

Preface

The objective of this contribution is to analyse the geochemistry, petrogenesis and geodynamics of the Early Cretaceous volcanism in Argentina, mainly located in Córdoba and Misiones provinces, during the break-up of Gondwana.

In Córdoba (central Argentina), the analysed volcanic rocks are outcropping in Sierra Chica and different groups of lithological types were recognized in various localities. These are mainly alkaline basalts that reflect a lithospheric mantle source.

In Misiones (north-eastern Argentina), the volcanic rocks are tholeiitic basalts and belong to Paraná Magmatic Province (PMP) which is regionally extended in South America and has a counterpart in Africa (in the localities of Etendeka and Angola). This large igneous province (LIP) has been widely studied by several authors, and different models have been considered to explain its origin. Dating obtained through various methodologies ($^{40}\text{Ar}/^{39}\text{Ar}$, U–Pb, and Re–Os isochrons) and published by different authors indicate an Early Cretaceous age between 131.6 ± 2.3 and 134.7 ± 1 Ma for PMP, though interbedded acid volcanic rocks yielded even 137.3 ± 1.8 Ma.

A new $^{40}\text{Ar}/^{39}\text{Ar}$ age of 129.6 ± 1 Ma from an alkaline rock of Sierra Chica of Córdoba (SCC) presented in this contribution, points out that this volcanism was slightly younger than PMP.

It is suggested that the volcanism in Misiones and in the overall LIP could have been linked to an ascending limb of a large-scale convective roll induced by the subduction in the western margin of Gondwana. This ascending limb might have mainly affected weak cortical areas (old sutures between cratons). On the other hand, the volcanism of Sierra Chica might have been related to a small-scale edge-driven convection triggered by the great contrast in thickness between the Río de la Plata craton and the Pampia terrane.



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