Aeromag 1996

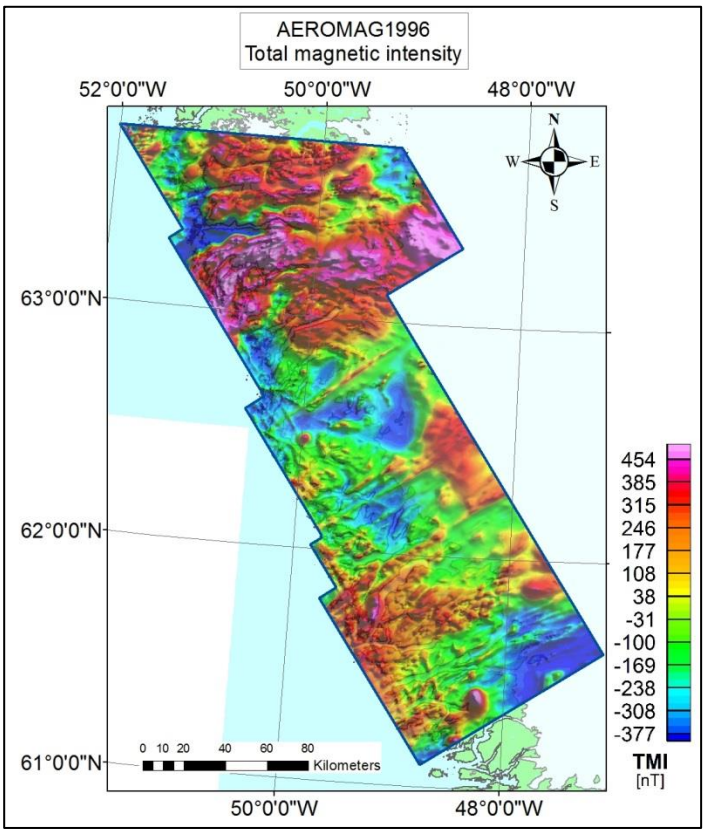
Description of an aeromagnetic survey in Greenland 1996

The Aeromag 1996 project covered a large part of South-West Greenland (size: 30 026 km²). Data were acquired and processed by Geoterrex Ltd. and financed by the governments of Greenland and Denmark. The regular survey lines are oriented N37°W and spaced at 500 metres intervals. Tie-lines were flown at 5000 metres intervals in an orthogonal direction to the regular survey lines.

The main geological units in the survey area are the Archean craton to the north and the Palaeoproterozoic Ketilidian orogen to the south, where most of the survey area lies within in the Archean craton.

The Archean craton of Greenland is the largest and best exposed craton of the North Atlantic cratons. It consists mainly of granitoid quatzo-feldspathic gneisses probably largely derived from acid to intermediate igneous rocks, but encompasses also rafts of amphibolites. There are many occurrences of supracrustal rocks of varying age within the surveyed area, however, the Tartoq group in the southern part of the Aeromag 1996 project area is the best known of the supracrustal sequences. Most of the craton experienced several phases of folding, faulting and/or metamorphism, often in granulite facies. The Fiskenæsset complex is situated within the Aeromag 1996 project area, near its northern boundary. It is a stratiform intrusion covering an area of approximately 2500 km^2 containing anorthosites, leucogabbro and gabbro with minor amounts of ultramafic rocks and chromite. The Fiskenæsset complex and has been dated to approximately 2800 Ma.

In the southern part of the Aeromag 1996 project area the Archaen gneisses are at places unconformably overlain by well-preserved undeformed and unmetamorphosed Palaeoproterozoic sediments and basic volcanic rocks. Further to the south these sediments become strongly deformed and metamorphosed by the Palaeoproterozoic Ketilidian orogenic belt. This is the 'Border Zone' between the Archaean craton and the Palaeoproterozoic Ketilidian orogen. See also Aeromag 1995.



Total magnetic intensity map from the Aeromag 1996 survey of SouthWest Greenland.

Data compilations can be directly downloaded from Greenland Portal by entering "Geophysics – individual surveys" and selecting this survey . To order hardcopies of map sheets, please contact Geus by email bhm@geus.dk.

Selected references:

- Allen, D. 1997: Logistics and processing report of the airborne magnetic survey in the South-West and southern West section of Greenland for the Geological Survey of Denmark and Greenland, Project Aeromag 1996. Geoterrex Ltd. January 1997. Unpublished report available from GEUS, 9 pp., 3 app.
- Thorning, L. & Stemp, R.W. 1997: Projects Aeromag 1995 and Aeromag 1996. Results from aeromagnetic surveys over South Greenland (1995) and South-West and southern West Greenland (1996). Geological Survey og Denmark and Greenland Report **1997/11**, 44 pp.