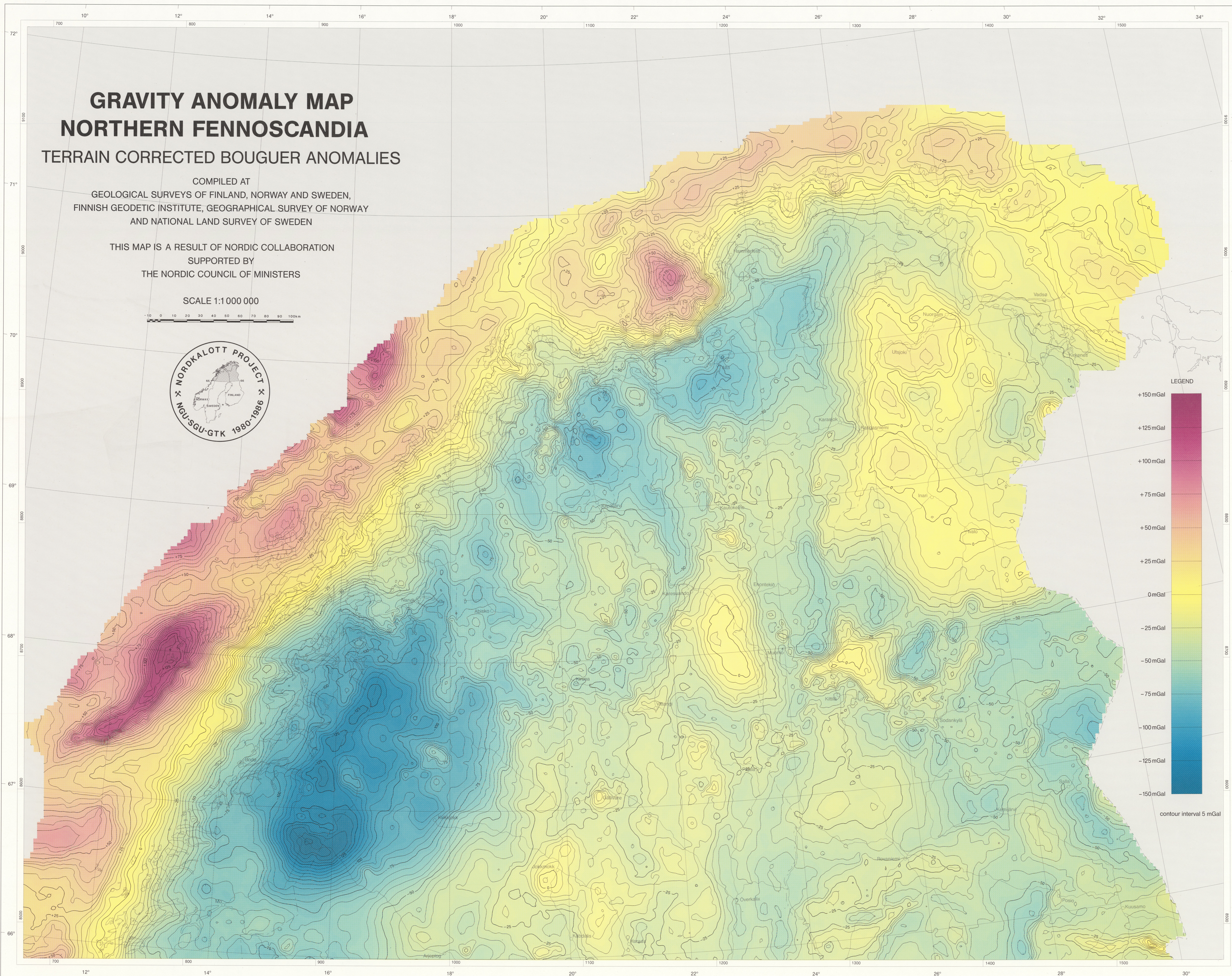
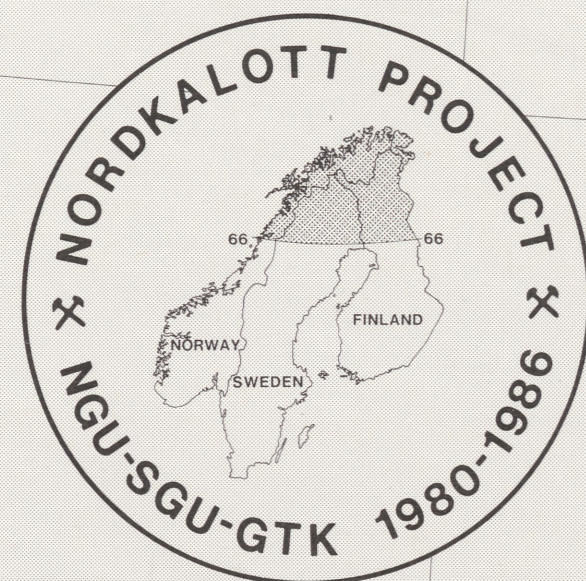
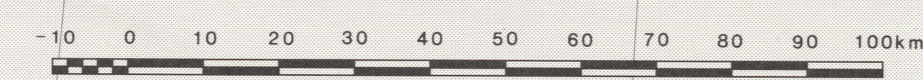


