

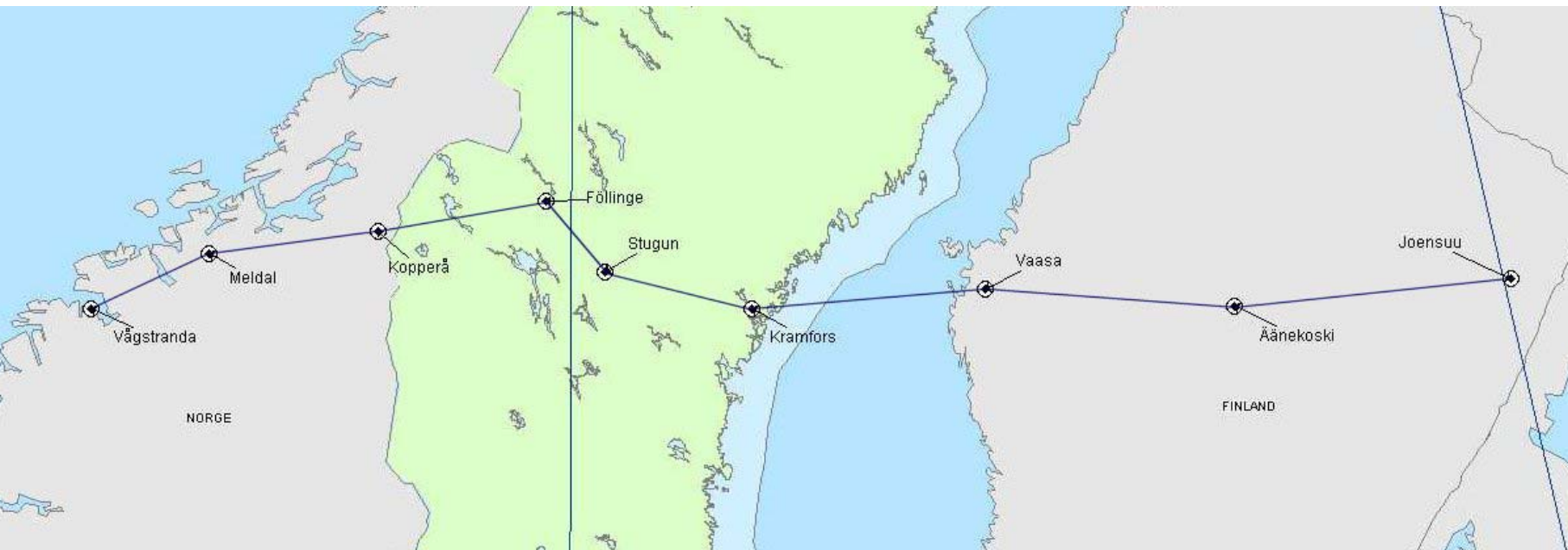
”The Swedish 63 degree campaign, 2003” & ”The Swedish/Danish 56 degree campaign, 2003”



Presentation at the NKG Geodynamics WG Meeting in Gävle, april 2004
Andreas Engfeldt, National Land Survey of Sweden



The 63rd Degree Landuplift Gravity Line



Joensuu 65362



Finland, Pohjois-Karjalan Lääni

Distance to walk: approximative 50m

Terrain: A slope to the point, otherwise a very flat area

Surroundings: Quite calm, a bit away from the main road, cows could



Äänekoski 65367



Finland, Keski-Suomi Lääni

Distance to walk: approximative 25m

Terrain: A slope to the point, otherwise a very flat area

Surroundings: Quite calm, a bit away from the main road

Vaasa 65370



Finland, Vaasan Lääni

Distance to walk: approximative 15m

Terrain: Flat to the point and very flat all around

Surroundings: Quite calm, a bit away from the main road, a cat passed us one day while we were measuring



