

115° 105° 95° 85° 75° 65° 55° 45° 35° 25° 15° 5°



Energy, Mines and Resources Canada  
Geological Survey of Canada

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Commission géologique du Canada

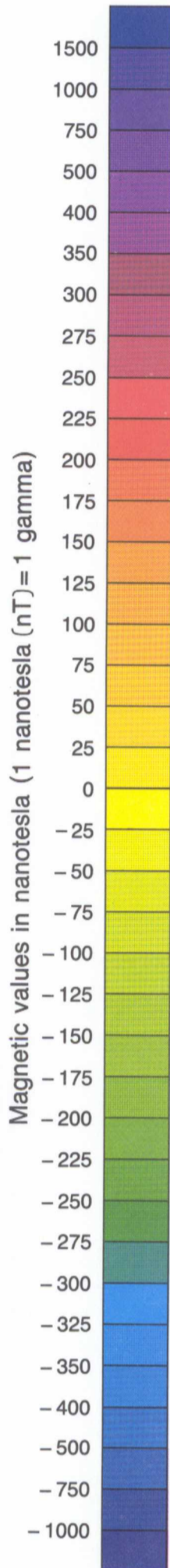
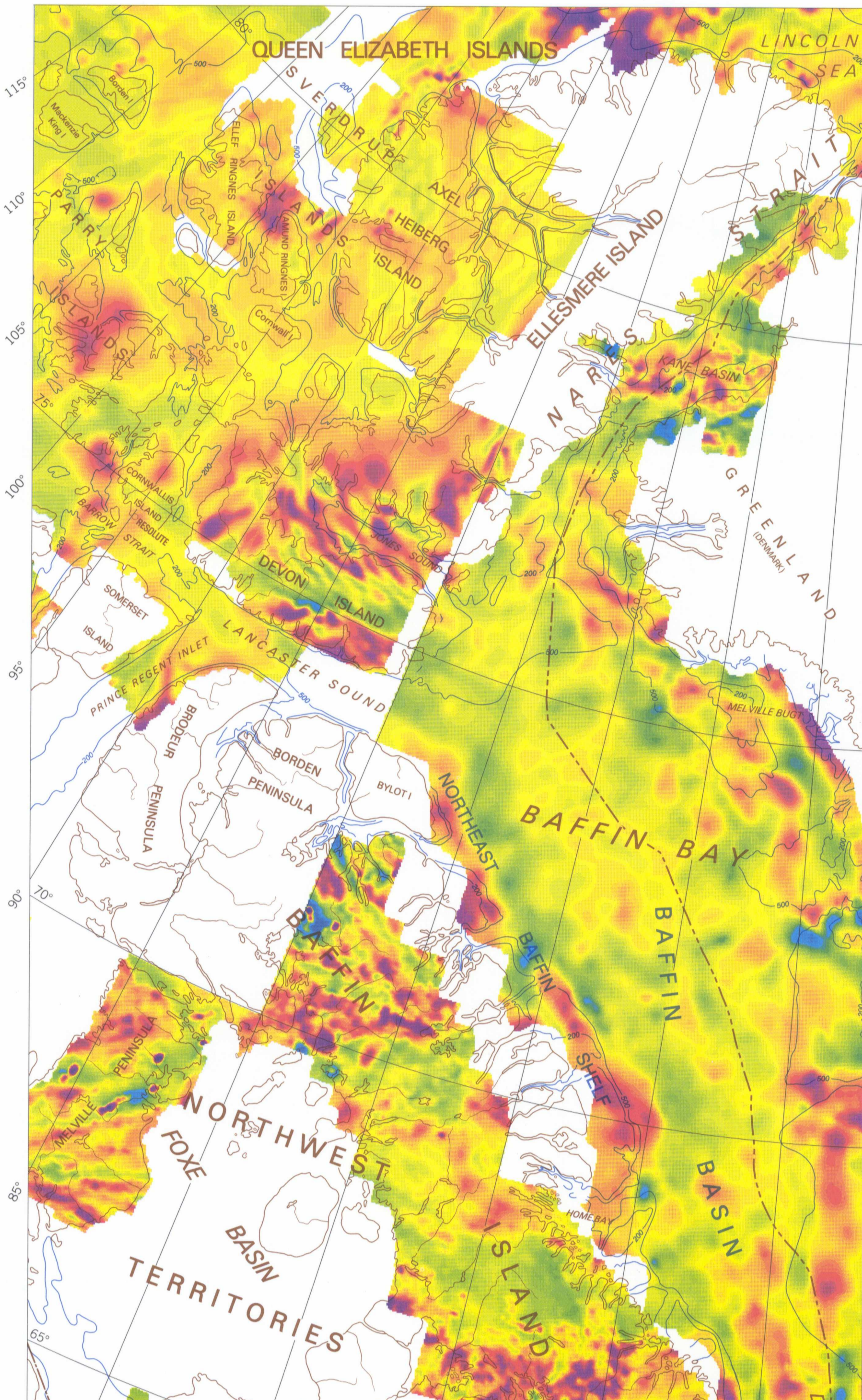
MAP 1709A

