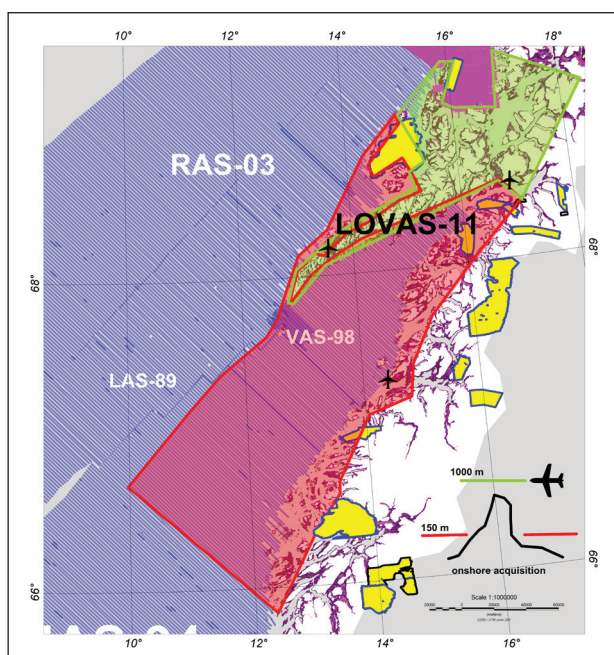


PROJECT PROPOSAL

Lofoten-Vesterålen Aeromagnetic Survey (LOVAS-11)

The Geological Survey of Norway (NGU) is carrying out a follow-up on the successful onshore-offshore projects in the Norwegian and Barents seas. The study area covers the Lofoten-Vesterålen archipelago and the Vestfjorden area with an overlap of the surrounding onshore areas.



Outline of the LOVAS-11 aeromagnetic survey (red & green polygons). The survey will be flown with different altitudes above sea level due to the steep topography. Dark blue lines show previous NGU surveys. High-resolution survey (helicopter and fixed wing) are marked in yellow.

The new onshore-offshore data-set will update and improve the existing data in the area and provides the missing link between the two domains. Closing the gap between onshore and offshore data will contribute to a better understanding of e.g. the basement characteristics at the narrowest part of the Norwegian Shelf and provide a more accurate depth-to-basement estimation offshore. The aeromagnetic survey will be flown with 500 m and 1000 m line spacing depending on the altitude. Flying altitude is c. 150 m offshore and in flat coastal areas, while the mountainous areas are flown with varying altitude at c. 1000 m above sea level.

NGU will within the frame of the current study compile existing aeromagnetic surveys on the mainland (e.g. high-resolution helicopter surveys) and in surrounding offshore areas (e.g. RAS-03, HRAMS-97) and provide a comprehensive and state of the art aeromagnetic grid. High-resolution aeromagnetic surveys are particularly useful for detailed mapping of sand channels, volcanics, igneous bodies,

salt diapirs, fault systems, deep weathering and depth to magnetic basement. This information provides a structural overview and is valuable for further survey planning like seismic, gravity and CSEM data acquisition. The products of the planned project includes a basement characterization as well as a full 3D crustal model of the survey area and the adjacent part of Nordland VII. The new survey constitutes the next part of an aeromagnetic mapping program to link the Norwegian onshore and offshore domains.

