



# *Bulletin of World Volcanism*

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## FALSE REPORTS OF VOLCANIC ACTIVITY

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# WORLDWIDE MONTHLY VOLCANIC ACTIVITY

## VOLCANOES ORGANISED BY THE CAVW/GVP VOLCANO NUMBER CODE



*Above; the unusual vent near Rome airport.*

**NAME:** Alban Hills?

**LOCATION:** Italy

**HEIGHT:** 919 M

**TYPE:** Caldera

**COORDINATES:** 41.73°N 12.7°E

A new vent opened up near a road next to Fiumicino International airport in Rome on 24<sup>th</sup> August. The vent measured 6 feet wide and 3 feet deep. The vent was emitting water, gas and clots of mud. It may be a man made problem, but first inspections apparently indicated that this was a natural vent. The nearest known volcanic system to this vent is the Alban Hills, 20 KM SE.

**NAME:** Ebulobo

**LOCATION:** Indonesia (Lesser Sundra Islands)

**HEIGHT:** 2124 M

**TYPE:** Stratovolcano

**COORDINATES:** 8.82°S 121.18°E

The CVGHM raised the alert level for the volcano from 1 to 2 (on a scale of 1-4) on 23<sup>rd</sup> August after steam plumes were seen rising from the volcano and incandescence at the summit was seen at night.

**NAME:** Iliwerung

**LOCATION:** Indonesia (Lesser Sundra Islands)

**HEIGHT:** 1018 M

**TYPE:** Complex Volcano

**COORDINATES:** 8.53°S 123.57°E

The CVGHM reported that seismicity fluctuated during the month, but 81 shallow volcanic earthquakes were detected between 16:06 and 17:41 on 19<sup>th</sup> August, compared to a total of 30 the previous 18 days.

The CVGHM reported that on 20<sup>th</sup> August a white plume containing minor amounts of ash rose 1 then

2 KM a.s.l from Hobal (a submarine parasitic cone) at 07:14 (local time); bubbling was also noted around the vent area. At 07:46 glow began to visible around the vent. A MODIS satellite image taken at 10:10 am showed no plume, but small volcanic fragments were seen drifting around the vent area. The eruption was reportedly only lasted around 2 minutes.

According to a news article, locals reported seeing the submarine cone 'surface'. A small eruption was also noted from the main subaerial cone of the volcano.

**NAME:** Ketoi

**LOCATION:** Russia (Kuril Islands)

**HEIGHT:** 1172 M

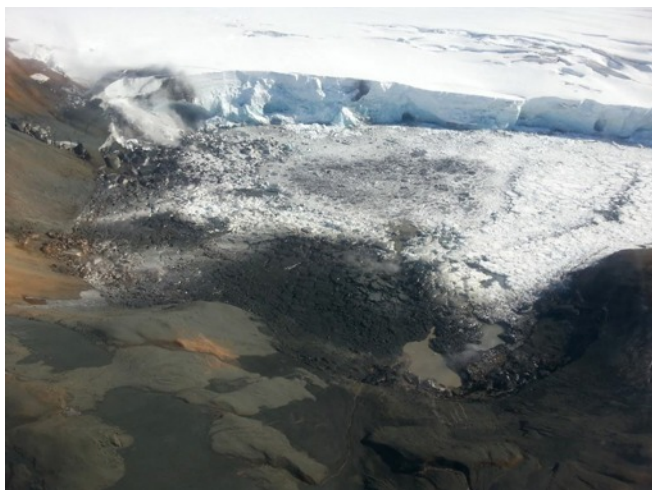
**TYPE:** Stratovolcano

**COORDINATES:** 47.35°N 152.475°E

The SVERT reported that during 29<sup>th</sup> – 31<sup>st</sup> July a thermal anomaly from Ketoi's Pallas Peak was observed in satellite imagery. Gas-and-steam emissions were also observed on 29<sup>th</sup> July, and possibly observed on 31<sup>st</sup> July and 4<sup>th</sup> August. The SVERT reported that a thermal anomaly over Ketoi's Pallas Peak was detected in satellite images during 5<sup>th</sup> – 7<sup>th</sup> and 9<sup>th</sup> August, and possibly during 10<sup>th</sup> – 11<sup>th</sup> August. Steam-and-gas emissions were detected on 9<sup>th</sup> August. The SVERT reported that a thermal anomaly over Ketoi's Pallas Peak was detected in satellite images on 12<sup>th</sup> August.



*Above; strombolian activity at Kliuchevskoi in August 2013.*



*Above; aftermath of the Kverkfjoll eruption which happened around 16 August. With the glacier covered by black ash and lahar deposits.*

**NAME: Kliuchevskoi**  
**LOCATION: Russia (Kamchatka)**  
**HEIGHT: 4835 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 56.057°N 160.638°E**

A new eruption on 15<sup>th</sup> August at 06:30 UTC was accompanied by strong tremor. Strombolian activity in the summit crater was noted. A gas-and-steam plume containing minor amounts of ash rose to a height of 5.5 KM and drifted NE on 16<sup>th</sup> August. Strong incandescence was observed at night. Satellite images from 15<sup>th</sup> – 17<sup>th</sup> August showed a strong thermal anomaly at the volcano. Gas-and-steam plumes containing minor amounts of ash rose to an altitude of 5.5 KM a.s.l. during 16<sup>th</sup> – 17<sup>th</sup> August. Incandescence from the crater at night and a thermal anomaly in satellite images continued to be reported during 17<sup>th</sup> – 19<sup>th</sup> August.

**NAME: Kverkfjoll**  
**LOCATION: Iceland**  
**HEIGHT: 1929 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 64.65°N 16.72°W**

The IMO reported that a small phreatic eruption at the volcano occurred around 16<sup>th</sup> August. The explosions emitted dark ash. The eruption produced a small glacial flood which was released into the Volga river.

