

**AIRBORNE REGIONAL SURVEY OF THE
ST. ALBAN'S REGION, NEWFOUNDLAND**
NTS MAP AREA 1M/13 AND PARTS OF 1M/12, 1M/14,
11P/16, AND 2D/04
VLF-EM Quadrature - 24.0 KHz (Cutler, ME)
(Fraser Filtered)
MAP 2018-10
OPEN FILE NFD/3339
Map 4 of 4
G. J. Kilfoil

ABOUT THE SURVEY

Introduction
The quadrature geophysical (spectrometric) and aeromagnetic geophysical survey of St. Alban's region, Newfoundland was completed by Geomatics Airborne Surveys. The survey was flown from October 19th to November 20th, 2015, using a single Cessna 208 Caravan (C-GZDN). The survey track and control line spacing were, respectively, 100 m and 100 m, and the aircraft flew at a constant terrain clearance of 120 m in outcrop terrain and 200 and 270 m elsewhere. Traverse lines were oriented 120° with orthogonal control lines. The flight path was measured following post-flight differential correction to raw data recorded by a Global Positioning System.

Geometric Spectrometric Data
The airborne geophysical measurements were made with a Radiation Solutions RS-300 spectrometric system using a 1000-20000 Hz (100-20000 Hz) magnetometer. The raw data were corrected for magnetic declination, Earth's magnetic field, and magnetic interference from the aircraft. The corrected data were then processed using a Fraser filter to produce a Fraser filtered quadrature geophysical data set. The Fraser filter is a low-pass filter that removes high-frequency noise from the data. The Fraser filter was applied to the quadrature geophysical data set to produce a Fraser filtered quadrature geophysical data set. The Fraser filter was applied to the quadrature geophysical data set to produce a Fraser filtered quadrature geophysical data set.

Electromagnetic Spectra
The electromagnetic spectra were recorded at uncorrected intervals. Data processing followed standard procedures as described in MEA, 1991 and MEA, 2003. During processing, the quadrature and real parts were accumulated into the windows described above. Counts from the real windows were converted to real values, and counts from the quadrature windows were converted to quadrature values. The real and quadrature values were then processed using a Fraser filter to produce a Fraser filtered quadrature geophysical data set. The Fraser filter was applied to the quadrature geophysical data set to produce a Fraser filtered quadrature geophysical data set.

