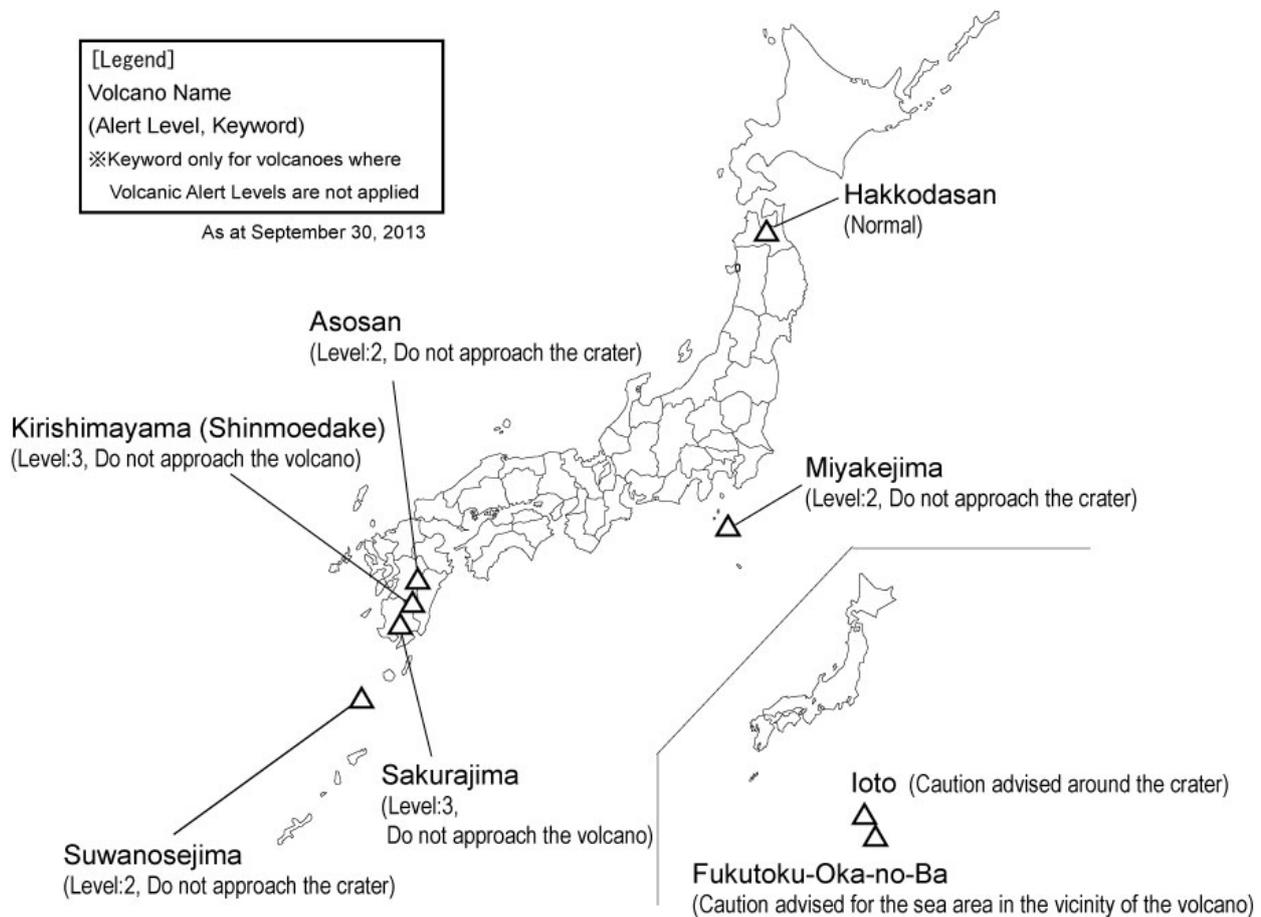


Monthly Volcanic Activity Report (September 2013)

Japan Meteorological Agency



Hakkodasan (Normal)

The number of earthquakes around Hakkodasan has been relatively large since the 2011 off the Pacific coast of Tohoku Earthquake (the 2011 Great East Japan Earthquake: March 11, 2011). Volcanic earthquakes in and around the summit have occurred sporadically since February 2013, and have been observed relatively frequently since late April.