### CONTINUING ACTIVITY

**NAME: White Island**  
**LOCATION: New Zealand**  
**HEIGHT: 321 M**  
**TYPE: Stratovolcanoes**  
**COORDINATES: 37.52°S 177.18°E**

GNS Science reported that on 20<sup>th</sup> August at 10:23 (local time) a small eruption occurred at the volcano that continued for 10 minutes. The eruption produced a steam plume with minor ash content that rose 4 KM a.s.l. The eruption ejected mud and rock. The Alert Level was raised from 1 to 2 (on a scale of 0-5), the Aviation Colour Code was raised to RED then lowered to ORANGE.

**NAME: Ambrym**  
**LOCATION: Vanuatu**  
**HEIGHT: 1334 M**  
**TYPE: Pyroclastic Shield**  
**COORDINATES: 16.25°S 168.12°E**

According to NASA's Earth Observatory, a satellite image acquired on 9<sup>th</sup> August showed steam-and-gas plumes rising from Ambrym's Benbow cone and from the active lava lake in Mbwelesu Crater (one of three active sub-craters of the Marum cone).

**NAME: Gaua**  
**LOCATION: Vanuatu**  
**HEIGHT: 797 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 14.27°S 167.50°E**

On 14<sup>th</sup> August the Vanuatu Geohazards Observatory reported that activity at Gaua had increased since June; volcanic tremor levels increased slightly and ash plume emissions continued.



*Above; webcam capture of the eruption at White island at 10:30 on 20 August.*

**NAME: Manam**  
**LOCATION: Papua New Guinea**  
**HEIGHT: 1807 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 4.080°S 145.037°E**

The RVO reported that activity at Manam's Southern and Main craters remained low during 22<sup>nd</sup> -31<sup>st</sup> July; observers noted white vapour plumes rising from the craters during periods of clear weather. Considerable amounts of blue vapour rose from Southern Crater during 25<sup>th</sup> – 26<sup>th</sup> July. Deep and low booming noises were heard on the island on most days since 24<sup>th</sup> July, however, on 30<sup>th</sup> July a loud explosion was heard in Bogia, 25 – 30 KM SSW of Manam on the N coast of the mainland. Seismicity fluctuated but remained high.

The Darwin VAAC reported that on 19<sup>th</sup> August an ash plume from Manam rose to an altitude of 4.6 KM a.s.l. and drifted 65 KM NW.

**NAME: Ulawun**  
**LOCATION: Papua New Guinea (New Britain)**  
**HEIGHT: 2334 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 5.05°S 151.33°E**

The RVO reported that activity at Ulawun was low during 22<sup>nd</sup> July – 4<sup>th</sup> August; emissions from the summit crater consisted of white vapour. Seismicity was also low. RSAM values decreased from 80 on 21<sup>st</sup> July to 50 on 31<sup>st</sup> July, and then began to increase on early 2<sup>nd</sup> August. By 4<sup>th</sup> August RSAM values reached 600, attributed to an increase in volcanic tremor.

**NAME: Rabaul**  
**LOCATION: Papua New Guinea (New Britain)**  
**HEIGHT: 688 M**  
**TYPE: Pyroclastic Shield**  
**COORDINATES: 4.271°S 152.203°E**

The RVO reported that during 22<sup>nd</sup> – 31<sup>st</sup> July low-level activity consisted of discrete emissions of pale grey ash plumes occurring at short intervals. Some emissions were explosive and generated plumes that rose 2 KM above the crater. Plumes drifted E, NE, N, NW, W, and SW, and deposited minor amounts of fine white and grey ash in areas downwind mainly between Namanula and Malaguna No. 1 (with Rabaul Town, 3 – 5 KM NW, in between), and to a lesser extent between the Vulcan area and Malaguna No. 2. Roaring and rumbling noises also continued, often in conjunction with explosions.



*Above; large ash plume due to partial collapse of the growing lava dome on Paluweh on 10 August.*

**NAME: Paluweh**  
**LOCATION: Indonesia (Lesser Sundra Islands)**  
**HEIGHT: 875 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 8.32°S 121.708°E**

According to news articles, a partial lava-dome collapse at Paluweh on 10<sup>th</sup> August generated a pyroclastic flow that travelled N towards a beach village and killed at least 5 people. A volcanologist at the monitoring post for Paluweh noted that the eruption lasted seven minutes, and that the pyroclastic flow burned trees around the beach and villages, making it difficult to reach the victims. Pyroclastic flows continued to be reported hours after the initial eruption. Based on analyses of satellite imagery and wind data, the Darwin VAAC reported that an ash plume rose to an altitude of 4.3 KM a.s.l. and drifted 130 KM W.

News sources noted that a mandatory evacuation order had caused some residents to evacuate prior to the eruption on 10<sup>th</sup> August, but nearly 10,000 still remained on the island. After the eruption, a rescue team was sent to evacuate about 2,000 people that remained inside a 3-KM exclusion zone. A team member noted that rescuing people was difficult since they were reluctant to leave their livestock and homes, but also that the ground was hot and covered in 10-20 cm of ash. The VAAC reported that during 11<sup>th</sup> – 12<sup>th</sup> August ash plumes rose to an altitude of 1.8 KM a.s.l. and drifted 110 – 130 KM W. A news article noted that the eruptions were smaller on 12<sup>th</sup> August, but pyroclastic flows continued to be observed.

**NAME: Batu Tara**

**LOCATION: Indonesia (Lesser Sunda Islands)**

**HEIGHT: 748 M**

**TYPE: Stratovolcano**

**COORDINATES: 7.792°S 123.579°E**

The Darwin Volcanic Ash Advisory Centre (VAAC) reported that on 16<sup>th</sup> August an ash plume from Batu Tara rose to an altitude of 1.5 KM a.s.l. and drifted 130 KM W.

