

<http://www.space.fmi.fi/NISSE/NISSEhomepage.html>

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NISSE Ionospheric Water Experiment March 12, 2009

Nordic Ionospheric Sounding rocket Seeding Experiment (NISSE)

The Nordic Ionospheric Sounding rocket seeding Experiment (NISSE) will be launched onboard of the REXUS 6 rocket on 10th March 2009 from Esrange, Kiruna.

In the experiment water will be released at about 95 km altitude. The possible impact of the water to the upper atmosphere will be explored by using the powerful EISCAT radar system.



Nordic Ionospheric Sounding rocket Seeding Experiment (NISSE)



Source: ESA

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Progress:

Feb
2010

What happened to NISSE after the launch? The story one year after lift-off... [more...](#)

Feb
2009

NISSE launched on March 12th 2009!

Jan
2009

Brandnew pictures on the Production News page! [more...](#)



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Since
 Nov
 2008

NISSE has a blog on the International Polar Year (IPY) homepage [IPY blog](#)

30 Nov
 - 3 Dec
 2008

NISSE has been elected as the highlight of the International Polar Year (IPY) homepage [IPY page](#)

Novem
 ber
 2008

The water tank and release system construction was completed and a full ground test was carried out
 Download the video (3GP format): [Water Release Test](#) and see the new pictures of the assembled tank in: [NISSE's Manufacturing News](#)

9
 Septem
 ber
 2008

NISSE's success story is spread over Finland in the Avaruusluotain!
 Read the first story: [Avaruusluotain](#)

20
 August
 2008

The workshop at the University of Bergen has now manufactured 6 brackets. Next in queue is the explosive valve system

25 June
 2008

After an interview with Timo Pitkänen, the Kaleva newspaper of Oulu, Finland, publishes Check it out online: [Kaleva news](#)

Jun
 2008

Timo Pitkänen went to Sodankylä Geophysical Observatory, Finland, to do the SIC modelling for NISSE. The results are very promising! A clear electron density depletion is expected to occur after the water release!
 For further information on the modelling see: [Sodankylä Geophysical Observatory](#)

13 Jun
2008

NISSE press release reaches over 15
online newspapers!
Just google "Nordic Ionospheric
Sounding rocket Seeding Experiment"

30 Apr
2008

The Finnish national wide radio channel
YLE Radio 1 mentions NISSE in their
Avaruusradiaattori (Space Radiator).
Listen here: [YLE Radio](#)

Apr
2008

Dream Team attends the
REXUS/BEXUS Student Training Week
from 20- 26 Apr 2008

4 Apr
2008

Web pages for NISSE launched!

17 Mar
2008

Gisela Baumann joins the Dream Team
Dream Team got a new member: Gisela
Baumann from University of Helsinki
(also at Finnish Meteorological Institute)
joins the team

<http://www.space.fmi.fi/NISSE/NISSEafterLaunch.html>

10 Mar
2008

NISSE selected to fly aboard the
REXUS!
See: [ESA Rexus project](#)





Last update: 11.12.2008



ESA

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Nordic Ionospheric Sounding rocket Seeding Experiment (NISSE)

[One year after lift-off](#)

It is already some way back in the past and the work the team members did for NISSE exponentially decreased. After the launch there was still no end for all the paper work; the team had to do a failure investigation followed by a report. Shortly after the final report was pending to be written for the European Space Agency. Additional outreach was done as well (see [Publications](#)). But what about our experiment today? Will NISSE see space for a second time?

The payload is still available and in a good condition – so in principle it could fly again. There are even rumours about having a new tank design by A. Søreide: a 50L water tank on its own rocket :-). In any case, if you are interested in joining the team or have questions about the REXUS program, you are very welcome to contact us!

The very last words goes to our faithful readers and our sponsors: A big thank you and bye, bye!
Your NISSE team!

