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ND ISOTOPIC CONSTRAINTS ON THE PROTOLITH AGE OF THE ARCHEAN IMATAKA COMPLEX, VENEZUELA

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The Archean Imataca Complex (IC), NW Amazon Craton, forms a ENE-fault-bounded block juxtaposed to the Paleoproterozoic Maroni-Itacaiúnas belt. It comprises polyphase para- and calc-alkaline gneisses, supracrustal rocks, and subordinate migmatitic and anatexic rocks. Intrusive quartz-monzonite sills and plutons are also present, tectonically related to the Transamazonian orogeny. IC rocks have TDM model ages mostly between 3.23 - 3.00 Ga and 2.90 - 2.80 Ga, suggesting that two major mantle-differentiation events took place in the evolution. Additional Rb/Sr dates sign that migmatitic injection, crust reworking and regional high grade metamorphism took place at 2.78 - 2.67 Ga, as also supported by the eNd (2.78Ga) values (+1.13 to -4.93). A gray gneiss gives the oldest TDM age of 3.41 Ga, whereas a granitoid yields 2.60 Ga - an evidence for crustal zoning within IC. Paleoproterozoic granitoids intrusive into the northern region of the IC are crustal derived, as indicated by the TDM ages (2.95 and 2.85 Ga) and eNd (2.10Ga) values of -4.20; -4.93. The granitic intrusions to the south have contrasting TDM ages between 2.29 and 2.21 Ga, showing positive eNd (2.1Ga) values (+3.05 to +0.74). Such a signature is consistent with a Paleoproterozoic magmatic arc scenario along the southern-southeastern edge of the Archean crust.

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