

**CARBON AND STRONTIUM ISOTOPE RECORD ON
THE VENDIAN-TOMMOTIAN TRANSITION IN THE NW
ARGENTINA**

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Carbonates of the Las Tienditas Fm., Salta province, recorded the Vendian-Tommotian transition in the top of this carbonate sequence, while carbonates of La Laja Fm., San Juan, recorded this transition next to the base of the Formation. $\delta^{13}\text{C}$, $^{87}\text{Sr}/^{86}\text{Sr}$, Si, Mg/Ca, Mn, Fe and Si chemostratigraphic profiles in the uppermost portion of Las Tienditas are very similar to those for the lowermost portions of La Laja Formation, suggesting synchronous deposition. $\delta^{13}\text{C}$ values (~ 0 ‰PDB) in carbonate lenses of the Caucete Group, Pie-de-Palo complex, coupled with high $^{87}\text{Sr}/^{86}\text{Sr}$ (0.709 to 0.710) and presence of Vendian ichnofauna suggest that sediments of this Group were, perhaps, deposited synchronically with carbonates of the La Laja Fm. The high $^{87}\text{Sr}/^{86}\text{Sr}$ for all of the Formations studied resulted from the nature of the continental crust (high Rb/Sr, or very ancient crust, or both) being eroded during the time of deposition of these marine carbonates. The moderate shift of $\delta^{13}\text{C}$ from +1‰PDB to -2‰PDB in this Vendian-Tommotian transition contrasts with strong shifts observed in most localities in the world. Similar behavior has been observed in Siberia and a shift from +5‰PDB to +2.7‰PDB was recorded in Bhander and Sirbu limestones, Vindhyan basin in India. These observations demonstrate a nonuniform isotopic behavior of the Vendian-Tommotian transition, at least, for continents that once were part of Gondwanaland. — (*May 18, 2001*) .