

INTEGRATION OF GEOPHYSICAL, GEOCHEMICAL AND METALLOGENIC DATA TO LANDSAT IMAGE IN THE GOLD-COPPER DISTRICT OF SERRA DO IPITINGA

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The data are integrated by digital processing of satellite images, yielding image-magnetometric, image-radiometric, and image-metallogenic charts. The geology of the Serra do Ipitinga district consists of medium to high-grade metamorphic rocks, Paleoproterozoic metavolcanic-sedimentary greenstone belts (Vila Nova Suite) and granitoids. Late-orogenic Paleoproterozoic and anorogenic Mesoproterozoic granitic suites as well as basic dike swarms are intrusive in the greenstones. Supergenic covers are developed over the metavolcanic-sedimentary sequence. The gold-copper mineralization is related to the NW-SE trending, NE plunging greenstone belts. In a segment of the Ipitinga Ridge, located between the Flexal and Purgatório creeks, IP and ground magnetometry methods has detected a 10 km long conductor body in depth, trending parallel to the main structures of the greenstones. Subsequent drilling has defined a volcanogenic sulphide body composed by pyrrhotite, pyrite, chalcopyrite, and sphalerite, with associated gold and silver. In that region, lithogeochemical processing data yielded isocontent maps for copper, zinc, cobalt and gold. Deposits, occurrences and evidences of alluvial gold and evidences of gold in soil are distributed through the area. Circular and tabular magnetic anomalies overlie the surface vertical projection of the sulfide body, indicating the occurrence of magnetic rocks in depth. Is very common the coincidence of radiometric and magnetic anomalies. High values of U, Th, K and total counting are observed in an 87-km long WNW-ESE fault. This fact has an important metallogenic implication, since is coincident with the main structural trend of the Guyana Shield, along which occurred the principal event of Paleoproterozoic crustal accretion.