

## Compositional variation during the Ko-Fuji stage, Fuji volcano, Japan

# Atsushi Yasuda[1]; Toshitsugu Fujii[1]; Takayuki Kaneko[2]

[1] Earthq. Res. Inst., Univ. Tokyo; [2] Volc. Res. C., ERI, Univ. Tokyo

Based on whole-rock composition of volcanic products sampled at various locations around Fuji volcano, compositional variation of magma during the Ko-Fuji (Old Fuji) stage is discussed. Analyzed samples consist of sequential air fall deposits in a borehole at Kamishibanta, the eastern foot of Mt. Fuji, boulders from debris flows at south western and north eastern foot, lava flows and boulders recovered from boreholes at north eastern flank, and sequential air fall deposits at eastern flank. The volcanic products of the Ko-Fuji stage are divided into three sub-stages; the early Ko-Fuji (ca. 100ka-50ka), the middle Ko-Fuji (ca. 50 ka-20 ka) and the late Ko-Fuji (younger than ca. 20 ka). Three sub-stages show distinct compositional trends in variation diagrams such as  $\text{SiO}_2$ - $\text{K}_2\text{O}$  and  $\text{MgO}$ - $\text{TiO}_2$  plots. The slope of the compositional trend of the early Ko-Fuji is almost similar to those of pre-Fuji volcanoes, which show gradual increase of  $\text{K}_2\text{O}$  with increasing  $\text{SiO}_2$ . On the other hand, the compositional trend of the late Ko-Fuji very resembles to that of the Older stage of Shin-Fuji (Younger Fuji) volcano, showing large variation of  $\text{K}_2\text{O}$  concentration without changing in silica content. The compositional trend of the middle Ko-Fuji plots between the two trends. Provided that those compositional trends are caused by fractional crystallization differentiation of a parental magma, it is likely that a primary differentiation environment of the parental magma gradually changed from a hydrous low-pressure condition to less-hydrous higher-pressure conditions during the entire activity of the Ko-Fuji volcano.