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## Neotethyan Evolution of the Ankara Mélange, Turkey: An Intraoceanic Subduction-Accretion System

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We report here new geochemical and geochronological data from mafic-ultramafic rock suites in the Ankara Mélange in north-central Turkey, and present a new tectonic model for its origin. Considered as one of most important relics of the Neotethyan realm in the region, the Ankara Mélange occurs between the Sakarya Continent (Eurasia) to the north and the Central Anatolian Crystalline Complex (CACC) to the south and includes remnants of the latest Triassic-early Jurassic Neotethyan oceanic lithosphere, fragments of Cretaceous seamounts, and intrusive and extrusive rocks of a Cretaceous island arc. The Beynam (Ankara), Eldivan (Çankırı) and Boğazkale (Çorum) ophiolites within the mélange comprise most of the units of a typical Penrose-type ophiolite, and their MORB-like dolerite-plagiogranite dikes have U/Pb zircon ages of (180.48±0.34 Ma). The Lower Cretaceous lavas with E-MORB and OIB affinities are intercalated with hemipelagic chert and limestone, shale and mudstones and represent thrust fault-bounded seamounts, which developed on and across the late Triassic-Jurassic Neotethyan oceanic lithosphere. Upper

Cretaceous extrusive rocks, dikes and gabbros in the mélange represent SSZ-type ophiolitic units, which formed in an intra-oceanic subduction zone system within the northern branch of Neotethys. Ophiolitic and seamount units are overlain by late Cretaceous and younger flysch units. Subalkaline to alkaline, 67-63 Ma volcanic and plutonic rocks represent the youngest magmatic units in the mélange, representing island arc products. All these tectonic units, except the latest Cretaceous-Paleocene arc rocks, occur as coherent or chaotic blocks in a shale-graywacke and or serpentinite matrix, and become younger from the north to the south within the mélange. The main fabric within the Ankara Melange is south-directed thrust faults and associated deformation (foliation and folds) that collectively formed above a N-dipping and southward retreating intraoceanic subduction zone system.

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