The Enryaku (AD800-802) and Johei (AD937) eruptions of Fuji Volcano, Japan

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Reliable historical eruptions of Fuji Volcano occurred ten times since AD719. However, their vents or ejecta have been uncertain except for the Jogan (AD864-866) and Hoei (AD1707) eruptions. On the other hand, our geological survey has revealed that there are about 25 eruptive products since the 8th century. In this study we focus the Enryaku (AD800-802) and Johei (AD937) eruptions. The old documents “Nihonkiryaku” said that gravels and sand fell on the eastern foot as a hail by the Enryaku eruption. We pointed out the Subashiriguchi-Umagaeshi 5 pyroclastic fall deposit (SU-5) was formed by this eruption based on its 14C age and stratigraphy. And, some previous studies proposed that the Takamarubi lava flow (Sd-Tam) was emplaced in this event. But, our new data indicate that SU-5 and Sd-Tam are distinct in bulk-rock geochemistry and SU-5 can be correlated with a scoria fall deposit immediately below Sd-Tam in the eastern foot (SiO2=50.3-51.3wt%, MgO=5.1-6.0wt%, K2O=0.57-0.66wt%, Zr=64-80ppm). Besides, the Subashiriguchi-Umagaeshi 6 pyroclastic fall deposit (SU-6), which has erupted at about AD900, is divided into lower and upper units; the upper unit (SU-6’) is geochemically identical to Sd-Tam (SiO2=49.9-51.2wt%, MgO=5.3-5.6wt%, K2O=0.79-0.80wt%, Zr=101-103ppm). The “Nihonkiryaku” said that a lava flow buried a lake in the Johei eruption. Because this description is consistent with the distribution of Sd-Tam reaching Oshino where there are many ponds, we conclude Sd-Tam is the product of this eruption.

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