**NAME: Sakura-Jima**

**LOCATION: Japan (Kyushu)**

**HEIGHT: 1117 M**

**TYPE: Stratovolcano**

**COORDINATES: 31.585°N 130.657°E**

The JMA reported that 10 explosions at Sakura-jima's Showa Crater were detected during 29<sup>th</sup> July – 2<sup>nd</sup> August and ejected tephra as far as 1.3 KM. Incandescence from the crater was observed on 1<sup>st</sup> August. Based on information from JMA, the Tokyo VAAC reported that during 31<sup>st</sup> July – 6<sup>th</sup> August explosions generated plumes that rose to altitudes of 1.5 – 3 KM a.s.l. and drifted E, SE, and S. On 31<sup>st</sup> July and 4<sup>th</sup> August pilots observed ash plumes that rose to altitudes of 2.4 – 3 KM a.s.l. and drifted E.

The Tokyo VAAC reported that during 7<sup>th</sup> – 11<sup>th</sup> and 13<sup>th</sup> August explosions from Sakura-jima generated plumes that rose to altitudes of 1.8 – 4.6 KM a.s.l. and drifted SE, S, and NW. On 8<sup>th</sup>, 10<sup>th</sup> and 13<sup>th</sup> August pilots observed ash plumes that rose to altitudes of 2.7 – 3 KM a.s.l., and travelled SE, S, and vertically, respectively. The JMA reported that seven explosions at Showa Crater

were detected during 9<sup>th</sup> – 12<sup>th</sup> August and ejected tephra as far as 800 M. A 50-minute-long eruption on 9<sup>th</sup> August generated an ash plume that rose 3.5 KM above the crater.

The JMA reported that 24 explosions at Sakura-jima's Showa Crater were detected during 12<sup>th</sup> – 19<sup>th</sup> August and ejected tephra as far as 1.8 KM. Incandescence from the crater was observed on 14<sup>th</sup> August. A very small eruption from Minami-dake Crater occurred on 16<sup>th</sup> August, producing an ash plume that rose 200 M.

An explosion from Showa Crater on 18<sup>th</sup> August generated a large ash plume that rose 5 KM above the crater and drifted NW. A small pyroclastic flow travelled SE. According to news sources, the 50-minute-long eruption produced ashfall in the central and northern parts of Kagoshima (10 KM W), causing train delays and poor visibility for car drivers. The event was the 500th explosion this year.

**NAME: Pagan**

**LOCATION: USA (Mariana Islands)**

**HEIGHT: 570 M**

**TYPE: Stratovolcanoes**

**COORDINATES: 18.13°N 145.80°E**

The seismic network at Pagan recorded tremor and small discrete earthquakes during 9<sup>th</sup> – 16<sup>th</sup> August, indicating low-level unrest. A steam-and-gas plume was visible in satellite images during periods of clear weather and from web-camera images. A small explosion with a relatively high amplitude seismic component and small infrasound component occurred at 00:10 on 12<sup>th</sup> August. The data suggested that degassing increased about 30 sec after the event.

**NAME: Chirpoi**

**LOCATION: Russia (Kuril Islands)**

**HEIGHT: 742 M**

**TYPE: Caldera**

**COORDINATES: 46.525°N 150.875°E**

The SVERT reported that a thermal anomaly over Snow, a volcano of Chirpoi, was detected in satellite images during 5<sup>th</sup> – 7<sup>th</sup> and 9<sup>th</sup> August, and possibly during 10<sup>th</sup> -11<sup>th</sup> August. Steam-and-gas emissions were detected on 9<sup>th</sup> August.

The SVERT reported that a thermal anomaly from Snow, a volcano of Chirpoi, was detected in satellite images on 12<sup>th</sup> August, along with gas-and-steam emissions. Cloud cover prevented observations during 13<sup>th</sup> – 18<sup>th</sup> August.



*Above; Pagan island is made up of two volcanic centres joined by a narrow isthmus. South Pagan is seen in the foreground with North Pagan (top centre) in the distance.*

**NAME: Chirinkotan**  
**LOCATION: Russia (Kuril Islands)**  
**HEIGHT: 724 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 48.98°N 153.48°E**

The SVERT reported that a thermal anomaly from Chirinkotan was observed during 29<sup>th</sup> – 31<sup>st</sup> July. The SVERT reported that a thermal anomaly and gas-and-steam emissions from Chirinkotan were observed on 5<sup>th</sup> and 9<sup>th</sup> August. A thermal anomaly was visible on 7<sup>th</sup> August, and possible gas-and-steam emissions were observed on 7<sup>th</sup> and 8<sup>th</sup> August.

The SVERT reported that a possible thermal anomaly from Chirinkotan was observed on 12<sup>th</sup> August.

**NAME: Karymsky**  
**LOCATION: Russia (Kamchatka)**  
**HEIGHT: 4835 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 56.057°N 160.638°E**

The KVERT reported that technical problems prevented seismic data collection at Karymsky during 26<sup>th</sup> July – 2<sup>nd</sup> August. A thermal anomaly over the volcano was detected in satellite images during 29<sup>th</sup> – 31<sup>st</sup> July and 1<sup>st</sup> August; weather conditions prevented views on the other days.

On 6<sup>th</sup> August at 10:35 a plume was observed by helicopter pilots (and confirmed by volcanologists at Tolbachik) rising 6 KM a.s.l. and drifting 30 KM E. An explosion at 11:45 generated an ash cloud observed in satellite images that rose to an altitude of 4 KM and drifted 45 KM ESE. The ash cloud was 9 x 14 KM. Ash plumes that were observed in satellite images at 13:32 and 15:12 rose to altitudes of 4.2 KM and drifted 30 KM ESE, and 4 KM and drifted 80 KM ESE, respectively.