According to ground deformation observation around the volcano, small inflation has been detected since February 2013 while no changes in surface phenomena such as fumaroles were observed.

Miyakejima (Alert Level: 2)

The emission rate of volcanic gas has been on a long-term declining trend and remained relatively low since February 2013 (Fig. 1). According to a report from Miyake Village, relatively high concentrations of SO₂ were recorded only occasionally in inhabited areas.

Volcanic seismicity has largely remained at low levels. No volcanic tremors have been observed. According to continuous GPS observation data, ground deformation indicating contraction in shallow parts of the mountain has continued since 2000, but has been gradually diminishing. Long-term extension of the baseline along the north-south section of Miyakejima has also been observed since 2006, indicating expansion in deeper parts.

According to an aerial observation conducted in collaboration with Japan Ground Self-Defense Force (JGSDF) on September 2, high-temperature areas remained inside the crater, which was almost identical with the result of

the previous survey on February 20, 2013.

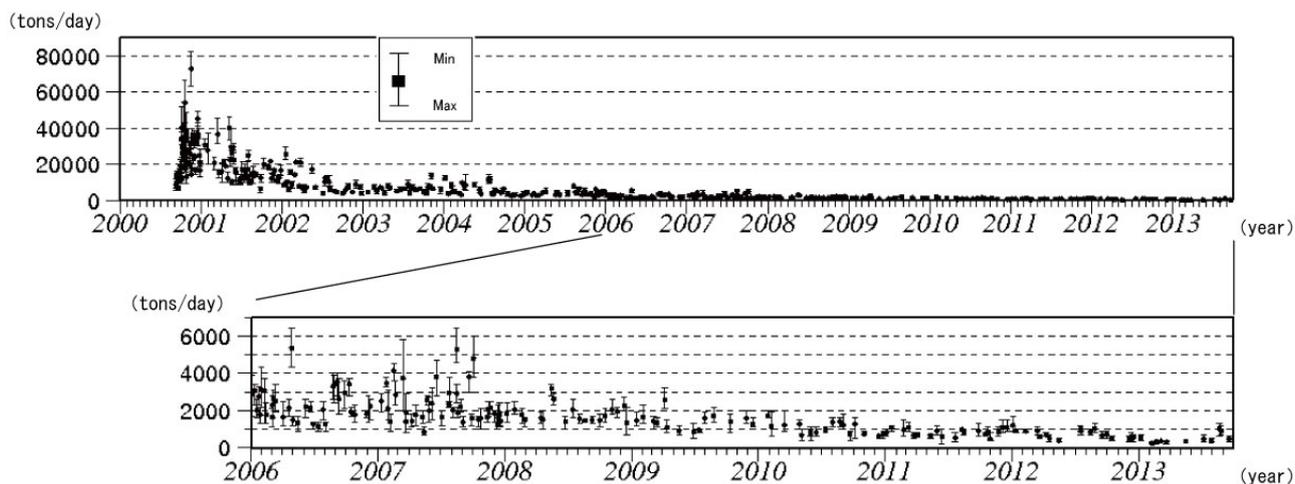


Fig. 1 SO₂ emission rate at Miyakejima.

Ioto (Near-crater Warning)

Phreatic eruptions have occasionally occurred since early February 2012 at the Old-crater (known as Million Dollar Hole) located on the western part of the island. However, no eruptions were observed in September.

Volcanic seismicity has generally remained at low levels. A volcanic tremor with duration of 50 seconds was recorded on September 19. No anomaly was observed in the other observation data before or after this tremor. Geospatial Information Authority of Japan (GSI) ground deformation data show that the ground has been rising since around May 2013, after the subsidence, static state, and uplift sequence that virtually stopped in April 2013.

