

A REVIEW OF THE CRETACEOUS ALKALINE MAGMATISM IN WESTERN MINAS GERAIS AND SOUTHERN GOIÁS

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Cretaceous alkaline rocks from Western Minas Gerais and Southern Goiás occur as lavas, breccias, volcanoclastic deposits, pipes, and plutonic complexes. Published age data range from 75 to 125 Ma but most results cluster around 85 Ma. In the Alto Paranaíba region, Minas Gerais, the plutonic complexes are carbonatite-bearing, containing additionally ultramafic rocks and phlogopites. In the Iporá region, Goiás, carbonatite is absent from the plutonic complexes where the typical rock association includes dunites, peridotites, pyroxenites, gabbros, and syenites. Pipes and volcanic rocks from both areas are mostly kamafugites, mainly ugandites and mafurites, and katungite is rare. Volcanoclastic rocks are predominant and lava flows are rare. Late stage alteration is pervasive with the transformation of leucite and kalsilite to analcime, in Goiás, and to harmotome in Minas Gerais. Lamproite and leucitite have also been described. Kimberlite pipes are much less abundant and at least two of them are mineralized, but not economic. Chemical and isotopic data characterize them as transitional kimberlites. Parental magmas that originated the carbonatite complexes were also potassium-rich and certainly related to the general potassic magmatism where the complexes occur. Sr, Nd, Os, and Pb isotopic results indicate a lithospheric mantle derivation. The geographic age distribution suggests that the magmatism is related to a plume activity. Trindade and Tristan da Cunha hot spots are both proposed by different authors.