Science Center Aurora Sodankylä

Lappish science and research from underground to space

Co-funded by the European Union

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About

- The municipality of Sodankylä and the Sodankylä Geophysical Observatory (SGO) started a preliminary study project in early 2024 to plan the Science Center Aurora, which will feature space science and sustainable mining.
- During 2024, the need and conditions for a science center in Sodankylä will be investigated. The concept of the science center will be made during this project.
- The preliminary study project will last 12 months, ending in December 2024
- The Science Center Aurora preliminary study project is funded by the Regional Council of Lapland from the European Regional Development Fund.

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Participants

Sodankylä Geophysical Observatory

The Sodankylä Geophysical Observatory has been operating in the area for over a century due to its geomagnetically significant location and is responsible for, among other things, international aurora research.

Mining

The area has active mines, two mining projects, and significant ore research. The Science Center would coordinate and centralize mining services.

Tourism

Tourism is vital in Sodankylä, but the town center lacks attractions to engage tourists and facilities for conference tourism.

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Research, mining, and tourism generate jobs and vitality in Sodankylä and Lapland.

Science Center Aurora

The international Science Center Aurora will serve as a showcase for the Lappish national landscape in Sodankylä, highlighting cutting-edge space research and sustainable mining activities in the area.

It will combine science, industrial activities, startups, innovations, residents, and tourists.

The center will include spaces for exhibitions, education, meetings, concerts, and service company needs.

Photo: Canva AI

Science Center Aurora

Science center

- Presentations of research and scientific observations
- Educational facilities
- Conference facilities

Exhibition center

- Permanent and changing exhibitions on space and geology

Tourism services

- Restaurant
- Other tourism-related services, such as tourist information

Sustainable mining center

- Showcase for sustainable mining
- Coordination of mining services

Innovation Campus

- Remote workspaces
- Pop-up offices
- Meeting rooms

Photos: Canva AI

Target customer groups

Tourists

- International luxury tourism is on the rise in Lapland. Rovaniemi can no longer accommodate the maximum number of tourists, pushing pressure outward.
- Collaboration with major foreign tour operators is essential.
- Finnish summer road tourists and caravanners.
- Independent travelers who come by public transport.
- Summer: Finnish road tourists
- Winter: international northern lights tourism groups

Local residents of Lapland

- The science center must emphasize locality and offer locals something to see and experience, so they feel it is their own.
- Local residents and organizations
- Those on short work assignments

Schools and educational institutions

- School visits
- Summer camps
- Occasional teaching and training in collaboration with educational units

International and domestic conference guests

- SGO’s international and national meetings
- Mining company conferences
- Events organized by the municipality and local businesses
- NATO and Defense Forces meetings

Sodankylä Geophysical Observatory's Space research for 110 years

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Exhibition contents

- SGO's 110-year history in Sodankylä
- LappiSat-1 Northern lights satellite
- Aurora borealis research then and now
- Solar storms and the magnetic field
- Greenstone belt of Lapland and Sodankylä Geology
- Arctic expeditions then and now
- Impact of climate and environmental change
- Connection to locality and livelihoods
- Utilizing virtual reality in exhibition content (Mine visits/space)

Educational aspect

- Establishing an educational pathway from primary school to university of applied sciences specializing in space and mining expertise.
- Organizing summer camps, workshops, and school visits.
- Creating a makerspace for students and other interested individuals.
- Establishing a science library focusing on space and mining literature.
- Providing laboratory facilities for schools and scientists.
- Establishing connections with the University of Oulu and Oulu Mining School.

Business collaboration and networking

- Stimulating business activities in the space and mining sectors.
- Establishing a business accelerator.
- Collaboration in space and mining expertise.
- Connecting researchers and entrepreneurs.
- Inspiring youth to enter the field.
- Creating Nordic cooperation in space industry.
- Collaboration with Business Finland and funding partnerships.

