

Figure S21. VLP tremor from June 2012, shortly after the May SSE and around when higher *Q* VLP events start occurring again after a year with minimal VLP seismicity.

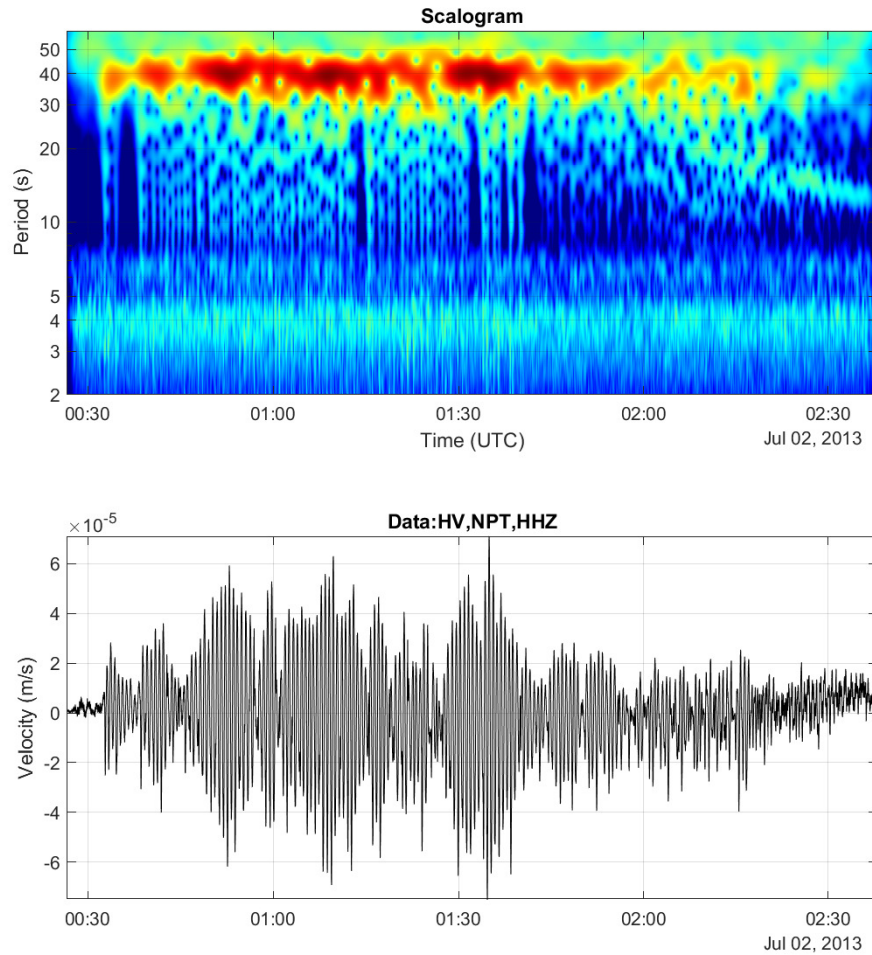


Figure S22. VLP event/tremor from July 2013. This signal consisted of sustained 40 s oscillations at varying amplitudes and irregular bursts of higher frequency energy. These bursts were much weaker relative to the main VLP oscillation than typical rockfall trigger signals. The main VLP signal had an impulsive onset with deflationary first motions.

