



Paleomagnetism of the Ediacaran sediments of the Yenisei Ridge Vorogovka series (South-Western framing of the Siberian craton)

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The dynamics and time of the separation of Siberia from the structures of Rodinia remains one of the most controversial issues in the reconstruction of the geological history of the Siberian Platform. Paleomagnetic data are very important in resolving existing contradictions under the condition of a well-founded and detailed paleomagnetic study of the Neoproterozoic geological complexes of Siberia. Such complexes are located on the framing of the Siberian craton, forming, in the main, sedimentary sequences.

The paper gives the first paleomagnetic data on the previously unexplored record of the Vorogovka Series on the Western margin of the Siberian Platform. The Vorogovka Series is a complex of carbonate-terrigenous sedimentary rocks, preserved in small graben-synclinal structures in the northwest of the Yenisei Ridge. Age of deposits, according to different authors, from Neoproterozoic to Ediacaran. However, recent data indicate that the age of sedimentation within the Vorogovka Basin is less than 585 Ma.

Bottom-up in the stratigraphic sequence, the Vorogovka Series is divided into the Severnaya Rechka, the Mutnina and the Sukhaya Rechka Formations. The oldest and stable paleomagnetic signal was preserved in the rocks of the Sukhaya Rechka Formations. Light-gray limestones of the middle part of the section (2 sites, 20 samples) and fine-grained sandstones from the upper part of the section (3 sites, 29 samples) were characterized through rock-magnetic and paleomagnetic analyses.

Vectors of natural remanent magnetization for both limestones and sandstones, by the results of stepwise alternating field (AF) demagnetizations, behave is similar. The low-coercivity component of NRM destruct by AF demagnetization up to 20 mT and have not regular directions. Its coercitive spectrum is substantially overlapped by the spectrum of the high-coercivity component. But using the Halls method, the directions of high-coercive component for Sukhaya Rechka Formation were established.

The site-means of high-coercive component have the best clustering in stratigraphic coordinates. The maximum K-statistics ($K_{max}=699$) is achieved at 109.8% of unfolding, thus, the fold test shows that the acquired magnetization is pre-folded. The paleomagnetic pole is located at $Plat=29.3^\circ$; $Plon=41^\circ$; with 95% confidence radius $B95=2.1^\circ$.

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