Science campus

- Science and art residency programs
- Accommodation facilities
- Research facilities
- Outdoor science trails
- Science park

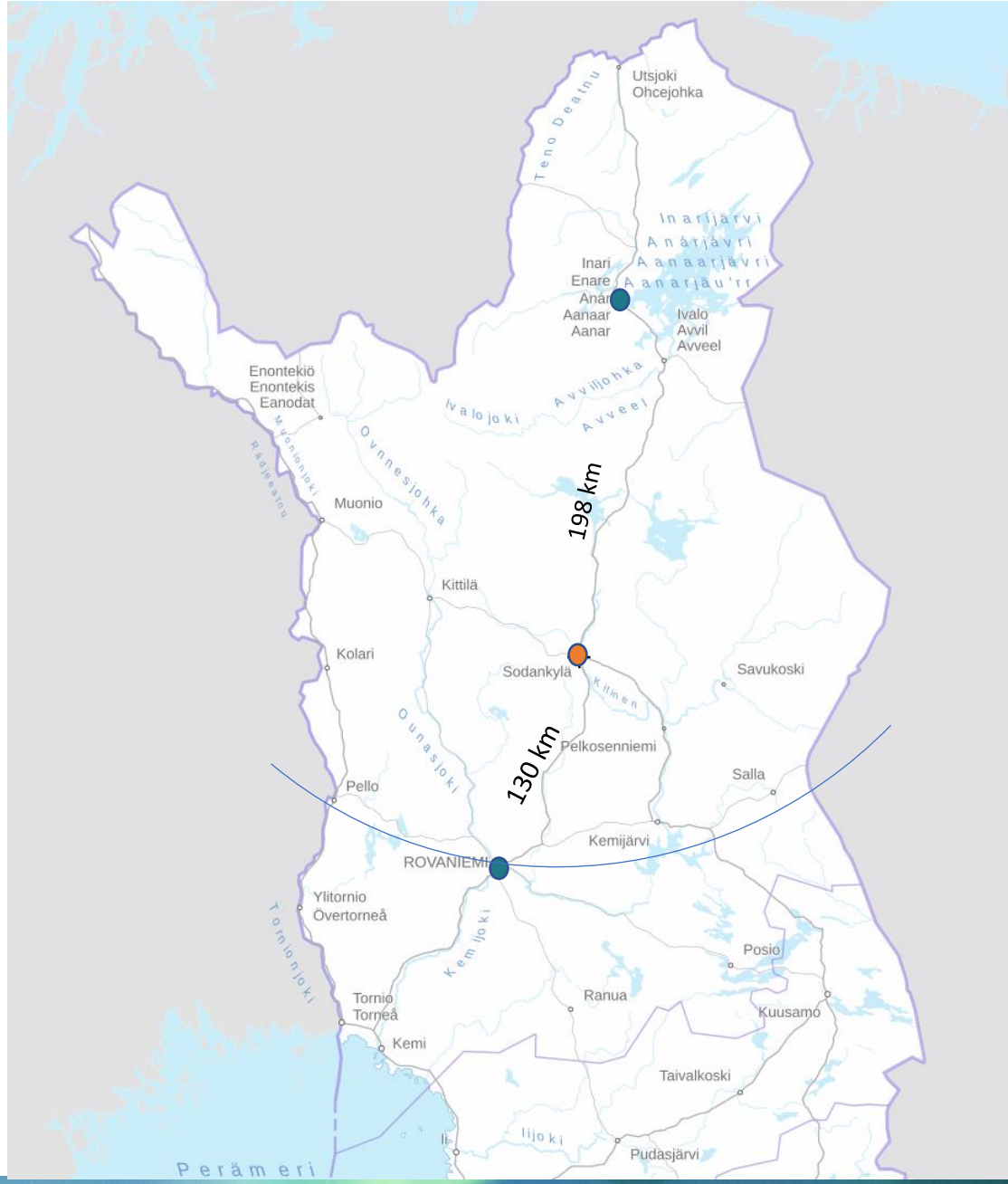
SGO – The northern location ensures a competitive edge in Arctic space research

- Due to the Earth's magnetic field, the Northern Lights can only be observed and studied in polar regions, shown in green in the picture.
- Proximity to the North Pole and the sun
- The climate and environment in the Arctic region are changing 4-7 times faster than in any other area, and the magnetic field is weakening more rapidly in polar regions.
- Lapland attracts both domestic and international tourists, with the Northern Lights being one of its key attractions.
- Tourism in Lapland has grown exponentially in recent years.