The KVERT reported that moderate seismic activity at Karymsky was detected during 9<sup>th</sup> – 17<sup>th</sup> August. Based on seismic interpretation, possible ash plumes rose to an altitude of 6 KM a.s.l. on 15<sup>th</sup> August and to an altitude of 4 KM a.s.l. the other days of the week. Satellite imagery showed a weak thermal anomaly on the volcano on 15<sup>th</sup> August; cloud cover prevented observations on the other days.

**NAME: Kizimen**  
**LOCATION: Russia (Kamchatka)**  
**HEIGHT: 2376 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 55.130°N 160.32°E**

The KVERT reported that during 26<sup>th</sup> July – 2<sup>nd</sup> August moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected in satellite images during 29<sup>th</sup> – 31<sup>st</sup> July; cloud cover obscured views on the other days.

The KVERT reported that during 2<sup>nd</sup> – 9<sup>th</sup> August moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected in satellite images during 2<sup>nd</sup> – 6<sup>th</sup> August; cloud cover obscured views on the other days.

The KVERT reported that during 9<sup>th</sup> – 17<sup>th</sup> August moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected in satellite images during 10<sup>th</sup> – 12<sup>th</sup> August; cloud cover obscured views on the other days.

**NAME: Tolbachik**  
**LOCATION: Russia (Kamchatka)**  
**HEIGHT: 3682 M**  
**TYPE: Shield Volcano**  
**COORDINATES: 55.830°N 160.330°E**

The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 26<sup>th</sup> July – 2<sup>nd</sup> August that travelled to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-and-steam plumes were observed. A thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.

The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 2<sup>nd</sup> – 9<sup>th</sup> August that travelled to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-

and-steam plumes were observed. A thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.

The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 9<sup>th</sup> – 17<sup>th</sup> August that travelled to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-and-steam plumes were observed. A thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.

**NAME: Shiveluch**

**LOCATION: Russia (Kamchatka)**

**HEIGHT: 3283 M**

**TYPE: Stratovolcano**

**COORDINATES: 56.653°N 161.360°E**

The KVERT reported that during 26<sup>th</sup> July – 2<sup>nd</sup> August, a viscous lava flow effused on the NW flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity. Satellite images detected a daily thermal anomaly.

A strong explosion at 22:55 on 26<sup>th</sup> July generated ash plumes that rose as high as 10 KM a.s.l. and drifted 520 KM SE. Pyroclastic flows travelled 5 KM. An ash cloud 15 x 7 KM was observed in satellite images about 60 KM SE of the volcano on 29<sup>th</sup> July. At 17:07 on 4<sup>th</sup> August video images showed an ash plume rising to altitudes of 4.5 – 5 KM a.s.l. and drifting 50 KM E. The next day the seismic network detected an explosion at 16:04; video images showed an ash plume rising to altitudes of 6.5 – 7 KM a.s.l. and drifting 50 KM ESE.

The KVERT reported that during 2<sup>nd</sup> – 9<sup>th</sup> August a viscous lava flow effused on the NW flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity. Satellite images detected a thermal anomaly during 3<sup>rd</sup> – 6<sup>th</sup>, 8<sup>th</sup>, and 10<sup>th</sup> – 11<sup>th</sup> August. Explosions during 4<sup>th</sup> – 5<sup>th</sup> August generated ash plumes that rose to altitudes of 5 – 7 KM a.s.l. and drifted SSE. A video camera recorded ash plumes that rose to altitudes of 7 – 7.5 KM a.s.l. during 10<sup>th</sup> – 11<sup>th</sup> August.

The KVERT reported that during 9<sup>th</sup> – 17<sup>th</sup> August a viscous lava flow effused onto the NW flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity.



*Above; erupting cinder cone and lava flow in the centre of Veniaminof caldera.*

Satellite images detected a thermal anomaly during 9<sup>th</sup> – 12<sup>th</sup>, 14<sup>th</sup>, and 16<sup>th</sup> – 17<sup>th</sup> August; cloud cover prevented observations on the other days. Explosions generated ash plumes that rose to altitudes of 5 – 7 KM a.s.l. and drifted E and NE.

**NAME: Veniaminof**

**LOCATION: USA (Alaska)**

**HEIGHT: 2507 M**

**TYPE: Stratovolcano**

**COORDINATES: 56.17°N 159.38°W**

The AVO reported that the ongoing low-level eruption of Veniaminof, characterized by lava effusion and emissions of minor amounts of ash and steam, continued during 31<sup>st</sup> July – 2<sup>nd</sup> August.

Although seismic activity decreased during 31<sup>st</sup> July – 2<sup>nd</sup> August, it still remained above background levels, and small discrete events continued to be detected. Cloud cover prevented satellite image and web-camera views.

The AVO reported that during 7<sup>th</sup> – 11<sup>th</sup> August seismicity at Veniaminof remained above background levels. Cloud cover obscured views of the cinder cone inside the caldera during 7<sup>th</sup> – 8<sup>th</sup> August. Slightly elevated surface temperatures, consistent with cooling lava flows, were detected in partly cloudy satellite images during 9<sup>th</sup> – 10<sup>th</sup> August. On 11<sup>th</sup> August cloud cover prevented satellite image views, and web-camera views showed nothing significant.

During 11<sup>th</sup> – 12<sup>th</sup> August seismic tremor increased and persistent elevated surface temperatures, consistent with lava effusion, were visible in satellite imagery. The web camera in Perryville (32 KM SSE) recorded intermittent steam-and-ash plumes; one on 12<sup>th</sup> August rose 3.7 KM a.s.l. and drifted W. Seismic tremor has remained high on 13<sup>th</sup> August.



