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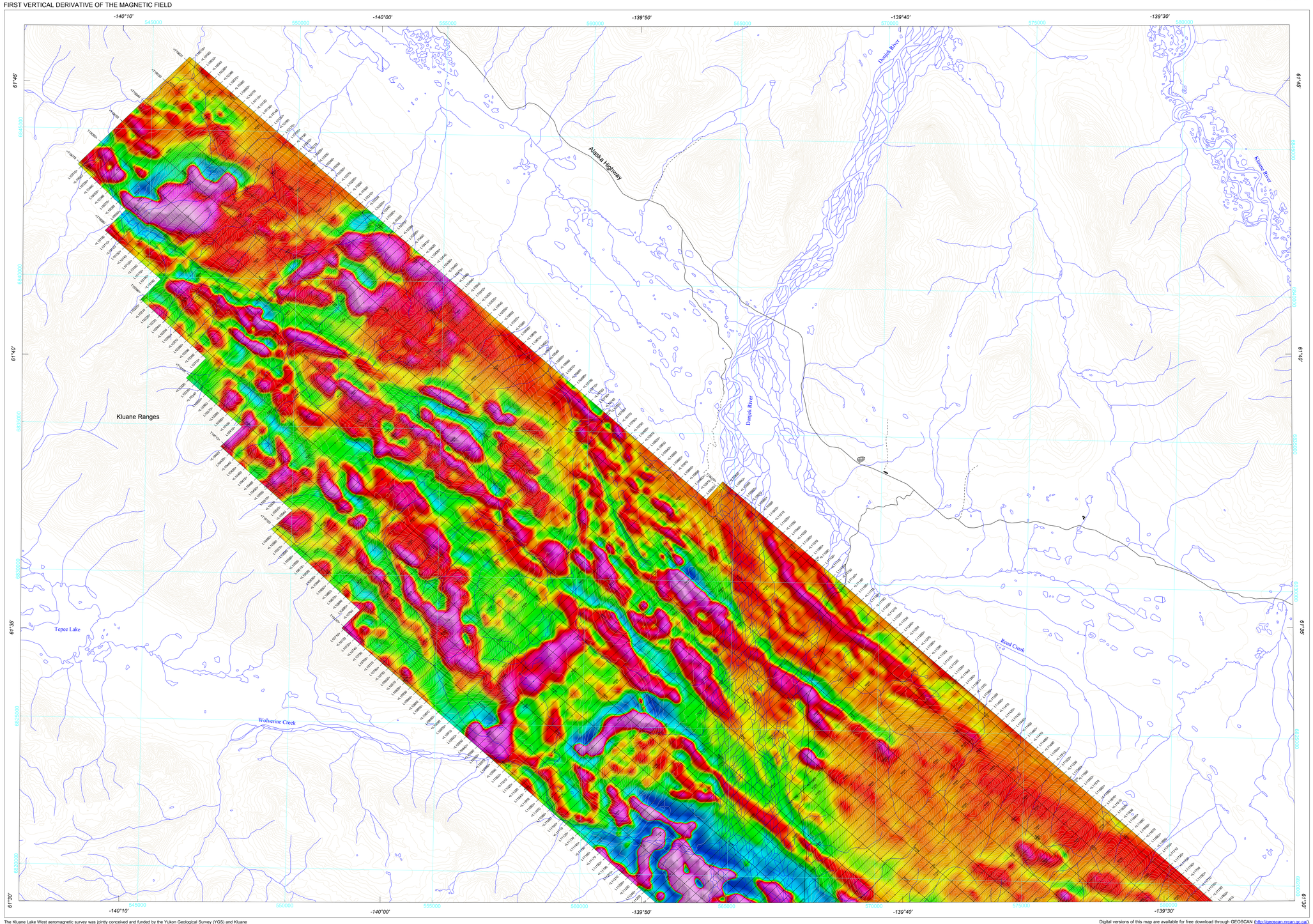
FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD



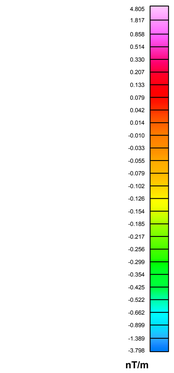
First Vertical Derivative of the Magnetic Field

This map of the first vertical derivative of the magnetic field was derived from data acquired during an aeromagnetic survey carried out by CGG from March 6, 2015 to April 15, 2015. The data were recorded using a split-beam cesium vapour magnetometer (sensitivity = 0.005 nT) mounted in a stinger rigidly attached to an Aerospatiale AS350 helicopter (C-FKMX). The nominal traverse and control line spacings were, respectively, 250 m and 1000 m, and the aircraft flew at a nominal terrain clearance of 100 m. Traverse lines were oriented NE-SW with orthogonal control lines. The flight path was recovered following post-flight differential corrections to the raw Global Positioning System (GPS) data and inspection of ground images recorded by a vertically-mounted video camera. The survey was flown on a pre-determined flight surface to minimize differences in magnetic values at the intersections of control and traverse lines. These differences were computer-analysed to obtain a mutually levelled set of flight-line magnetic data. The levelled values were then interpolated to a 50 m grid. The International Geomagnetic Reference Field (IGRF) defined at the average GPS altitude of 393 m for the year 2015.23 was then removed. Removal of the IGRF, representing the magnetic field of Earth's core, produces a residual component related almost entirely to magnetizations within Earth's crust.

The first vertical derivative of the magnetic field is the rate of change of the magnetic field in the vertical direction. Computation of the first vertical derivative removes long-wavelength features of the magnetic field and significantly improves the resolution of closely spaced and superposed anomalies. A property of first vertical derivative maps is the coincidence of the zero-value contour with vertical contacts at high magnetic latitudes (Hood, 1965).

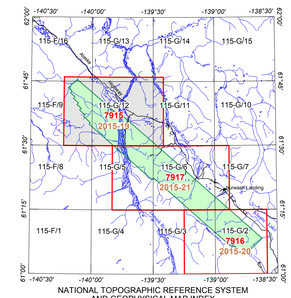
Reference

Hood, P.J., 1965. Gradient measurements in aeromagnetic surveying; Geophysics, v. 30, p. 891-902.



PLANIMETRIC SYMBOLS

Project Limit .....
Drainage .....
Topographic Contour .....
Building .....
Road .....
Trail .....
Quarry .....
Flight Path ..... 62500 L12370>



NATIONAL TOPOGRAPHIC REFERENCE SYSTEM AND GEOPHYSICAL MAP INDEX

NTS Map Number
GSC Open File Number
YGS Open File Number

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KLUANE LAKE WEST AEROMAGNETIC SURVEY

GSC OPEN FILE 7915
YGS OPEN FILE 2015-19

FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD

KLUANE LAKE WEST AEROMAGNETIC SURVEY
YUKON
NTS 115-G/12 and parts of 115-G/11, 13, 14 and 115-F/9, 16

Scale 1:50 000
1 0 1 2 3 kilometres
WGS 84 / UTM zone 7N

World Geodetic System,1984

Topographic Data from Natural Resources Canada


MAP LOCATION

Authors: M. Coyle and D. Oneschuk
Data acquisition and data compilation by CGG, Mississauga, Ontario.
Project management and map production by the Geological Survey of Canada, Ottawa, Ontario.

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7915
GEOLOGICAL SURVEY OF CANADA
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COMMISSION GÉOLOGIQUE DU YUKON
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