

MAGMATISM IN THE DELHI FOLD BELT, NW INDIA: CORRELATION WITH RODINIA TECTONICS

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The geological evolution of the Aravalli-Delhi region is marked by repeated crustal rifting, development of intracratonic rift basins and sedimentation, polyphase deformation and repeated cycles of magmatism during a protracted period of 2000 million years. The rocks of the Proterozoic Delhi Fold Belt are contained in two domains, the North Delhi Fold Belt (NDFB) and South Delhi Fold Belt (SDFB). Older magmatic activity (Mesoproterozoic) is confined to the NDFB, while the younger and most extensive one (Neoproterozoic) is in the SDFB. The voluminous Erinpura granites and the suite of granitic plutons of SDFB yield an age of 800 ± 50 m.y. The NDFB granitoids are quite distinct from each other in terms of their tectonic environment, emplacement history, and degree of deformation, mineralogy and source characteristics. Corresponding magmatism in NDFB is represented by the anorogenic Ajithgarh granite, which is possibly related to the Neoproterozoic, as against other older plutons in the group. The amalgamation and disruption of Rodinia Supercontinent occurred during 1.0 Ga. and 0.75-0.70 Ga. respectively. Events between 1.0 Ga and 0.70 Ga that postdated the assembly and predated the break up of Rodinia included widespread shearing and tectonic escape, post tectonic magmatism, extension, rifting, and intra continental mobile belt formation. The abortive opening of the Sirohi basin of SDFB have been linked with the break up of Rodinia Supercontinent. There appears to be a close link between the tectonics of Rodinia disruption with some of the magmatic events in SDFB and NDFB.