GRAVITY ANOMALY MAP NORTHERN FENNOSCANDIA TERRAIN-CORRECTED BOUGUER ANOMALIES

COMPILED AT
GEOLOGICAL SURVEYS OF FINLAND, NORWAY AND SWEDEN,
FINNISH GEODETIC INSTITUTE, GEOGRAPHICAL SURVEY OF NORWAY
AND NATIONAL LAND SURVEY OF SWEDEN

THIS MAP IS A RESULT OF NORDIC COLLABORATION
SUPPORTED BY
THE NORDIC COUNCIL OF MINISTERS

SCALE 1:1 000 000



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General description

This gravity map is based on terrain-corrected Bouguer anomaly data provided by the geodetic institutes and geological surveys of Finland, Norway and Sweden. The distribution of observation sites is shown in Fig. 1. National coordinates have been transformed to a common system, the European Datum 1950 (ED 50). The terrain correction has been extended to a distance of 167 km and includes Bullard's term. A Bouguer density of $2.67 \times 10^3 \text{ kg/m}^3$ has been used over land areas; over sea areas, the water density $1.027 \times 10^3 \text{ kg/m}^3$ has been employed in the correction for water depth. The International Gravity Standardization Net 1971 (I.G.S.N.71) and the Gravity Formula 1980 for normal gravity have been used.

The variable areal distribution of the primary observations has been homogenized to a maximum data density of 1 value per 6.25 km^2 by averaging. These data have been interpolated to a square grid of $2.5 \text{ km} \times 2.5 \text{ km}$ in the final map production. This interpolation is based on weighted averaging and estimation of regional gradients. The frequency function and some statistical parameters of the final matrix are shown in Fig. 2.

GRAVIMETRISK ANOMALIKARTA NORRA FENNOSKANDIEN TERRÄNGKORRIGERADE BOUGUERANOMALIER

Allmän beskrivning

Den gravimetriska kartan grundar sig på terrängkorrigerade Bouguer-anomalier som tillhandahållits av de geodetiska instituterna och de geologiska undersökningarna i Finland, Norge och Sverige. Observationspunkternas lägen framgår av fig. 1. De nationella koordinaterna har transformerats till ett gemensamt system, ED 50 (Europeiska Datum 1950). Terrängkorrektionerna har beräknats för topografin ut till 167 km och inkluderar Bullards term. Till lands har Bouguerdensiteten $2,67 \times 10^3 \text{ kg/m}^3$ använts och till havs densiteten $1,027 \times 10^3 \text{ kg/m}^3$ för vattendjupskorrekturen. Mätningarna har beräknats i I.G.S.N.71 (Internationella Gravitationsstandardiseringsnätet 1971) och normaltyngdkraftsformeln med tyngdkraftsformeln 1980 (Gravity Formula 1980).

De observationerna är geografiskt ojämnt fördelade och de genom medeltalsbildning räknats om till högst en per $6,25 \text{ km}^2$. Dessa har sedan interpolerats till ett kvadratisk rutnät av $2,5 \text{ km} \times 2,5 \text{ km}$. Interpolationstekniken baseras på viktad medeltalsbildning och uppskattning av regionala gradienter. Frekvensfunktionen och några statistiska parametrar för den slutliga datamatrixen framgår av Fig. 2.

