

STRATIFORM PPGE+AS-RICH CHROMITITES FROM THE ARCHEAN LUANGA MAFIC-ULTRAMAFIC COMPLEX (CARAJÁS, PARÁ, BRAZIL).

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The Archean ($2,763 \pm 6$ Ma; U-Pb age) Luanga Mafic-ultramafic Complex (Carajas, Pará, Brazil) comprises a cumulitic sequence (from dunites to leuco-norites; Mg-olivine \pm Cr-spinel, Mg-orthopyroxene \pm Cr-spinel, and Ca-plagioclase cumulus) which hosts stratiform chromitites. This sin-volcanic layered, deformed, and metamorphosed body intruded the Rio Novo greenstone belt. The massive and disseminated chromitite layers occur only between the ultramafic and the mafic sections. In the intrusion's lower and middle parts mafic igneous minerals alter to serpentine, amphibole, chlorite, talc and rare carbonate, according to structural domains. In the upper portion igneous mineralogy and textures are more preserved. Whole-rock (INAA) analyses show up to 3,0 g/ton Pt+ Pd in massive chromitites. Electron microprobe analysis in chromitites identified only Pt-Pd (sperrylite, minor Pd₂As, and PdAs₂) arsenides and alloys; native Pt(Rh) or Pd; and rare Fe, Cu, Ni, and Pb sulfides. PPGM occur as inclusions in: cumulus silicate in chromite; between cumulus silicates and chromite; chromite grains; between chromite and silicate matrix; and, in the silicate matrix. Fe-Cu-Ni-sulfides seem related to serpentinization because occur as trace minerals in less altered mafic-ultramafic rocks, and appear as disseminated abundant minerals in serpentinized and/or amphibolitized rocks. Stratiform PPGE+As-rich chromitites from Luanga Complex suggest that in a S-unsaturated environment As may act as a collector to form PGE-rich chromitites.