

## **LA-ICP-MS U–Pb zircon ages of syn-extensional granitoids in the Alaçamdağ metamorphic core complex, western Turkey**

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Dating of synextensional granitoids provides important information in understanding the timing and onset of extensional deformation in the Mendere Massif. The Alaçamdağ metamorphic core complex, which is located in the north of Mendere Massif, is characterized by a number of shallow-seated granitoid stocks that are closely associated with high- and low-angle ductile shear zones. Ductile deformation in the granitoids is defined by ultramylonites and protomylonites. Here we report crystallization ages of two granitoids using U-Pb dating, which may reveal the timing of two contrasting shear zones. Western stocks occur to have been emplaced into pull-apart spaces of NE-trending faults, which form a part of a regional-scale transfer zone. They were overprinted by ductile shearing event that marked a strike-slip displacement. Eastern stocks were deformed by extensional low-angle ductile shear zones that developed during or immediately after emplacement of granitoids as revealed by field relations. These shear zones indicate a top-to-the-NNE displacement, which is consistent with regional extensional direction. Both granitoids yielded laser spot ages ranging from 23.6 to 18.4 Ma. However, they display two clusters of ages around 21 and 20 Ma. Concordia ages of western and eastern stocks are  $20.44 \pm 0.13$  and  $18.95 \pm 0.20$  Ma, respectively. These data show that the high-angle shearing event was immediately followed by detachment faulting and accommodated a differential extension in fault blocks. U-Pb ages combined with structural data revealed that not only detachment faults but also high-angle shear zones have played an important role during exhumation of crystalline footwall rocks in an extended continental crust.