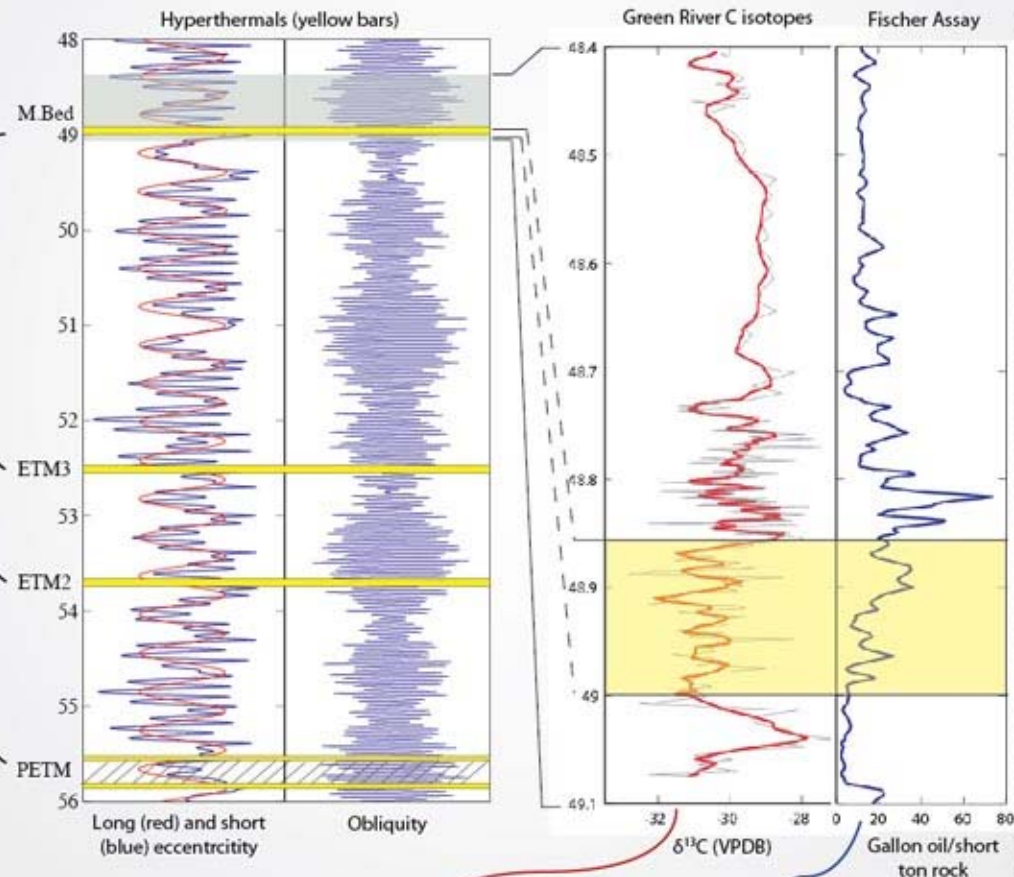


Biomarker Investigation of Lake-Level and Ecosystem Control of Organic Matter Sources in Oil Shale of the Green River Formation, Wyoming, Colorado, and Utah

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Yellow bars show timing of hyperthermals (PETM, ETM2, ETM3 and newly identified Mahogany Bed) in relation to the Laskar 2004 solution for short and long eccentricity (blue and red lines) and obliquity (blue line, second panel).



Green River Fm. bulk carbon isotopes and Fischer Assay data from 48.4 to 49.1 Ma are shown, with the carbon isotope excursion highlighted in the yellow box.

Molecular structure of biomarkers found in Green River Formation (Utah) samples.