# MAGNETIC ANOMALY MAP OF THE CONTINENTAL MARGIN OF EASTERN CANADA

Scale 1:5 000 000 - Echelle 1/5 000 000

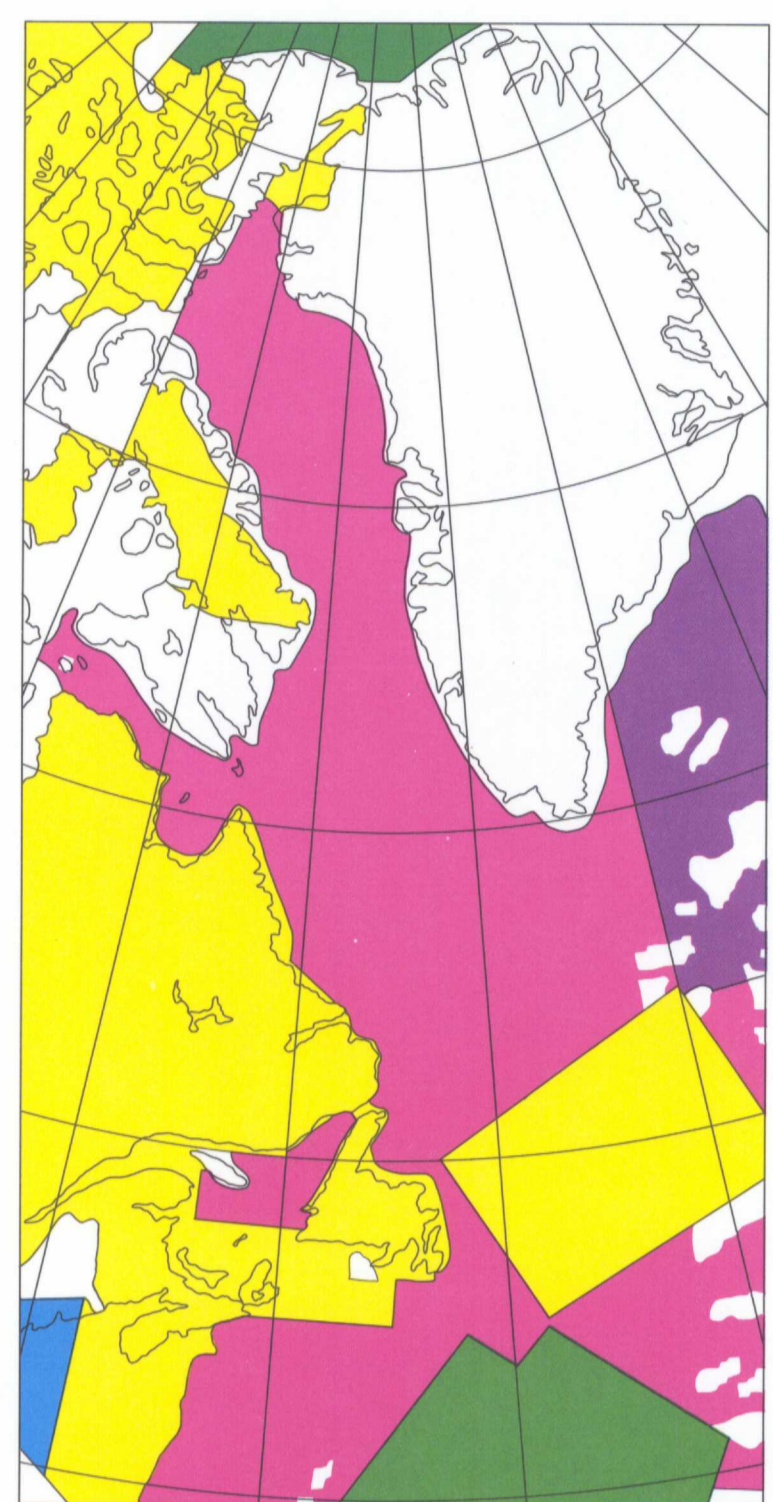
Kilometres 100 0 100 200 300 400 Kilometres

