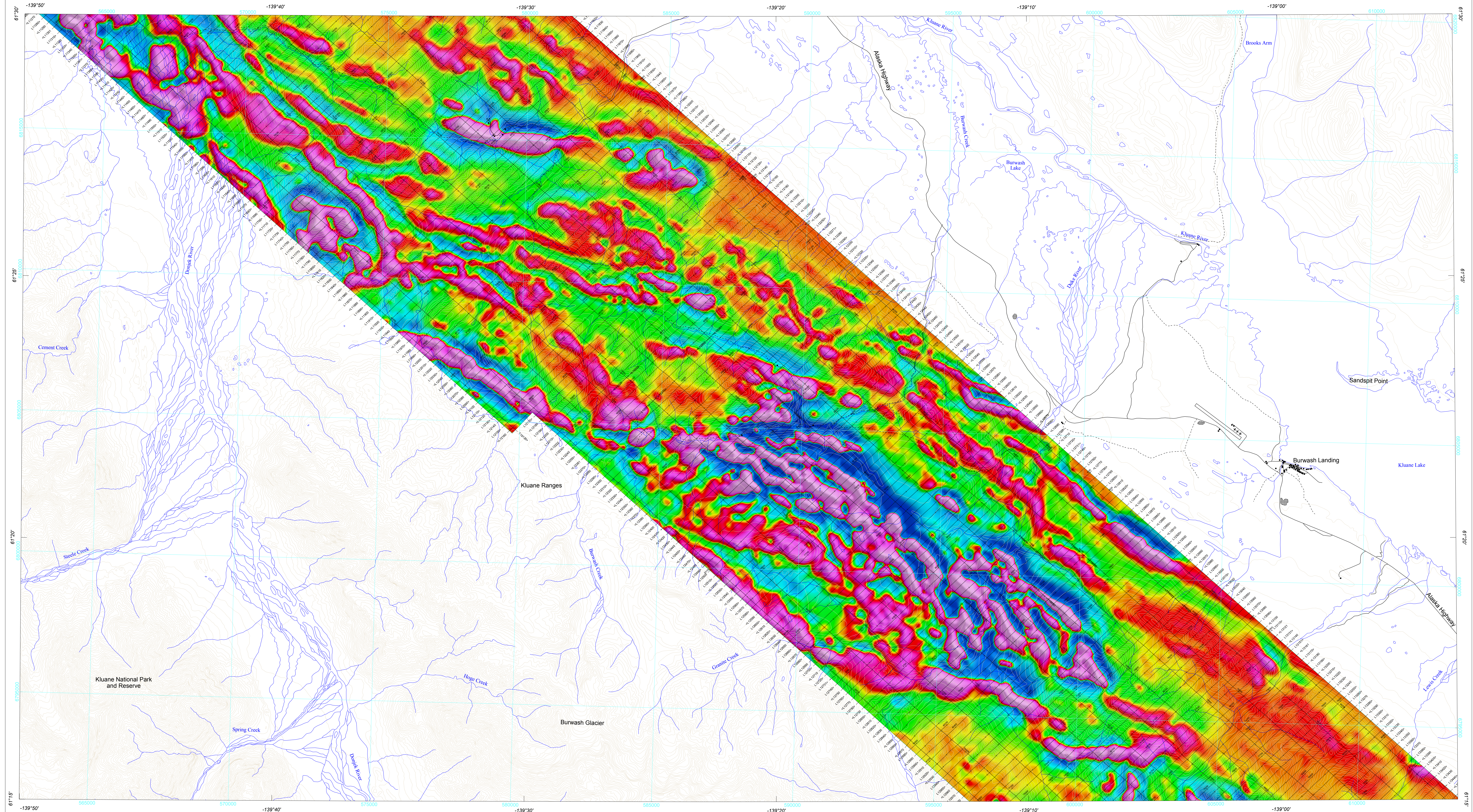


FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD



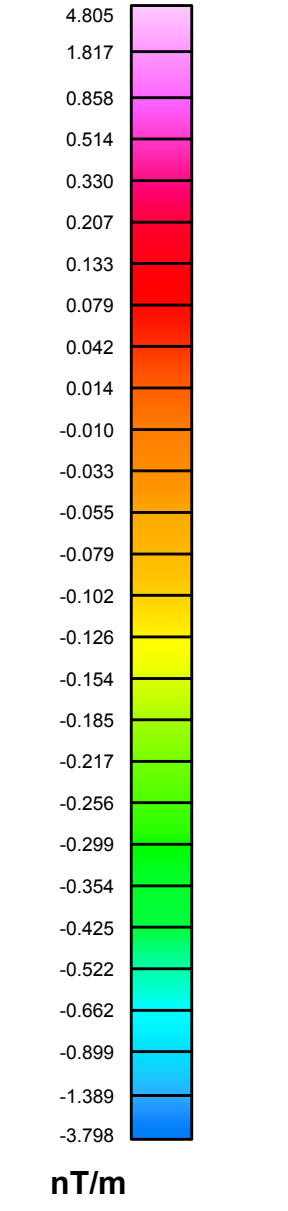
First Vertical Derivative of the Magnetic Field

This map of the first vertical derivative of the magnetic field was derived from data acquired during an aeromagnetic survey carried out by GSC from March 9, 2015 to April 15, 2016. The data were recorded using a split-beam cesium vapour magnetometer (Sensivity = 0.005 nT) mounted in a stinger rig attached to an Aerotec 4330 helicopter (G-PMX). The nominal traverse and control line spacing 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 correction to the new 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 350 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 subdued anomalies. A property of first vertical derivative maps is the coincidence of the zero-value contour with vertical contacts at high magnetic latitudes (Hood, 1962).