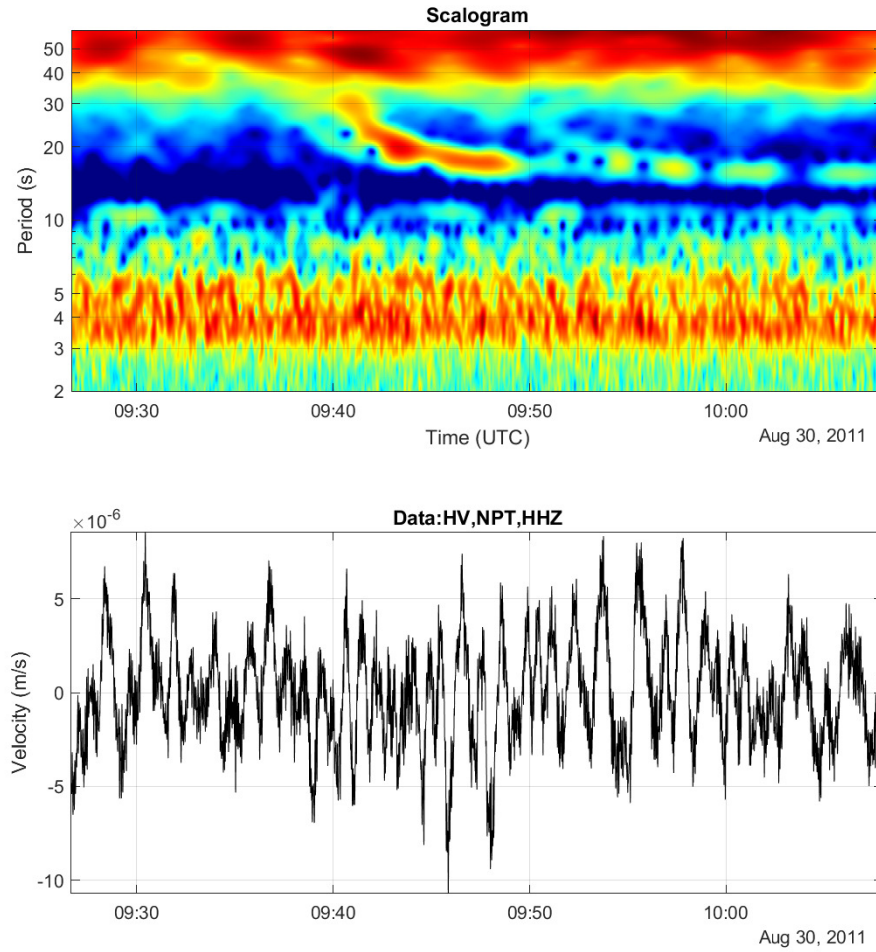


Figure S23. Gliding-frequency VLP signal from August 2011, part of a small cluster of VLP seismicity following the August 2011 Pu‘u ‘Ō‘ō eruption. This event had no apparent high frequency trigger. VLP energy remained elevated for 10s of minutes after the event, though this energy did not appear to represent continuous decay of the initial resonance but rather continued intermittent forcing, perhaps partly by what may be a second smaller gliding-frequency signal around 10 minutes after the first. There was also background VLP tremor present with a period of around 11 s that does not appear to have been effected by the gliding-frequency event.

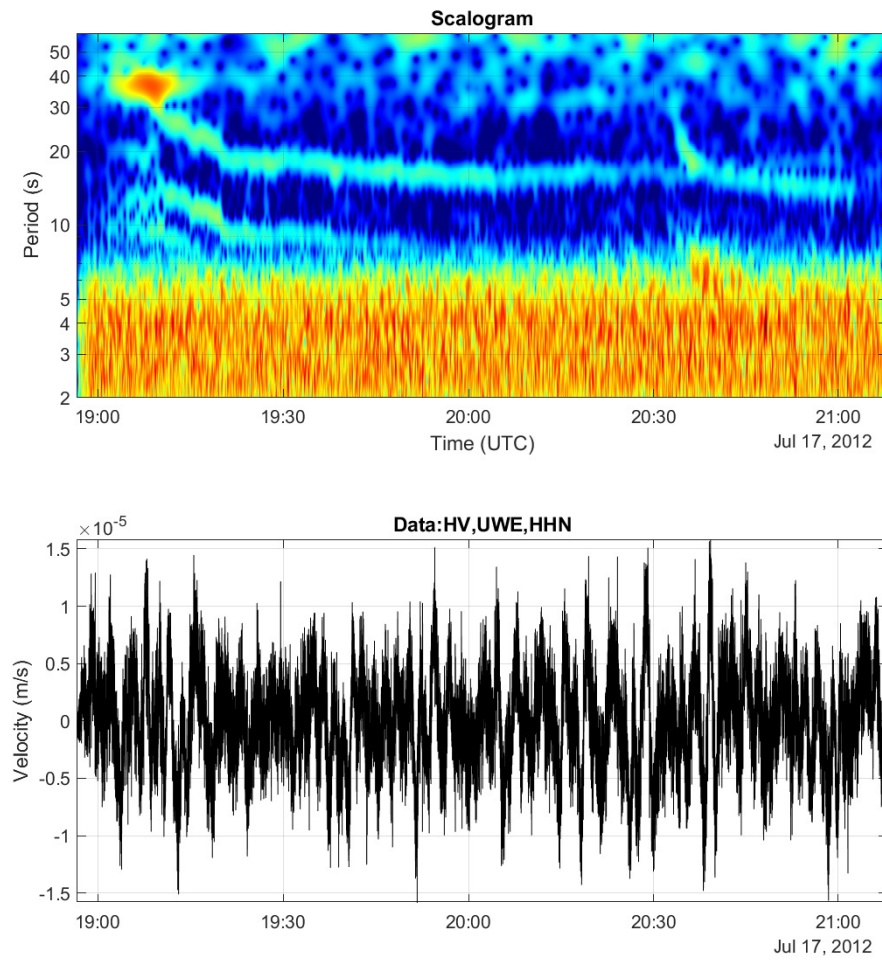


Figure S24. Gliding-frequency VLP signals from July 2012. There was a set of three resonant modes starting around 19:10, and a single resonant mode that started about 90 minutes later. No high frequency triggers were apparent. The first 3 modes all exhibited a similar glide to lower periods over about 10 minutes, then maintained more stable periods. The later mode had a more rapid initial glide to lower periods (over about 5 minutes) but then continued more slowly gliding for another 20 minutes.