The Central Russian fold belt: Paleoproterozoic bondary of Fennoscandia and Volgo-Sarmatia, the East European Craton

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The Central Russian Fold Belt (CRFB) is a large Paleoproterozoic mobile belt in the central part of the East European Craton [1]. The belt is covered by a thick sequence of platform sediments. We report the results of interpretation of geophysical data, and of petrographic, geochemical, isotopic and geochronological studies of core samples from 25 deep boreholes.

The southern part of CRFB consists of Paleoproterozoic (~2.0 Ga) juvenile volcano-sedimentary rocks and various granitoids with island arcs affinities. These rocks are similar in age and composition with the adjacent Osnitsk-Mikashevichy belt, and as the latter, it were probably formed in an active margin setting on the edge of the Volgo-Sarmatia megablock.

The northern part of CRFB consists of the Archean (3.2 to 2.7 Ga) gneisses and granitoids and numerous ca. 2.5 Ga intrusions of high-Ti monzodiorites and metagabbro. These intrusions have geochemical and isotope features typical of Phanerozoic LIPs, particularly of the Parana province [2], and it could be considered as an indicative for a passive margin of the Fennoscandian megablock.

The boundary of these two domains is marked by a wide mylonite zone of granulite facies rocks that could be a result of collision of the Fennoscandia and Volgo-Sarmatia megablocks at 1.8- 1.7 Ga.

References:

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