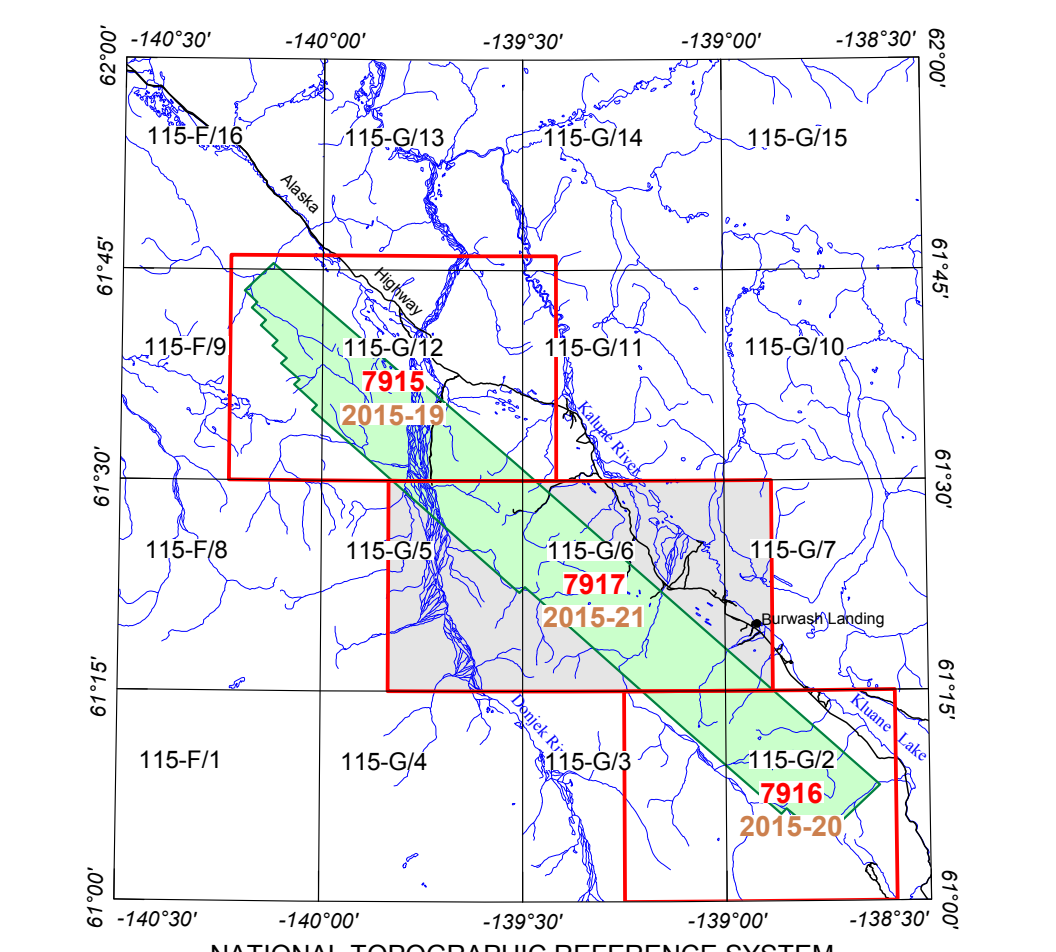
Reference

Hood, P.J., 1965. Gradient measurements in aeromagnetic surveying. *Geophysics*, v. 30, p. 881-902.



PLANIMETRIC SYMBOLS

Project Line	—
Drainage	—
Topographic Contour	—
Building	■
Road	—
Traffic	—
Mine Quarry	■
Flight Path	—



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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.nrcan.gc.ca/geodata>. The same products are also available, for a fee, from the Geophysical Data Centre, Geological Survey of Canada, 615 Booth Street, Ottawa, Ontario K1A 0E8. Telephone: (613) 996-5206, email: gdpc@gs.crsd.gc.ca.

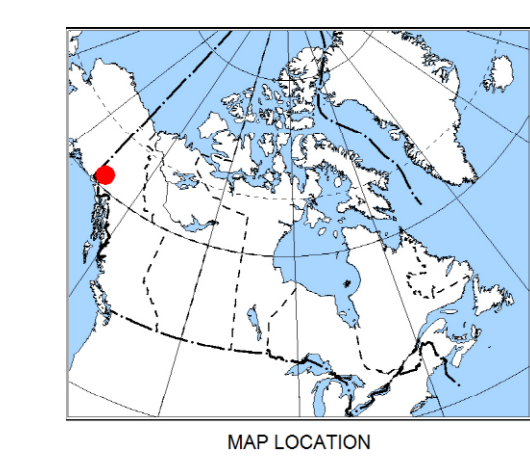
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 Data acquisition and data processing by C.G.S. Mississauga, Ontario.
 Project management and map production by the Geological Survey of Canada, Ottawa, Ontario.
 doi:10.4095/298751

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 YGS OPEN FILE 2015-21

FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD

KLUANE LAKE WEST AEROMAGNETIC SURVEY
 YUKON
 NTS 115-G/6 and parts of 115-G/5 and 7

Scale 1:50 000
 WGS 84 / UTM zone 7N



KLUANE LAKE WEST AEROMAGNETIC SURVEY

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