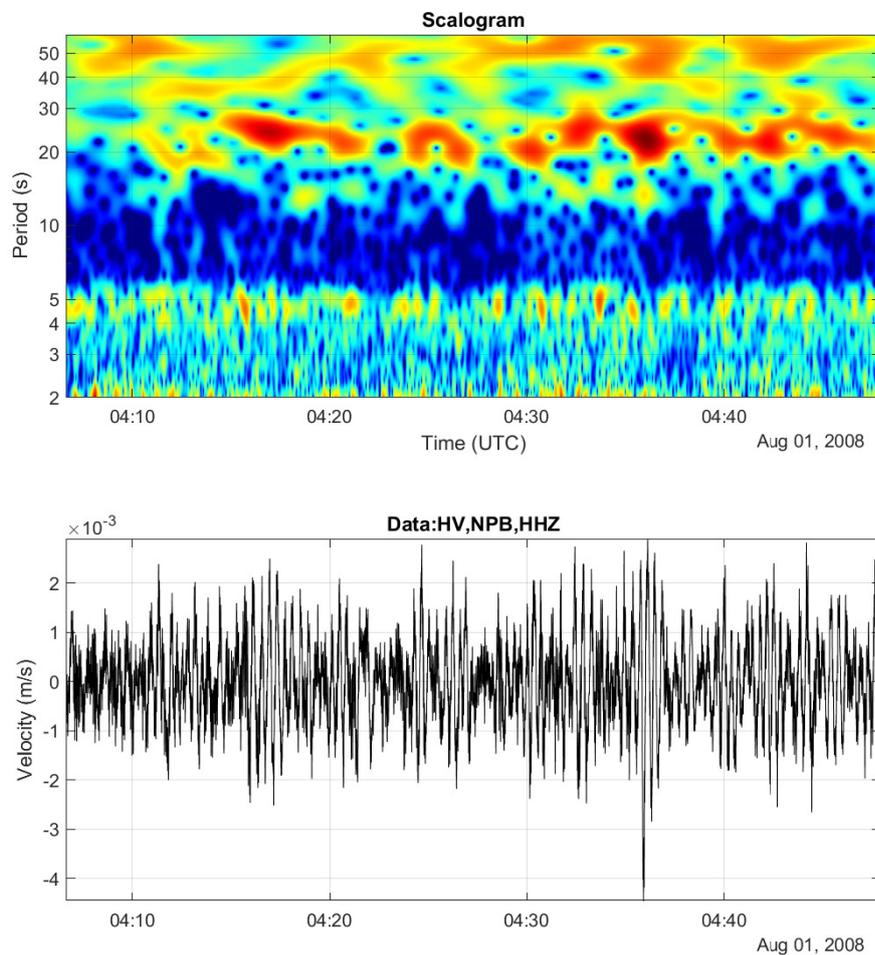


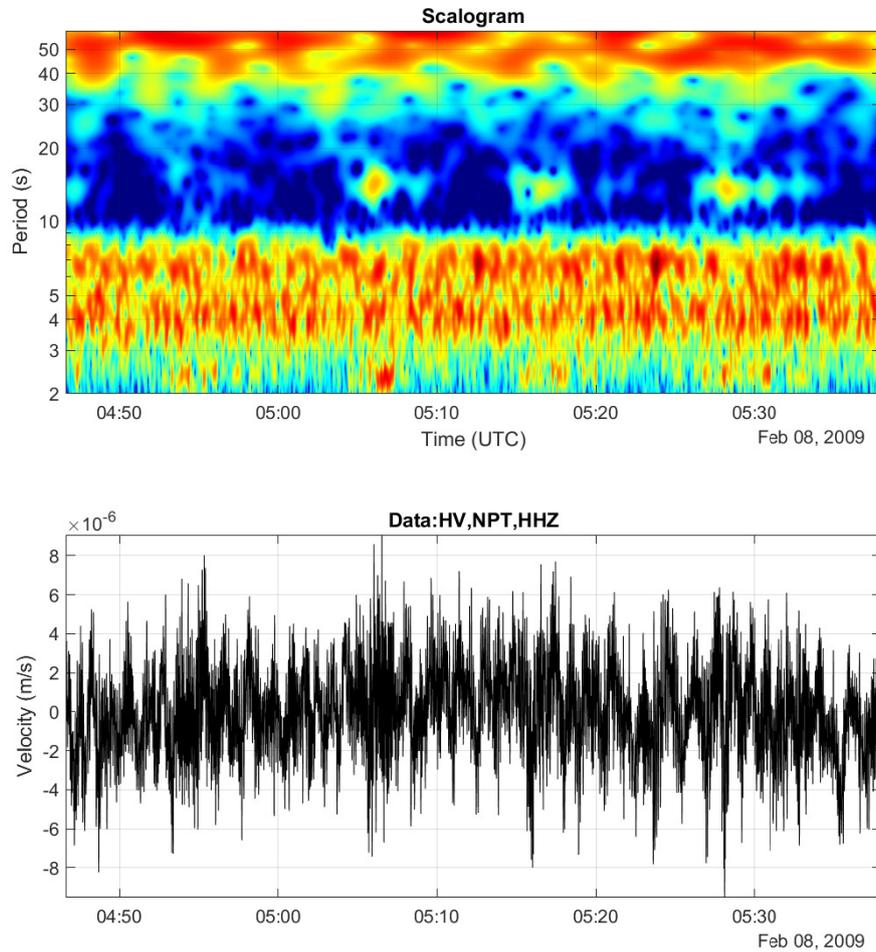
**Figure S16.** Isolated lake sloshing mode with possible gliding-frequency onset from July 2017.