Kramfors D

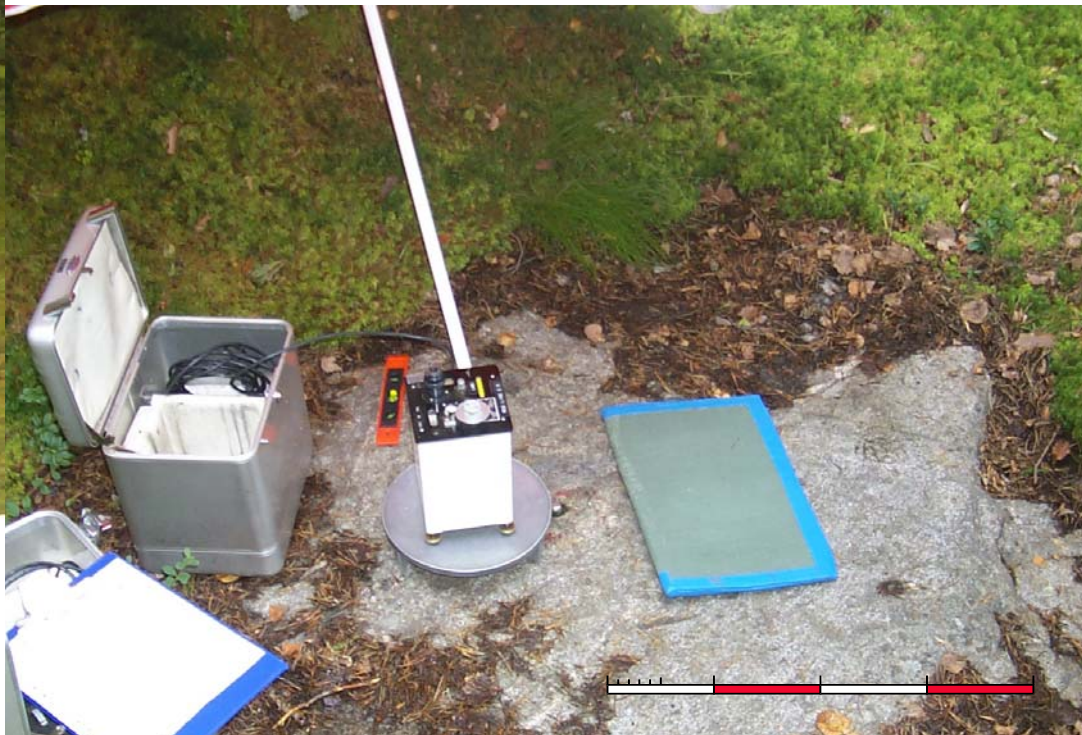


Sweden, Västernorrlands Län

Distance to walk: approximative 25m

Terrain: Flat to the point, mountaineous area, but not steep ones

Surroundings: Not so much traffic on the road (left), not beautiful sights from the point, but the surroundings are very beautiful



Stugun B



veden, Jämtlands Län

Distance to walk: approximative 250m

Terrain: A slope to the point, mountaineous area, but not steep ones

Surroundings: Not so much traffic on the road (right) elks and dogs passed us on different days while we were measuring



Föllinge A



Sweden, Jämtlands Län

Distance to walk: approximative 25m

Terrain: Steep close to the point, otherwise quite flat

Surroundings: Not so much traffic on the road (left)



Kopperå A

Norway, Nord-Trøndelag Fylke

Distance to walk: approximative 25m

Terrain: Flat to the point, otherwise lots of mountains around

Surroundings: Quite much traffic on the road (left), elk passed by one of us while we were measuring



Meldal E (Løkken)

Norway, Sør-Trøndelag Fylke

Distance to walk: approximative 250m

Terrain: Steep to the point and mountainous in the area around

Surroundings: Beautiful, very little traffic around



Vågstranda C



Norway, Møre og Romsdal Fylke

Distance to walk: approximative 100m

Terrain: Steep to the point and all around. Very interesting terrain.

Surroundings: Beautiful, sheep sounds all the time, a lot of traffic S of the po



The observers



From left to right: Gabriel Strykowski (Denmark), Hannu Ruotsalainen (Finland), Andreas Engfeldt (Sweden) and Håkan Skatt (Sweden).



Problems during the campaign

Mainly there were two things:

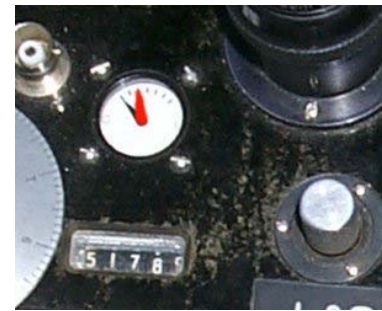
- G290

Behaved strange during most of the campaign.

A "pointer" was not in the bottom position when the instrument was unclamped (at it shall) except the three last measuring days. Especially during the trips between Kramfors and Vågstranda the gravimeter had a strong drift.



