

Post-collisional Quaternary basaltic magmatism from the Central Anatolian Volcanic Province (CAVP): mineralogy and P-T estimates

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This study focuses on Quaternary basaltic volcanism developed along a NE-SW direction and consisting of Erciyes stratovolcano (ES), Hasandağ stratovolcano (HS) and Obruk-Zengen (OZ) and Karapınar (K) dispersed volcanism. Based on our dated datasets, coeval samples exhibit calcalkaline affinity in ES while alkaline in HS, OZ and K.

The mineralogical assemblage of HS, OZ and K is plg+ol+cpx+oxide minerals. On the other hand ES is composed of plg+ol+cpx±opx and oxide minerals. Opx was only detected in some samples of ES. We emphasize the difference in mineralogical features, comparatively to the 3 other studied areas. The occurrence of both plg and ol, in equilibrium and disequilibrium, emphasizes that the genesis conditions were variable and related to magma mixing processes.

Estimated temperatures and barometers are proposed in Table 1 [1]. Calculated depths (km) are 10.5-17, 18, 19-28 and 21 for ES, HS, OZ and K, respectively. According to these results, the depths of ES are shallower than for the other studied areas. OZ gives the highest cpx-liq temperature, pressure and depth. The mean value of ol-liq temperatures and depths are increasing from NE to SW. All these differences may be explained by multistage crystallization of minerals in magma chambers located at different depths.

Study Area	Temperature (°C)			Pressure (kbar)
	Eq (32d-33-34) cpx-liq	Eq 22 ol-liq	(Eq 36-37) two-prx	(Eq 32a-32b-32c) cpx-liq
ES	1138-1167	1160-1260	1024	4.20-4.90
HS	1208	1199-1273	-	4.66
OZ	1120-1233	1135-1296	-	5.76-7.79
K	1172	1262-1263	-	5.30

Table 1: Estimated geothermometer and geobarometer values for the four groups volcanics.

[1] Putirka (2008) *Rev.Min&Geo* **69**, 61-120