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Mid-Neoproterozoic paleomagnetic results from the Tarim Basin (NW China) and their geodynamic implications

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In order to improve the understanding of the configuration and breakup history of the Rodinia supercontinent, a paleomagnetic study has been carried out in the Aksu and Kuluketag regions of the Tarim Basin (NW China). In the Aksu area of the western Tarim, the paleomagnetic sampling consists of 26 sites of sandstone from the Neoproterozoic Sugaitebulak formation, 8 sites of basalt of $\sim$780 Ma dated by Ar/Ar and 9 sites of from mafic dykes with a high-resolution microprobe (SHRIMP) U-Pb age of 807$\pm$12 Ma. In the Kuluktag of the eastern Tarim, we have sampled 10 sites of volcanic rocks of $\sim$620 Ma. The major part of our collection is still in laboratory treatment, nevertheless, the paleomagnetic results of 9 sties from the Aksu mafic dykes show that the magnetic remanence is principally carried by automorphous titanium-poor magnetite, both normal and reversed magnetic polarities are isolated from stable magnetic directions. Because of the monoclinal bedding of overlying sedimentary rocks, no fold test can be provided. However, a positive reversal test is obtained. A paleomagnetic pole, therefore, is computed: 19°N, 128°E, dp = 6°, dm = 7° with N = 9. This new paleomagnetic observation reveals that the Tarim block was located at an intermediate latitude of 43$\pm$6°N. Integrating the geochronological studies of dyke swarms from Australia and the Aksu area and referring to the configuration of the Rodinia supercontinent proposed by Moores (1991) and Li and Powell (2001), the Tarim block was placed north of Australia and the Aksu dykes may be the northward continuity of lamprophyre dykes and kimberlite pipes in the northeast part of the Kimberley Craton, Western Australia. The results from the remained collection will be presented

and their geodynamic implications will be discussed in the meeting.