



## **The recent activity of the Albano maar (Colli Albani volcano, Roma): a stratigraphy review by new exposed sections**

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This work summarizes the results of new field and samples analytical data collected both in proximal and in distal position in the Colli Albani area. New proximal outcrops of the most recent products of the Colli Albani have been exposed along the western slope of Albano crater during road excavations (Ta.Ca.Ro. Hwy) and, in distal position, in the urbanized boundaries of Roma. The Colli Albani volcano has been considered until last years extinct or longly quiescent. The presence of lahar and phreatomagmatic deposits emplaced after the “Peperino Albano” (PA; 29 ka) was recognized for the first time by Funicello et al. (2003, 2004). In the present work detailed results of stratigraphic and sedimentologic analyses of the deposits that constitute the Tavolato Formation and exposed inside a paleo-valley by the excavation of a trench realized “ad hoc” nearby the Lucrezia Romana site, in collaboration with the Soprintendenza Archeologica of Roma, are presented. These analyses allowed also the reconstruction of the paleo-hydraulic regimes giving surprising results, linked to the exceptional conditions of the site interested by the over flowing of the Lake Albano.

Before the Ta.Ca.Ro Hwy excavations limited proximal exposures available made it difficult to evaluate distribution and volume of the products, the exact stratigraphic sequence, and eruption style. New sections are 20-30 m high and cut the most recent products of the Albano maar, at proximal location, that is a continuous exposure ~ 2 km long, parallel to the maar rim at ~ 2 km along its western slope. Funicello

et al (2003) named the main volcanic units overlying the Peperino Albano units SD and PHF. In this work we name these units Villa Doria Unit (UVD) and Palazzolo Unit (UPA). In the exposures, UVD is up to 8 m thick, made by sandwaves, impact sags, and planar beds, with antidunes of 15-20 m of wavelength, indicating a surge origin and an unexpected very large energy for this recent eruption. UVD is associated to lahars at the top with syn- and post-eruptive lahar deposits, well correlated with the Tavolato Formation. At the top of UVD is present a last phreatomagmatic unit characterized by the presence of a fall deposit at its base, the Palazzolo Unit (UPA), that very likely represent the last eruption of the Albano maar. The physic characteristics of deposits are different from the underlying phreatomagatic ignimbrite PA, likely due to the different water-magma interaction rates. AMS studies constrained the flow directions and determined the position of the vent in the south part of the Albano nested crater. The overlying UPA is characterized by the presence at the base of a pumice lapilli fallout deposit.