Photo: SGO

Benchmarking

Destination	Municipality	Road	Yearly visitor count
Lapin yliopiston Arktikum	Rovaniemi	VT 4	136 000 (maks 150 000)
Tiedekeskus Aurora	*Sodankylä*	*VT 4*	*70 000 - 130 000?*
Saamelaisalueen Siida	Inari	VT 4	140 000
Metsähallituksen Pilke	Rovaniemi	VT 4	70 000
Oulun kaupungin Tietomaa	Oulu	VT 4	70 000
Ametistikaivos	Sodankylä	VT 4	25 000
Heureka	Vantaa		347 926
Sodan ja rauhan keskus Muisti	Mikkeli		33 000
Avaruuspuisto Väisälä	Kaarina		15 000
Tiedemuseo Liekki	Helsinki		12 000



The regional impacts

- The Science Center Aurora will have a significant national and international impact, as it conducts Arctic space science north of the Arctic Circle, near the North Pole, and serves as a showcase for sustainable mining operations.
- It will enhance the appeal of tourism in Lapland by offering a completely new type of exhibition destination, coinciding with the significant growth of tourism in the region.
- It will provide the people of Lapland with a learning environment and a vantage point for cutting-edge research in space and mining industries. Currently, higher education is offered in Rovaniemi and Kemi-Tornio, while geologists and space physicists are trained in Oulu, Turku, and Helsinki.
- The science center will act as an attraction to draw experts to Sodankylä, which suffers from a labor shortage.
- It will increase knowledge about the sustainability and environmental aspects of mining operations and showcase the latest innovations in the field.
- The center will highlight the importance of critical minerals to society and the role of space operations and critical infrastructures in people's daily lives.
- As a meeting place for science and business, the Science Center Aurora will promote local research, development, and innovation activities and enable new business opportunities in the New Space Business sector.
- It will provide employment for local construction and earthmoving companies during the construction phase. In the operational phase, the center will require approximately 10-15 employees.
- The Science Center Aurora is a vision for the future and new opportunities!

Collaboration network and events

Kick-off seminar, teams 8.2.2024

Workshop for mining operators 15.2.2024

Open ideation workshop, teams 22.2.2024

Sodankylä education units workshop 15.3.2024

Locals ideation workshop 16.4.2024

In addition to organized events, numerous meetings have been held with various stakeholders. The project has sparked significant interest locally, regionally, and nationally. It has also received extensive media coverage.

ARKTIKUM TIEDEKESKUS | MUSEO

Työ- ja elinkeinoministeriö
Arbets- och näringsministeriet

Kaivosteollisuus

MUISTI SODAN JA RAUHAN KESKUS CENTRET FÖR KRIG OCH FRED MIKKELI-FINLAND

REDU

METSÄHALLITUS PILKE TIEDEKESKUS | SCIENCE CENTRE

SUOMEN TIEDEKESKUKSET

LAPIN YLIOPISTO
UNIVERSITY OF LAPLAND

OPETUS- JA KULTTUURIMINISTERIÖ
UNDERVISNINGS- OCH KULTURMINISTERIET

LAPIN AMK
Lapland University of Applied Sciences

OULUN YLIOPISTO

Yrittäjät SODANKYLÄ

TIEDEKESKUS TIETOMAA

SPACEFINLAND

OULU MINING SCHOOL
UNIVERSITY OF OULU

GTK

Heureka

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More information on website

https://www.sodankyla.fi/tiedekeskusaurora/

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