Detailed bathymetric map of south flank of Kilauea volcano

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Mulitbeam bathymetric and sidescan sonar mapping was carried out on the south flank of Kilauea volcano during the Kairei 9809 cruise. The mapped area includes Hilina slump, Puna ridge, Papa'u and Loihi seamounts, as well as Cretaceous seamounts. The Hilina slump consists of upper and lower scarps and midslope terrace over 50 km. About 10 km offshore of the slope lies a 700 m high ridge, which was visited by ROV Kaiko. The south flank of Kilauea is moving seaward, associated with on-going volcanic activity. The 1975 Kalapana earthquake (M 7.2) produced 8 m horizontal and 3.5 m vertical movements of the coast, and caused damaging tsunami. This slumping feature, very different from debris avalanches on north of Oahu or Molokai, may be related to the small edifice size of Kilauea.

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