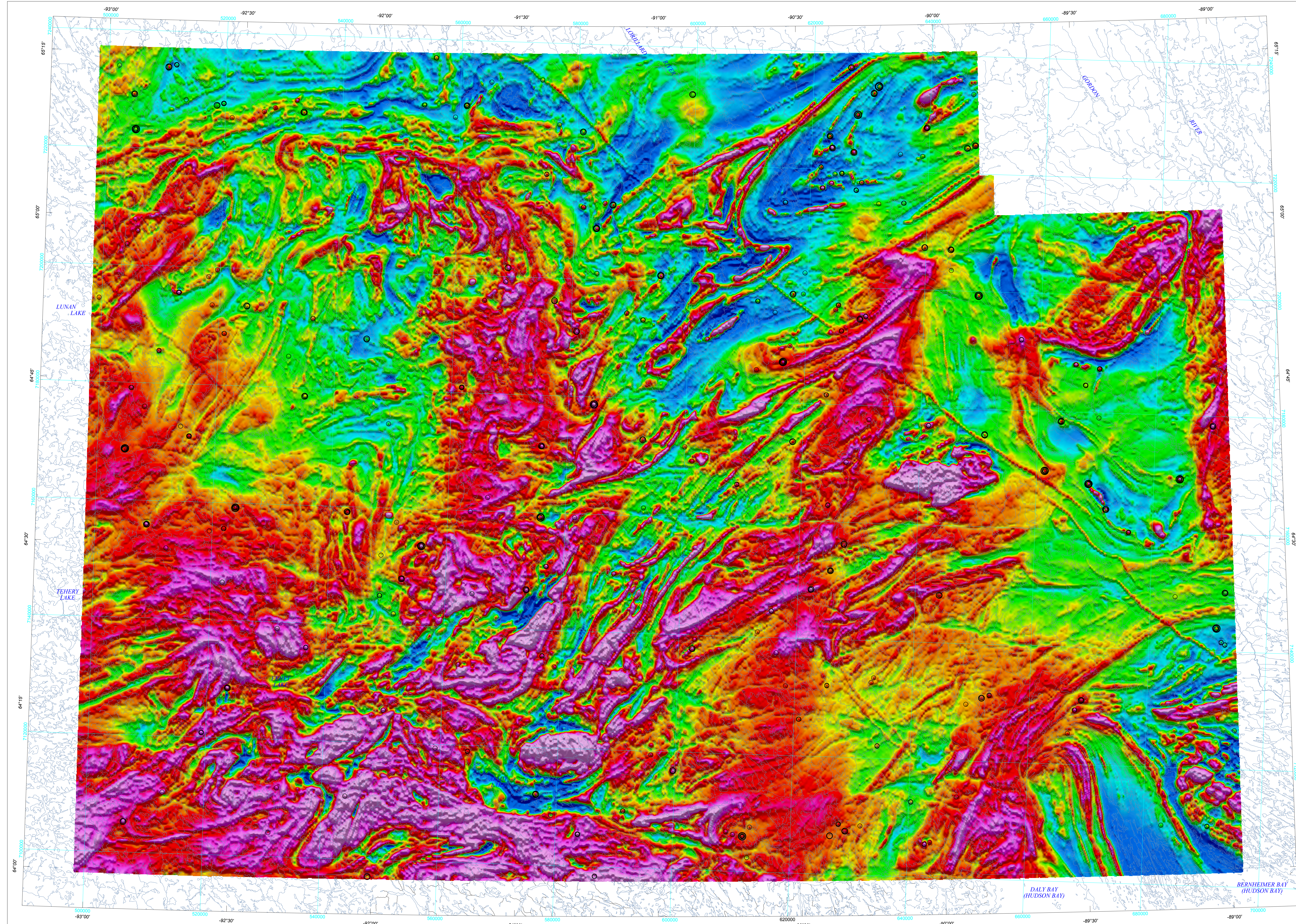


KEATING CORRELATION COEFFICIENTS



Keating Correlation Coefficients

Possible kimberlite targets have been identified from the residual magnetic field over the Tehery Lake area, Nunavut (Coyle and Kiss, 2012 a, b, c, d) based on the identification of roughly circular anomalies. This procedure was automated by using a known pattern recognition technique (Keating, 1995) which consists of computing, over a moving window, a first order regression between a vertical cylinder model anomaly and the gridded magnetic data. Only the results where the absolute value of the correlation coefficient is above a threshold of 80% were retained.