LAMBERT CONFORMAL CONIC PROJECTION, STANDARD PARALLELS 49°N AND 77°N; MODIFIED POLYCONIC PROJECTION NORTH OF LATITUDE 80°  
PROJECTION CONIQUE CONFORME DE LAMBERT, PARALLÈLES D'ÉCHELLE CONSERVÉE: 49°N ET 77°N; PROJECTION POLYCONIQUE MODIFIÉE AU NORD DU 80° DE LATITUDE

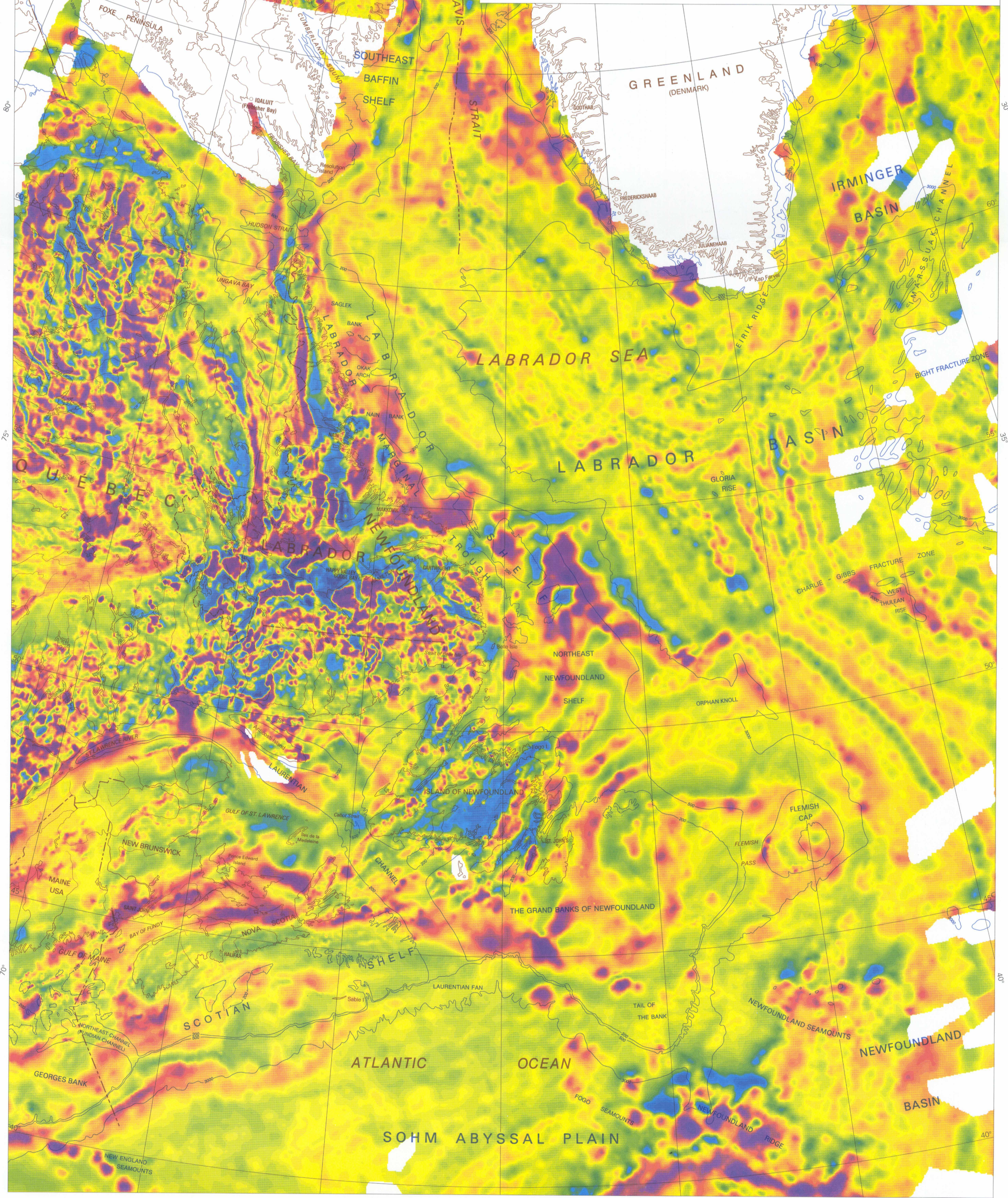


This map was produced with marine and aeromagnetic data collected by the Geological Survey of Canada (GSC) and other agencies. Distribution of the data according to type and source agency is shown on the accompanying index map.  
The GSC acknowledges the data provided by the National Geophysical Data Center, Boulder, CO, the United States Naval Research Laboratory, Washington, D.C., and the United States Geological Survey, Woods Hole, MA, and, for Orphan Basin, data from Amoco Petroleum, Cantara Energy, Chevron Canada Resources, Columbia Gas Development of Canada, and Petro-Canada Resources.  
All measurements were collected along ship tracks or aircraft flight lines spaced about 1 to 35 km apart, usually with wider spacings in areas of greater water depth.  
The earth's core field and the effects of its secular variation were removed by applying the International Geomagnetic Reference Field 1985.0 (IAGA Division 1 Working Group 1, 1986).  
A visual inspection of shaded relief maps and a statistical analysis of marine observations at about 60 000 track crossing points identified track segments where the most serious measurement errors occurred; data collected along these segments were eliminated. Corrections for diurnal or other effects were not applied to the basic marine data. The accuracy of marine measurements is estimated to be about 70 nT, based on an analysis of errors at crossover points in the ship tracks. The accuracy varies greatly over the entire region, due to the presence of high amplitude, short wavelength anomalies in some areas.  
GSC aeromagnetic data were collected mainly under contract (Hood et al., 1985). Survey altitudes were generally set at 305 m above mean elevation, with a line spacing of 800 m. Over rugged terrain such as in northern Labrador, constant barometric altitudes were flown to provide clearance above the highest terrain. In marine areas, flight line spacings were increased because of the greater depth to sources. The normal resolution for the aeromagnetic data is about 2 nT.  
