



Geochronology of the late Jurassic – early Cretaceous: New insights from the western Tethys (Blake-Bahama Basin, USA)

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Drilled in 1983, DSDP Site 534A is a prime location to investigate marl-limestone alterations from the middle Tithonian to the earliest Barremian. In 336 metres, the studied interval encompasses a nearly complete succession, allowing a high-resolution long-term study for this critical interval of Earth's history. To strengthen the Stratigraphy of the Jurassic-Cretaceous system boundary, we integrate the already published magnetostratigraphic, chemostratigraphic (bulk carbonate carbon isotopes) and biostratigraphic framework of the core (based on nannofossils, radiolarians, dinoflagellates and calpionellids) with cyclostratigraphy based on high-resolution (4cm) XRF data. Astronomical tuning of the core suggests a total duration of ~ 19 million years for the studied interval. Interestingly, long-term trends in the Ca/Fe ratio compare well with that of carbon isotopes. These trends are forced by the 9.1 Myr grand eccentricity cycle, placing the Weissert event close to a maximum of this grand cycle. Astronomical configuration appears to have played a major role in the development of this oceanic anoxic event.