

Synchronous hiatus formation in the Eastern Pontides and phases of increased subsidence in the Greater Caucasus – evidence for Early Cretaceous rifting in the Black Sea region?

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In the Eastern Pontides, Turkey, strontium isotope stratigraphy and foraminiferal biostratigraphy carried out on the carbonate Berdiga Formation has identified significant hiatuses during the latest Kimmeridgian to Tithonian or Berriasian, and during the Hauterivian to Barremian. Less well constrained, but broadly contemporaneous stratigraphic gaps in multiple successions around the Black Sea provide additional insights (probably limiting the initial hiatus period to the Berriasian) and point to a regional driving mechanism. The timing of these hiatuses does not correspond to periods of eustatic lowstand. However, it does broadly coincide with two phases of increased subsidence in the Greater Caucasus Basin near Sochi, Russia, following initial Aalenian to Bajocian basin formation. These occurred during the late Tithonian to Berriasian and Hauterivian to early Aptian. Thus, it is possible that subaerial exposure in the Eastern Pontides was caused by rift flank uplift during periods of regional extension. We speculate that these phases of regional extension are likely to have affected the intervening Black Sea region and that this may help constrain initial rifting within the western, and possibly eastern, Black Sea basins to the ?latest Jurassic to Early Cretaceous. We also tentatively link a younger late Campanian to Danian subsidence event identified in the Greater Caucasus Basin to the later opening of the eastern Black Sea basin.