

SARDINIAN AND TUNISIAN MARGINS IN CONTACT (CENTRAL MEDITERRANEAN) :
A COMPLEX RECORD OF GEOLOGICALLY RECENT DISPLACEMENT.

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ABSTRACT

The seafloor between Sardinia, Tunisia and Sicily occupies a key sector essential for understanding the Neogene evolution of the Central Mediterranean. This structurally complex region remains poorly defined geologically. The juxtaposition of the present-day Tunisian and Sardinian margins results, in large part, from the contact of the southern part of the Corsican-Sardinian microplate with North Africa. To better interpret the Neogene evolution, a detailed bathymetric chart and a map showing structural provinces and post-Miocene sediment patterns have been prepared on the basis of seismic data (primarily a dense network of 30 KJ sparker and 3.5 kHz profiles). Pronounced NNE-SSW trending structural features in the Tyrrhenian Sea east of Sardinia.

This study indicates that tectonic structures on the margin east of Sardinia extend southward (S190°-200°W) onto, and across, the Tunisian margin. Some of the largest, most obvious physiographic features, including seamounts, ridges and canyons, are associated with these trends. These features, for the most-part of upper Miocene age, are believed closely related to the subsidence of the Tyrrhenian Sea. Morphological, structural and sedimentary evidence, particularly off Tunisia, also records the effects of Quaternary compression (E-W trending tectonics and depositional axes) resulting from the northward movement of Africa. Moreover, important NW-SW structural-depositional trends of Plio-Quaternary age dominate the area west of Sicily ; these may be related to displacement along the Calabrian-Sicilian Arc and to Plio-Quaternary extension of faulting in the Strait of Sicily. It is of note, therefore, that the present configuration of the two margins resulted from plate contact and welding during several Miocene events, and also from subsequent lowering, first, of the Algero-Balearic Basin, and then, Tyrrhenian Sea. Although the margin and adjacent land off Tunisia is compressive, records at the seafloor and in subsurface show a predominance of late Miocene to Recent structures of extensional origin.

