

High resolution stratigraphy of pyroclastic fall deposits of Asama-Maekake volcano since 10ka based on trenching and 14C datings -1- : Result of trenching and tephra-stratigraphy

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Asama-Maekake volcano has been active for about 10000 years. Black soil on the flank slope of the volcano contains numerous pyroclastic fall deposits suggesting the past eruptions of various scales. Since the older deposits are buried by the younger deposits of the large-scale eruptions such as As-A (1783AD) and As-B (1108AD), enough has not been known for the period before the 12th century. In order to reconstruct the history of eruptions as detail as possible, geological investigation that included trenching by backhoe was carried out. This is a part of the “integrated program for next generation volcano research and human resource development” supported by the ministry of education, culture, sports, science and technology, Japan since 2016. Total number of the trenches is 13 and trench sites are from the south, via east to the north of the volcano. Distance from the summit crater of the trench sites varies from 5.4 km to 12 km. Soil samples for the 14C dating were taken from immediately below the pyroclastic fall deposits at the individual site. A wide-spread tephra called K-Ah was recognized in the soil in many sites, and it played an important role as a key bed of ca. 7300 yBP. One of the results is that the major part of As-C distributes toward the due east and minor distribution to the northeast. This minor one is overlain by a welded pyroclastic flow deposits. 14C date of As-C may go back to the era. There are two major pyroclastic fall deposits those were found ca. 6000 yBP and 8300 yBP in the stratigraphy. The former one distributes widely from the south via the east to the northwest. The latter distributes mainly toward the SE. It was also revealed that there are many small to intermediate-scale deposits around 5000 yBP. Since these deposits seldom distribute on the distant place more than 10 several kilometers from the summit crater, trenching on the proximal to the medial area has worked efficiently to recognize them. This work is characterized by the extensive geological descriptions covering wide area of the foot of the volcano. This is a significant new trial for reconstructing the history with high resolution.

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