Fukutoku-Oka-no-Ba (Near-sea-area Warning)

An aerial observation conducted by the Japan Maritime Self-Defense Force (JMSDF) on September 27 revealed green sea water discoloration and upwelling of white bubbles within a 450 m radius of Fukutoku-Oka-no-Ba.

Discoloration and floating objects have been frequently observed in the waters surrounding Fukutoku-Oka-no-Ba in recent years, which are considered to be caused by volcanic activity. The latest submarine eruption occurred on February 3, 2010.

Asosan (Alert Level: 2)

After the rapid increase of volcanic earthquakes around 21:00 JST on September 23, volcanic seismicity had been at very high levels. According to field survey on September 25, the SO₂ flux was around 1,900 t/d, showing high levels. In response, the Japan Meteorological Agency (JMA) evaluated there was possibility of eruption that may scatter ballistic projectiles within 1km from the Nakadake No.1 crater. and issued a Warning at 15:40 JST on September 25 to raise the Volcanic Alert Level from 1 (Normal) to 2 (Do not approach the crater).

Volcanic seismicity remained at high levels, although it had been on declining trend since September 29. According to field survey on September 26, the SO₂ flux was around 2,000 t/d, remaining high levels.

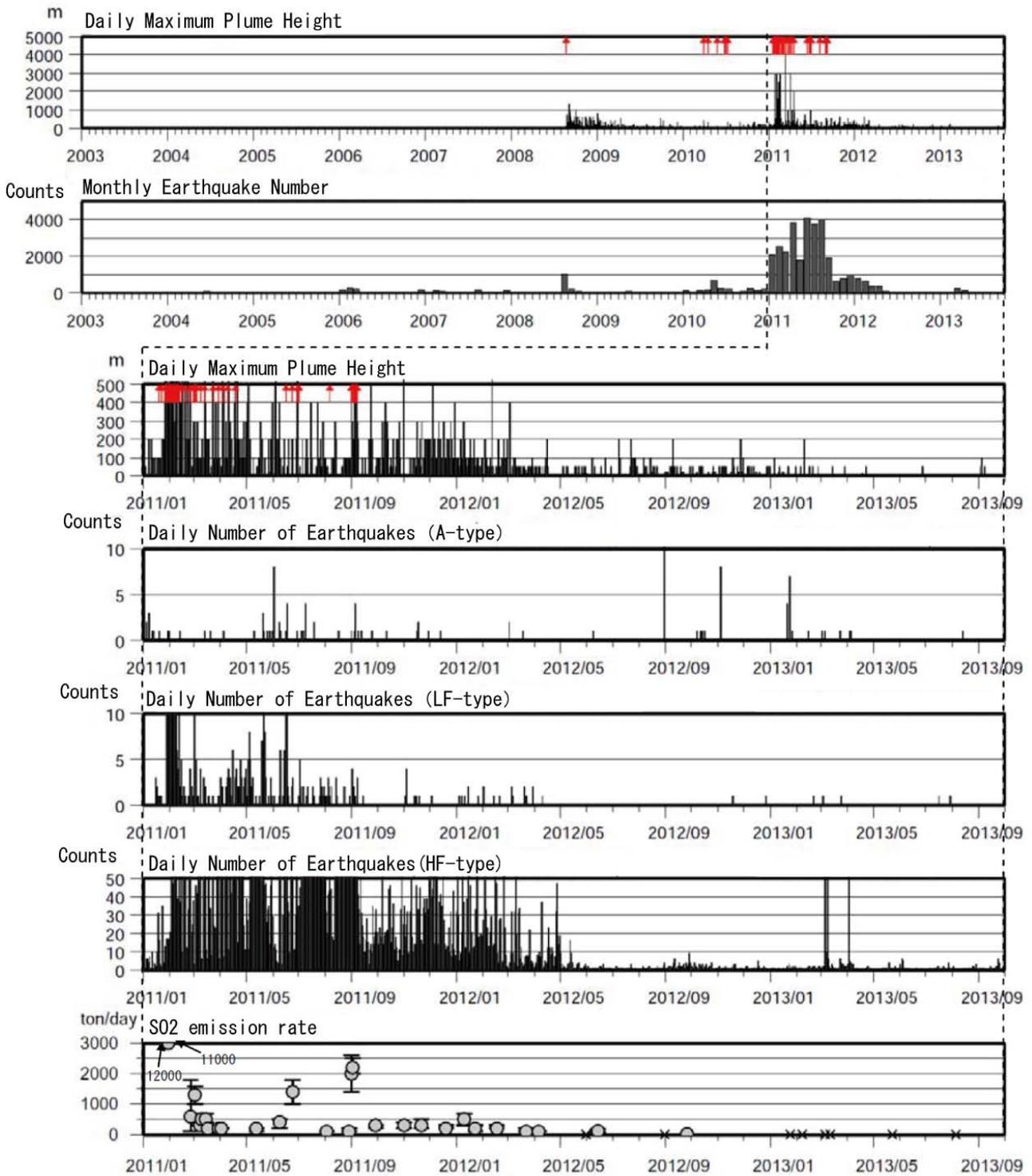
Kirishimayama (Shinmoedake)(Alert Level: 3)

