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CARBON ISOTOPE STRATIGRAPHY OF THE UPPER CAMBRIAN STEPTOEAN STAGE AND EQUIVA- LENTS WORLDWIDE

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Analyses of well-dated carbonate strata in North America, China, Australia and Kazakhstan reveal a large (~+4‰) positive excursion in carbon isotopes that may be used as a chronostratigraphic marker in the Upper Cambrian. The beginning of the $\delta^{13}\text{C}$ excursion appears to be coincident with the first occurrence of the cosmopolitan trilobite *Glyptagnostus reticulatus*. This horizon coincides with a world-wide extinction event at the base of the Steptoean Stage (and equivalents), suggesting a link between the $\delta^{13}\text{C}$ excursion and the extinctions. Future work is aimed at more precisely determining the relative synchronicity of these events in western Newfoundland, northeastern Utah, the Upper Mississippi Valley as well as Hunan, China. In addition, the peak of the isotopic shift in North America occurs at a major sequence boundary (Sauk II - Sauk III hiatus) that suggests an additional linkage between the carbon cycle and sea level. Using carbon isotope chemostratigraphy, it may be possible to test whether or not the Sauk II - Sauk III sea level drop was a global event. A smaller (~+2‰) positive $\delta^{13}\text{C}$ shift has also been recognized at the top of the Steptoean Stage above the last occurrence of *Irvingella* in a limited number of sections in Wyoming and the Great Basin, U.S.A. This event may also serve as a useful marker horizon in intercontinental correlation.