

Outreach at Onsala Space Observatory Chalmers University of Technology

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LOFAR here we come!



What & why?

Third mission for a university.

Communicate about astronomy and OSO:
public, schools/teachers/science centres,
media and politicians

Convince public and decision-makers of
importance of our facility and astronomy
research.

Share our progress in science - for many reasons, e.g. democracy,
scientific return to taxpayers, combat ignorance and pseudoscience.

Re-awaken interest in science, basic research & technology.

*We live in space and therefore we must study it in order to understand
the Earth & ourselves, our origin & future.*



Outreach at OSO

Guided tours (~1400 visitors/yr):

- talk about astronomy & OSO facilities:
why it is important & what we have learned.

- tour around the observatory: go inside the radome & the control-room, see the 25m antenna, and end with the astronomy exhibition.

- people of all ages visit: schools (6-16 yrs) & different associations from all over Sweden.



Visiting school classes are given a brochure about OSO, a popular astronomy book, and the magazine Populär Astronomi. Others buy them for a low cost. We also sell postcards of OSO.

Special visits at OSO for the political parties in Kungsbacka (2009).

Support teachers & science centers (e.g. Universeum).

Outreach beyond OSO

Public lectures & in schools (~10/yr)

All over Sweden (from Kiruna to Lund)
and abroad (France, Germany, USA)

International science festival, Göteborg
(participated for 13 years):

experiment workshop: during 2 weeks 7000+ children visit (7-16 yr).

talks & activities for schools and the general public during 2 weeks.

special tours to OSO for children and the general public 2009.

Program for 2010: focus on LOFAR and creativity

Web pages

Popular science resources

Ask an astronomer.

Represented on editorial board of Populär Astronomi.



Media

A few examples from 2009-10:

Regular radio interviews in commercial radio

News coverage on national radio and local press

Guest blogger on Swedish National Space Board's outreach site

Student on cover of Forskning & framsteg.

Articles about students & OSO in Göteborgs-Posten

"The Moon studio" SVT (Swedish television) 20 July 2009.

Interview in magazine "Forska" about ALMA .

Article about radio astronomy and OSO in Kosmos (a yearly physics book for non scientists).

A popular Odin article in science magazine Forskning & framsteg.

Several articles in Populär Astronomi.



Learning by doing with SALSA

SALSA – Such A Lovely Small Antenna
& EU-HOU (EU Hands-On Universe)

Bring actual science into classrooms: learning science
by doing science.

A 2.3 m radio telescope developed at
OSO is used to detect the 21 cm line.

Project work with students in high school
(~5-15/yr). Both at OSO and through the
internet.

Teachers training sessions in Sweden, France, Poland, Portugal, Spain.

Tzec Maun: we have 250 hours access to small optical telescopes in
Arizona and Australia. We have training sessions for teachers, and
their students can then easily observe via the internet during daytime.



Outreach activities increased 2009-10

Annual open day at OSO for the general public
(May 2009-10). Collaboration with
Kungsbacka tourist information office.

A new exhibition at OSO.

2600 visitors during 2009.

Teachers' course at Gothenburg univ (2009/10).

Collaboration with Aranäs school (16-19 yrs)

Radio astronomy course in their education starting
2010/11.

International year of astronomy 2009, examples:

Inauguration in Paris 15-16 Jan: SALSA & eVLBI.

High-profile launch event for Herschel in Göteborg

100 hours of astronomy 3 & 5 April: eVLBI

"Around the world in 80 telescopes".

100 hours of astronomy 4 – 12 April: 17 lectures
at Universeum, Gothenburg by 12 researchers.



School visits with Universeum

School visits (13-16 yr) with science centre Universeum, pilot visits start november 2010.

Two visits, 3 practical activities with scientist, educator and teacher.

Supported by University of Gothenburg and Chalmers, could be up to 0.25 FTE.

Space and astronomy complements other programs (mini hospital, radiation, forensic lab).



Our LOFAR station



LOFAR station is the biggest new radio telescope in Sweden since 1976.

It symbolises international cooperation, new technology and science that crosses boundaries.

Help and ideas

Inauguration late summer 2011 (royalty?)

Outreach material and media (SETI vs everything else)

Interdisciplinary science (needs kickstarted)

Ideas with a future

Starry nights: observation evenings for the public at OSO with a 14-inch optical telescope start winter 2010/11.



Press releases:

LOFAR construction start (this week!)

ALMA band 5 antenna

"Walk of life" – a waymarked path where each metre is 1 Myr in the history of the universe, with information and models.

Other activities

Increase number of visitors

Improve web content and visibility

Increase visits to and collaborations with schools, organisations, science cafés

Brochures, roll-ups, posters, merchandise

OSO is biggest on outreach at Chalmers.



Carina som var på plats i Florida när Christer Fuglesang flög iväg till rymden för att sedan gästade studion. Carina fick svara på oändligt många rymdfrågor om hur man vet vad klockan är i rymden, hur stor rymden är, om det finns liv i rymden samt om OB var berusad under buffén som man åt precis före Christers lyft. Carina hade bilder inifrån NASAs döds hemliga hangarer och hon hade med sig alla de rymdsouvenirer hon köpte på resan.



All these activities with only ~1-1.2 FTE & voluntary work & cooperation with the radio and astrophysics group.

A rewarding activity!



Inauguration of IYA2009 Paris: e-VLBI



➤ Real-time demo during opening ceremony of IYA, 15-16 January 2009, Paris

➤ 33 hours real-time tracking of three source

➤ 5 - continent e-VLBI





2-5 April

INTERNATIONAL YEAR OF
ASTRONOMY 2009
 CORNERSTONE PROJECT

ne



100 Hours of Astronomy - A retrospective

Photo Galleries	Blogs	Around the World in 80 Telescopes	24-hour Global Star Party	100 Hours of Remote Astronomy
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100 Hours of Astronomy, 2-5 April brought over 100 countries together in a planet-wide celebration of astronomy. The world visited 80 professional observatories around the world during a 24-hour live online tour, and more than a million people had their first close-up views of the Moon, Saturn, the Sun and other objects of interest through telescopes. A Cornerstone Project of the [International Year of Astronomy](#) brought the Universe to all the world's citizens to discover for themselves.



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There are 2370 registered global events to read about: find them [here](#). To view the events, visit the [100 Hours of Astronomy](#)

Site Access

Username

14 May 2009: Live show of the launch of Herschel & Planck for the general public, including a 2.5 hour programme with talks by scientists, the Swedish space board, an artist, a local politician and Chalmers principal (Universeum, Gothenburg).



25/8 2009: Talk about how we perform astronomy research at a seminar for the Swedish delegation with politicians & VIPs invited to see the launch of Christer Fuglesang with the Space Shuttle to ISS 28/8.