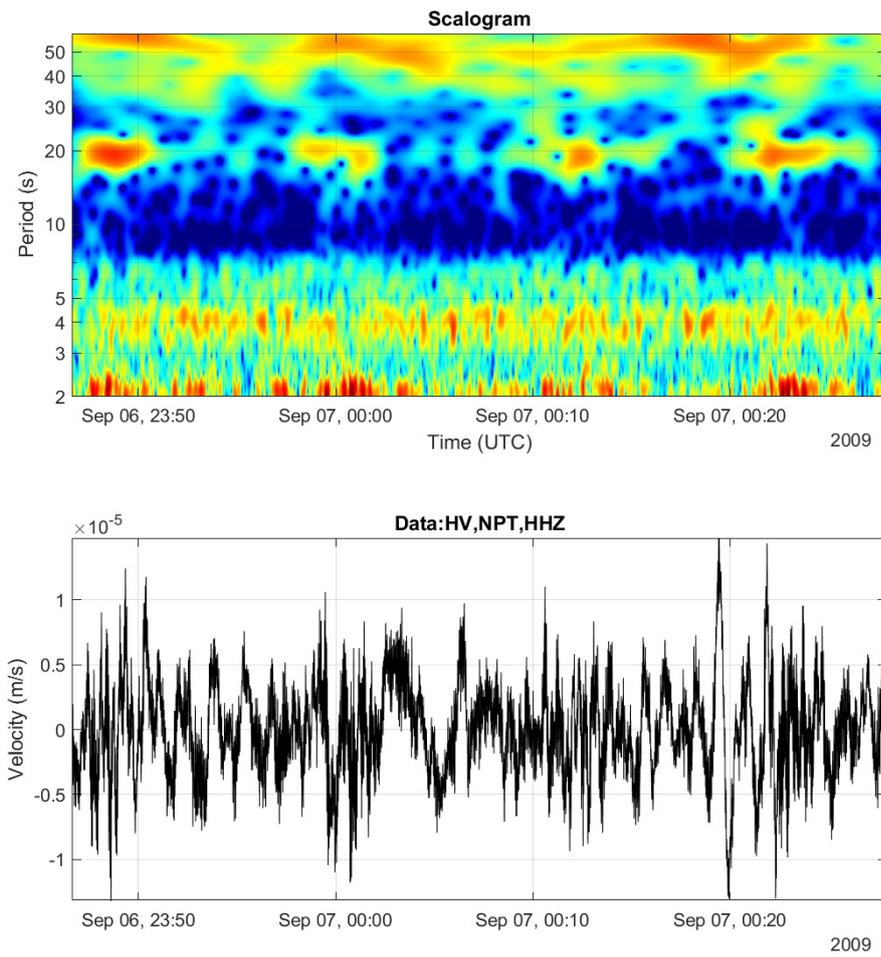
**Figure S17.** VLP events with regular recurrence interval from June 2008, a few months after the Overlook Crater began forming. These events occurred roughly every 5 minutes and contained broadband energy with spectral peaks at around 3.5 s, 6 s, 25 s, and possibly 40 s. These events exhibited less clear onsets and exponential decays than typical rockfall-triggered events.



**Figure S18.** VLP tremor from August 2008, in the first focused cluster of VLP signals. There was elevated energy at periods from 15-30 s and 4-5 s, though the dominant periods were not clearly focused and were variable over time. The signal cannot readily be separated into distinct events, and exhibited no clear high frequency triggers.



**Figure S19.** VLP events from February 2009, around the time where dominant VLP period is at a minimum. These appear to be distinct VLP events, though onsets of some were gradual and first motions were not well defined. Elevated energy at periods  $< 2$  s occurred alongside these signals, but did not appear to represent the more broadband impulsive trigger mechanisms that occur at the onset of typical rockfall events.



**Figure S20.** VLP tremor from September 2009, in a signal cluster that seems to represent a local maxima in VLP period (around 20 s).