

Auroral oval in the last 3000 years and future

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We investigate the global shape of auroral oval based on the paleomagnetism models for the last 3000 years. Recent IGRF models are also used for future extrapolation. Similar method as proposed by Oguti (1993, JGR) is adopted to draw the auroral oval. The method as well as the dependence on the geomagnetic activity etc. are examined by the >30 year data from DMSP satellites and the >70 year data from ground-based magnetometers located at high latitudes. It is confirmed that there is only a weak effect of the dipole moment to change the shape of the auroral oval, as theoretically expected.

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