

## Paleogeographic evolution of the southwest Gondwana boundary during the Late Paleozoic: Paleomagnetism of the lower Choiyoi volcanics in the San Rafael block, Mendoza, Argentina

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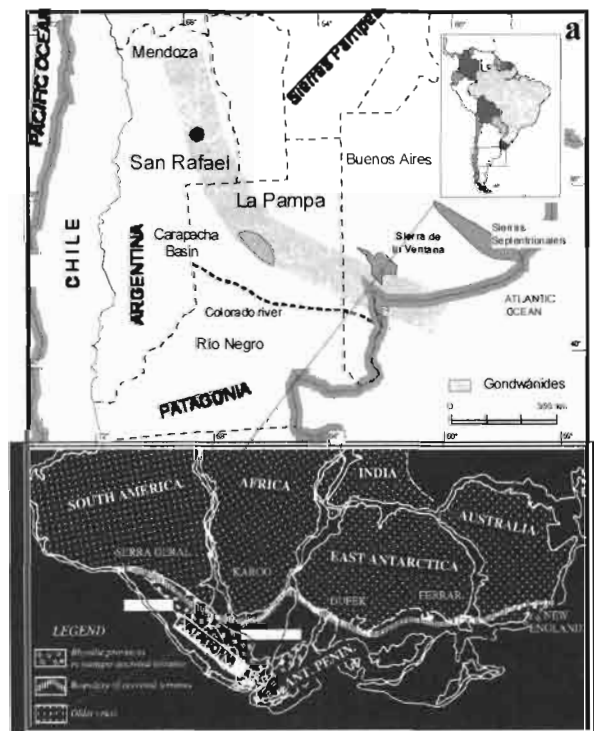
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**KEYWORDS:** Gondwana; Lower Choiyoi volcanism; Paleomagnetism; Pangea

New paleomagnetic data from a section of the Cochicó Group (Lower Choiyoi) in the San Rafael Block (34-35°S), Mendoza, Argentina, improve the knowledge of this part of Gondwana during the late Paleozoic. This area is the westward part of an orogenic belt, known as Cordón de las "Gondwánides" (Keidel, 1916) or "Sam Frau geosyncline" (Du Toit, 1927) which may represent the suture zone between the Gondwana and Patagonia terranes. This collision model is still uncertain and there are many controversies related to the age of the deformation of this belt (Figure1).



**Figure 1:** Location of the study area of the San Rafael block, province of Mendoza, Argentina, exposed in the orogenic belt known as "Gondwanides" (Keidel, 1916). This deformed belt has the same distribution of the gondwanic magmatism of Carboniferous-Permian age.

Paleomagnetism and the exploration of the magnetic fabric signatures (AMS) can be useful to evaluate the regional deformation and lead to a better understanding of the assembly, deformation, and fragmentation of

Gondwana / Pangea. The stability of the area implies that the obtained paleomagnetic poles are representative of South America. AMS will be used as a tool to determine the provenance of the ignimbrites and to correlate different cooling units from the Permian eastern and western basins of the San Rafael Block (Tommezzoli *et al*, 2002).

Gondwana magmatism in the San Rafael Block (Figure 2) is represented by the Choiyoi magmatic province which can be divided into a lower sequence, deposited in a magmatic arc during active subduction and an upper sequence coeval with a period of post-orogenic extensional collapse (Kleiman, 1999; Japas and Kleiman, 2002; Japas and Kleiman, 2004). The lower Choiyoi section in San Rafael (Cochicó Group) overlies unconformably the carboniferous sediments of El Imperial Formation (Figures 2 and 3). These rocks were emplaced syntectonically with transpressional deformation attributed to the San Rafael orogeny (Kleiman and Japas, 2002; Japas and Kleiman, 2004). The Yacimiento Los Reyunos Formation, at the base of the sequence, is composed of four interbedded facies: conglomerates (Psefítico Member), andesitic breccias (Andesítico Member), ignimbrites (Toba Vieja Gorda Member: TVG), and epiclastic redeposited eolian sandstones (Areniscas Atigradas Member). Samples from five ignimbrite cooling units and some of the interbedded sandstones were taken in a section located at La Pintada (Figures 2 and 3). A description of the ignimbrites was presented in a previous contribution (Tommezzoli *et al*, 2002).

