



A new sediment core from the early Aptian OAE1a: the Cau section (Prebetic Zone, Spain)

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The occurrence of time intervals of enhanced deposition of organic matter (OM) during the Cretaceous, defined as Oceanic Anoxic Events (OAE), reflect abrupt changes in global carbon cycling. The exemplary Aptian OAE1a (120 Ma), is recorded in all the main ocean basins and associated with massive burial of OM in marine sediments [1]. OAE1a is concomitant with the ‘nannoconid crisis’, which represents a major biotic turnover [2], and also with widespread demise of carbonate platforms [1]. Much research has been done on the OAE1a from different sections in the world over the last decades, since the definition of the C-isotope stratigraphy of the event [3]. Notwithstanding, high-resolution studies across the entire event will be crucial to elucidate the precise timing and rates of the different environmental and biotic changes involved.

In order to perform high-resolution studies, drill-cores can represent the best option. Previous cores with successful scientific results has been performed in two reference sections, the Cismon Apti-core [4], and more recently in La Bédoule [5]. Here we present a new drill-core from southern Spain, the Cau section core, drilled in the last quarter of 2015.

The Cau section is located in the easternmost part of the Prebetic Zone (Betic Cordillera), which represents the platform deposits of the Southern Iberian Palaeomargin. The lower Aptian of the Cau section is represented by an hemipelagic unit (Almadich Formation, ca. 200 m thick), deposited in a highly subsiding sector of a tilted block, located in the distal parts of the Prebetic Platform. Previous studies of the early Aptian of the Cau section have focused on the stratigraphy, bioevents, C-isotope stratigraphy, and organic and elemental geochemistry [6], [7], among others. A recent study on the Cau section based on biomarkers has presented a detailed record of the PCO₂, [8]. All these studies reveal that the Cau section represents an excellent site to investigate the OAE1a, based on its exceptional thickness and stratigraphic continuity, the quality and preservation of fossils and the geochemical signatures.

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