



A Late Cretaceous cyclostratigraphic framework for the eastern Tethyan deposits of the Zagros basin (Shahneshin section, Iran)

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The Shahneshin section covers the middle Coniacian to the Cretaceous-Paleogene boundary of the Gurpi Formation with a well-preserved and well-exposed sedimentary record. It is one of the rare sections from the Zagros Basin (Iran) that presents a nearly continuous sedimentary record from the Coniacian to the Maastrichtian and exhibits exquisite marl-limestone alternations. An integrated stratigraphic framework for this section has been established, based on calcareous nannofossil, planktic foraminifer and dinoflagellate cyst biostratigraphy, and carbon isotope stratigraphy. Marl-limestone alternations have been logged bed by bed in the field and magnetic susceptibility (MS) has been measured at a sampling resolution of 10 to 15 cm. Cyclostratigraphic analysis performed on MS measurements reveal periodicities in the precession (~ 20.6 ka), obliquity (~ 39.5 ka, ~ 173 ka, ~ 1.2 Ma) and eccentricity bands (~ 100 ka and 405 ka). The eccentricity cycles are particularly well pronounced as compared to other Milankovitch components. Maxima in eccentricity correspond to marly layers and maxima in MS values, suggesting eccentricity-driven detrital input to the basin. All the 405 kyr and 100 kyr eccentricity cycles of the Maastrichtian stage are recorded in the Shahneshin section when compared to Thibault et al. (2012). The late Campanian is incomplete, characterized by a hiatus in zones CC23a/UC16aTP, but a continuous record of 405 kyr eccentricity cycles is presented for the early and middle Campanian. A number of additional 405 kyr eccentricity cycles is recorded in the middle Coniacian to Santonian but the Santonian is condensed, preventing a conclusive interpretation.