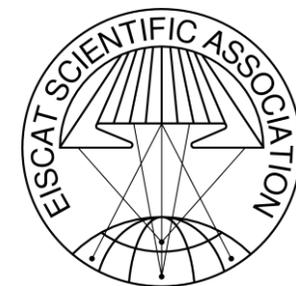




# Access to EISCAT node

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## Description of the infrastructure



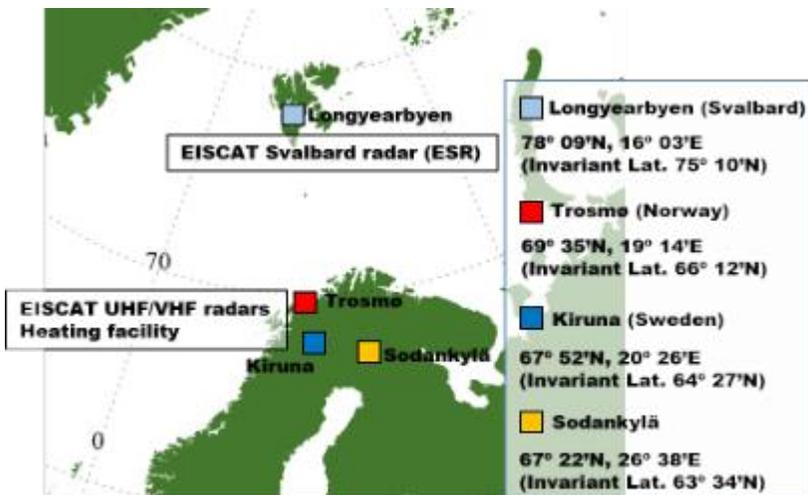
[www.eiscat.se](http://www.eiscat.se)

EISCAT Scientific Association (EISCAT) conducts upper atmosphere radar measurements, providing data for the research community.

The **incoherent scatter radar system** (ISR) is distributed on four sites in northern Scandinavia/Svalbard, with the addition of a **heating facility** and a **dynasonde** in Tromsø. A next-generation radar system **EISCAT\_3D** is under development and construction.



The Longyearbyen/Svalbard ESR antennas.



Credit: [eiscat.nipr.ac.jp](http://eiscat.nipr.ac.jp)

## Operation Sites:

- **Tromsø**
  - VHF transmitter/receiver 224 MHz
  - UHF transmitter/receiver 929 MHz
  - **Dynasonde**
  - HF High power transmitter/receiver 4-8 Mhz
- **Longyearbyen**
  - ESR double transmitter/receiver 500 MHz
- **Kiruna & Sodankylä**
  - VHF receivers



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Products/models

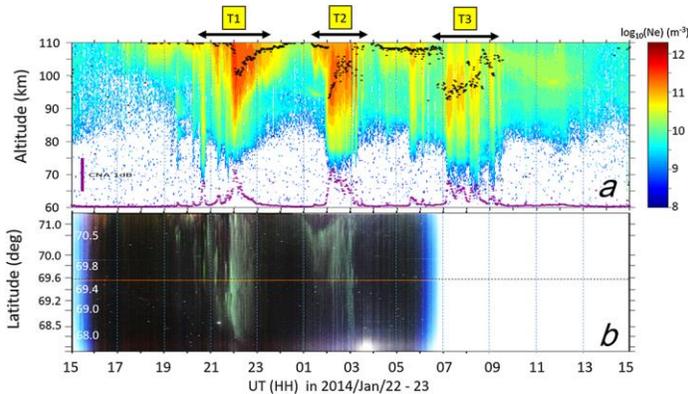


## Physical parameters:

**ISR:** Profiles of electron density, electron and ion temperature, ion drift velocity, ion composition, etc.

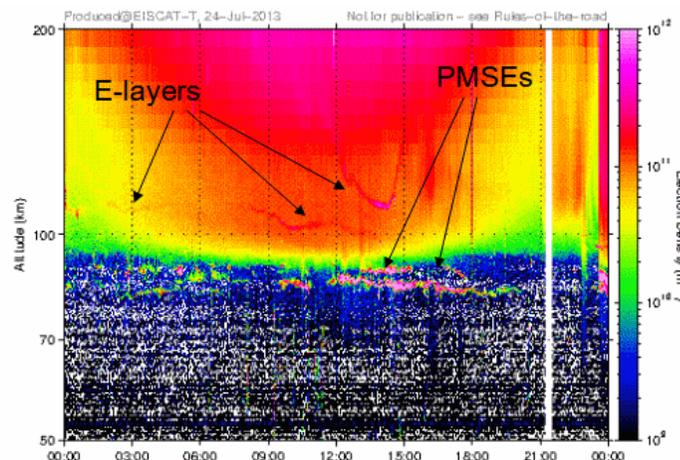
**Dynasonde:** Critical frequencies, electron density profiles, drift vector fields, angle of arrival, etc.