This project is supported by:



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<http://www.space.fmi.fi/NISSE/NISSEafterLaunch.html>



Source: ESA



Nordic Ionospheric Sounding rocket Seeding Experiment (NISSE)

A. Conference proceedings:

Hølland, V., T. Pitkänen, G. Baumann, G. Mellestrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. I. Virtanen, J. Vierinen, and E. I. Tanskanen, Nordic ionospheric sounding rocket seeding experiment (NISSE), submitted to the Proc. of the 19th ESA Symposium on European Rocket and Balloon Programmes and Related Research, Bad Reichenhall, Germany, Jun 7-11, 2009.

B. Publications (Talks):

Talks: (Name of the person giving the talk is underlined)

Hølland, V., G. Mellestrand, and T. Pitkänen, NISSE - Norwegian ionospheric sounding rocket

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seeding experiment, REXUS/BEXUS Selection Workshop, ESA/ESTEC, Noordwijk, Netherlands, Mar 5-6, 2008.

[Hølland, V.](#), [G. Mellemstrand](#), [T. Pitkänen](#) and [G. Baumann](#), Nordic ionospheric sounding rocket seeding experiment (NISSE), Student Training Week and Preliminary Design Review, Esrange, Kiruna, Sweden, Apr 20-26, 2008.

[Pitkänen, T.](#), [V. Hølland](#), [G. Baumann](#), and [G. Mellemstrand](#), Nordic ionospheric sounding rocket seeding experiment (NISSE), Introduction seminar talk, SGO, Sodankylä, Finland, Jun 19, 2008.

[Hølland, V.](#), [T. Pitkänen](#), [G. Baumann](#), [G. Mellemstrand](#), [C.-F. Enell](#), [I. Virtanen](#), and [J. Vierinen](#), Introduction and the current status of the NISSE experiment, CHAMOS/THERMES Workshop, Luosto, Sodankylä, Finland, Nov 10-12, 2008.

[Kauristie, K.](#), [O. Amm](#), [L. Juusola](#), [A. Vlasov](#), [N. Partamies](#), [T. Pitkänen](#), [E. Turunen](#), and [R. Vainio](#), Finnish upper atmospheric and geospace research activities during the 4th Polar International Polar Year, Congress of the international polar year 2007/08, Espoo, Finland, Nov 12-13, 2008.

[Hølland, V.](#), [T. Pitkänen](#), [G. Baumann](#), [G. Mellemstrand](#), [C.-F. Enell](#), [I. Virtanen](#), and [J. Vierinen](#), Introduction and the latest status of the NISSE experiment, SGO Christmas Seminar, SGO, Sodankylä, Finland, Dec 12, 2008.

[Hølland, V.](#), [T. Pitkänen](#), [G. Baumann](#), [G. Mellemstrand](#), [A. Søreide](#), [S. Njåstad](#), [K. Slettebakken](#), [C.-F. Enell](#), [I. Virtanen](#), and [J. Vierinen](#), and [E. Tanskanen](#), Nordic ionospheric sounding rocket seeding experiment (NISSE), 19th ESA Symposium on European Rocket and Balloon Programmes and Related Research, Bad Reichenhall, Germany, Jun 7-11, 2009.

[Pitkänen, T.](#), [V. Hølland](#), [G. Baumann](#), [G. Mellemstrand](#), [A. Søreide](#), [S. Njåstad](#), [K. Slettebakken](#), [C.-F. Enell](#), [I. I. Virtanen](#), and [J. Vierinen](#), and [E. I. Tanskanen](#), NISSE – summary and conclusions, The 2nd SPG-SGO Seminar, SGO, Sodankylä, Finland, Jan 7-8, 2010.

C. Posters:

Hølland, V., T. Pitkänen, G. Baumann, G. Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. Virtanen, J. Vierinen, E.I. Tanskanen, and T. Nygrén, Nordic ionospheric sounding rocket seeding experiment NISSE, 43rd Annual Conference of the Finnish Physical Society, Espoo, Finland, Mar 12-14, 2009.

