

TRACE ELEMENT ANALYSIS IN APATITE AND DIOPSIDE FROM THE SANTANÁPOLIS SYENITE, BAHIA – BRAZIL.

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Santanópolis syenite is one of the N-S longitudinally oriented Paleoproterozoic alkaline-potassic intrusion of the Salvador-Curaçá Mobile Belt (SCMS), east of São Francisco Craton, State of Bahia, Brazil. The SCMS is the result of a collisional event between two nuclei: Serrinha, on the Eastern side, and Remanso, on the Western side. Santanópolis syenite can be shared in two facies: a coarse grain porphyritic one, on the South; and a fine grain, phaneritic one, on the North. Both facies are composed of apatite, diopside, ilmenite, amphiboles, feldspar and quartz and exhibit felsic and mafic lithotypes. ICP-MS laser ablation analysis of rare earth elements (REE) were performed in several minerals using a pulsar ArF excimer laser coupled to a Fisons Plasma Quad PQ2+ ICPMS. REE patterns in diopside and fluor-apatite demonstrated high LREE content, mainly in Ce and Nd, with rather flat pattern of HREE, and small Eu anomalies. (Ce/Yb)_N ratio in diopside range from 9.03 and 11.13 in the most mafic lithotypes, to 10.34 and 7.89, in the most felsic lithotypes. In the apatites, (Ce/Yb)_N ratio range from 67, in the most mafic lithotypes, to 114, in the most felsic lithotypes. These REE patterns in both minerals, and the high Sr/Mn ratio in apatite, are not found in literature in ordinary syenites. However, they are very common in apatites found in carbonitites, kimberlites and kimberlite xenoliths, which suggest that these syenites are related to a metassomatic mantle. Acknowledge: CBPM and CAPES. Contribution: 056-99 of GPA.