## Aurora:

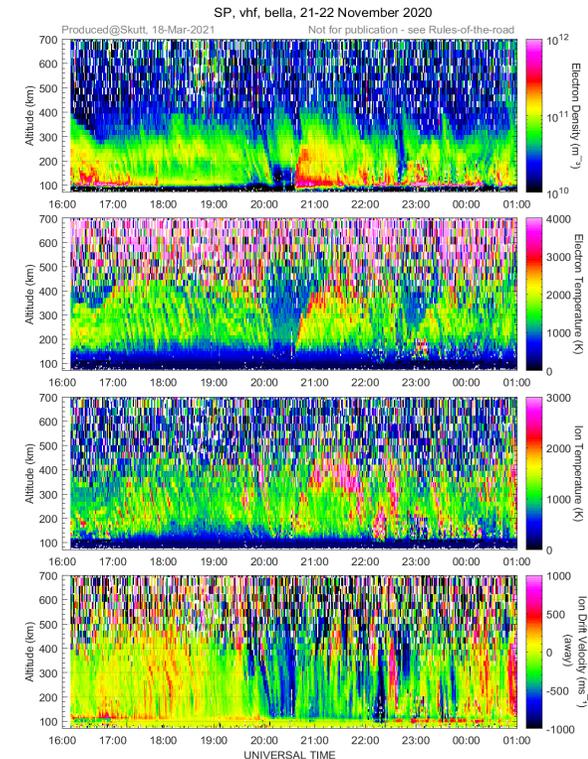


Oyama et al. 2017, Energetic electron precipitation and auroral morphology at the substorm recovery phase, J. Geophys. Res. Space Physics, 122, doi:10.1002/2016JA023484.

## Polar mesospheric summer echoes (PMSE) and induced E-Layers:



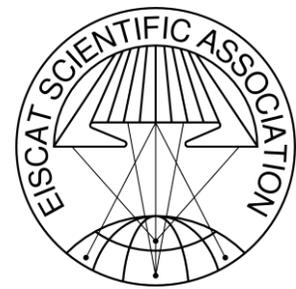
## Polar cap dynamics:





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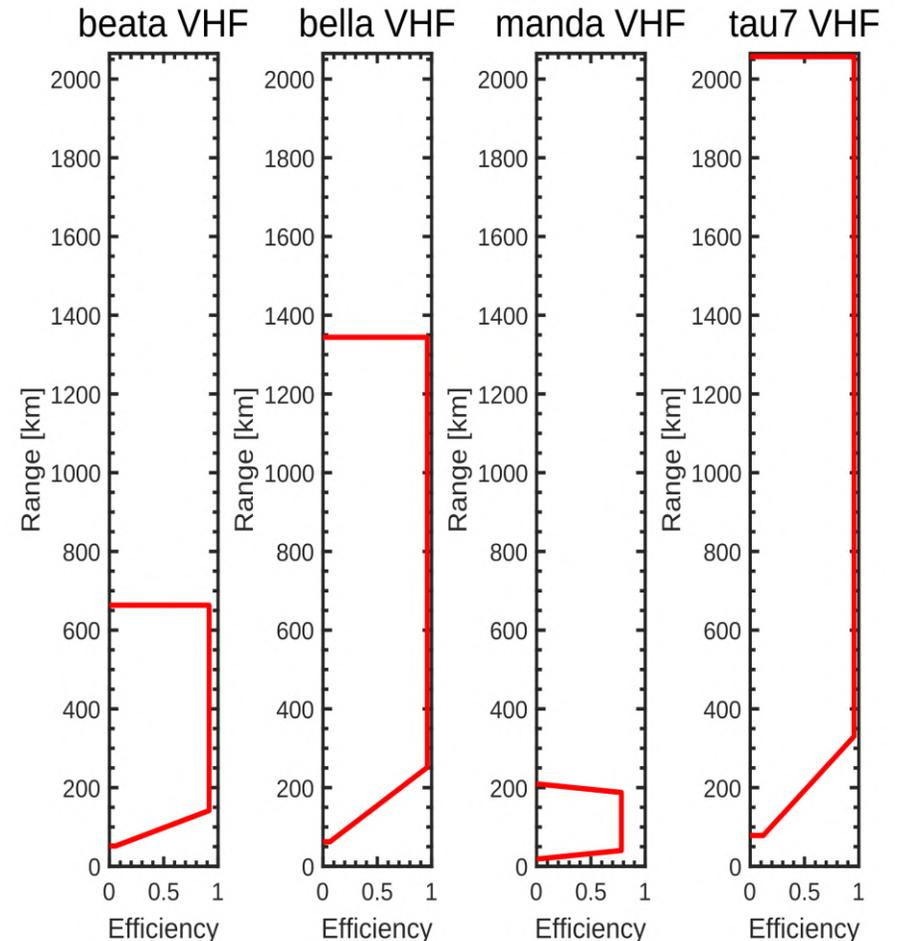
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[www.eiscat.se](http://www.eiscat.se)

EISCAT node is open to experiment proposals in the following fields:

- Polar cap dynamics
- Ionospheric phenomena such as aurora, polar mesospheric clouds and summer echoes (PMC and PMSE), sporadic E-layers and naturally enhanced ion-acoustic lines (NEIAL).
- ISR/HF experiments
- Magnetosphere-ionosphere-atmosphere coupling.
- Auroral electrodynamics statistical models
- Space environment-atmosphere coupling at the statistical southern edges of the polar vortex and the auroral oval
- Meteoroids, dust particles and near-Earth objects detection experiments
- Ionospheric 3D imaging

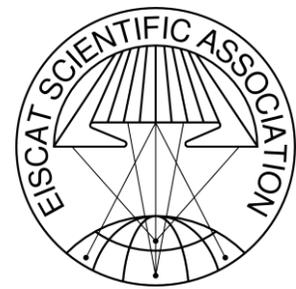




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Commitments for granted TNA projects



[www.eiscat.se](http://www.eiscat.se)

## Node commitments:

- Physical access
  - Offer travel to the site location and one week of accommodation
- Remote access
  - Weekly scheduled interactions for one month
- 8 hours of radar operation runtime
- Hands-on support and training at site for running experiments, analysing database searching, etc.
- Remote support during the whole project

## User commitments:

- Present scientific results and findings in a written report at the end of project, maximum 6 months
- Submit an evaluation of the project experience