

The SASCA Domain in the Southwest Côte d'Ivoire: strong interactions between Archean and Birimian (Man-Leo Rise, West African Craton)

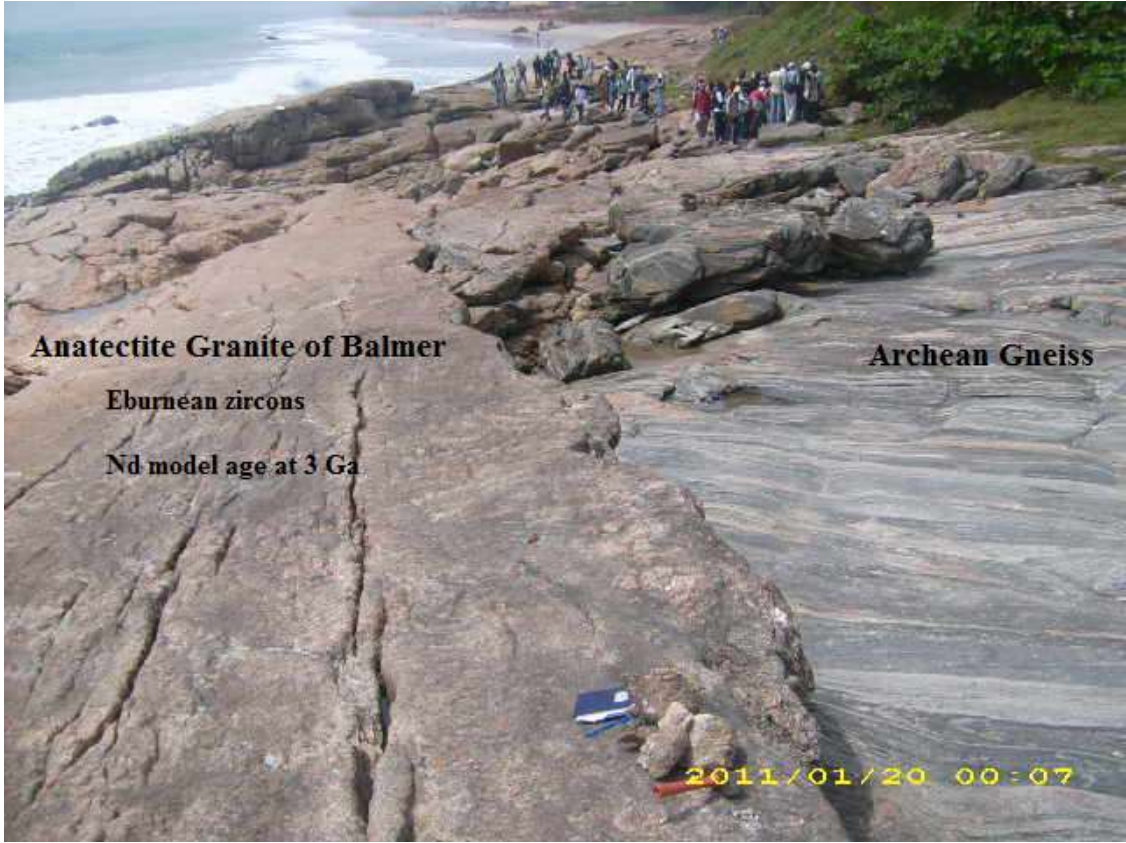
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In the Man-Leo Rise, the Archean - Birimian (Paleoproterozoic) Transition Zone is located between the Archean domain limited by the Sassandra Fault and the 6°W longitude in the Baoulé-Mossi domain. This Transition Zone is isotopically characterized by the presence of Archean inheritance frequently indicating by some zero to negative ϵ_{Nd} , Archean U-Pb inherited ages and the occurrence of Archean relicts. The most important interactions are observable in the SASCA Domain in particular from Balmer to Monogaga in San Pedro region (at the Atlantic coast). In that respect, an Eburnean pegmatitic anatectite granite with a 3 Ga Nd model age has sheared the Archean gneisses (U-Pb on zircon at 3.2 Ga and Nd model age at 3.4 Ga). At Monogaga, the Archean gneisses (Nd model age at 3.3 Ga) are in contact with Birimian juvenile magmas (Nd model age at 2.6 Ga). So far, it is only in this part of the Man Rise that such interactions occur. The Archean gneisses in contact with the Birimian juveniles formations reinforce the idea that the Archean protocontinent was geographically close during the genesis of the Birimian juvenile domain. In this juvenile domain, the ϵ_{Nd} are in the interval +2 to +3 at 2.1 Ga while in the depleted mantle there are around +5 to +6 at the same period. This difference could be caused by the existence of inherited components, probably of Archean age, on the whole of the Birimian magmatism. An Archean protocontinent rifting would better explain such a contamination rather than oceanic plateaus generated without direct link with Archean and which would exclude such interactions.

Keywords: Archean, Birimian, SASCA domain, inheritance, contamination, rifting, Côte d'Ivoire



Anatectite Granite of Balmer

Eburnean zircons

Nd model age at 3 Ga

Archean Gneiss

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