

Chaimov, Thomas Andrew, *Balanced Cross Sections, Seismic Stratigraphy, and Structural Interpretation of the Intracontinental Palmyride Fold Belt, Syria*, Ph. D. Dissertation, Cornell University, 1991.

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Abstract:

The Palmyride fold belt in central Syria is the result of Late Mesozoic and Cenozoic inversion of a Late Paleozoic and Mesozoic intraplate trough located within the northern Arabian platform. Detailed analysis of available seismic reflection profiles from the Palmyrides reveals the Late Mesozoic to present transpressive structures of the Palmyrides and clarifies the timing and magnitude of such deformation within the belt.

Uplift of the Mesozoic Palmyride trough began in the Late Cretaceous, rejuvenated in the Middle Eocene, and culminated in the period from the Miocene to present. Each of the three episodes of deformation was temporally associated with a distant (~300 km) Arabian plate margin tectonic event as follows: (1) Late Cretaceous collision between the northern and eastern margin of the Arabian plate and a microplate or island arc; (2) Middle Eocene incipient faulting of the Red Sea/Dead Sea fault system; and (3) Miocene to present shortening of the Arabian-Eurasian plate collision zone along the Bitlis/Zagros suture in Turkey and Iran.

Despite this repeated tectonism, only 20-25 km of shortening accumulated in the southwestern, most strongly deformed sector of the belt, diminishing to only a few kilometers 400 km along strike to the northeast. And although Triassic evaporites form local detachment surfaces, there has been no large-scale lateral transport of Mesozoic and Cenozoic rocks over Paleozoic rocks in the Palmyrides of Syria. Rather, deep structures in Paleozoic rocks appear to be in general concord with structures in overlying Mesozoic and Cenozoic rocks.