

Paleomagnetic study of the Okhotsk-Chukotka Volcanic Belt at Magadan, Kolyma-Omolon Superterrane, Russia

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Post-Cretaceous tectonic deformation of Eurasian continent can be estimated by comparison of Cretaceous paleomagnetic pole positions from its western and eastern extreme areas. We choose the Kolyma-Omolon Superterrane as one of the eastern extreme. Late Cretaceous ignimbrites are collected at 19 sites from the Kholchan Suite in the Okhotsk-Chukotka Volcanic Belt at the north of Magadan (60.4N, 151.0E) in the terrane. Characteristic paleomagnetic directions are isolated from 16 sites by AF demagnetization and their primary nature is ascertained through presence of both normal and reversed polarities. Late Cretaceous paleomagnetic direction after tilt correction is $D=17.6$, $I=82.5$, $k=13.1$, $a95=10.5$, $N=16$ at Magadan, corresponding to a paleomagnetic pole at Long. = 166.7, Lat. = 72.4, $A95=18.9$. This pole falls on the pole position for the Chukotka, indicating the Kolyma-Omolon Superterrane and Chukotka behaved as a tectonic unit since Late Cretaceous. Compared with Late Cretaceous poles from Europe and the Mongolia block, pole positions from the Mongolia block, Eurasia and Magadan are arranged from the north to south along longitude of 170E. Disagreement of pole positions of western and eastern extreme areas suggests occurrence of deformation of the Eurasian continent later than Late Cretaceous. Pole positions from the Kolyma-Omolon-Chukotka block and Mongol block implies southward displacement of the Kolyma-Omolon-Chukotka block and northward displacement of the Mongol block. Continuation of closure of the Mongol-Okhotsk Ocean is one of post-Cretaceous tectonic deformation aspects within Eurasian continent.

Keywords: paleomagnetism, tectonics, Cretaceous, Asian continent