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## A Transient but Protracted Geomagnetic Anomaly in the Sudbury Basin Following Two Near-Contiguous Intense Geomagnetic Storms

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### ABSTRACT

During the maintained quiescence between solar cycle 23 and 24, two unusually intense (K-indices = 7) global geomagnetic disturbances separated by 6 days occurred. They were followed by a protracted increase of between 150 and 200 nT in the vertical component of our local magnetic field (Sudbury, Ontario). The duration of the variation anomaly was unusually long, about 3 weeks, before returning to baseline following a one week period of below average intensity characterized by approximately 50 min periodicities. We suggest this anomaly supports previous research that specific temporal patterns of increased global geomagnetic activity when matched with local impedance/reluctance of ore bodies created the condition for remarkable transient changes in the surface static intensity of magnetic fields.

### KEYWORDS

Anomalous Transients, Sudbury Basin, Magnetic Storm, Periodicity

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