No eruptions were observed at Shinmoedake in the reporting period (the last explosive eruption occurred on March 1, 2011, while the last eruption of any kind was on September 7 of the same year).

No remarkable change was observed in plume activity. Volcanic seismicity remained at low levels. No volcanic

tremors have been observed since March 2012. No remarkable change was observed from ground deformation observation data.

Supply of magma from deeper parts to the magma chamber located several kilometers northwest of the crater has stopped. However, a large amount of lava has accumulated in the crater. Based on this information, the possibility of small eruptions cannot be ruled out even now.



※ The notation “↑” represents an eruption.

Fig. 2 Seismicity, plume activity and SO₂ emission rate at Shinmoedake from January 2003 to September 2013.

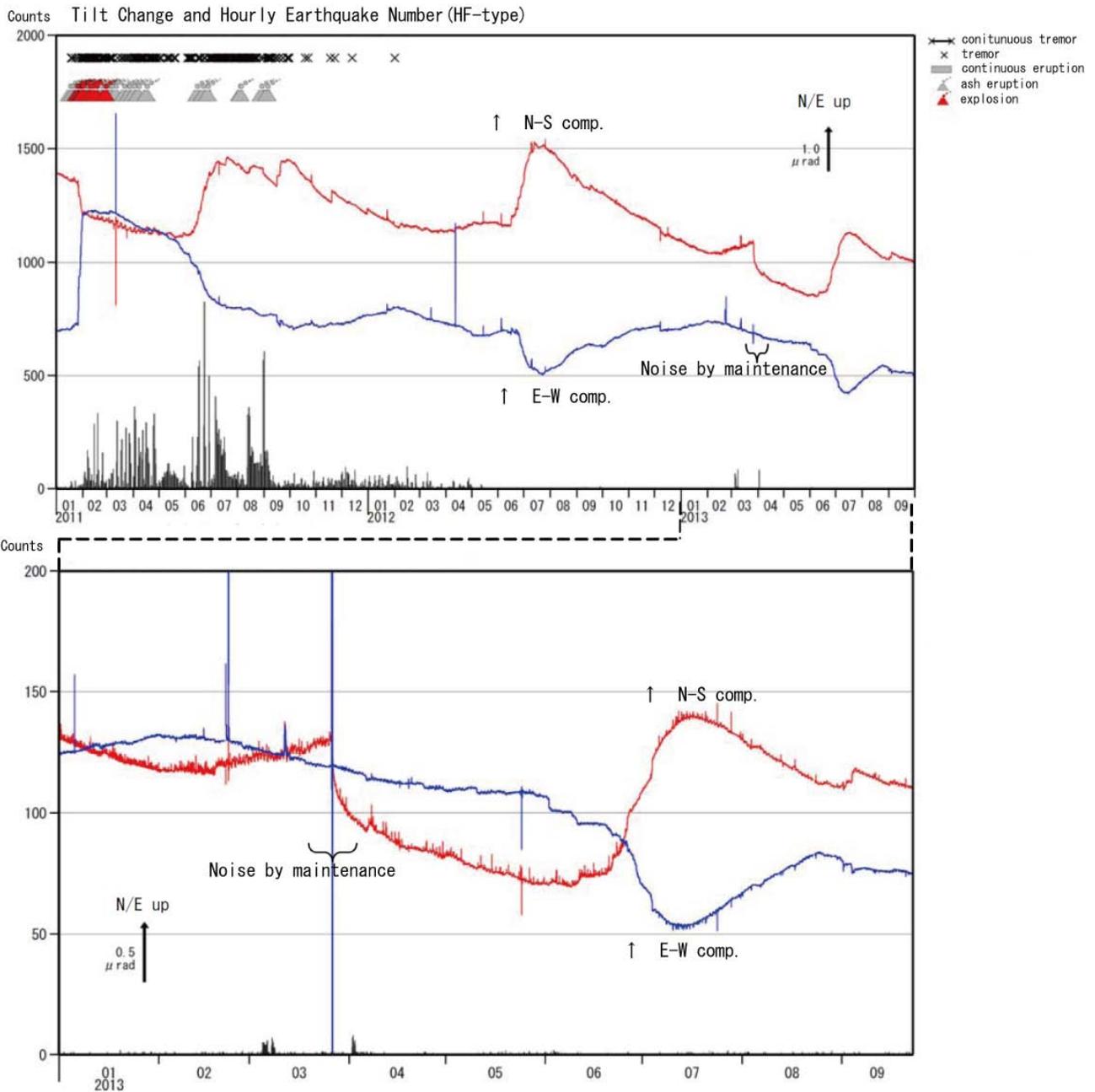


Fig. 3 Tiltmeter observation at Shinmoedake from January 2011 to September 2013.

Sakurajima (Alert Level: 3)

Eruption activity including explosive ones at the Showa crater has remained at high levels. During this reporting period, 154 eruptions were observed and 110 of them were explosive. In conjunction with an explosive eruption at 11:00 (JST) on September 4, lapilli with a diameter of up to 4 cm fell on an area from Furusatocho to Arimuracho, Kagoshima City (located about 3 km south of the Showa crater) and lapilli with a diameter of 1.5 cm also fell on the