

十勝岳北西麓で新たに発見された4,700年前の火砕流堆積物と 十勝岳の完新世の活動の再検討

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Newly Found 4.7 ka Pyroclastic Flow Deposits on the Northwestern Foot of Tokachi-dake Volcano, Central Hokkaido, Japan and Reexamination of the Eruptive Activity During Holocene

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Tokachi-dake volcano restarted eruptive activity at the Ground crater in middle Holocene after long dormancy of nearly 10 ky. The activity at the crater (Stage 1) was the most explosive and voluminous one in the volcano during Holocene. We newly found a pyroclastic flow deposit beneath already recognized pyroclastic flow deposit (Gfl-1: Ground Crater pyroclastic flow deposit 1) of the Stage-I, intercalated with lahar deposits and thin soils. The deposit is composed of gravel-sized blackish blocks, pumices, banded pumices and altered blocks with yellowish to reddish brown colored fine sand matrix. Progressive thermal demagnetization experiments for the blackish blocks and the pumices show that the direction of the remnant magnetization of the deposits is close to that of the geocentric axial dipole and did not change up to blocking temperature of about 580°C, indicating that these blocks and pumices are essential magmatic materials. Thus, the deposit can be considered as pyroclastic flow one. However, this is characterized not only by the heterogeneous distribution of these essential materials in the deposit but also by heterogeneous matrix. These features and abundant accidental altered blocks suggest that generation of the pyroclastic flow might be related with sector collapse of the volcanic edifice. This is consistent with the topographic feature of the Ground crater. The petrography and the whole-rock chemical compositions of these essential materials are similar to those of the Stage I. This suggests that the newly found pyroclastic flow must be related to the initial eruptive activity of the Stage I. New ¹⁴C ages for the deposit are in 4.7 ka, indicating that the activity of the Stage I began much earlier than previously recognized age (3.3 ka). Finding of the pyroclastic flow deposit, named as Gfl-0, suggests that the Stage I had continued and been derived from the same magma system for more than 1400 years. However, considering a long interval between Gfl-0 and Gfl-1, the Stage I might be divided into two sub-stages, Stage I-0 and Stage I-1.

Key words: Tokachi-dake volcano, pyroclastic flow, sector collapse, thermal demagnetization experiments

1. はじめに

十勝岳火山群は、北海道中央部のNE-SW方向に延びる大雪-十勝火山列の南西部に位置する。火山群の活動

は古期、中期および新期に区分されており(石川・ほか, 1971)、新期の中でも完新世の活動は、十勝岳の北西斜面で認められている(Fig. 1)。そこでは少なくとも、3,300

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