The AVO reported that during 13<sup>th</sup> – 15<sup>th</sup> August seismic tremor at Veniaminof was high, and persistent elevated surface temperatures consistent with lava effusion were visible on satellite imagery. During 16<sup>th</sup> – 17<sup>th</sup> August the high levels of tremor became sustained; seismicity remained high through 20<sup>th</sup> August. Very high surface temperatures were detected in images during 16<sup>th</sup> – 17<sup>th</sup> August; only weak thermal signals were evident through the cloud cover in satellite data during 17<sup>th</sup> – 18<sup>th</sup> August. Clear views on 18<sup>th</sup> August from the FAA web-camera in Perryville (32 KM SSE) showed minor ash emissions. During a helicopter overflight on 19<sup>th</sup> August geologists observed two active lava flows from the cone, and lava flowing passively over ice at the foot of the cone. Elevated surface temperatures were detected in satellite data during 19<sup>th</sup> – 20<sup>th</sup> August. Clear web-camera views showed minor ash emissions rising to an altitude of 3.7 KM a.s.l. and drifting W and then SSE, just past the caldera rim.

**NAME: Kilauea**

**LOCATION: USA (Hawaii)**

**HEIGHT: 1222 M**

**TYPE: Shield Volcano**

**COORDINATES: 19.421°N 155.287°W**

During 31<sup>st</sup> July – 6<sup>th</sup> August, the HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater. The plume from the vent continued to deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas. The lake level was 51 M below the Halema'uma'u Crater floor on 5<sup>th</sup> August.

At Pu'u 'O'o Crater, glow emanated from three spatter cones and a small lava pond on the E part of the crater floor. The Kahauale'a 2 lava flow branches, fed by the NE spatter cone, were active as far NE as 3.2 KM and as far NW as 2 KM, and burned forest occasionally in two locations at the N edge of the 1983-1986 'a'a flows from Pu'u 'O'o. Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakout activity on the pali and coastal plain, and an ocean entry outside of the National Park boundary to the E.

During 7<sup>th</sup> – 13<sup>th</sup> August, the HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater. The plume from the vent continued to

deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas. The lake level rose during the week; the level was 49 M below the Halema'uma'u crater floor on 7<sup>th</sup> August and 37 – 39 M below the floor during 10<sup>th</sup> – 12<sup>th</sup> August. The level rose to 48 M below the floor during 12<sup>th</sup> – 13<sup>th</sup> August.

At Pu'u 'O'o Crater, glow emanated from spatter cones on the N and S portions of the crater floor. The Kahauale'a 2 lava flow, fed by the NE spatter cone, was active with scattered break-out flows and burned forest N of Pu'u 'O'o. Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakout activity on the pali and coastal plain, and an ocean entry outside of the National Park boundary to the E.

During 14<sup>th</sup> – 20<sup>th</sup> August, the HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater; the lake level was as high as 36 M below the Halema'uma'u crater floor on 16<sup>th</sup> and 18<sup>th</sup> August. The plume from the vent continued to deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas.

At Pu'u 'O'o Crater, glow emanated from spatter cones on the N and S portions of the crater floor. The Kahauale'a 2 lava flow, fed by the NE spatter cone, was active with scattered break-out flows and burned the forest N of Pu'u 'O'o. On 18<sup>th</sup> August on 13:30 the E flank of the N spatter cone apparently burst, causing lava flows to sporadically rush from the cone and cover a large part of the crater floor by the next morning. Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakouts on the pali and coastal plain, and an ocean entry outside of the National Park boundary to the E.

**NAME: Popocatepetl**

**LOCATION: Mexico**

**HEIGHT: 5426 M**

**TYPE: Stratovolcanoes**

**COORDINATES: 19.023°N 98.622°W**

The CENAPRED reported that during 31<sup>st</sup> July – 6<sup>th</sup> August seismicity at Popocatepetl indicated continuing gas-and-steam emissions that sometimes contained ash; cloud cover often prevented visual confirmation. Incandescence from the crater was occasionally observed. On 31<sup>st</sup> July a clear decrease in the size of the water vapour and gas plumes was observed; plumes were pushed by winds down the NW flank and rose only 100 M above the crater rim.

An explosion was detected at 23:12 on 1<sup>st</sup> August, but

cloud cover prevented confirmation of any ejecta.

On 2<sup>nd</sup> August minor amounts of ash fell in the Tepetlixpa, Atlautla, Ecatzingo, and Ozumba municipalities of Mexico State. On 4<sup>th</sup> August emissions of gas, steam, and ash drifted NW. During 5<sup>th</sup> – 6<sup>th</sup> August a few observed plumes rose 1 – 2 KM and drifted WNW, W, and WSW.

The CENAPRED reported that during 14<sup>th</sup> – 20<sup>th</sup> August seismicity at Popocatepetl indicated continuing emissions; cloud cover sometimes prevented observations of the crater. Incandescence from the crater was observed and occasionally intensified with some emissions. On 14<sup>th</sup> August a period of tremor was accompanied by an ash emission that drifted W. Ashfall was reported in the towns of Ozumba (18 KM W), Tepetlixpa (20 KM W), Atlautla (17 KM W), and Ecatzingo (15 KM SW) in the State of México. Later that day an ash plume rose 1 KM above the crater and drifted W. Gas-and-steam plumes were observed during 15<sup>th</sup> – 16<sup>th</sup> August. A period of tremor on 17<sup>th</sup> August was accompanied by an ash plume that rose 1.5 KM and drifted WSW. Ash fell in Tetela del Volcán (20 KM SW), Ocuituco (24 KM SW), Yecapixtla (31 KM SW), Tlayacapan (40 KM WSW), Cuautla (43 KM SW), Ayala (45 KM SW), and Cuernavaca (65 KM WSW). On 18<sup>th</sup> August high-frequency, low-amplitude tremor was accompanied by an ash emission that rose 1.2 KM and drifted SW. On 19<sup>th</sup> August minor steam-and-gas emissions drifted W. During 19<sup>th</sup> – 20<sup>th</sup> August emissions likely contained small amounts of ash but cloud cover prevented confirmation.