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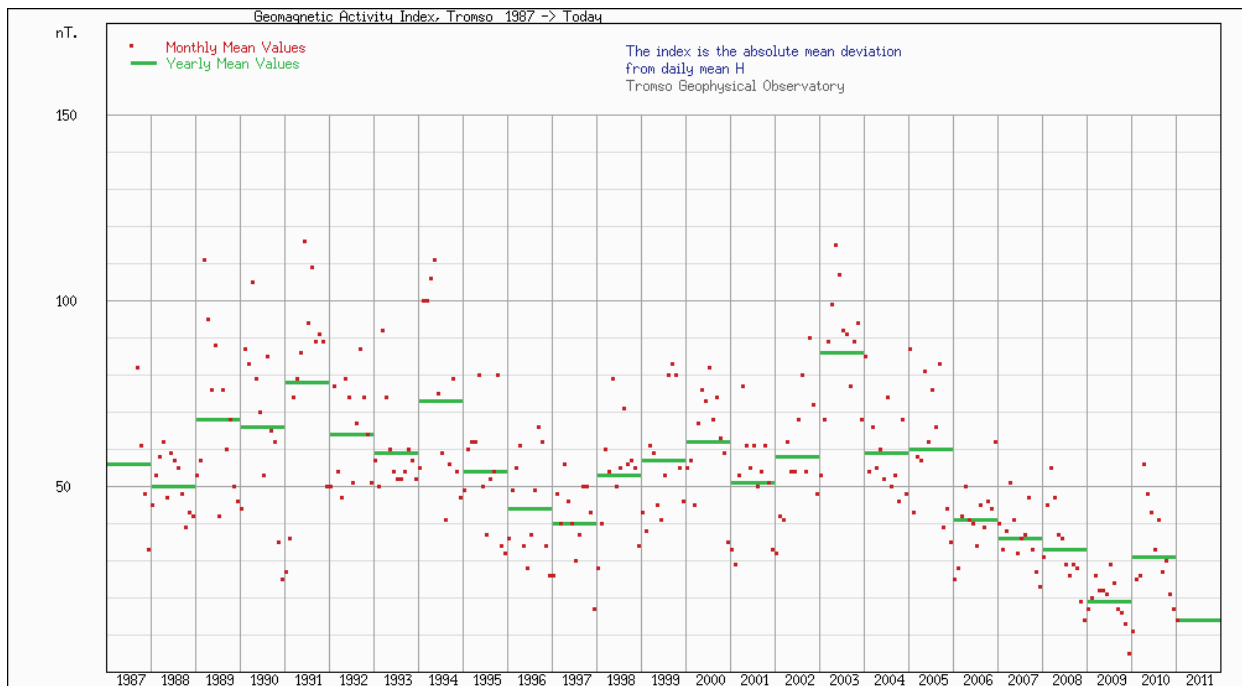
www.ngu.no/continental_shelf_geophysics

ORDERING:

Price early participants:

1.90 million NOK (4 Participants)

Deadline Early Participants: **31 January 2011**



Magnetic disturbances recorded by the Tromsø Geophysical Observatory (<http://www.tgo.uit.no/aix>) during the time period 1987-2011. The activity is presently low which is expected to prevail for another 6 months. The conditions are therefore ideal for aeromagnetic data acquisition.

MAIN OBJECTIVES

- Basement characterization
- Depth to basement
- Fault zones (onshore-offshore)
- 2D & 3D crustal modelling
- Geodynamic and tectonic interpretations
- Subcrop mapping
- Deep weathering
- Quaternary sand channels

DELIVERABLES

Maps

- Aeromagnetic total field data-sets
- Free air, Bouguer and isostatic gravity maps
- Filtered magnetic and gravity maps
- Depth to magnetic sources
- Combined interpretation maps
- Gravity and magnetic modelling along key transects
- Combined interpretation with seismic data
- Tectonic interpretations

Reports

- Processing reports
- Interpretation report

OFFSHORE SURVEY SPECIFICATIONS

Line spacing:	500 m/ 1000 m
Sensor elevation:	150 m/ 1000 m
Area coverage:	c. 46,000 km ²
Total flying distance:	c. 68.000 km
Aeroplane:	Piper Chieftain
Magnetometer:	Scintrex Cesium Vapour MEP410
Noise envelope:	±0.1 nT
Sensor:	CS-3 mounted in towed bird
Navigation:	Real time differential GPS
Navigation accuracy:	< 5 m
Base of operation:	Evenes, Bodø, Leknes
Base magnetometers:	Geometrics G822

Project completion: November 2012