

# NYAL Ny-Ålesund 20 Metre Antenna

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## Abstract

For the year 2004, the 20-meter VLBI antenna at the Geodetic Observatory, Ny-Ålesund has participated in VLBI experiments at the scheduled level, except for the period 23th of September to 10th of October, when the Observatory was down due to receiver problems. Maintenance and repair have been done. After mid June there was only one person at the station because of a general reduction in the Mapping Authority. The station is now a Mark 5 station only.

## 1. General Information

The Geodetic Observatory of the Norwegian Mapping Authority at 78.9 N and 11.87 W is located in Ny-Ålesund, in Kings Bay at the west side of the island of Spitsbergen, the biggest island in the Svalbard archipelago. In 2004, Ny-Ålesund was scheduled for 80 VLBI experiments within R4, R1, EURO, VLBA/RDV, RD, T2 and ICRF. After mid June there was only one person at the station and all experiments with tape or more than two modules in Mark 5 have been cancelled. 70 experiments were run during the year. In addition to the 20-meter VLBI antenna, the observatory has two GPS antennas in the IGS system and a Super Conducting Gravimeter is installed on the site. On the site, there is also a CHAMP GPS and a PRARE installation. There is also a SATREF (dGPS) installation at the station.



Figure 1. Ny-Ålesund 20 meter antenna

## 2. Component Description

The antenna is intended for geodetic use, and is designed for receiving in S- and X- band. The equipment is Mark 5. Station configuration file: [ivscc.gsfc.nasa.gov/pub/config/ns/nyales.config](http://ivscc.gsfc.nasa.gov/pub/config/ns/nyales.config). Ny-Ålesund is located so far north that it has daytime aurora in winter. The location of the antenna enables signal reception over the North Pole. (In 1998, Ny-Ålesund was the only antenna that could receive signals from the Mars Global Surveyor for 24 hours.)

## 3. Staff

Table 1. Staff related to the operation of the VLBI in Ny-Ålesund.

Hønefoss:	Section manager:	Rune I. Hanssen	
	Station responsible, Hønefoss:	Svein Rekkedal	
Ny-Ålesund:	Station commander:	Leif Morten Tangen / Helge Digre	
	Engineers:	Vidar Eggimann David Holland	until 13.05.2004
	Engineer:	Sune Elshaug	until 31.05.2004

David Holland is still on sick leave. After May 13 there was only one person at the station. All the experiments are done during the normal working hours of one person.

## 4. Current Status and Activities

Ny-Ålesund has participated in VLBI experiments at the scheduled level, except for the period 23th of September to 10th of October, when the Observatory was down due to receiver problems. There were some problems with inert gases, causing a cold head failure. Some experiments had to be run with warm receiver. The Super Conducting Gravimeter placed on the same fundament as IGS-GPS NYA1, has been running without any problems. This year, PRARE became more and more unstable and work intensive. It is now turned off.

Ny-Ålesund is Mark 5A only. Both the FS and Mark 5 are upgraded to the latest software versions.

The Ministry of Environment funds the Norwegian Mapping Authority (NMA). For 2004, there have been cutbacks again. As a part of the process of reducing costs, two of the employees did not receive new contracts when the old ones ended in spring. It looks like there will be no change in 2005 and the observatory will be run in a minimum mode.

## 5. Future Plans

Ny-Ålesund will continue to participate in the experiments the antenna is scheduled for. The SCG has to be refilled with liquid Helium each year, and the lift has to be re-certified every year. We will try to do as many experiments as possible with the people at the station. We have ordered a new FS computer that will be delivered in 2005.