**NAME: Santa Maria**

**LOCATION: Guatemala**

**HEIGHT: 3772 M**

**TYPE: Stratovolcano**

**COORDINATES: 14.756°N 91.552°W**

The INSIVUMEH reported that an explosion from Santa María's Santiaguito lava-dome complex at 05:29 on 1<sup>st</sup> August generated an ash plume that rose 150 M above the crater and drifted SW. Ashfall was reported in the ranches of Monte Claro (S) and La Florida (5 km S). A few avalanches from the lava dome travelled short distances. On 4<sup>th</sup> August a weak explosion at 06:13 produced a white plume that rose 300 M and drifted SW. Minor amounts of ash fell in Monte Claro, El Rosario (45 km SW), and Palajunoj (S). Avalanches were generated by the lava flow on the S flank. Seven explosions were

detected during 5<sup>th</sup> – 6<sup>th</sup> August; the explosions generated avalanches on the NE flank, and degassing, jet-engine, and rumbling sounds. The last explosion was followed by a weak pyroclastic flow that travelled S and a moderate one that travelled SW. White and grey plumes rose 500 – 800 M. Ashfall was reported in the Palajunoj area. Later that day on 6 August OVSAN reported that explosions were heard, and ash plumes that rose 500 – 800 M drifted W and SW.

The INSIVUMEH reported that two explosions on 7<sup>th</sup> August from Santa María's Santiaguito lava-dome complex were followed by white plumes that rose 500 M. Pyroclastic material descended the E, S, and SW flanks. Fumarolic plumes rose 100 M on 8<sup>th</sup> August. On 10<sup>th</sup> August white plumes rose 250 M. An explosion at 06:24 generated an ash plume that rose 900 M and drifted SW, causing ashfall in Monte Claro (S). Heavy rainfall on 11<sup>th</sup> August caused a lahar in the San Isidro-Tambor River, a tributary of Samala River, which was 30 M wide, 1.5 M thick, and carried branches, tree trunks, and blocks up to 1.5 M in diameter. A few explosions on 13<sup>th</sup> August generated ash plumes that rose 1 KM and drifted 10 KM WSW.

**NAME: Fuego**

**LOCATION: Guatemala**

**HEIGHT: 3763 M**

**TYPE: Stratovolcano**

**COORDINATES: 14.473°N 90.880°W**

The INSIVUMEH reported that explosions from Fuego during 13<sup>th</sup> – 14<sup>th</sup> August generated ash plumes that drifted 10 KM W and SW. Three lava flows were active; one of the flows travelled SW.

Five explosions during 14<sup>th</sup> – 15<sup>th</sup> August ejected incandescent material 100 M high, and generated ash plumes that rose 300 M and drifted 6 KM. Lava flows were 150 and 300 M long in the Taniluya (SW) and Ceniza (SSW) drainages, respectively. The next day explosions produced ash plumes that rose 550 M and drifted 10 KM W. On 17<sup>th</sup> August 30-M-wide lahars carrying blocks travelled down the Las Lajas, Ceniza, and El Jute (SE) drainages. During 17<sup>th</sup> – 18<sup>th</sup> August explosions that were heard generated ash plumes that rose 200 – 300 M and drifted 7 KM W. Lava flows in the Taniluya and Ceniza drainages were each 400 M long.

During 18<sup>th</sup> – 19<sup>th</sup> August the flow rate increased; the lava flows were 600 and 800 M long in the Taniluya and Ceniza drainages, respectively. Incandescent blocks from the lava-flow fronts rolled down the

flanks and reached vegetated areas. Explosions during 19<sup>th</sup> – 20<sup>th</sup> August ejected incandescent material as high as 150 M, and generated ash plumes that rose 400 M.

**NAME: Pacaya**  
**LOCATION: Guatemala**  
**HEIGHT: 2552 M**  
**TYPE: Complex Volcano**  
**COORDINATES: 14.381°N 90.601°W**

The INSIVUMEH reported that during 7<sup>th</sup> – 8<sup>th</sup> August white vapour plumes rose 200 M above Pacaya and drifted E. On 9<sup>th</sup> August seismicity increased, and Strombolian explosions ejected tephra 200 M above MacKenney Crater and onto the flanks, 400 M away from crater. The next day the number and magnitudes of explosions increased, and seismic signals indicating fluid movement were recorded. Tephra was again ejected 400 M away from MacKenney Crater, causing small avalanches of volcanic material on the flanks. On 12<sup>th</sup> August fumarolic plumes rose 50 M. Cloud cover prevented observations of the crater on 13<sup>th</sup> August; however, the seismic network recorded a few gas explosions and tremor.

The INSIVUMEH reported that during 13<sup>th</sup> – 14<sup>th</sup> August the seismic network at Pacaya recorded weak tremor and explosions, although no ash plumes were observed. Incandescence from the crater was visible at night during 14<sup>th</sup> – 15<sup>th</sup> August. White and blue plumes rose from the crater on 15<sup>th</sup> August. A Strombolian eruption occurred on 16<sup>th</sup> August from 19:15 to 22:45, producing a 300-M-long lava flow that travelled W from MacKenney Crater. The seismic network recorded a few gas explosions and intermittent tremor during 17<sup>th</sup> – 18<sup>th</sup> August. Seismicity increased on 19<sup>th</sup> August; tremor and explosions were detected. On 20<sup>th</sup> August white plumes rose to low heights and drifted N.

**NAME: Reventador**  
**LOCATION: Ecuador**  
**HEIGHT: 3562 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 0.077°S 77.656°W**

The IG reported that during 7<sup>th</sup> – 8<sup>th</sup> August explosions at Reventador ejected incandescent material onto the SW flank. Steam emissions were observed on 8<sup>th</sup> and 9<sup>th</sup> August, and on 10<sup>th</sup> August they contained ash and rose 1 KM above the crater.

Cloud cover prevented observations during 11<sup>th</sup> – 13<sup>th</sup> August; roaring was reported on 13<sup>th</sup> August.

