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Tectono-Stratigraphic Evolution of the Southern Tethyan Margin, North Africa and Arabia

Prior to the opening of the Red Sea in the Neogene, North Africa and Arabia were part of the same southern Tethyan Gondwanan continental margin. To better resolve the tectono-stratigraphic evolution of this southern Tethyan margin we present a chronostratigraphic chart, running from Morocco in the west to Oman in the east, which correlates the sequence stratigraphy of these two hydrocarbon provinces within a newly compiled geological timescale. Refined sequence stratigraphic correlation allows the plethora of disparate lithostratigraphic schemes in use across this vast region to be placed within coeval 2nd order depositional sequences. The stabilisation of the stratigraphy at this scale also provides the opportunity to correlate and map higher frequency surfaces (maximum flooding surfaces and sequence boundaries) between these continental plates.

North Africa and Arabia were both affected by the Hercynian, Cimmeride and Alpine orogenies, and by synchronous glacial events in the end Ordovician and Permo-Carboniferous. Throughout much of the Mesozoic - Paleogene they occupied a position on the tectonically quiescent margin of southern Tethys. In these later periods carbonate deposition prevailed, influenced by global eustacy, although progradation of clastic systems off ancient shield areas at times of synchronous uplift are notable features of both North Africa and Arabia.