

## **Combined stratigraphic and isotopic studies of Triassic strata, Cuyo Basin, Argentine Precordillera**

*by*

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### **Sampling and Analytical Procedures**

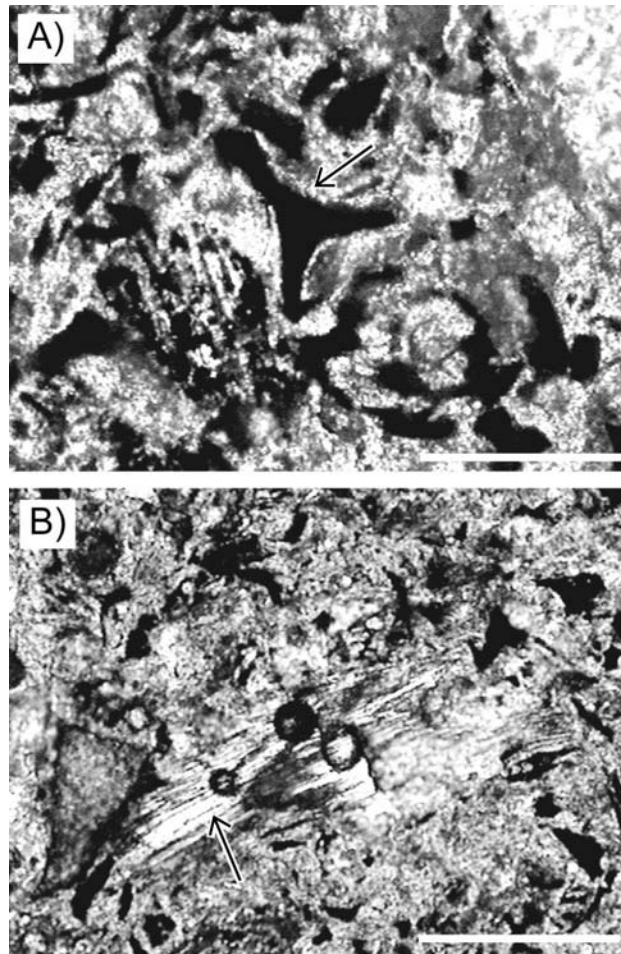
Samples of volcanoclastic and sedimentary rocks from the Cacheuta Sub-Basin and its basement were collected along Route 7 (Fig. 2). Some samples from neighboring igneous units were collected to obtain a database for comparison of isotopic signatures. The stratigraphic position of each sample is presented in Fig. 3.

Samples were crushed and milled, and aliquots of rock powders prepared for Sm-Nd isotopic analysis. The rest of each sample was sieved for zircon separation. Zircons were separated by conventional procedures using heavy liquids and magnetic separator after concentration by hand panning. The most clear and inclusion-free zircons from the least magnetic fractions were hand picked for U-Pb SHRIMP analysis.

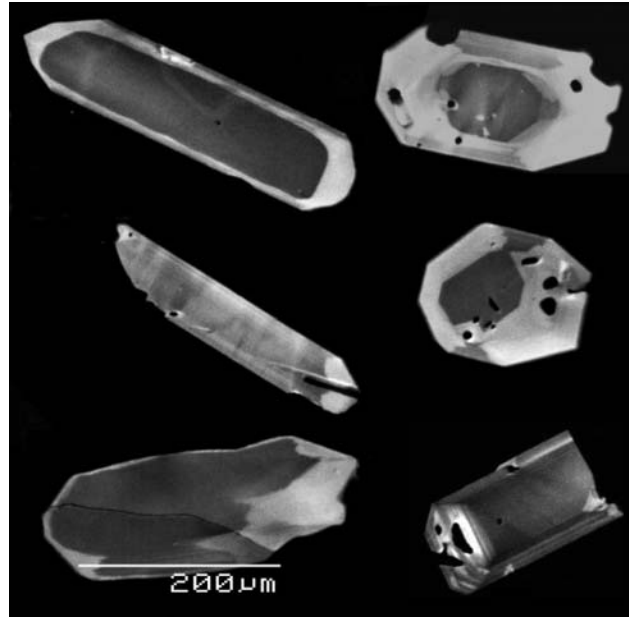
U-Pb SHRIMP zircon geochronology was carried out at the Research School of Earth Sciences, Australian National University, using a SHRIMP II equipment. Handpicked zircons were mounted in an epoxy disc along with zircon standards (SL-3 and FC-1), ground and polished, microphotographed in transmitted and reflected light, and imaged using scanning electron microscope (backscattered electrons, BSE). The mounts were then cleaned and gold-coated. Analytical methods and data treatment can be found elsewhere (Williams, 1998). U-Pb data were reduced using Isoplot EX version (Ludwig, 1998).

Sm-Nd isotopic analyses were carried out at the Laboratório de Geologia Isotópica of Universidade Federal do Rio Grande do Sul, Brazil. Whole-rock powders were spiked with mixed  $^{149}\text{Sm}$ - $^{150}\text{Nd}$  tracer and dissolved in Teflon vial using an HF-HNO<sub>3</sub> mixture and 6N HCl until complete material dissolution. Column procedures used cationic AG-50W-X8 (200-400 mesh) resin in order to separate rare earth elements (REE), followed by Sm and Nd separation using anionic politeflon HDEHP LN-B50-A (100-200 $\mu\text{m}$ ) resin according to Patchet and Ruiz (1987). Each sample was dried to a solid and then loaded with 0.25N H<sub>3</sub>PO<sub>4</sub> on appropriated filament (single Ta for Sm and triple Ta-Re-Ta for Nd). Isotopic ratios were measured in static mode with a VG Sector 54 multi-collector mass spectrometer. We normally collected 100 ratios with 0.5-1.0 V  $^{144}\text{Nd}$  beam. Nd ratios were normalized to  $^{146}\text{Nd}/^{144}\text{Nd} = 0.7219$ . All

analyses were adjusted for variations of instrumental bias due to periodic adjustment of collector positions as monitored by measurements of our internal standards. Measurements for the La Jolla standard yielded average for  $^{143}\text{Nd}/^{144}\text{Nd} = 0.511859 \pm 0.000010$ . Total blanks average were <150 pg for Sm and <750 pg for Nd. Correction for blank was insignificant for Nd isotopic compositions and generally insignificant for Sm/Nd ratios. Neodymium model ages ( $T_{\text{DM}}$ ) were calculated following the depleted mantle model of De Paolo (1981).  $\epsilon\text{Nd}(t)$  values were calculated using as reference U-Pb zircon age or estimated ages based on regional geology and fossil record.



**Figure DR1.** Thin section photographs showing typical volcanic textures (A- shards, B- pumice) in the sample Cuy-7. Zircons from this sample were dated by U-Pb SHRIMP zircon. Scale bar = 1 mm.



**Figure DR2.** Backscattered electron images of dated zircons from sample Cuy-7. Note the prismatic shape of the crystals, indicating a juvenile magmatic origin.

## References Cited

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