



## **The junction of Hellenic and Cyprus arcs: the Bey Dağları lineament, offshore termination of the Antalya Basin**

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The Antalya Basin is one of a series of basins that sweep along the Cyprus Arc in the forearc region between the (formerly) volcanic Tauride Mountains on Turkey in the north and the subduction zone and associated suture between the African plate and the Aegean-Anatolian microplate in the eastern Mediterranean, south of Cyprus. Miocene contraction occurs widely on southwest verging thrusts. Pliocene-Quaternary structures vary from extension/transension in the northeast, adjacent to the Turkish coastline, to transpression in the southwest, farther offshore.

All these structures are truncated at the northwest end of the Antalya Basin by a broad zone of NNE-SSW-trending transverse structure that appears to represent a prolongation of the extreme easterly transform end of the Hellenic arc. Our mapping suggests that this broad zone links the Hellenic Arc with the Isparta Angle in southern Turkey, which we suggest is an earlier location of the junction of Hellenic and Cyprus Arcs: the junction migrated to the southwest over time, as the Hellenic Arc rolled back.

The Turkish coastline turns from parallel to the Antalya Basin structures in the east to a N-S orientation, cutting across the trend of the Antalya Basin. The Antalya Complex and the Bey Dağları Mountains provide a spectacular backdrop to this edge of the offshore basin. Somewhere offshore lies the structural termination of the Antalya Basin. In 2001, we acquired around 400 km of high-resolution multi-channel seismic reflection data across the western end of the Antalya Basin to explore the nature of the termination, which we call the Bey Dağları lineament. We present a selection of the seismic profiles with interpretation of the nature and Neogene history of the lineament. Landward of the N-S-trending coastline, ophiolites of the Antalya Complex are exposed in a series of westerly-verging thrust slivers that extend to the carbonate sequences of the Bey Dağları Mountains. Our seismic data indicate that N-S trending west- and east-verging thrusts define a transpressional continental margin. The shelf is underlain by a prominent angular unconformity between overlying shallow-dipping Pliocene-Quaternary sediments and underlying, easterly-dipping Miocene sediments.