

## **The Precambrian of Eastern Bolivia - a Sm-Nd Isotope Study.**

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In eastern Bolivia, rocks of the Rondônia - San Ignacio (1.5-1.3 Ga) and Sunsás - Aguapeí (1.25-0.9 Ga) provinces form the western fringe of the central Brazil Shield. Both of these chronotectonic provinces contain preserved older basement nuclei. A Sm-Nd isotope study has recently been carried out on samples collected for age determination during the Anglo-Bolivian Technical Co-operation Project 'Proyecto Precambrico'.

Nd isotope compositions of granulites and gneisses from the Lomas Manechas Complex and the San Ignacio Supergroup demonstrate a Transamazonian age for the metamorphic basement. The Pensamiento Complex comprises an extensive suite of syn- to post-tectonic granitoids with Rb-Sr ages ranging from 1380 to 1285 Ma. The earliest, anatectic, Puerto Alegre/La Junta granites display slightly negative  $\epsilon_{Nd}$  values and  $T_{DM}$  model ages of 1.99 and 2.09 Ga. The granophyric suite (~1325 Ma) exhibit model ages between 1.51 and 1.57 Ga and positive  $\epsilon_{Nd}$  signatures (3.3-3.9) indicating a significant contribution of juvenile material. Late- to post-orogenic Diamantina and Orobaya granites yield  $\epsilon_{Nd}$  values of 1.0 to 1.4 and  $T_{DM}$  between 1.69 and 1.73 Ga. The El Tigre Alkaline complex, which represents the final pulse of the San Ignacio orogeny, has  $T_{DM}$  of 1.88 Ga and a negative  $\epsilon_{Nd}$  (-0.9) suggesting localised remelting of an enriched crustal source. Within the Sunsás belt, the post-orogenic Casa de Piedra granite displays a model age of 1.92 Ga and  $\epsilon_{Nd}$  signature of -4. In summary, there is no evidence for basement of Archaean age in this part of the central Brazil Shield.