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## **A review of the tectonic history of the Amazonian Craton**

Cordani, U.G.<sup>1</sup>

<sup>1</sup>Institute of Geosciences of the USP, rua do Lago 562, Cidade Universitária, São Paulo, Brazil, ucordani@usp.br.

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The Amazonian Craton is divided by the Amazon sedimentary Basin into the Guyana Shield to the north and the Guapore Shield to the south. In the last 50 years, reconnaissance geochronological work permitted the subdivision of it into the Central Amazonian (CAM), Maroni-Itacaiunas (MI), Ventuari-Tapajos (VT), Rio Negro-Juruena (RNJ), Rondonian-San Ignacio (RSI) and Sunsás (SS) tectonic provinces [1 and 2]. For of such a very large region, in which basic geologic information is restricted, several precise and fast-acquisition U-Pb zircon ages were produced in the last two years by SHRIMP and LA-ICP-MS in the laboratories of the Geochronology Research Center of the USP.

1 - Within the central and eastern parts of the Guyana shield, some archean nuclei such as the Imataca and Amapá inliers occur within the MI province, affected by the Trans-Amazonian orogeny (2.08 to 1.90 Ga) [1]. A few additional robust ages were obtained in Suriname, Republic of Guiana, Venezuela and northern Brazil. The Cauarane-Kanuku-Coeroeni belt was dated at 2.05-2.07 Ga. To the north of this belt, the Cuchivero-Surumu-Iwokrama-Dalbana felsic magmatic rocks yielded ages of 1.99-1.98 Ga. Moreover, detrital zircon ages, with a major peak at about 2.1 Ga, were obtained from sediments of the Roraima Supergroup in a few different places, and the younger maximum age of this formation was set at about 1.80 Ga. At the westernmost part of the Guyana Shield, in Colombia, within the RNJ province, the widespread regional granitoid rocks formed within a series of magmatic arcs, essentially juvenile and related with subduction. In the north-eastern part, the Atabapo belt comprises rocks formed within a period of about 60 MA, from 1800 to 1740 MA. In the south-western region, the granitoids were formed between 1580 and 1520 MA, in the Vaupés belt.

2 – To the south of the Amazon sedimentary basin, within the Carajás domain of the CAM province, which occupies the eastern part of the Guaporé Shield, late Archean TTG granitoids and greenstone belt type units, including the Grão Para iron formations, were in part overprinted by pervasive paleoproterozoic rejuvenation. To the west, this domain may underlie the widespread felsic volcanics of the Iri Group, dated at about 1850-1880 Ma. Going further west, granitoids belonging to the VT province yielded U-Pb zircon ages of 1970-1990 Ma. In the central part of the Guapore Shield, within the south-eastern part of the RNJ province, granitoids of the Nova Floresta region yielded U-Pb zircon ages similar to those of the Atabapo belt of Colombia. Farther to the south, within the RSI province, the Serra da Providência granites yielded similar U-Pb zircon ages as those of the Vaupes belt, and the Pensamiento granitoid rocks in Bolivia exhibited U-Pb zircon ages of about 1300-1350 Ma.

3 - The SS orogenic belt, at the south-western end of the Amazonian Craton, was originated in an extensional environment, later deformed during the Grenvillian collision between Amazonia and Laurentia. A few granitic intrusions of that belt yielded U-Pb zircon ages of about 1100 Ma [1]. Moreover, several age measurements were done for the region of the Rio Apa cratonic fragment, which crops out in Mato Grosso do Sul state of Brasil and in north-eastern Paraguay and comprises a series of magmatic arc complexes [2]. The more important results were the depositional age of the Alto Tererê meta-sediments (1.80 Ga) and the duration of the magmatism of the partially accretionary Caracol orthogneisses, from 1.78 to 1.74 Ga. In addition, detrital zircon dates were also obtained from the Alto

Tererê meta-sediments, as well as from the Neoproterozoic sediments of the Corumbá Group, indicating the archean and paleoproterozoic age of the main sources present within the Rio Apa cratonic fragment.

*References:*

- [1] Cordani UG and Teixeira, W (2007) Geol. Soc. Amer. Memoir 200: 297-320.
- [2] Cordani UG et al. (2010) Amer. J. Sci., 310:981-1023.

