

Volcanic events associated with an enigmatic submarine earthquake

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On September 4, 1996, a submarine earthquake under the Smith caldera near Tori Shima, whose mechanism is a CLVD. We detect successive T-wave trains on the records of the OBS submarine cable arrays, off Sanriku, Boso and Tokai. These T-wave origins are coincident within solution errors with the hypocenter of the CLVD earthquake. The T-wave events repeated for about 35 min and changed their wave characteristics with time. These temporal changes suggest that the origins of these T-waves are seismic shocks which migrated upward well into the body of Smith volcano. The spectra of seismic waves from the CLVD source lack significantly high frequency components. These observations suggest that the CLVD mechanism is closely related to magmatic processes in the source region.