

Interactive comment on “Jurassic–Paleogene intra-oceanic magmatic evolution of the Ankara Mélange, North-Central Anatolia, Turkey” by E. Sarifakioglu et al.

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Received and published: 11 December 2013

The ms is a re-evaluation of the geochemistry and geology of the Izmir-Ankara oceanic assemblages in the Ankara Mélange with some new analytical and age data. The most striking feature of the ms is that numerous papers on the same subjects, published in international journals are ignored. Moreover, most of the conclusions are not original but were already proposed in copious studies, which are not mentioned in “Introduction”, nor considered in “Discussions”. It is interesting that the local referee has overlooked this fact. - All biostratigraphic statements used for critical conclusions are referring to “unpublished data”, whereas a number of published data by other authors

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on the ages of ophiolitic volcanics from different tectonic settings are completely ignored. - Nine of the eleven geochemical analyses “from volcanic and dike rocks from the Neotethyan ophiolitic units” are taken from previous publications. - None of the sample locations are shown on the geological maps. - The alteration and element mobility in different volcanic rocks are not taken into account and not all diagrams used for geochemical evaluation are properly selected. - The geochemical character of the metamorphic blocks mentioned in the text as “seamount volcanics and ophiolitic basic rocks” is neither evidenced by data, nor supported by a reference. - The authors claim in the introduction part, that all units including the lamprophyric rocks within the Ankara Mélange are of oceanic origin. They interpret these lamprophyres to have been formed in an intra-oceanic subduction zone. However, the lamprophyres have highly enriched trace element characteristics that seem difficult to have been derived from in an intra-oceanic subduction-zone without any contribution from SCLM. - The island arc character of the alkaline rocks, making up the main body of the presented geochemical data is not well-evaluated and not convincing. - The Ar/Ar whole-rock ages performed on basaltic pillow lavas are very limited and scattered. The fact that the samples are variably altered (as reflected from the geochemistry and petrography) and that the ages may represent cooling ages has not been taken into account. - The authors state in the abstract that the metamorphic rocks within the Ankara Mélange reflect ages between ~83-187 Ma. However, in the manuscript, they also mention an amphibole-epidote schist that has yielded an age of ~260 Ma. This latter age is not mentioned in the abstract. - According to the authors, the map given in Fig.6 reflects the distribution of 180 My-old ophiolitic rocks. Where does this age come from? If this is the age proposed by the study of Dilek and Thy (2006), which is an age finding obtained from a single plagiogranite dyke, what make authors believe that this age also represents the age of all ophiolitic outcrops in this map? - The distribution of the isotopic data of the Tertiary volcanics from somewhere else on Figure 19a and the related comments in the text are irrelevant to the scope of the ms. - There is no citation to the origin of a number of figures with local geological maps. - Several elements of Fig. 20 (in-

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cluding intra-oceanic subduction and generation of SSZ-type ophiolites in IAEO, age span of OIB generation, MOR spreading etc) were already published several times in earlier work since late1990's. In the presentation of this model and in related discussions, however, these studies are disregarded. In brief, the ms in its present form as a review-paper does not reflect the state-of-art knowledge on the evolution of the Izmir-Ankara-Erzincan Oceanic branch and the Ankara Mélange as a classical remnant of it.

Interactive comment on Solid Earth Discuss., 5, 1941, 2013.