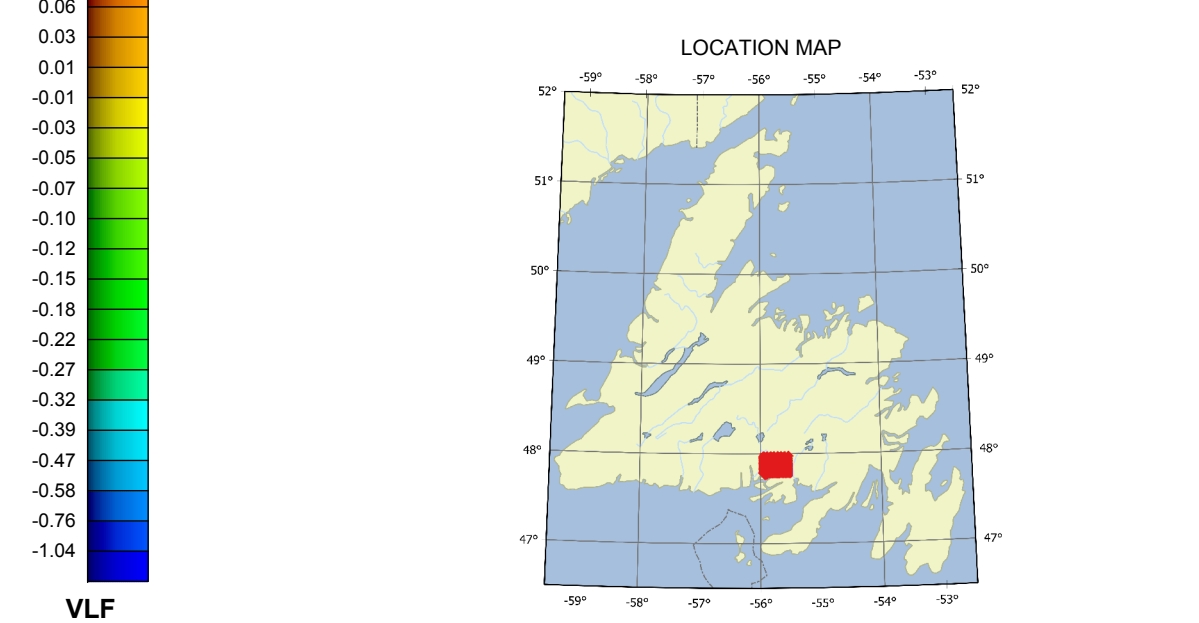
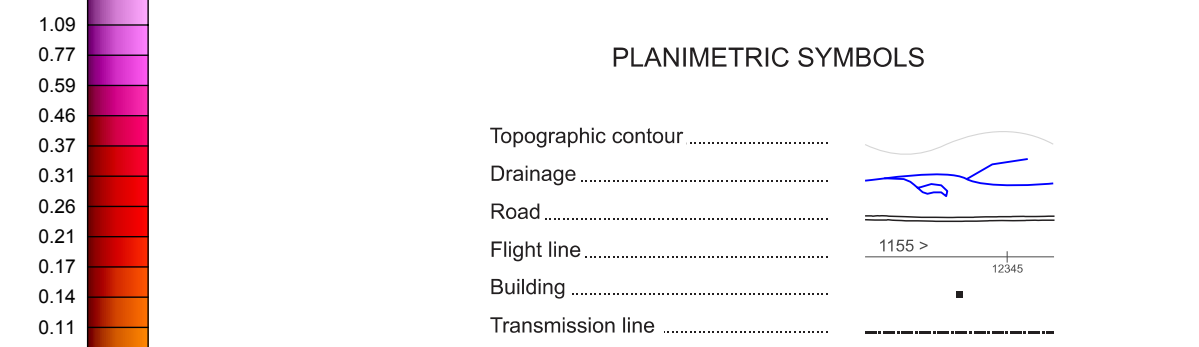
Magnetic Data
The magnetic field was sampled 10 times per second using three split-beam cesium vapour magnetometers (cesium/yr 2000-17) mounted on the tail boom of the aircraft. The survey track and control line spacing were, respectively, 100 m and 100 m, and the aircraft flew at a constant terrain clearance of 120 m in outcrop terrain and 200 and 270 m elsewhere. Traverse lines were oriented 120° with orthogonal control lines. The flight path was measured following post-flight differential correction to raw data recorded by a Global Positioning System.

VLF Data
The VLF-EM data were acquired by a Heiss Tower 24 dual channel receiver. The receiver records the total field and quadrature component of two VLF frequencies. The VLF-EM data were acquired by a Heiss Tower 24 dual channel receiver. The receiver records the total field and quadrature component of two VLF frequencies. The VLF-EM data were acquired by a Heiss Tower 24 dual channel receiver. The receiver records the total field and quadrature component of two VLF frequencies.

Additional Information
The acquisition of VLF-EM data was not included in the specifications of the St. Alban's airborne survey contract. These data were purchased separately from the contractor, Geomatics Airborne Surveys. Data collection and final map production were performed by Geomatics Airborne Surveys, St. John's, Newfoundland. Contract and project management and final map production were provided by the Newfoundland and Labrador Department of Natural Resources.

Reference
Head, P.J. 1965. Gradient measurements in aeromagnetic surveying. *Geophysics*, vol. 30, p. 891-902.

