

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Robert K Goldhammer¹, Linda A Hinnov², Lawrence A Hardie², Robert Forkner³ (1) University of Texas (Austin), Austin, TX (2) Johns Hopkins University, (3) University of Texas, Austin,

Resurrection of the Allocyclic Interpretation of the Latemar Cycles (M. Triassic, The Dolomites): View from a Coeval Platform

The Latemar Platform (4-5 km wide, 700 m thick) is an isolated platform containing a succession of over 500 cycles (< 1 m avg. thickness), which have been attributed to glacio-eustatic, allocyclic forcing driven by Milankovitchian composite eustasy. This interpretation was based on the facies composition of a cycle (thicker subtidal unit overlain abruptly by a thin cm-scale, subaerial cap), and the 5:1 bundling of the fundamental m-scale cycles into lower-frequency megacycles. Central to this interpretation are the upward-thinning, asymmetric vertical stacking patterns of the fundamental cycles per megacycle. The allocyclic Milankovitchian interpretation has been challenged, based principally on recently derived absolute age dates and improved biostratigraphy of the Latemar. Middle Triassic paleogeography of the Dolomites reveals several age-equivalent platforms that developed independently from the Latemar, each containing its own cyclic record. To evaluate the allocyclic interpretation of the Latemar cycles, we investigated the cyclic succession preserved at Mendola Pass (located 30 km NW from the Latemar) where over 500 m of cyclic platform interior strata are exposed. The Mendola cycles (avg. 0.70 m/cycle) are also bundled into upward-thinning packages with a ca. 5:1 ratio. Unlike the Latemar cycles, a Mendola cycle consists of a mud-rich subtidal unit gradationally overlain by a cryptalgal (peritidal) laminite cap. The stacking pattern of the Mendola cycles correlates statistically to a unique interval within the Latemar succession. Although laminite-capped cycles are often attributed to autocyclicality the similarity of the stacking pattern of the Mendola cycles to those of the Latemar support the original allocyclic interpretation.