

Paleoarchaeon Crustal Evolution of Bundelkhand Craton: Comparison with the Crust Forming Processes of Selected Archaean Terrains

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An attempt has been made to correlate the crustal evolution of the heterogeneous Indian, Karelian and Kaapvaal Cratons in the Archaean times. Each is characterized by a central old core, in the form of all the cratons (Dharwar, Bastar, Singhbhum and **Bundelkhand**) of the Indian Shield, Vodlozero block of Karelian Craton and the Witwaterstrand block of Kaapvaal Craton. It was the granite-greenstone complexes of Vodlozero block were the initial event began during 3.0 – 2.8 Ga (Mesoarchaeon) within the Karelian Craton and through a series of subduction related accretionary episodes it culminated by the Neoarchaeon. However, the cratonic blocks of the Indian shield possess its own significant attributes. Similar to the evolution of Kaapvaal Craton in Southern Africa, it was plume activity that affected the cores of the southern cratons of Bastar, Singhbhum and Western Dharwar during the Mesoarchean (3.1 -2.8 Ga), which led to the development of basaltic-komatiite complexes in Bastar craton, Badampahar and Simlipal region of Singhbhum Craton and Sargur and Bababudan region of Western Dharwar Craton, probably leading to an independent evolution of these cratons at that time. At about 2.8 – 2.7 Ga, during the Neoarchaeon, a new cratonic block started developing south of the present Bundelkhand Craton and east to the Western Dharwar Craton (according to the present coordinate system) resulting in the formation of central Bundelkhand block and the Eastern Dharwar greenstone complexes. It can be inferred that the TTG gneiss zircon ages from Bundelkhand can be thus be correlated with the age and crystallization history of eastern Indian granites of Central Bastar Craton, Singhbhum granites of the Iron Ore Group from Singhbhum Craton and southern India supracrustals from Dharwar Craton. Thus, the continental crust formation began around ~3.6 Ga in Bundelkhand Craton, an age which is synonymous with the time frame of crustal evolution in Bastar and Singhbhum Craton making the Palaeoarchaeon evolution of these cratons similar, showing Bundelkhand to be a part of Ur supercontinent.