



An astronomically calibrated timing of the Late Campanian Radotruncana calcarata planktonic foraminifer Zone

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A Campanian (Upper Cretaceous) pelagic section from the southern (Austro-Alpine Northern Calcareous Alps) margin of the Penninic Ocean in the NW Tethys realm is investigated stratigraphically. In the Upper Campanian part of the section, plankton foraminifer and nannofossil biostratigraphy designate the presence of the *Radotruncana* (*Globotruncanita*) *calcarata* Total Range Zone, and standard nannofossil zones CC21 - UC15cTP and CC22ab - UC15deTP. In the investigated section the FO of *R. calcarata* and the FO of the nannofossil *Uniplanarius* (*Quadrum*) *trifidus* co-occur in the same sample. The *calcarata* Zone includes 41 marl-limestone cycles within 16 m. The combination of carbon isotope stratigraphy, strontium isotopes, and cyclostratigraphy allows a detailed chronostratigraphic correlation (Wagreich et al., 2012). Periodicity was obtained by power spectral analysis, sinusoidal regression, and Morlet wavelets. The duration of the *calcarata* Total Range Zone is calculated by orbital cyclicity expressed in thickness data of limestone-marl rhythmites and stable carbon isotope data. Orbital cycles were identified and confirm a precessional origin of the basic limestone-marl cycles of 19.7 kyr, and the presence of the long and stable 405 kyr eccentricity cycle, thus indicating a duration of c. 806 kyr for the *calcarata* Zone. Mean sediment accumulation rates are as low as 1.99 cm/kyr and correspond well to sediment accumulation rates in similar settings. Based on correlations an age of the top of the *calcarata* Zone at either 75.1 Ma or 74.7 Ma and an age of the base of the *calcarata* Zone at either 74.3 Ma or 73.9 Ma is concluded.

Wagreich, M., Hohenegger, J. & Neuhuber, S., 2012. Nannofossil biostratigraphy, strontium and carbon isotope stratigraphy, cyclostratigraphy and an astronomically calibrated duration of the Late Campanian *Radotruncana calcarata* Zone. *Cretaceous Research* 38, 80-96. doi:10.1016/j.cretres.2012.04.006.