

Eruption in Eyjafjallajökull

Status Report: 19:00 GMT, 27 April 2010

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Compiled by: *MJR / SSJ / MTG / BO*

Based on: IMO seismic monitoring; IES-IMO GPS monitoring; IMO river gauges; information from local police; and aerial observations over the eruption site

Eruption plume:

Height (a.s.l.): Observed from the air at 12:00 GMT at an elevation of 3–3.6 km (10–12,000 ft).

Heading: West–northwest from the eruption site.

Colour: Light, low-lying clouds of steam observed over the eruption site, together with occasional bursts of grey to black-coloured cloud, which rose to up to half of the total height of the eruption plume. Above this level, the plume was lighter in colour with a capping of white cloud. Localised clouds of steam were also visible at the top of the Gígjökull glacier.

Tephra fallout: Light dusting of ash seen on cars in the towns of Hvolsvöllur and Hella, located 32 and 45 km, respectively, west of the eruption site.

Lightning: No detections over the eruption site since 19 April 2010.

Noises: Booming sounds reported from Hvolsvöllur, 32 km west of eruption site.

Meltwater:

Continuing discharge of water from Gígjökull due to ice-melt at the eruption site. Discharge at the old Markarfljót bridge, 18 km from Gígjökull, is estimated at $\sim 100 \text{ m}^3 \text{ s}^{-1}$, of which $\sim 30 \text{ m}^3 \text{ s}^{-1}$ is baseflow. Between $\sim 13:00$ and $15:45$ GMT, a 30-cm rise in stage was recorded at the bridge; this increase was accompanied by a decrease in electrical conductivity, which is a measure of dissolved solutes in the river.

Conditions at eruption site:

The eruption site was seen clearly during today's overflight. Eruptive activity in the northern ice cauldron remains similar to conditions during the preceding four days. A volcanic crater has formed in the south-western corner of the cauldron. Erupted material from the vent continues to accumulate on the flanks of the crater. The rim of the volcanic crater is ~ 50 m lower than the surrounding ice cauldron. Volcanic spatter was observed from the vent, with ejected lava reaching heights of 100–200 m. Unstable plumes of ash rise regularly from the vent. Lava continues to flow to the north, advancing ~ 1 km from the crater. Depressions in the ice-surface have formed due to lava being in contact with ice; these features have enlarged considerably

since 24 April. The surface of Gígjökull is grey in colour due to ash deposition; likewise, the north-western flank of Eyjafjallajökull is black in appearance.

Seismic tremor: Intensity comparable to the preceding four days of eruptive activity.

Earthquakes: No locatable seismicity has been recorded today beneath Eyjafjallajökull.

GPS deformation: Horizontal displacement towards the centre of the volcano, in addition to vertical subsidence. These observations are consistent with deflation of a magma reservoir beneath Eyjafjallajökull.

Magma flow: No measurements possible today; however, the intensity of the eruption suggests that the discharge level is similar to the preceding four days (i.e. 20–40 tonnes s⁻¹).

Other remarks: No measurable geophysical changes within the Katla volcano.

Overall assessment: Plume elevations and magma discharge levels remain similar to the preceding four days of activity. Lava continues to flow north from the eruption site toward the head of the Gígjökull glacier. Despite light ash-fall occurring up to 45 km west of the eruption site, today's explosive activity and ash production represents a fraction of conditions during the height of the eruption (14–17 April). There are no measurable indications that the eruption is about to end.