

U/Pb and Nd data from Peñas Blancas Pluton, Northpatagonian Massif, Argentina

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Peñas Blancas Pluton, North Patagonian Massif, SHRIMP U-Pb, Famatinian magmatic cycle

The Peñas Blancas pluton has been considered part of the Permian Pailemán Plutonic Complex and assigned to the Gondwanic magmatic cycle in the North Patagonian Massif of Río Negro province. This pluton is a NW-SE elongated body with a curvature to the West in its southern section. Metasedimentary rocks of El Jagüelito Formation are the country rock, they are present through numerous enclaves and pendants. To the East, the El Jagüelito ductile-brittle shear zone separates it from the high-grade metamorphic rocks of Mina Gonzalito Complex. To the West it is covered by Jurassic volcanic rocks of Marifil Complex.

The pluton is a two-mica bearing peraluminous S-type granite with A/CNK between 1.09 and 1.18. This intrusive body displays several facies, such as a coarse-grained one, characterized by the presence of K-feldspar crystals in porphyritic texture, and a fine-grained equigranular one. The western section of the pluton is foliated and grades into mylonites along two previously mapped ductile-shear zones. Slightly foliated, late-stage leucogranites with muscovite and garnet occur as small N-S dike intrusions.

First SHRIMP U-Pb isotopic analyses from Peñas Blancas pluton were carried out at Centro de Pesquisas Geocronológicas of São Paulo University. Five single zircon spots yield an Ordovician crystallization age of 471.0 ± 2.8 Ma. This age is older than the Rb-Sr dates previously published for the same plutonic complex. The $\epsilon_{\text{Nd}}(t)$ values are predominantly negative and range from -2.7 to -4.0, with T_{DM} model ages between 1.42 and 1.52 Ga. This new result allows us to assign the Peñas Blancas pluton to the Famatinian magmatic cycle rather than the Gondwanic cycle in the North Patagonian Massif. It could be correlated to other Ordovician intrusive bodies from Punta Sierra Plutonic Complex.