In a preliminary compilation, the GSC aeromagnetic data were gridded at 2000 m. For the preparation of this map, the data were subsequently resampled on a geographical grid at intervals of 5 minutes of latitude and 5 minutes of longitude.  
Additional aeromagnetic data, as well as all the marine data, were gridded at similar intervals by a method that combined an adjustable digital filter with a weighting procedure (Verhoef et al., 1986). This method produced grid values that were unbiased by track or flight line geometry, and also diminished the influence of residual positioning errors. Some data sets were de-correlated by means of a directional filtering technique to minimize the effect of level differences between parallel and adjacent ship tracks or flight lines (Macnab et al., 1987).  
For purposes of map construction, gridded data sets were assembled in patchwork fashion. Where necessary to achieve a proper match along the boundaries between data sets, aeromagnetic data were levelled to agree with regional marine data. Residual seams between the data sets were treated with a smoothing algorithm that eliminated sharp edges by fitting a local surface with a cosine taper. Data gaps up to 100 km wide were filled in by a running mean procedure with a Gaussian weight function.  
Verhoef and Macnab (1988) described the procedures used in the construction of this map.

References  
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Base map derived from Map 850-A Bathymetry, at the scale of 1:5 000 000 published by the Canadian Hydrographic Service, Department of Fisheries and Oceans, 1986.  
Bathymetric contours in metres



Copies of this map may be obtained from the Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E9, 3003-33rd Street, N.W., Calgary, Alberta T2L 2A7



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1709A (E)

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