PRESENT STATUS AND APPLICATIONS OF THE ASTRONOMICAL TIME SCALE FOR THE MEDITERRANEAN NEogene

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In particular, the tuning of the Lower Miocene remains uncertain, and seafloor spreading rates are still necessary to calculate ages for all reversal boundaries. Nevertheless, the astronomical age of the Oligocene-Miocene boundary will not change by more than \textasciitilde100-kyr. It is anticipated that this will be solved with the help of deep-sea records from ODP Leg 208 sites in the South Atlantic and IODP Legs 320-321 sites in the equatorial Pacific having a reliable magnetostratigraphy. Significant progress has recently been in the tuning of middle Miocene deep marine successions in the Mediterranean. This progress led among others to the definition of the Serravallian GSSP at Ras il Pellegrin on Malta.

We will show how astronomical tuning of the Mediterranean Neogene influenced chronostratigraphic thinking by favoring the unit stratotype instead of the GSSP only approach, and the definition of Milankovitch cycles as chronozones, the smallest possible scale of formal chronostratigraphic unit. Finally, examples will be presented of the application of the high-resolution astronomical time scale to solve fundamental problems in Earth history.