**NAME: Tungurahua**  
**LOCATION: Ecuador**  
**HEIGHT: 5023 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 1.467°S 78.442°W**

The IG reported that activity at Tungurahua remained high during 31<sup>st</sup> July – 5<sup>th</sup> August; the seismic network detected explosions, emissions, and long-period earthquakes indicating fluid movement. Although cloud cover mostly prevented visual observations of the crater, plumes were occasionally observed. Roaring was also heard. Steam plumes with low ash content were observed on 31 July, and on 1<sup>st</sup> August drifting W. Ashfall was reported in Mocha (25 KM WNW) on 31<sup>st</sup> July and in El Manzano (8 KM SW) on 1<sup>st</sup> August. On 2<sup>nd</sup> August a low-energy steam-and-ash emission was noted. During 2<sup>nd</sup> – 3<sup>rd</sup> August ash fell in El Manzano and Choglontus (SW). IG reported that seismic activity at Tungurahua was moderate to high during 7<sup>th</sup> – 13<sup>th</sup> August; the seismic network detected long-period earthquakes indicating fluid movement and some emissions. Although cloud cover mostly prevented visual observations of the crater, plumes were occasionally observed. On 8<sup>th</sup> August an ash plume rose 2 KM and drifted W, and ash fell in Choglontus (SW). A small steam plume rose 100 M and drifted SW the next day. Minor vapour emissions were noted on 11<sup>th</sup> and 13<sup>th</sup> August.

**NAME: Copahue**  
**LOCATION: Chile/Argentina border**  
**HEIGHT: 2997 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 37.85°S 71.17°W**

Webcams on the night of 15<sup>th</sup> August showed incandescence in the summit crater.

**NAME: Villarrica**  
**LOCATION: Chile**  
**HEIGHT: 2847 M**  
**TYPE: Stratovolcano**  
**COORDINATES: 39.42°S 71.93°W**

According to Proyecto Observación Visual Volcán Villarrica (POVI), satellite images of Villarrica acquired on 25<sup>th</sup> July revealed a weak thermal

anomaly. On 29<sup>th</sup> July observers photographed the crater and described a thermal anomaly on the S edge of the crater rim, in the same area from which a lava flow originated on 29<sup>th</sup> December 1971. They also heard deep degassing sounds. A second photograph showed a diffuse gas plume rising from the bottom of the crater, and ash and lapilli on the snow on the inner crater walls.

*All volcano reports in this issue are subject to change. All reports in this issue were from the following sources.*

### **Global Reports:**

Activolcans: <http://activolcans.info/>

VolcanoDiscovery:  
<http://www.volcanodiscovery.com/news.html>

Global Volcanism Program (Weekly Reports):  
<http://www.volcano.si.edu/reports/usgs/>

Volcanolive - John Seach:  
<http://www.volcanolive.com/index.html>

And Also the writers and commenters of Eruptions and VolcanoCafe.

### **Also Including:**

The Daily Telegraph:  
<http://www.telegraph.co.uk/>

The Jakarta Globe:  
<http://www.thejakartaglobe.com/>

### **Acronyms and Abbreviations**

a.s.l - Above Sea Level

AVO - Alaska Volcano Observatory

CENAPRED - Centro Nacional de Prevencion de Desastres

CVGHM - Center of Volcanology and Geological Hazard Mitigation

HVO - Hawaii Volcano Observatory

IG - Instituto Geofisico

IMO - Icelandic Meteorological Office

INSIVUMEH - Instituto Nacional de Sismologia, Vulcanologia, Meteorologia e Hidrologia

JMA - Japanese Meteorological Agency

KVERT - Kamchatkan Volcanic Eruption Response Team

MODIS - Moderate Resolution Imaging Spectroradiometer

RVO - Rabaul Volcano Observatory

SVERT - Sakhalin Volcanic Eruption Response Team

VAAC - Volcanic Ash Advisory Centre

## The Latest in Volcanoes and Volcanic Eruptions

*A Bulletin of World Volcanism magazine*

[www.volcanismbulletin.org](http://www.volcanismbulletin.org)

[bulletinwv@hotmail.co.uk](mailto:bulletinwv@hotmail.co.uk)

### **What is a Decade Volcano?**



The Decade Volcano programme was set up to expand research on deadly volcanoes and to provide better understanding if a volcanic disaster was to occur. This article explains what is a Decade Volcano.

**Continued on page 14**

### **Also in this Issue:**

The Volcano in a Car Park?

Sometimes in articles about a particular volcano the phrase ‘Decade Volcano’ is mentioned, but what is a decade volcano?

### **A Decade Volcano**

A decade volcano is a volcano that has been chosen by the IAVCEI (basically the head organization of Volcanology) as a particularly dangerous volcano with need for special research.

### **The Programme**

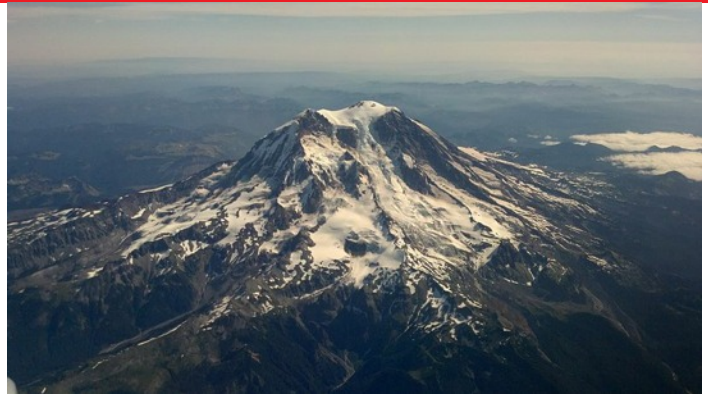
The Decade Volcano programme is a three way programme between the United Nations, the IAVCEI and the IDNDR.

The IDNDR was the International Decade for Natural Disaster Reduction. The decade was 1990-2000. The Decade volcano programme has helped many volcanic disasters as shown below.

