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Paleomagnetism of Early Paleozoic sections from the southern part of Siberian platform

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New paleomagnetic data from Vendian and Lower Cambrian sediments from the Aldan block of the Siberian platform (58°N, 126°E) are presented. These are the Ust-Judoma, Tumuldur and Ungelinskaya Formations, which have been biostratigraphically dated. The original aim of our paleomagnetic study was to obtain high resolution records of polarity transitions. Unfortunately, however, stepwise demagnetization experiments demonstrate that about half the collection was affected by remagnetization by the present day field (Dec 16°, Inc 75°) completely erasing all information on ancient magnetizations. The remaining part of the collection is characterized by low intensities and sometimes rather complicated NRM properties. Nevertheless, several stable components of magnetization could be identified. Light grey dolomites of the Ust-Judoma Formation are dominated by ancient magnetizations. A component with intermediate unblocking temperatures reveals a mean direction of (Dec 096°, Inc 73°), which results in a paleopole position indistinguishable from pole positions for the Siberian Trap Basalts of Permo-Triassic age. A further component can be identified at high unblocking temperatures, which is pointing to the northwest with intermediate positive inclinations (Dec 305°, Inc 37°). The corresponding paleopole locates at 36°N, 343°E. This direction is very similar to the one identified in the coeval Tumuldur Formation of earliest Cambrian age. Here the characteristic magnetization is stable up to 590°C and yields northwesterly declinations with positive inclinations (Dec 322°, Inc 25°). The resulting paleopole position is at 37°N, 354°E. We assume a primary character of both magnetizations from Ust-Judoma and Tumuldur, unfortunately, however, both sections are flat lying and no field test could have

been carried out. Our interpretation is supported by the presence of unaltered detrital magnetite which can be observed under the microscope. The red colored limestones of the Ungelinskaya Formation (lower Cambrian) are dominated by two high temperature components with occasionally overlapping unblocking temperatures. The stable characteristic remanence directions show both polarities either pointing to the east (west) with negative (positive) inclinations. The paleopole position is at 02°N, 037°E. All paleopoles of presumably primary age plot on the relevant parts of the reference Apparent Polar Wander Path thus demonstrating the structural coherence of southern Siberia during the latest Vendian/earliest Paleozoic. In addition we were able to identify two zones of normal polarity, which are situated close to the top of the Vendian and in the middle part of the lower Cambrian.