Normal when unclamped



As it was now when unclamped

- The batteries for G378 and G45

The third time in Äänekoski we found that the battery was out for G378.

The result there then was excluded from all calculations.

We discovered then that only two of the batteries for the Norwegian gravimeters were good and could be used for one day (if charged).



Results Joensuu - Kramfors

Gravity differences

Point	All values are microgals								
	G55	G600A	G466	G867	G54	G290	G45	G378	Mean
Joensuu									
	340,2	332,2	353	339,8	349,2	350,8	348,3	345,5	344,9
Äänekoski									
	-513,6	-499,6	-522,8	-500,5	-514,1	-506,8	-509,1	-513,1	-510
Vaasa									
	-371,2	-380,9	-410,8	-413,7	-373,2	-371,4	-369	-362,5	-381,6
Kramfors									

G55 and G600A: Hannu Ruotsalainen

G466 and G867: Gabriel Strykowski

G54 and G290: Andreas Engfeldt

G45 and G378: Håkan Skatt



Results Kramfors - Vågstranda

Gravity differences

Point	All values are microgals								
	G55	G600A	G466	G867	G54	G290	G45	G378	Mean
Kramfors									
	-56,7	-31,6	-62,4	-14,3	-44,3	-52	-48,5	-49	-44,8
Stugun									
	49	49,9	65,5	43,2	52	36,7	55	40,5	49
Föllinge									
	511	499,3	477,9	493,1	490,2	505,9	487,3	497,5	495,3
Kopperå									
	-432	-434,2	-390	-415,2	-400,8	-433,2	-428,5	-426,7	-420,1
Meldal									
	-563,7	-560,4	-583,3	-580,8	-579,2	-591,5	-558,8	-566,7	-573,1
Vågstranda									

G55 and G600A: Hannu Ruotsalainen

G466 and G867: Gabriel Strykowski

G54 and G290: Andreas Engfeldt

G45 and G378: Håkan Skatt



Results Joensuu - Kramfors

Differences from mean

Point	All values are microgals							
	G55	G600A	G466	G867	G54	G290	G45	G378
Joensuu	-4,7	-12,7	8,1	-5,1	4,3	5,9	3,4	0,6
Äänekoski	-3,6	10,4	-12,8	9,5	-4,1	3,2	0,9	-3,1
Vaasa	10,4	0,7	-29,2	-32,1	8,4	10,2	12,6	19,1
Kramfors								

G55 and G600A: Hannu Ruotsalainen

G466 and G867: Gabriel Strykowski

G54 and G290: Andreas Engfeldt

G45 and G378: Håkan Skatt



Results Kramfors-Vågstranda

Differences from mean

Point	All values are microgals							
	G55	G600A	G466	G867	G54	G290	G45	G378
Kramfors	-11,9	13,2	-17,6	30,5	0,5	-7,2	-3,7	-4,2
Stugun	0	0,9	16,5	-5,8	3	-12,3	6	-8,5
Föllinge	15,7	4	-17,4	-2,2	-5,1	10,6	-8	2,2
Kopperå	-11,9	-14,1	30,1	4,9	19,3	-13,1	-8,4	-6,6
Meldal	9,4	12,7	-10,2	-7,7	-6,1	-18,4	14,3	6,4
Vågstranda								

