geochemical data from previous studies, and interpretation of our own data from monogenetic volcanoes enabled us reviewing source characteristics of monogenetic basalts in CAVP.

CAVP monogenetic samples are transitional to calc-alkaline according to their Zr and Y contents. All CAVP monogenetic basalts display similar variably enriched LIL/HFS patterns and HFS anomalies on mantle-normalized diagrams. They all have incompatible element ratios intermediate between orogenic andesites and within-plate basalts. High La/Nb (>1.6), Al_2O_3/TiO_2 (10-17) and low Sm/Yb ratios (<2.5) imply that the melts must have been derived from shallow depths (<80 km), that is within the lithospheric mantle, just like the calc-alkaline volcanics of CAVP. There is also evidence which might account for crustal contamination such as highly variable range in HFS and other incompatible element ratios Zr/Nb, Y/Nb, La/Yb, and presence of slight negative Ba anomaly on multielement diagrams. Presence of U peaks on mantle-normalized multielement diagrams for most monogenetic CAVP basalts, and variation in $^{87}Sr/^{86}Sr$ ratios reported for monogenetic volcanoes in the western part of CAVP imply crustal contribution as well.

The driving mechanism for generation and ascent of Neogene-Quaternary volcanism in the CAVP is the transtensional and rotational tectonics in central Anatolia from Miocene onwards. This is evidenced by exposure and vent distribution of the central Anatolian volcanics confined to two major fault zones namely, the Central Anatolian Fault Zone (or Ecemis Fault Zone) and the Tuz Gölü Fault Zone. In a wider regional context, CAVP monogenetic basalts are comparable to Apuseni Mountains (Romania) and Big Pine (Basin and Range) volcanics, except CAVP basalts have depleted Ba contents. There is a need for systematic petrological study to expand the database and have a better picture of monogenetic volcanism within the CAVP.

Eocene post-collisional volcanism in the Central Anatolian Crystalline Complex, Turkey: Petrology and geodynamic significance

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In the Central Anatolian Crystalline Complex (CACC) the Late Cretaceous post-collisional granitic magmatism is followed by Eocene extension, resulting in formation of roughly E-W trending transtensional basins. The volcanic rocks, mainly submarine lava flows and subareal domes are concentrated along these Middle Eocene (Bartonian) basins. The volcanic rocks are basic to intermediate and are classified as basalt, basaltic andesite and rarely alkali basalt and trachy-andesite. Petrographically they are generally plagioclase + pyroxene ± olivine ± hornblende ± biotite pyhric, indicating a shallow crystallization level. They are characterized by several disequilibrium textures, which may suggest role of magma mixing/mingling process during their evolution. Eocene volcanic rocks are characterized by high phenocryst contents, low but variable MgO concentrations (0.54- 9.30 wt %), low Mg numbers (19.57- 55.57) and low compatible trace element concentrations (Ni 5-166 ppm; Co 7-32 ppm), which provide strong evidence for the mafic mineral fractionation. Their relatively high Zr and Y contents provide strong evidence for their transitional to mildly alkaline nature and also point out their within-plate characters. All studied samples are strongly and variably LREE enriched relative to chondrite with the (La/Sm) N ratio of 2.26- to 6.17 and show small negative Eu anomalies (Eu/Eu*=0.65-1.00), suggesting plagioclase fractionation. The REE patterns of the studied rocks are consistent with the derivation from a shallow depth (e.g. spinel lherzolitic source). They have negative Nb-Ta and Ti anomalies in the primitive mantle normalized diagram and are characterized by low Nb/La (0.21 to 0.62), Ce/Pb (3.70-34.90) and Nb/U ratios (1.11-30), which may indicate an interaction with the Late Cretaceous granitic host rocks in the course of their ascent.

