A Milankovitch time scale for the Maastrichtian

A high resolution cyclostratigraphic framework for the Maastrichtian will be established by analysis of multi-proxy lithological and geochemical datasets. These will be collected from selected land-based marine sedimentary successions in Europe with a rhythmical alternation of marls and limestones. Initially, a comparison of the lithological and geochemical expressions of cyclicity in different intervals below and above the K/T boundary may reveal how orbital variations influenced the greenhouse climate of the Late Cretaceous. Subsequently, identification of the stable 405 kyr period of eccentricity and the 21 kyr period of precession will enable extension of the astronomically tuned time scale from the K/T boundary into the Maastrichtian. Also, recognition of long-term periodicity and the development of the “100 kyr period of eccentricity further back in time may shed light on the chaotic behaviour of the solar system. The research leading to these results has received funding from the European Community’s Seventh Framework Programme (FP7/2007-2013) under grant agreement n° [215458].