

Volcanic activity of Ontake-san started at December in 2006

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In Volcano Ontake-san, volcanic earthquakes began to occur beneath the summit at late December in 2006, and the seismicity has been a little active since then. By GPS observation, we found slight extensions of the baseline length simultaneously with seismic activity, which suggested the inflation of the volcanic body. Beside these, there was no significant seismicity around the summit after the unrest including very small eruption from April to July in 1991. It was the first time that a deformation associated with volcanic activity was observed in Ontake-san by GPS network of JMA established in October 2001.

We recognized a time change in the style of seismic activity. It began at late December by so-called A-type earthquake, then HF B-type earthquakes increased at the end of December, and earthquakes with LF coda were remarkable since the beginning of January. In the middle of January, many HF B-type earthquakes took place temporarily, and then volcanic tremor started to occur. After the largest tremor in the activity observed on January 25, the number of earthquake decreased, and that of tremor increased. These changes inferred that the source of activity shifted from deep to shallow place.

Broadband seismic observation by Nagoya University revealed that very LF component with the period 15 to 20 seconds was included in the largest tremor on Jan. 25. NIED estimated a dyke intrusion model at about 5km deep as the source of LF event, and pointed out the volumetric change with degassing of magma as a possible cause. The change of activity, from deeper earthquake to shallower tremor, can mean the volcanic gas went up to shallow place after the degassing.

By monitoring camera, there were no unusual surface phenomena like fumarole activity near the summit. From helicopter on Jan. 23 and Feb. 6, we found only faint steams from craters of the 1979 eruption and in Jigoku-dani Valley as seen previously. It seems that cracks in shallower part of volcanic edifice have not evolved enough for steam to come up to the surface at the time when this text is written.