

Continent-continent collision in the Maastrichtian and its stages in the Middle East area

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The study area involves the Caucasus, Turkey, and northern margin of the Arabian Plate and is bounded by the Cimmerian continent in the north and the Arabian continent in the south. The study area consists of units of platform, oceanic and magmatic arc origins; These tectonic units have been juxtaposed before Late Maastrichtian, along two separate suture zones located in the south of the Cimmerian Continent and in the north of the Arabian continent, respectively. Considering the tectonic units, suture zones and the Maastrichtian-Recent cover rocks of the continents, the following results can be concluded: (1) timing of the continent-continent collision is Maastrichtian; (2) the collision consists of three phases, namely the pre-paroxysm, paroxysm and post-paroxysm. Late Maastrichtian and Late Paleocene times are important compressional subphases of the pre-paroxysm. Late Eocene represents paroxysm phase of the collision. During this period, mountain building formed as a whole and the units derived from the uplifted basement were reworked into the newly-formed intracontinental basins. Late Oligocene and Late Miocene times are major compressional subphases of the postparoxysm; (3) The Eastern Anatolian Plateau have formed as a natural response to the collision and the Black Sea and the Caspian Sea have formed as intracontinental depressions; (4) The Red Sea has formed as an impactogene during a period following the paroxysm phase of the continent-continent collision; (5) the Mediterranean Sea and the Persian Gulf can be interpreted to be the remnants of the early closed oceanic basins.