

浅間前掛火山山頂部と黒斑火山崩壊カルデラ壁に記録された 火砕噴火による安山岩質溶結火砕丘の形成

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(2014年9月1日受付, 2015年3月24日受理)

Formation of the Andesitic Welded Pyroclastic Cones by Pyroclastic Eruption recorded in the Summit area of Asama–Maekake Volcano and the Collapsed Caldera Wall of Kurofu Volcano

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The following proximal deposits of andesitic composition in Asama–Maekake Volcano and Asama–Kurofu Volcano were compared: 1) Kama-yama, 2) Upper Maekake-yama, and 3) Upper Sennin-iwa. The 1783 and 1108 eruptions formed Kama-yama and upper Maekake-yama, respectively. The upper Sennin-iwa, which is exposed on the collapsed caldera wall, was formed before the large-scale sector collapse approximately 24,000 years ago. Most of these deposits are piles of multiple welded pyroclastic rocks that form the topography of pyroclastic cones. Massive parts exhibit densely welded features such as fiamme and a eutaxitic texture under a microscope. These deposits are also associated with Plinian pumice fall deposits on the distal area, indicating that the intense pyroclastic fall formed these welded pyroclastic cones in the proximal area during the eruptions. Therefore, syn-Plinian fountaining is considered to have occurred in these cases.

Kama-yama is a simple, small-scale truncated cone and occupies the dish-shaped crater of Maekake-yama. A thick, densely welded pyroclastic rock that is exposed on the crater wall forms the central part of the cone. On the other hand, upper Maekake-yama is a large truncated cone extending in the east-west direction. The complex topography and geology around upper Maekake-yama suggest that it is a composite of pyroclastic cones and that it collapsed at least twice during the 1108 eruption. The upper Sennin-iwa is a remnant of a pyroclastic cone, judging from its topography. It is considered to be less proximal than the other two examples. However, it consists of densely welded pyroclastic rocks with interbedded non-welded pumice fall deposits. Various factors, including the distance from the eruptive source, depositional rate, and fountain height, may have generated the variations in the occurrence among the proximal deposits observed in this study.

Key words: Proximal deposit, welded pyroclastic rock, pyroclastic cone, Asama Volcano

1. はじめに

火口近傍に分布する噴出物の産状は、噴火様式の実態や火山体形成の理解に直結する多くの情報をもつ。しかしながら、火山山麓に分布する降下火砕堆積物や火砕流堆積物に比べ、火口近傍相は産状が複雑である場合が多く、記載があまりすすんでいない。ニュージーランドのナラホエ火山の例 (Hobden *et al.*, 2002) など、比較的小規模な噴火による山頂部の地形の変遷が示された研究例は

あるが、一般に規模の大きい噴火の噴出形態と火山体形成の実態が議論された事例は多くはない。火口近傍で生ずる諸現象の解明を目指す“プロキシマル火山地質学” (高橋, 2006) のフィールドの一つとして、我々は浅間火山において検討をすすめている。浅間前掛火山の山頂部には火口近傍相の観察に適した露頭が点在し、また浅間黒斑火山の崩壊カルデラ上部にも良好な露頭が見られる。現在活動中の山頂火口を有する釜山については、火

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