G55 and G600A: Hannu Ruotsalainen

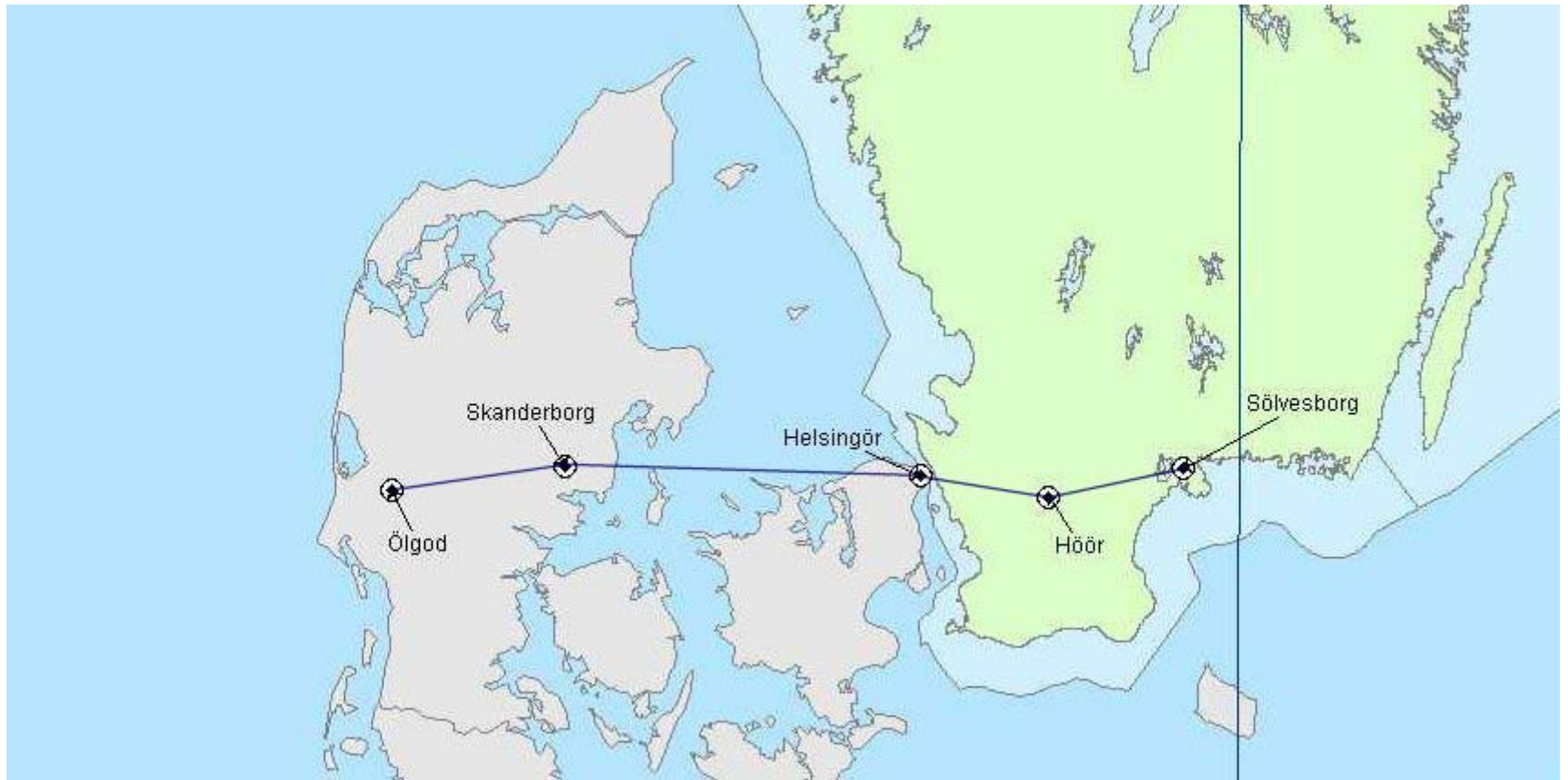
G466 and G867: Gabriel Strykowski

G54 and G290: Andreas Engfeldt

G45 and G378: Håkan Skatt



The 56th Degree Landuplift Gravity Line



Ølgod



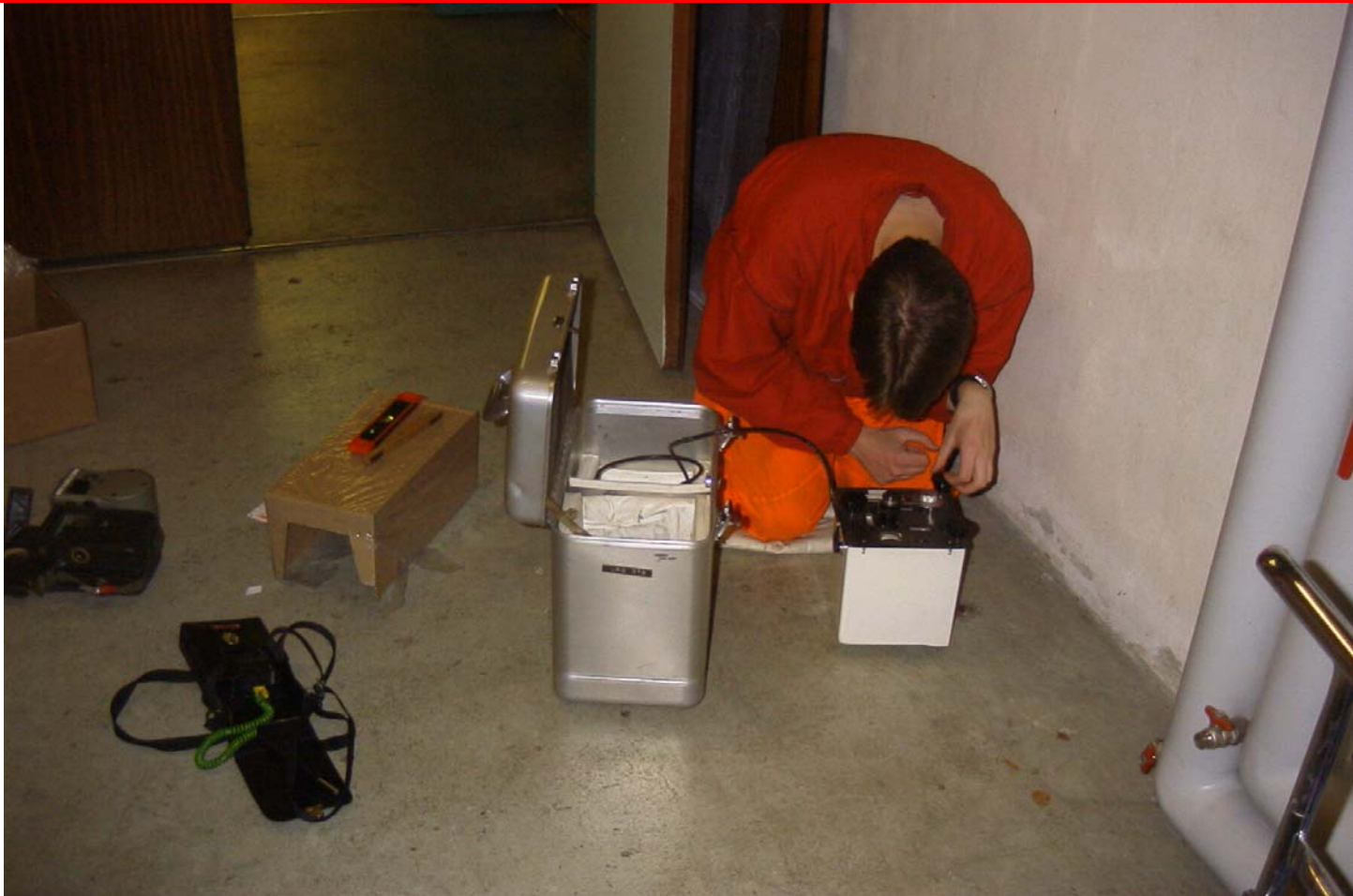
Denmark, Ribe Amt

Distance to walk: approximative 100m

Terrain: Flat over the graveyard to the point, also very flat all around



Skanderborg (Tebstrup)



Denmark: Skanderborg Amt

Distance to walk: Just a few meters to the door, but quite long indoors

Terrain: One stair and many doors have to be passed. Small hills around



Helsingør



Denmark: Fredriksborg Amt

Distance to walk: approximative 15m

Terrain: Flat around the building



Höör B



Sweden, Skåne Län

Distance to walk: approximative 75m

Terrain: Very steep up to the point, otherwise mountaineous but not steep ones



Sölvesborg A



Sweden, Skåne Län, less than 1 km from Blekinge Län

Distance to walk: approximative 150m

Terrain: A small slope to the point, otherwise mountaineous but not steep ones



The observers



Left: Andreas Engfeldt (Sweden)



Right: Gabriel Strykowski (Denmark)

Problems during the campaign

Mainly there were two things also for this campaign:

- G466

There was something wrong with the heating of the instrument. During the campaign the instrument only had the right temperature one whole day. Therefore the results from this instrument won't be published here.

- The temperature outdoors

The temperature was a few degrees above zero while the Swedish sites were measured. This means that it was "frost blasting" on several occasions while we were measuring.



Results Ølgod - Sølvesborg

Gravity differences

Point	All values are microgals				Mean
	G54	G378	G867	G466 *	
Ølgod	53	43,7	27,2	*	41,3
Skanderborg	-159,2	-155,3	-155,7	*	-156,7
Helsingör	58	51,5	39,7	*	49,7
Höör	11,3	1,8	23,1	*	12,1
Sølvesborg					

G466 and G867: Gabriel Strykowski
G54 and G378: Andreas Engfeldt

* See previous page