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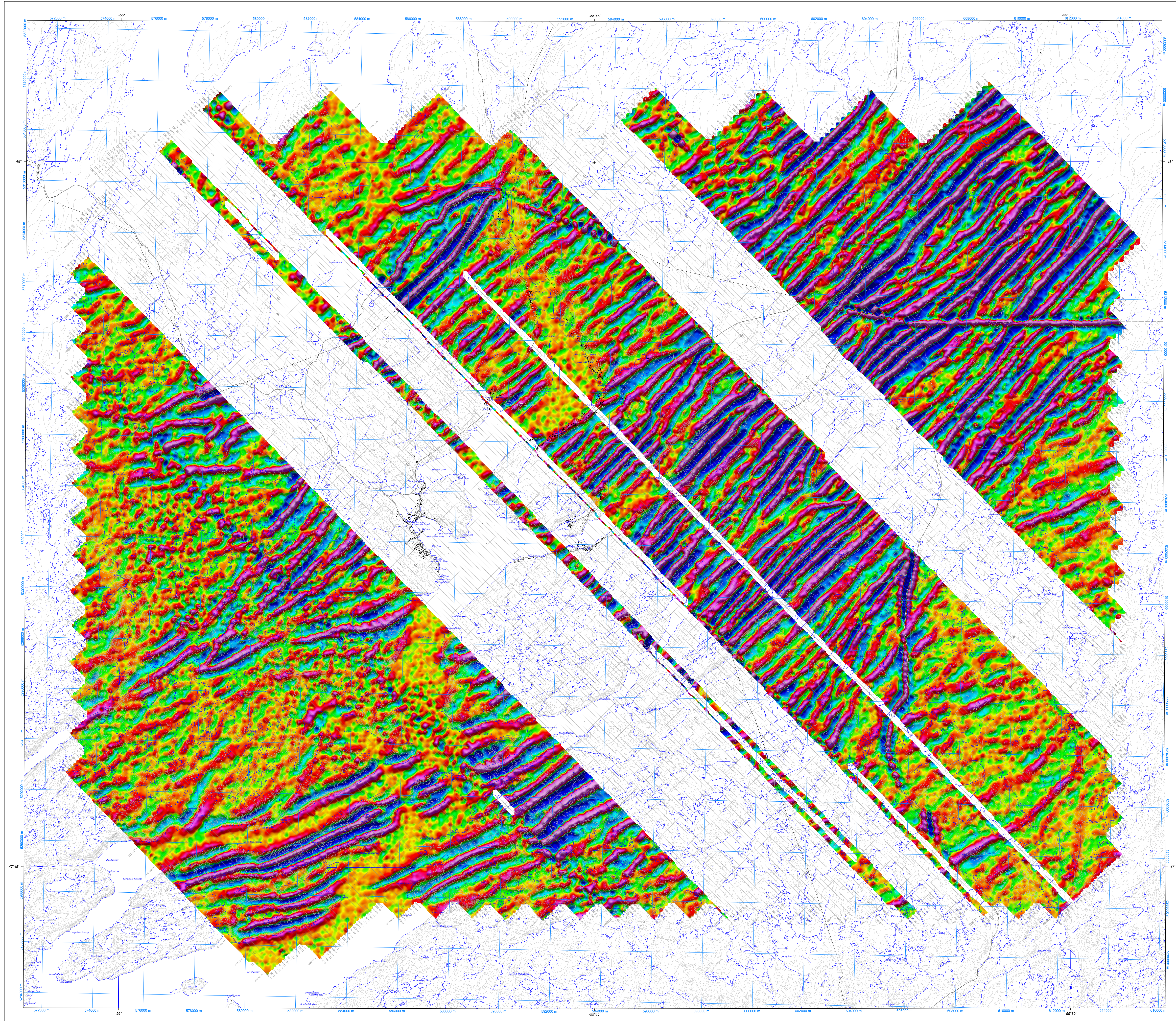
VLF Quadrature (%)



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