



## **The Anaximander Mountains linkages with the Florence Rise in the east and the Pliny-Strabo Trench in the west, eastern Mediterranean**

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Interpretation of ~4500 km of high-resolution multichannel seismic reflection profiles and correlation with complex multibeam bathymetric features allows us to assess the Neogene tectonics of this area of the Anaximander Mountains at the junction of the Hellenic and Cyprus Arcs. Three seismic stratigraphic units are observed in this region and are correlated with exploration wells drilled onland in the Antalya and Kasaba Basins, and DSDP holes 375 and 376: The uppermost Unit (1, Pliocene-Quaternary) is a strongly reflective laterally continuous package of high frequency reflections which extends from the seabed to the M-reflector. Beneath this, Unit 2 (Messinian) is a weakly reflective package displaying complex internal architecture with weak, discontinuous and often chaotic reflections bounded at their top and base by the M- and N-reflectors, respectively. Unit 3 (pre-Messinian Miocene) is a strongly reverberatory, high reflective package of low amplitude reflections with significant lateral continuity.

The structural architecture of the Anaximander Mountains (*sensu lato*) at the junction of the Hellenic and Cyprus Arcs is characterised by two phases of deformation. A protracted interval of contraction in the Miocene created a series of broadly east-west trending and predominantly south-verging structures across the entire eastern Mediterranean. This phase culminated in the latest Miocene and was followed in the Pliocene-Quaternary by an interval of spatially-partitioned strain which resulted in the development of discrete domains characterized by extensional, contractional, transpressional and transtensional structures. The Anaximenes and Anaxagoras Mountains in the east and southeast exhibit contractional/transpressional deformation and form the linkage with the Florence Rise to the southeast. An arcuate and extensively faulted and folded region immediately northwest of the Anaximenes and Anaxagoras Mountains (i.e. the Sırrı Erinç Plateau) forms a 30-40 km-wide zone which separates the Anaximander Mountains in the west and northwest and the Anaximenes and Anaxagoras Mountains. The northern margin of the Sırrı Erinç Plateau is characterized by two east-west trending segments which are connected with one another by a north-south trending segment. Seismic profiles show that both the east-west and north-south trending segments are delineated by prominent crustal-scale thrusts. Secondary sedimentary structures on the hanging walls and footwalls of these thrusts document the presence of considerable strike slip motion across these thrusts. Thus, the Sırrı Erinç Plateau defines a prominent shear zone across the Anaximander Mountains. This zone also forms the southern margin of the deep Rhodes Basin and extends with a north-northeast – south-southwest trend towards the Pliny and Strabo Trenches.