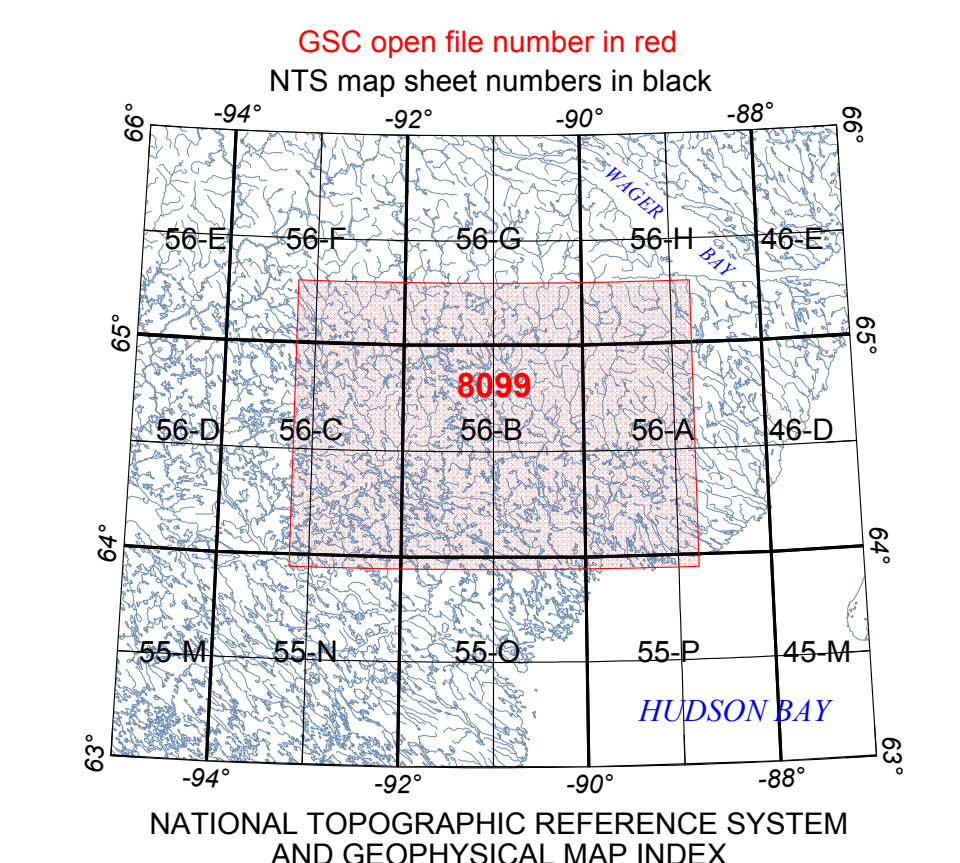
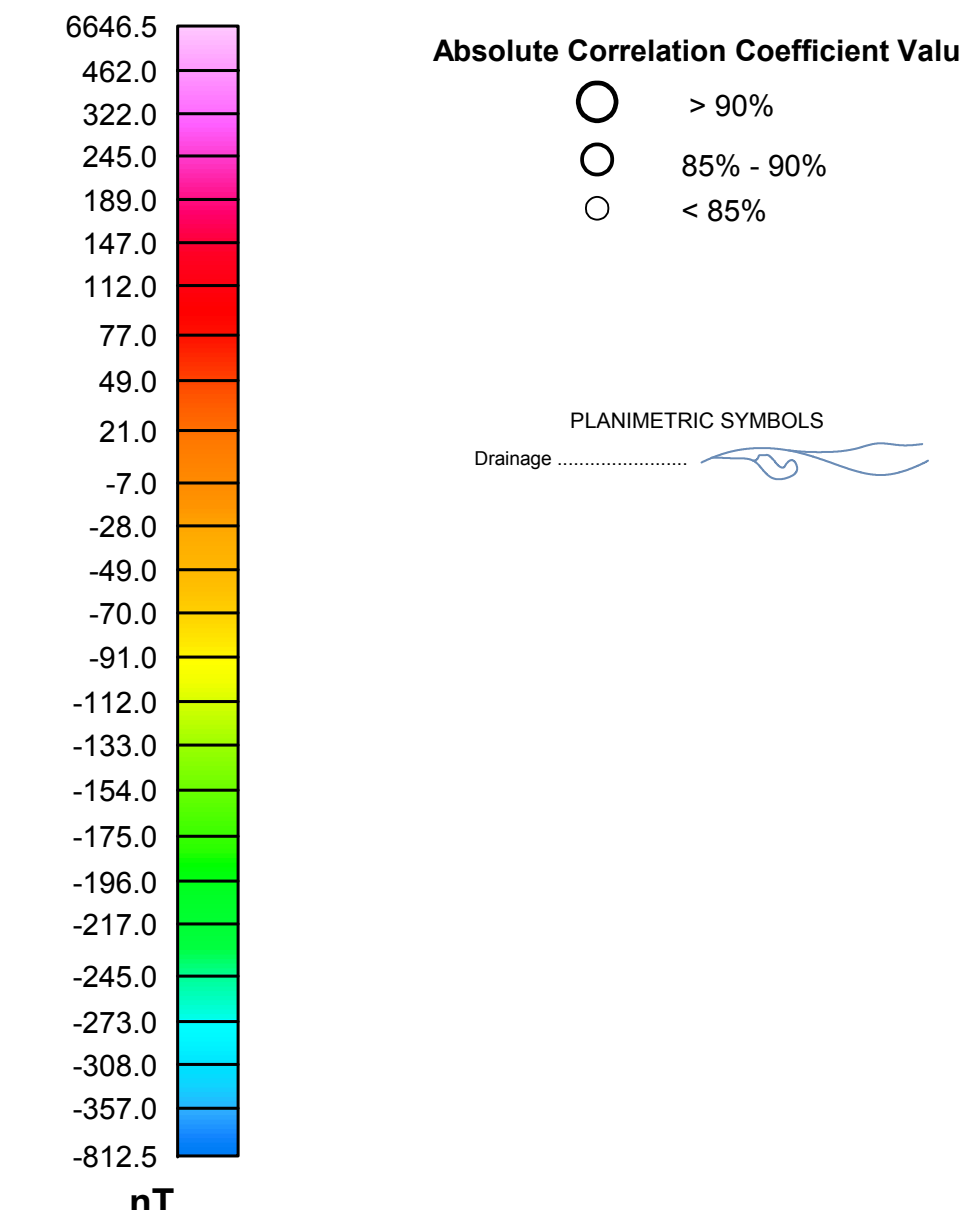
The results are depicted as circular symbols to reflect the correlation value. The most favorable targets are those that exhibit a cluster of high amplitude solutions. Correlation coefficients with a negative value correspond to reversely magnetized sources. It is important to be aware that other magnetic sources may correlate with the vertical cylinder models, whereas some kimberlite pipes of irregular geometry or insufficient diameter may not.

