

## **MAGMATIC EVOLUTION OF THE CANA BRAVA LAYERED MAFIC-ULTRAMAFIC COMPLEX, GOIÁS-TOCANTINS, BRAZIL**

1 LIMA, T. M. and 2 NILSON, A. A. 1 CPRM, Serv. Geol. Brasil, Brasília, Brazil 2 Inst. Geociências, UnB, Brasília, Brazil

The 1.9 Ga old Cana Brava Layered Mafic-Ultramafic Complex, a part of the Goiás Massif, is located in Goiás- Tocantins, central Brazil, in tectonic contact with mylonitic granite-gneiss (east) and metabasaltic amphibolites (west). It is 40 km in length and 7-11 km in apparent thickness. It is strongly deformed, underwent granulite facies metamorphism and comprises three principal metacumulate units: Lower Mafic Zone (LMZ), Ultramafic Zone (UZ), and Upper Mafic Zone (UMZ). LMZ consists mainly of gabbro-norite with coronitic olivine-melagabbro-norite and pyroxenite intercalations. UZ exhibits repeated peridotite and websterite layers. UMZ consists of several pyroxenite-gabbro-norite (norite) sub-units. LMZ and each UMZ sub-unit shows decreasing Mg/Mg+Fe<sup>2+</sup> ratio of orthopyroxene and clinopyroxene, increasing total REE concentration, increasing (La/Lu)<sub>n</sub> ratio and total light REE contents, in addition to a positive Eu<sup>2+</sup> anomaly towards the top of each unit/ sub-unit. UMZ pyroxenites exhibit variable, cyclic unit type, (La/Lu)<sub>n</sub> ratios, probably a result of changes in magma composition caused by the input of new magma pulses. Estimates of REE concentrations in the parental liquids for LMZ and for UMZ sub-units are similar. UMZ sub-units apparently underwent up to approximately 50% fractionation, suggesting that a part of the magma column for each magma pulse may not be represented in the rock record.