

Public Abstract

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Title:THE ORDOVICIAN CLIMATE: CONSTRAINTS FROM CARBON AND OXYGEN ISOTOPES

The Ordovician Period, an interval of time from 483 to 443 million years ago, is marked by major changes in biodiversity and climate. For this reason, the Ordovician is an attractive interval to study for an understanding of the causes and consequences of climate change. However, uncertainty regarding the timing of an important climatic shift from green-house to "ice-house conditions complicates attempts to understand what caused climatic cooling and how the changing climate impacted life on earth.

This project was designed to test competing models for the evolution of the Ordovician climate. Using oxygen and carbon isotopes recorded in rocks from North America and Australia I provide new and important constraints on carbon cycling and sea surface temperature trends through the Ordovician. From these results I conclude that climatic cooling and the formation of ice sheets was a relatively rapid event and that climate may have played an important in biodiversification in the Early to Middle Ordovician.