Auxiliary Text 1. Relocations using a 1-D velocity model designed for the region around Kilauea caldera did not perform as well in terms of collapsing the clouds of seismicity to well-defined streaks in depth (Auxiliary Figure S1). Additional tests using alternative velocity models were found to have some effect on the absolute locations of the various clusters (Auxiliary Figures S1 and S2), although the fault zone studied by *Got and Okubo* [2003] tends to always relocate shallower than some other fault zones.

Auxiliary Figure Captions:

Auxiliary Figure S1. Plots of the relocated seismicity for different velocity models. Left panel shows epicenters (SE triggered events on 1/26/2005 are given as black circles), middle panel shows depths, and right panel shows the velocity model used (thick gray line) along with the reference velocity model at Kilauea caldera (thin black line).

Auxiliary Figure S2. Plots of relocated seismicity for different velocity models. See Figure S1 for further information.

Auxiliary Figure S3. Assumed layered velocity model for Hilina Pali (thick gray line) used for the results presented in Figures 2 and 3. Layered velocity model for Kilauea caldera (thin black line) is also shown for reference.