### **The Volcanoes**

At the time of writing, currently 16 volcanoes are ‘decade volcanoes’, they are listed below.

1. Avanchinsky - Koryaksky (two volcanoes next to each other), Russia
2. Colima, Mexico
3. Etna, Italy
4. Galeras, Colombia
5. Mauna Loa, USA
6. Merapi, Indonesia
7. Nyiragongo, Democratic Republic of the Congo
8. Rainier, USA
9. Sakura-Jima, Japan
10. Santa Maria, Guatemala



*Above; Rainier volcano in Washington state, USA is a decade volcano. Its main volcanic hazard is large mud flows (lahars) produced during eruptions.*

11. Santorini, Greece
12. Taal, Philippines
13. Tenerife [Teide], Spain
14. Ulawun, Papua New Guinea
15. Unzen, Japan
16. Vesuvius, Italy

### **Success and Disappointment**

The programme was called into action in 1992 when an eruption on the SE flank of Etna that began in 1991 began to produce a lava flow that threatened to overrun the town of Zafferana. The lava flow was diverted by man made barriers. They also lowered several concrete blocks into the active lava tube that was feeding the flow. Their efforts saved the town.

However nothing could be done to prevent a sudden explosion of Galeras volcano in Colombia in 1993 that killed several people. Or the 2010 eruption of Merapi that was one of the most devastating on record.

### **Research**

The main focus of the Decade Volcano Programme was to improve the understanding of the above volcanoes. Some of the volcanoes, like Etna in Italy are very well known. Others however have hardly been studied; political problems prevent much research of Nyiragongo volcano in the Congo.

Others have hardly been studied. For example, Ulawun volcano in Papua New Guinea was selected to be a decade volcano because of its large range of eruptive styles. But the volcano has not been studied since the announcement of its status.

### **Suggestions of Other Decade Volcanoes**

The 16 above volcanoes are just a very small portion of the 1500 active and potentially active volcanoes known currently. It is clear that the above list is not a complete list of all of Earth's dangerous volcanoes.

For my decade volcano list, I wouldn't go for volcanoes that have maybe had a large eruption (most volcanoes have large eruptions at some point in their lives). It would be the volcanoes that have had a list of large eruptions in the Holocene.

One volcano I'd definitely recommend for this status would be Apoyeque in Nicaragua. This large ignimbrite complex has had 4 known eruptions in the past 10,000 years. Three of these were very large eruptions. The volcano has been quiet for thousands of years and it may be one to watch out for.

Two other things make this a place deserving of Decade Volcano status are discussed below:

1) Next to Apoyeque volcano is the minor centre of Nijapa-Miraflores. These are mostly made up of maars, maars that could form on anyplace on the fissure on which they are built. What makes this tiny volcano dangerous is that it and neighbouring Apoyeque are situated on the outskirts of Managua, the capital of Nicaragua and its surrounding inhabitants, with a combined population of 3,335,000 people.

Apoyeque is situated just 4 km from the city and Nijapa-Miraflores straddles the city, with some volcanic centres inside it.

Another example is the Campi Flegrei volcano just outside the city of Naples. Its neighbouring volcano, Vesuvius is also a decade volcano, but many Italian scientists say that this volcano could be a bigger hazard than Vesuvius.

The volcano forms a caldera which lies less than 10 KM from the city of Naples. The caldera was once home to a stratovolcano like Vesuvius, however large eruptions thousands of years ago destroyed this cone leaving the caldera. The volcano has had a few small eruptions since then which have formed maars and pyroclastic cones. The last created the Monte Nuovo in 1538. What really worries Italian Volcanologists is the fact that the town of Pozzuoli, home to around 83,000 people lies in the centre of activity. A new eruption in this area would spell disaster for this town.

These are just a couple of examples of possible Decade Volcanoes, and there are countless more. It still shows that when it comes to Volcanic Hazards, we are still not that well prepared.

## The Volcano in a Park?

In the middle of a normal suburban neighbourhood in Puebla lies what many in Mexico believe to be the world's smallest volcano. Cuexcomate.

### Geology

The cone of Cuexcomate is 13 metres tall and 23 metres in diameter. It is now a small tallest attraction. It has a 4-8 diameter crater that has a depth of 17 metres. At the bottom sits a pool of still warm water.

### Formation

Historical Records show that Cuexcomate formed around 1060 years ago during a major eruption of nearby volcano Popocatepetl. Not much is known about anything else apart from this.

The Mexicans for centuries claimed this to be the worlds smallest volcano.

### New Research

However, the first real geological survey taken at the 'volcano' show a very different story.

Results published in 2012 show the 'volcano' to be 90 % sinter (hydrothermal deposits). This is almost identical to currently active Geysers in Mexico.

But, even though it is not volcano (formed instead from phreatic eruptions and hydrothermal explosions), this makes it the worlds largest Geyser!.



*Above; Cuexcomate, is this the worlds smallest volcano?*



*Above; inside Cuexcomate's crater.*



## **Website of the Month**

### **GNS Science - Volcanoes**

New Zealand is one of the most amazing and beautiful places of volcanic activity in the world. With its impressive snow-capped, volcanoes like Tongariro and Ruapehu or the subdued massive caldera volcanoes like Taupo. You can learn about these wonders on the GNS Website, the official website for New Zealand's natural hazards. As New Zealand's volcanoes are some of the most intensely studied in the world, there is a treasure trove of information on this website. From how they work to how they are monitored, it is the perfect starting place to learn more about New Zealand's volcanoes.

<http://www.gns.cri.nz/Home/Learning/Science-Topics/Volcanoes>

### **Your Thoughts**

This month, do you think there is evidence of recent volcanic activity on Venus?, write to us at [bulletinwv@hotmail.co.uk](mailto:bulletinwv@hotmail.co.uk) and let us know!