

## Transition sequence of the Y4 Eruption, Izu-Oshima volcano, Japan.

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Izu Oshima volcano Y4 eruption is a large-scale eruption that occurred in the first half of the 15th century. In the Y4 eruption, a flank eruption occurred the southeastern part of Izu Oshima. The fissure of Y4 flank craters is approximately 4 km in length in the northwest-southeast direction from the southeastern Imasaki coast to the vicinity of Mabushi Forest Road. In this report, the interpretation of the airborne laser survey data and the on-site geological survey have revealed the distribution of side craters and the transition of eruptions from the tephra.

Of the two pyroclastic cones previously considered N1 flank volcanoes, the northern "Mokkoku" pyroclastic cone has a fresh crater rim and the craters are lined up in the same direction as the Y4 eruption flank craters, and lava flows from the southwestern foot of the cone. The lava flow was confirmed to be Y4, and the "Mokkoku" pyroclastic cone was determined to be a volcano on the Y4 eruption.

On the northwestern extension of the Y4 flank fissure near the Mabushi Forest Road, there is a fissurer-like topography extending across the ridge. In the northwestern extension there is a dike that cuts the N4 pyroclastic cone, and on the southwestern part of the caldera rim, a slightly welded spatter covers the caldera rim on the west of the Suberi-dai. The chemical composition of the welded spatter is consistent with that of the initial eruption product of the Y4 eruption, but not with other eruption products.

From these facts, it is considered that the Y4 eruption crater extended into the caldera. The fissure of the Y4 flank eruption is about 6 km long on the ground, and reaches 10 km including the seafloor (Ishizuka et.al., 2014).

The Y4 eruption tephra is divided into Y4a scoria fall, Y4b ash mainly composed of scoria ash, Y4c scoria fall, and Y4d fall ash with light gray / light brown ash layers. Y4a may be divided into lower Y4a1 scoria fall and Y4a2 scoria fall depending on size change. The Y4a1 is thick in the southeastern part of the island and its distribution is considered to originate mainly from the flank craters. The Y4a2 is thicker on the north side than Y4a1, and it is considered from the distribution axis that it erupted from Mt. Mihara area. This indicates that the flank eruption of Y4 occurred in early stage of the eruption, followed by a scoria discharge eruption at the summit. Y4a1 and Y4a2 fall scoria have almost the same whole-rock chemical composition as the spatters and lava of the early Y4 eruption stage.

Both Y4b and Y4d have no axis in a specific direction. Volcanic ash release may have taken place over a long period of time. Y4c scoria fall which covers Y4b are richer in  $Al_2O_3$  than early eruptives such as Y4a. The axis of distribution extending southeast from Mt. Mihara is clear, but scoria fall with different  $Al_2O_3$  composition is also distributed on the northeast side, suggesting that scoria fall of Y4c was emitted multiple times.

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