NISSE press release, 14 Mar 2009.

NISSE - A partial success

The REXUS 6 rocket carrying the Nordic Ionospheric Sounding rocket Seeding Experiment (NISSE) experiment was successfully launched from Esrange Space Centre, Kiruna, Sweden on Thursday 12 Mar, 2009 at 11:08 LT. The NISSE experiment was to release water on the upper atmosphere at the apogee altitude of the REXUS 6 rocket. The aim was to study the possible impact of the released water on the ionosphere by the tristatic EISCAT UHF incoherent scatter radar system. NISSE was planned and designed by a group of Nordic students from Norway, Finland and Denmark.

Blue sky and no wind made the launch conditions perfect. Before eight in the morning the helicopter scanned the impact area for human beings. The wind balloons were launched for the trajectory calculation of the rocket. The sirens started and the radio silence was announced. To keep the excitement high, the EISCAT UHF radar did not start properly at first. But an hour before the launch everything was ready, and by using the calculated nominal trajectory file the EISCAT UHF was redirected, pointing at the expected water release position. It was a textbook launch (See YouTube: REXUS 6 launch). With a total rocket weight of 551 kg the payload was flown up to 89 km over ground.

The NISSE experiment was partially successful, the water unfortunately did not eject but the structure could withstand the forces during the entire flight. In addition, the temperature and the pressure inside the tank were measured during the countdown and the flight. The team is currently investigating the payload.

The payload of NISSE is 28 kg including the water tank and release system. The EISCAT UHF incoherent scatter radar is a powerful radar system used for observing and studying the upper atmosphere, e.g. aurora. It is located in the Northern Fennoscandia, in Tromsø, Norway, Kiruna, Sweden, and Sodankylä, Finland.

The project NISSE has been planned and designed by four students from Bergen, Norway, Oulu, Finland and Copenhagen, Denmark. Also the Universities of Bergen and Oulu, as well as the Finnish Meteorological Institute are involved in the project. In addition with the research objectives, the educational objectives include gaining experience of international scientific research collaboration and enhancement of Nordic student projects in space physics.

Further information about the project NISSE:
http://www.space.fmi.fi/NISSE/NISSEhomepage.html

and about the REXUS programme: http://www.rexusbexus.net ja
http://www.esa.int/esaCP/SEM7IA53R8F_index_0.html