Hølland, V. T. Pitkänen, G. Baumann, G. Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. Virtanen, J. Vierinen, and E.I. Tanskanen, Active rocket water release experiment in the upper atmosphere, Space Climate, Symposium 3, Saariselkä, Finland, Mar 18-22, 2009.

Pitkänen, T., V. Hølland, G. Baumann, G. Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. I. Virtanen, J. Vierinen, and E. I. Tanskanen, Nordic student experiment in the REXUS BEXUS program, XII meeting of Finnish space researchers FinCOSPAR 2009, Rokua, Finland, Sep 3-5, 2009.

D. Publications (Abstracts):

Kauristie, K., O. Amm, L. Juusola, A. Vlasov, N. Partamies, T. Pitkänen, E. Turunen, and R. Vainio, Finnish upper atmospheric and geospace research activities during the 4th Polar International Polar Year, Abstract for the Congress of the international polar year 2007/08, Espoo, Finland, Nov 12-13, 2008 ([IPY meeting](#))

Hølland, V., T. Pitkänen, G. Baumann, G. Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. Virtanen, J. Vierinen, E.I. Tanskanen, and T. Nygrén, Nordic ionospheric sounding rocket seeding experiment NISSE, Proc. of the 43rd Annual Conference of the Finnish Physical Society, Espoo, Finland, Mar 12-14, 2009 ([Abstract](#)).

Hølland, V., T. Pitkänen, G. Baumann, G.

Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. Virtanen, J. Vierinen, and E.I. Tanskanen, Active rocket water release experiment in the upper atmosphere, Abstract for the Space Climate Symposium 3, Saariselkä, Finland, Mar 18-22, 2009 ([Abstract](#)).

Hølland, V., T. Pitkänen, G. Baumann, G. Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. Virtanen, and J. Vierinen, and E. Tanskanen, Nordic ionospheric sounding rocket seeding experiment (NISSE), in the abstract book of the 19th ESA Symposium on European Rocket and Balloon Programmes and Related Research, Bad Reichenhall, Germany, Jun 7-11, 2009.

Pitkänen, T., V. Hølland, G. Baumann, G. Mellemstrand, A. Søreide, S. Njåstad, K. Slettebakken, C.-F. Enell, I. I. Virtanen, J. Vierinen, and E. I. Tanskanen, Nordic student experiment in the REXUS BEXUS program, Proc. of the XII meeting of Finnish space researches FinCOSPAR 2009, Report series in physical sciences, Report No. 57, University of Oulu, 2009.

E. Non-refereed publications and other:

Baumann, G., First part of the success story of NISSE, Avaruusluotain (Space Probe), 3, 18-19, 2008.

Hølland, V., T. Pitkänen, G. Baumann, and G. Mellemstrand, Series of blog articles about the NISSE project at The International Polar Year 2007-8 (IPY) website [IPY](#), 2008-9:

- NISSE - a student rocket project to study the upper polar atmosphere, Nov 30, 2008, [IPY Nov 30](#)
- EISCAT testing for NISSE, Dec 19, 2008, [IPY Dec 19](#)
- Two months to the launch!, Jan 22, 2009, [IPY Jan 22](#)
- NISSE launch campaign under way!, Mar

7, 2009, [IPY Mar 7](#)

- The NISSE launch, Mar 14, 2009, [IPY Mar 14](#)

Hølland, V. and T. Pitkänen, Secrets of the experiment revealed – part II of the success story of NISSE, Avaruusluotain (Space Probe), 1, 10-12, 2009 ([Space Probe](#)).

Hølland, V. and T. Pitkänen, REXUS 6 NISSE Student Experiment Documentation (SED) - Final report, RXBS-09-08-25
SED_vers6.1_NISSE.pdf, 142 pages, Eurolaunch, 2009.

Hølland, V., T. Pitkänen, G. Baumann, and G. Mellemstrand, What happened to NISSE? – Third part of the success story of NISSE, Avaruusluotain (Space Probe), 3-4, 18-19, 2010.

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