Nakamata, Tarumizu City (located about 8 km south-southeast of the Showa crater), breaking the windows of cars and causing other damage. In conjunction with an explosive eruption at 12:42 (JST) on September 25, lapilli with a diameter of up to 2 cm fell on the Arimuracho, Kagoshima City, breaking the windows of cars and causing other damage as well. Including these eruptions, eruptions with plume height 2,500 m or more occurred 11 times, and Japan Meteorological Agency (JMA) issued Ash Fall Forecasts for each event. Clear volcanic glows in the Showa crater were sometimes recorded at night with high-sensitivity cameras.

No eruption was observed at the Minamidake summit crater.

While volcanic seismicity remained at low levels in September, volcanic tremors accompanied the eruptions. A field surveys to measure SO₂ flux were conducted on September 19 and 26. The SO₂ flux was around 2,200 – 2,900 t/d showing high levels. The results of continuous GPS measurement have shown the tendency of inflation in Sakurajima Island since around February 2013. Deformation observations in some baselines across the Aira Caldera (in a closed-off section of Kagoshima Bay) made by GSI indicate an expansion in the deeper part of the Aira Caldera. Ashfall on Kagoshima Local Meteorological Observatory (KLMO) amounted to 906 g/m². The total amount of ashfall estimated from data provided by the Kagoshima prefectural government was about 0.7 million tons in August 2013.

