SCAR WG-GGI NATIONAL REPORT

Report of Current Activities of Finland for 2000-2002

Prepared by Jaakko Mäkinen, Finnish Geodetic Institute
Finnish representative to SCAR WG-GGI

The following Finnish organisations / institutes have developed working programmes to conduct research or operational work in the Antarctic in the field of Geodesy, Photogrammetry, Remote Sensing, Bathymetry, Geographic Information, Cartography.

Finnish Geodetic Institute
Finnish Institute of Marine Research
Finnish Meteorological Institute
University of Helsinki, Department of Geophysics
University of Lapland, Arctic Centre

1. FIELD ACTIVITIES

1.1 Geodetic Surveys

a) (Finnish Geodetic Institute and Finnish Institute of Marine Research) GPS observation campaigns were carried out in the international framework of the SCAR 2001 and SCAR 2002 Epoch GPS Campaigns at the station Wasa.

b) (Finnish Geodetic Institute) An absolute-gravity measurement was performed at Aboa in January 2001 with the JILAg-5. This was a repeat of the first measurement, performed in 1994.

c) (University of Lapland, Arctic Centre) GPS was used for ice flow measurements and for the precise positioning of Ground Penetrating Radar surveys in Western Dronning Maud Land.

1.2. Remote Sensing

a) (Helsinki University, Department of Geophysics) Radarsat images were used and ground truth measurements performed at several sites in Western Dronning Maud Land. The quantities were density, temperature, crystal size, permittivity, electric conductivity and salinity, pH, albedo, and spectral reflectance. In addition, airborne measurements of spectral reflectance were carried out. The measurements are part of the project " Seasonal snow in Antarctica" (season 2000/2001)

b) (Finnish Meteorological Institute) Round-the-year ozone soundings at Marambio (since 1988) are compared with TOMS records from Nimbus7 and now from Earth Probe. Additional UV work is performed at Belgrano II.

2. MAPPING ACTIVITIES

2.1 Topographic Mapping: *none*

2.2 Thematic Mapping: *none*

3. GEOGRAPHIC INFORMATION ACTIVITIES

3.1 Digital Datasets: *none*

3.2 GIS Established: *none*

4. SCIENTIFIC PAPERS PUBLISHED / PRESENTED

Karhu K.A, Taalas P, Ginzburg M. (2000): Springtime stratospheric ozone over Marambio, Antarctic during 1990–1998 — analysis of ozone sonde data in relation to the phase and position of polar vortex. In: Zerefos C.S. et al. (eds.), Chemistry and Radiation Changes in the Ozone Layer, Kluwer, Netherlands, pp. 227-231.

Kärkäs, E., H. B. Granberg, C. Lavoié, K. Kanto, K. Rasmus and M. Leppäranta (2002): Physical properties of the seasonal snow cover in Dronning Maud Land, East-Antarctica. Accepted for publication in the Annals of Glaciology.

Mäkinen, J. (2001): Absolute gravity measurements at the Finnish Antarctic base Aboa in 1994 and 2001. In: M. Poutanen (ed), Abstracts of IAG International Symposium on Recent Crustal Movements, SCRCM'01. Helsinki, Finland, August 27–31, 2001, p.106 (Abstract).

5. PLACE NAMES

5.1 *no activities*

6. GROUND CONTROL POINT LIBRARY

no activities

7. PLANNED ACTIVITIES FOR THE NEXT TWO YEARS

7.1 Geodetic Surveys (Finnish Geodetic Institute)

a) GPS observations will be carried out in the international framework of the SCAR 2003 Epoch GPS Campaign at Wasa.

b) A permanent GPS station will be established at Aboa/Wasa during the Finnish scientific Antarctic Expedition Finnarp 2002 (season 2002/2003).

c) Absolute gravity will be re-measured at Aboa during Finnarp 2003 (season 2003/2004).

7.2 Remote Sensing

a) (Helsinki University, Department of Geophysics) The work described in 1.2.a) will continue during the season 2003/2004

b) (Finnish Meteorological Institute) The work described in 1.2.b) will continue.

7.4 Geographic Information Activities (Finnish Geodetic Institute)

a) A digital elevation model of the nunatak Basen and its immediate surroundings will be produced to assess the gravity effect of variation in snow accumulation.