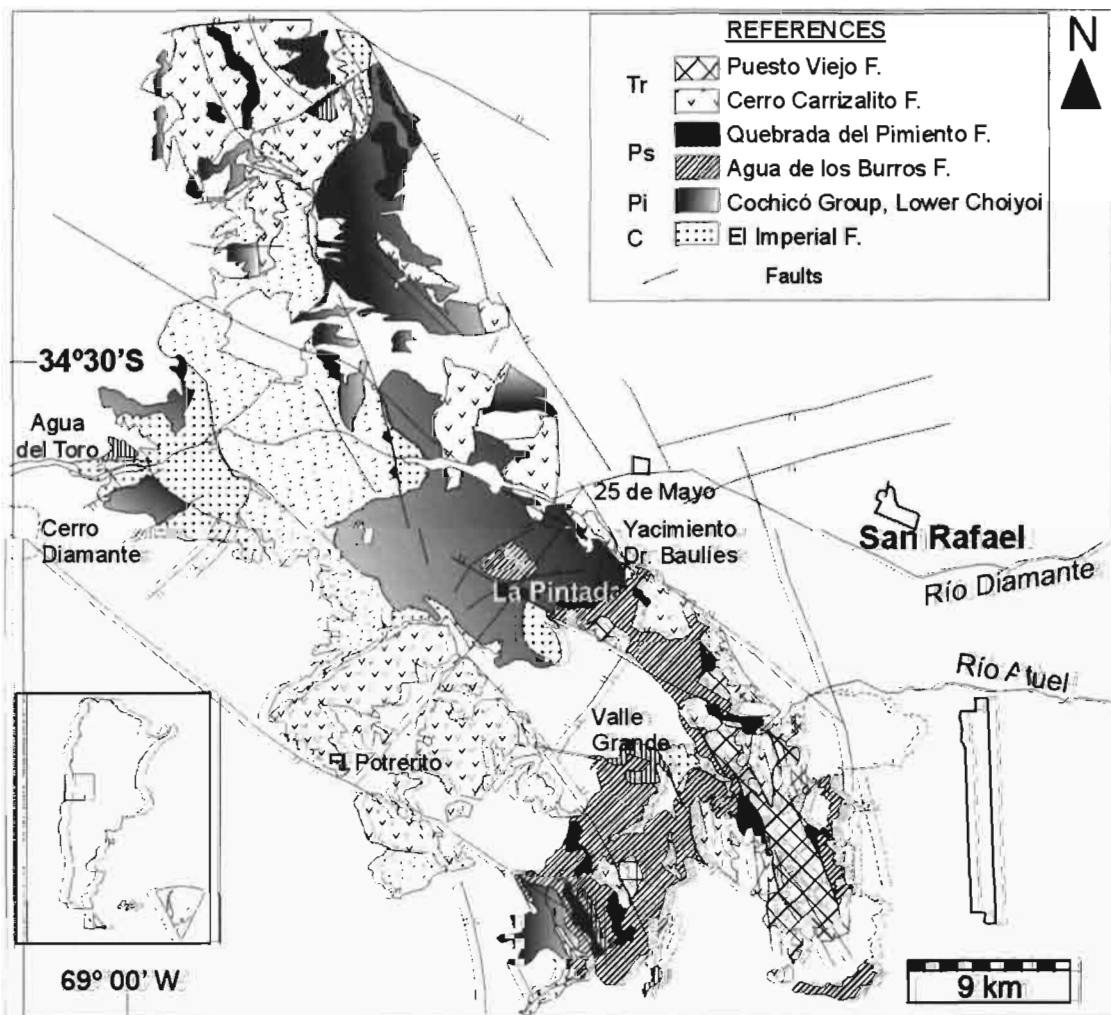


Figure 2: Geological map of the San Rafael Block showing the location of La Pintada profile.