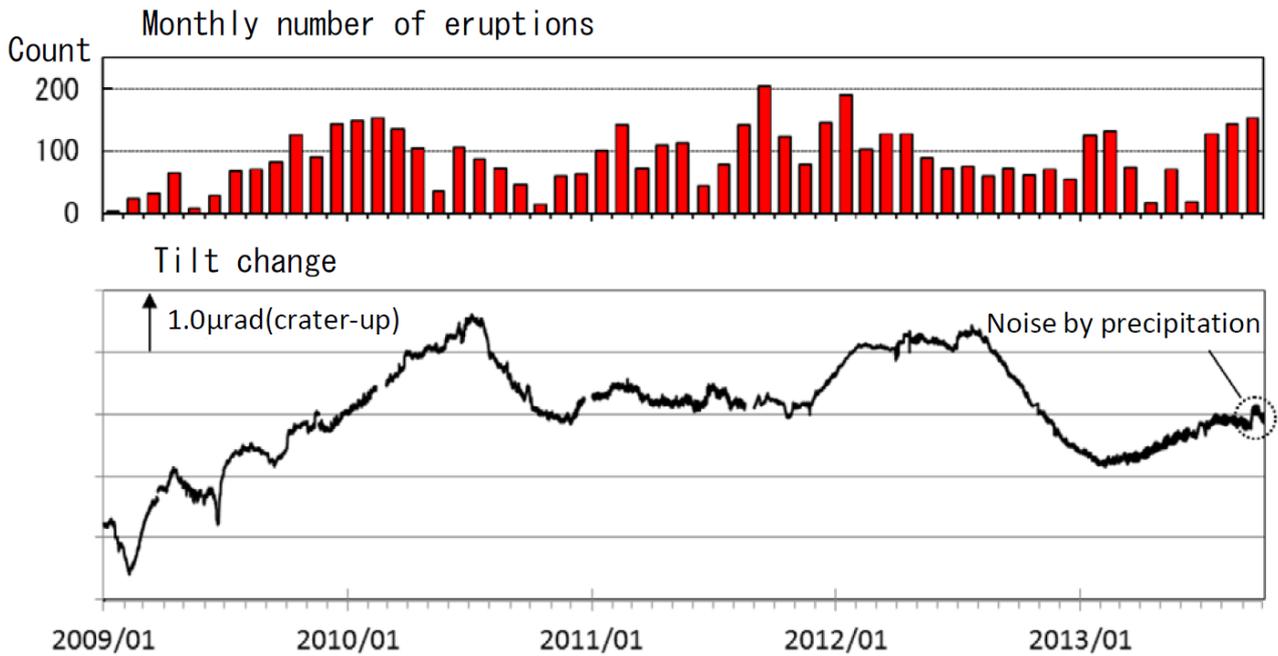


Fig. 4 Tilt change observed with a water-tube tiltmeter at Arimura Station from January 2009 to September 2013 with tidal response eliminated. Upheavals of the summit side correspond to positive tilts. The red bars in figure denote monthly eruption frequencies at the Showa crater.

Suwanosejima (Alert Level: 2)

Intermittent eruptions have been observed, and explosive ones occurred 6 times at the Otake crater. Along with an explosive eruption on September 29, volcanic blocks being scattered around the crater were observed. The height of the plumes has generally been less than 1,000 m, and at a maximum it was 1,400 m above the crater rim. Weak volcanic glows in the crater were sometimes recorded at night with high-sensitivity camera.

Earthquakes occurred near Suwanosejima on September 10, 21 and 26, and seismic intensity of 1 on JMA scale were measured respectively at the island. Volcanic tremors occurred intermittently.