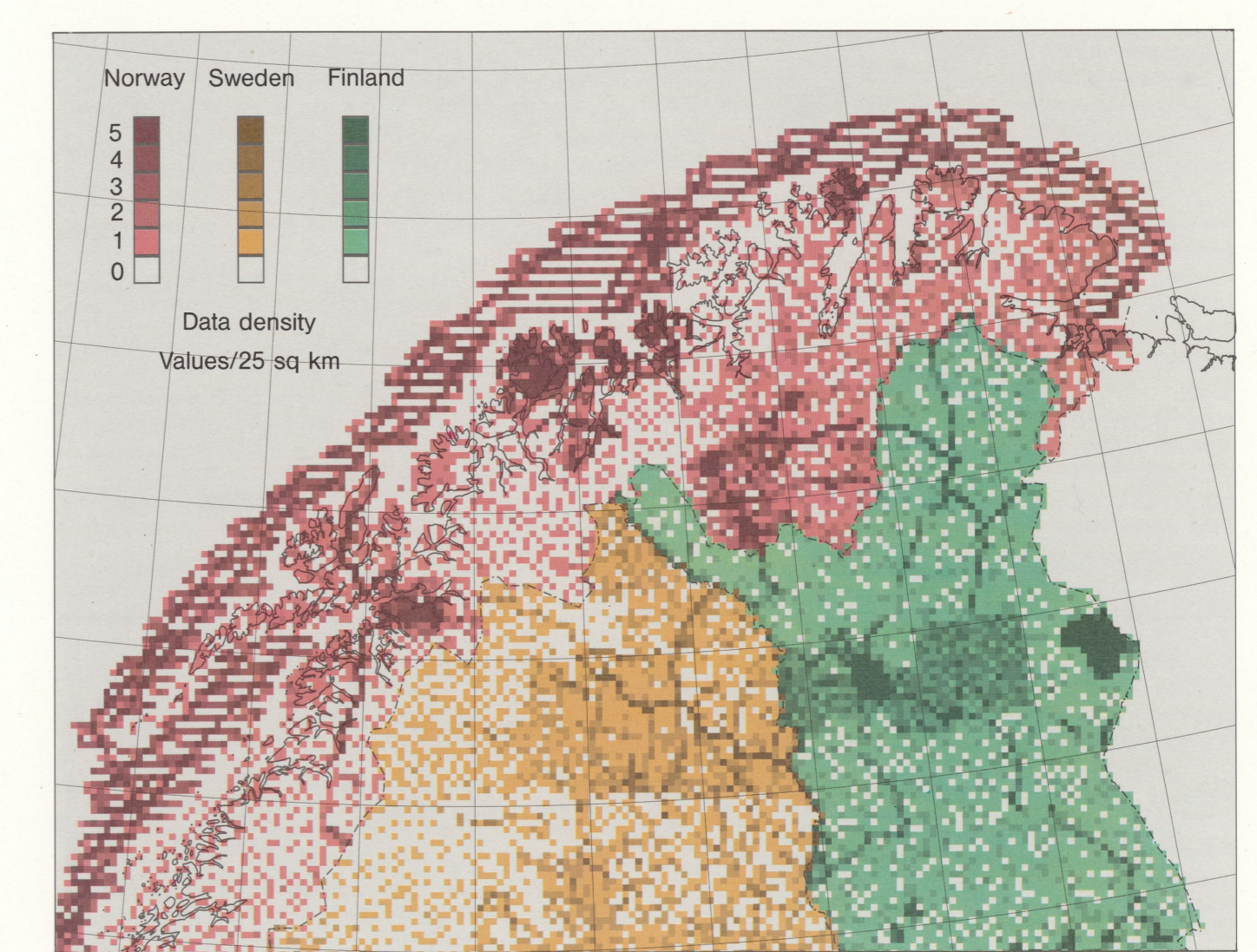


Fig. 1. The distribution of observation sites

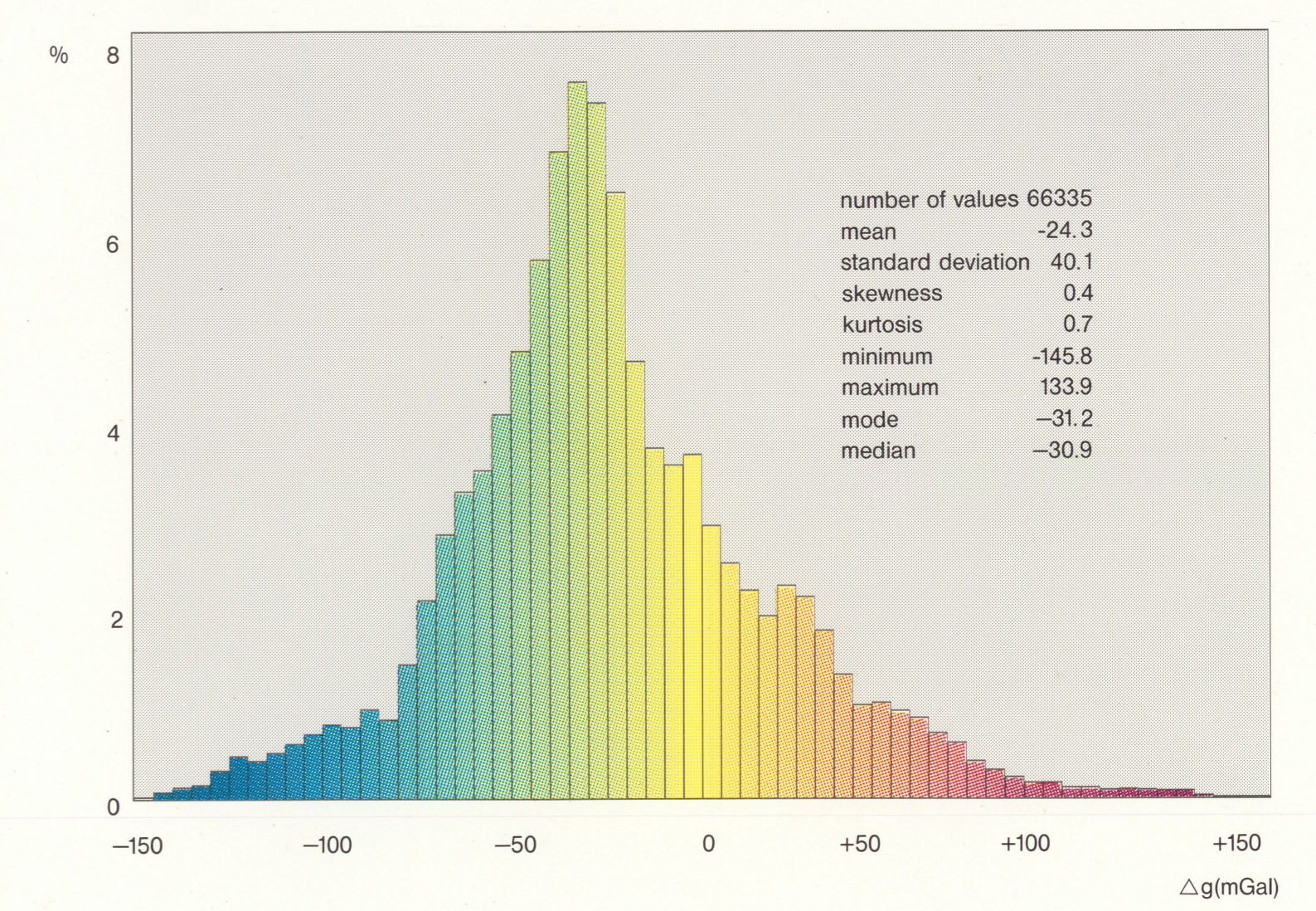


Fig. 2. The statistical parameters of data matrix

Subproject leader (geodetic institutes): A. Kiviniemi
Members: L.-Å. Haller, A. Midsundstad

Subproject leader (geological surveys): J. Korhonen
Members: I. Aalstad, S. Eio, L. Granar, B. Nyfurd, A. Sindre

The topographic base has been compiled by the Publications Division of the National Board of Survey of Finland in cooperation with the National Land Survey of Sweden and the Geographical Survey of Norway. Lambert conformal conic projection. Standard parallels 54° N and 66° N , centre meridian 18° E . UTM 10° E and long = 18° E correspond to $x = 8472376$, $y = 1000000$.

Det topografiska underlaget har sammanställts av Lantmätternas tekniska förhållanden i Finland i samarbete med Lantmätternas i Sverige och Norges Geografiske Oppmåling. Lambertis konforma koniska projektion. Standardparallellerna 54° N och 66° N , medelmeridianen 18° E . UTM 10° E och lång = 18° E motsvarar $x = 8472376$, $y = 1000000$.

This map is a result of the Nordkalott Project, a joint venture (1980-1986) between the Geological Surveys of Finland, Norway, Sweden and Greenland (Denmark) to define one province in Fennoscandia north of latitude 66° N by means of regional geological, geophysical, geochemical and remote sensing methods. Project leader: G. Kautsky.

Bibliographic reference: Gravity Anomaly Map, Northern Fennoscandia, 1:1 mill. Geodetic Institutes and Geological Surveys of Finland, Norway and Sweden, 1986. ISBN-91-7158-374-2.