Structural Setting of Kimberlitic Magmatism in Angola

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The dispersal of kimberlitic occurrences over the cratonic area in Angola is satisfactorily explained by their structural setting. Furthermore, it may provide a basis for searching kimberlites and lamproites. The alkaline-carbonatitic complexes in south-western Angola and the occurrence of several kimberlitic provinces from the westhern rim of the craton towards Mbugi-Mayi, in Congo, reveal an extensive, NE trending tract of structural weakness associated with deep magmatism (alkalines and carbonatites in the SW, and kimberlites towards the centre of the craton). This structural trend is repeated to the NW and to the SE, where two other similar tracts are found, characterized by the presence of kimberlites, alkaline rocks, diamond and kimberlitic minerals. Taking into account seismicity studies on the East African Rift, one concludes that this tract of structural weakness extends to western sector of that rift. Equally important is a NW-SE trend, easily recognizable since it controls the courses of most rivers in Angola, as well as important geological contacts and the occurrence of tens of kimberlites, of diamonds or kimberlitic indicators. The analysis of those physiographical and geological features allows the definition of, at least, three main tracts of structural weakness. The northeastern tract runs to the Kalahari Craton, as a long shear zone that separates the Karroo from the Lufilian fold-belt. Undoubtedly, the NE and the NW trends constitute a remarkable structural pattern in southern Africa.