



Late Jurassic low latitude of Central Iran: paleogeographic and tectonic implications

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The individual blocks forming present-day Central Iran are now comprised between the Zagros Neo-Tethys suture to the south and the Alborz Palaeo-Tethys suture to the north. At the end of the Palaeozoic, the Iranian blocks rifted away from the northern margin of Gondwana as consequence of the opening of the Neo-Tethys, and collided with Eurasia during the Late Triassic, giving place to the Eo-Cimmerian orogeny. From then on, the Iranian block(s) should have maintained European affinity. Modern generations of apparent polar wander paths (APWPs) show the occurrence in North American and African coordinates of a major and rapid shift in pole position (=plate shift) during the Middle–Late Jurassic. This so-called monster polar shift is predicted also for Eurasia from the North Atlantic plate circuit, but Jurassic data from this continent are scanty and problematic. Here, we present paleomagnetic data from the Kimmeridgian–Tithonian (Upper Jurassic) Garedu Formation of Iran. Paleomagnetic component directions of primary (pre-folding) age indicate a paleolatitude of deposition of $10^{\circ}\text{N} \pm 5^{\circ}$ that is in excellent agreement with the latitude drop predicted for Iran from APWPs incorporating the Jurassic monster polar shift. We show that paleolatitudes calculated from these APWPs, used in conjunction with simple zonal climate belts, better explain the overall stratigraphic evolution of Iran during the Mesozoic.