New K-Ar ages of post-collisional Quaternary basaltic volcanism in the Central Anatolian Volcanic Province, Turkey

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Post-collisional Quaternary basaltic volcanism developed in Central Anatolia along a NE-SW direction. This basaltic volcanism occurs partly at Erciyes (ES) and Hasandag (HS) stratovolcanoes and mostly at monogenetic volcanoes, in the Obruk-Zengen (OZ) and Karapınar (K) areas. According to new radiometric and major element data, the oldest basaltic sample of ES is 1.695±0.037 Ma and exhibits an alkaline character whereas the youngest (<0.001 Ma) is calc-alkaline. ES basalts are generally ~0.45 Ma and the younger ones are located at the north of ES. At HS, the oldest and the youngest samples are alkaline basalts and they are 0.543±0.012 Ma and 0.002±0.007 Ma, respectively. Except the oldest one, all the studied HS basalts are ~0.1 Ma or younger. In the OZ area, the oldest sample is 0.799±0.02 Ma and the youngest is 0.066± 0.007 Ma. Except the youngest one, all basalts are alkaline and they are older than HS basalts. The oldest basaltic sample (0.28±0.0071 Ma) in the K area is calc-alkaline whereas the youngest (<0.001 Ma) is alkaline. We emphasize the very young ages in ES, HS and K. Geochemical data outline the calc-alkaline and mainly alkaline affinities in ES and HS, OZ and K, respectively. These new ages prove the occurrence of historical eruptions in Central Anatolia which is very important for the assessment of volcanic hazards. As some volcanoes in Central Anatolia are very close to highly populated cities, we suggest that they should be monitored and local population informed about possible volcanic risks in the future.