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Summary of volcanic activity at Ontakesan Volcano in 2014

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An eruption occurred on 27 September 2014 at Ontakesan volcano. We report the summary JMA observation data in 2014, including this eruption.

Ontakesan is considered to erupt at 11:52 on 27 September. Though visual observation was interrupted by poor visibility, a pyroclastic flow, which flowed to Jigokudani direction, was observed. JMA raised the Volcanic Alert Level from 1 (Normal) to 3 (Do not approach the volcano) on the same day, because of the increased activity by the eruption.

According to an aerial observation conducted in collaboration with Japan Ground Self-Defense Force (JGSDF) and Chubu Regional Development Bureau (Ministry of Land, Infrastructure, Transport and Tourism; MLIT) on the following day, we confirmed that pyroclastic flows came down from newly formed crater chains in the SW of ones in 1979 eruption, and flowed down to the 2.5 km SW and 1.5 km NW from new crater chains.

The plumes from new craters became visible after 28 September. Eruption produced grayish and milky white plume, but changed to white plume after approximately 10 October. A Maximum plume height was 800 m above the crater rim on 28 September 2014, however, it gradually became lower, and plume height was ranged 100 - 300 m above the crater rim through the most of the period after November 2014.

Seismic activity remained at low levels before August 2014. Seismicity increased from the night of 10 September. Low-frequency earthquakes started to be observed though seismicity decreased gradually after 12 September. A continuous volcanic tremor occurred on around 11:41, just before the eruption. Seismicity became higher before and after the eruption. A continuous volcanic tremor fluctuated the amplitude and continued until about 6 October. The highest seismicity was observed on 27 September, and decreased since then. The number of volcanic earthquakes per day has fluctuated from several to ten and several times. All hypocenters of these volcanic earthquakes and tremors were located beneath the summit of Kengamine.

A tiltmeter, located at the 3 km SE at the summit (Kengamine), a rapid NW-up deformation was observed from 11:45 just before the eruption, but it reversed on around 11:52, then a gradual SE-down ground change continued.

JMA started to observe the amount of sulfur dioxide (SO2) flux just after the eruption. It was approx. 1,000 t/d on 28 September 2014, but gradually decreased, and has remained approximately 200-300 t/d after November 2014.

These observations support that volcanic activity became quite high before and after the eruption on 27 September 2014, but has not yet got back on the activity before August 2014 though it has gradually been at lower state,. We have been intensifying the surveillance of Ontakesan volcano more than ever.

Keywords: Ontakesan volcano, eruption, volcanic tremor, tiltchange, sulfur dioxide (SO2)