Cylinder diameter	50 m
Cylinder length	infinite
Depth of cylinder	(below tail sensor) 150 m
Magnetic inclination	84°N
Magnetic declination	13.5°E
Window cell size	12 x 12 (960 m x 960 m)

Digital versions of this map are available for free download through GEOSCAN (<http://geoscan.nrcan.gc.ca/>). Corresponding digital profile and gridded data as well as similar data for adjacent airborne geophysical surveys can be downloaded, at no charge, from Natural Resources Canada's Geoscience Data Repository for Geophysical Data at http://gdr.agq.nrcan.gc.ca/index_e.html. The same products are also available, for a fee, from the Geophysical Data Centre, Geological Survey of Canada, 615 Booth Street, Ottawa, Ontario K1A 0E9. Telephone: (613) 995-5326, email: info@agq.nrcan.gc.ca.

References

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- Keating, P., 1965. A simple technique to identify magnetic anomalies due to kimberlite pipes. Exploration and Mining geology, vol. 4, No. 2, p.121-125.



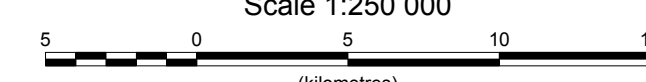
KEATING CORRELATION COEFFICIENT RESULTS OVER THE TEHERY LAKE AREA

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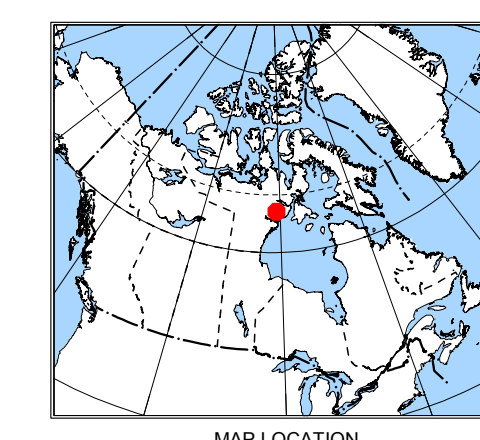
Author: V. Tschirhart
 Digital cartography by D. Oneschuk, Geological survey of Canada.
 doi:10.4095/299252

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 KEATING CORRELATION COEFFICIENT RESULTS OVER THE TEHERY LAKE AREA

NUNAVUT
 NTS 56-B and parts of 55-N, O, P, 56-A, C, F, G and H
 Scale 1:250 000



Base map at the scale of 1:250 000 from Natural Resources Canada
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