
Milankovitch paced sedimentation on a tropical mixed siliciclastic-carbonate margin during the Mississippian: the Rush section, North County Dublin

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Abstract

Numerous rock formations of Mississippian age span much of central Ireland. These rocks, including limestones, claystones, sandstones, conglomerates and volcanoclastics, originally accumulated at low latitudes on shelves and slopes rimming Laurussia. A spectacular 150-metre thick section of the Tournaisian Tober Colleen Formation outcrops along the coast at Rush, north of Dublin. Here, muddy limestone and calcareous claystone and sandstone beds represent deposition in an upper slope environment. Logging and spectral analysis of these beds shows inherent cycles of 2, 8 and 25 metres thickness. With age constraints, these cycles have durations of approximately 100, 400 and 1200 kyrs and thus reflect short eccentricity, long eccentricity and possibly modulation of obliquity. Detailed documentation of the Rush section should allow comparisons to contemporaneous sections elsewhere, especially Europe, as well as modern tropical mixed siliciclastic-carbonate margins, such as North Queensland.

Keywords: Ireland, continental margin, limestone, Tournaisian

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