The volcanic rocks display similar but variable ranges of Sr, Nd and Pb isotope ratios. εNd values range from 0.12 to 4.06, which is indicative of an isotopically depleted mantle source. They have relatively high and variable LILE/HFSE, LILE/LREE ratios (e.g. Ba/Nb

32- 208 and Ba/La 16-46) and relatively radiogenic Sr, Pb isotope compositions (0.70404-0.70559 and 18.62 - 19.17 for $^{206}Pb/^{204}Pb$ 15.58 – 15.68 for $^{207}Pb/^{204}Pb$ and 38.65 – 39.00 for $^{208}Pb/^{204}Pb$), indicating that they were derived from a heterogeneous lithospheric mantle that had been metasomatised by subduction related agents such as fluids and/or melts during a previous geodynamic event. On the other hand, high LILE and LRE contents of the rocks point out fluid dominated metasomatism rather than melt metasomatism.

Eocene volcanic rocks are supposed to be formed as a result of post-collisional lithospheric extension that followed the Late Cretaceous thickening of the Central Anatolian Crystalline continental crust, related to the closure of the Neotethyan Izmir-Ankara branch of Neotethys. Geochemistry and geotectonic setting point out that lithospheric delamination was the most likely mechanism to generate these calcalkaline to mildly alkaline volcanic rocks in the CACC.

Contribution to the mineralogy of wollastonite from the contact aureole near Xanthi and Kimmeria (N. Greece)

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The studied area belongs to the Rhodope Massif and is located approximately 1km north of town of Xanthi, where a plutonic body of mainly granodioritic composition and Oligocene age intrudes into marble. It is generally medium-grained, composed mainly of plagioclase, orthoclase, quartz, biotite and hornblende.

Three samples of the skarn formation were collected; two from the aureole near Xanthi (samples WXT1 and WXT2) and one from the aureole near Kimmeria (sample WXB1).Thin sections of the samples were prepared in order to determine their mineralogical and textural characteristics. Furthermore, X-ray powder diffraction (XRPD) study was performed using a Philips PW1710 diffractometer with Ni-filtered CuK_a radiation. Representative quantity of the samples was treated chemically. In this way the organic matter, fine carbonates and iron oxides (COI) were removed. The abundance and semi-quantitative estimates of the mineral phases present was determined from the untreated samples, whereas the form of the wollastonite present along with its unit cell properties were established from the treated ones (31 lines each). Finally, chemical analyses of the wollastonite were carried out using a JEOL JSM-840A Scanning Electron Microscope (SEM) equipped with attached Energy Dispersive Spectrometer.

All the samples are in general of massive fabric, forming fibrous aggregates with no distinct spatial orientation. Samples WXT1 and WXT2 are coarser grained compared to WXB1. The samples from Xanthi reveal elongated crystals of wollastonite with fractures parallel to the secondary cleavage (001), mainly filled with fine micritic calcite. The sample from Kimmeria reveals finer and elongated crystals of wollastonite, as a sample being also richer in calcite in aggregate form.

The samples are mostly composed of wollastonite (73-80%), along with considerable amounts of calcite (3-13%). Andradite is found in considerable amounts (up to 18%) only in the samples from Xanthi, while quartz is present only in Kimmeria samples. Clinopyroxene is not always found, as well as feldspars. The COI amount is greater in Kimmeria samples, showing an increasing tendency with the calcite content present in the samples.

From the unit cell data obtained from the chemically treated samples it is shown that all the samples are of triclinic structure, being in general very close to the wollastonite nominal structure. These from Xanthi show generally a slightly lower (a) angle. The wollastonite from Kimmeria demonstrates a more complex chemical content, which does not affect its crystal structure. The mean chemical formula of wollastonite in sample WXT1 is $(Ca_{5.895}Mn_{0.100}Fe_{0.017})Si_{5.994}O_{18}$, in sample WXT2 is $(Ca_{5.846}Mn_{0.152})Si_{6.001}O_{18}$ and in WXB1 is $(Ca_{5.833}Mn_{0.120}Mg_{0.045})Si_{6.001}O_{18}$. The wollastonite from Kimmeria incorporates Mg^{2+} in its structure, whereas wollastonite from Xanthi Fe^{2+}. Both demonstrate substitution of Mn^{2+} for Ca^{2+}.