



Outreach for sustainability, science capital and a future in space at Onsala Space Observatory's new visitor centre

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**ONSALA
RYMDOBSERVATORIUM**



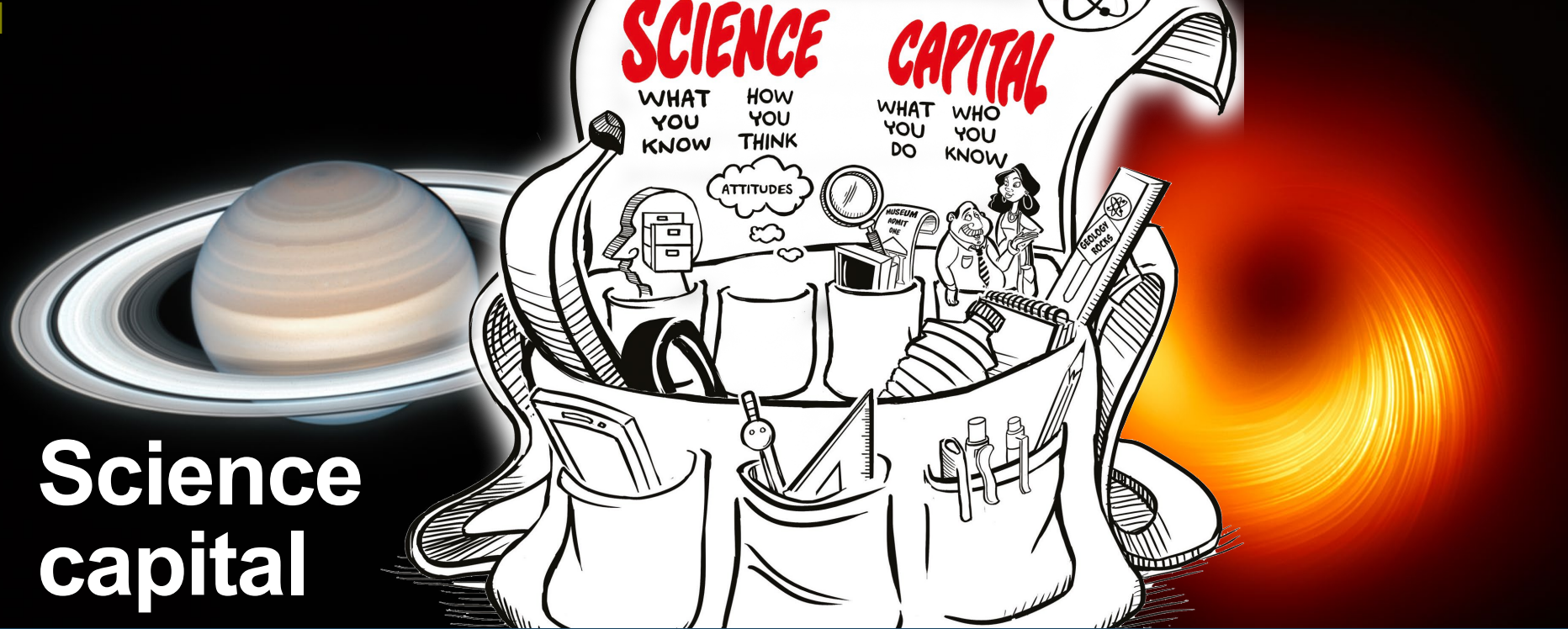
New visitor centre for the SKA era

Swedish universities have to **work together with society**

Space attracts kids to STEM and climate (Pompea & Russo 2020)

Onsala Space Observatory has a **national and regional role**

We're in new era of big astronomy, interferometry, climate change, satellite constellations and more



Science capital

Your **science capital** gives you access to science - and science careers (Archer+ 2015)

- what you know - how you think - what you do -who you know





- To increase science capital, Chalmers is building a new **visitor centre** at Onsala Space Observatory.
- Visitors will experience
 - ... the observatory's **telescopes and instruments.**
 - ... a new **exhibition.**

Radio and space technology help us **think big enough** to understand our planet, the cosmos and our place in the universe



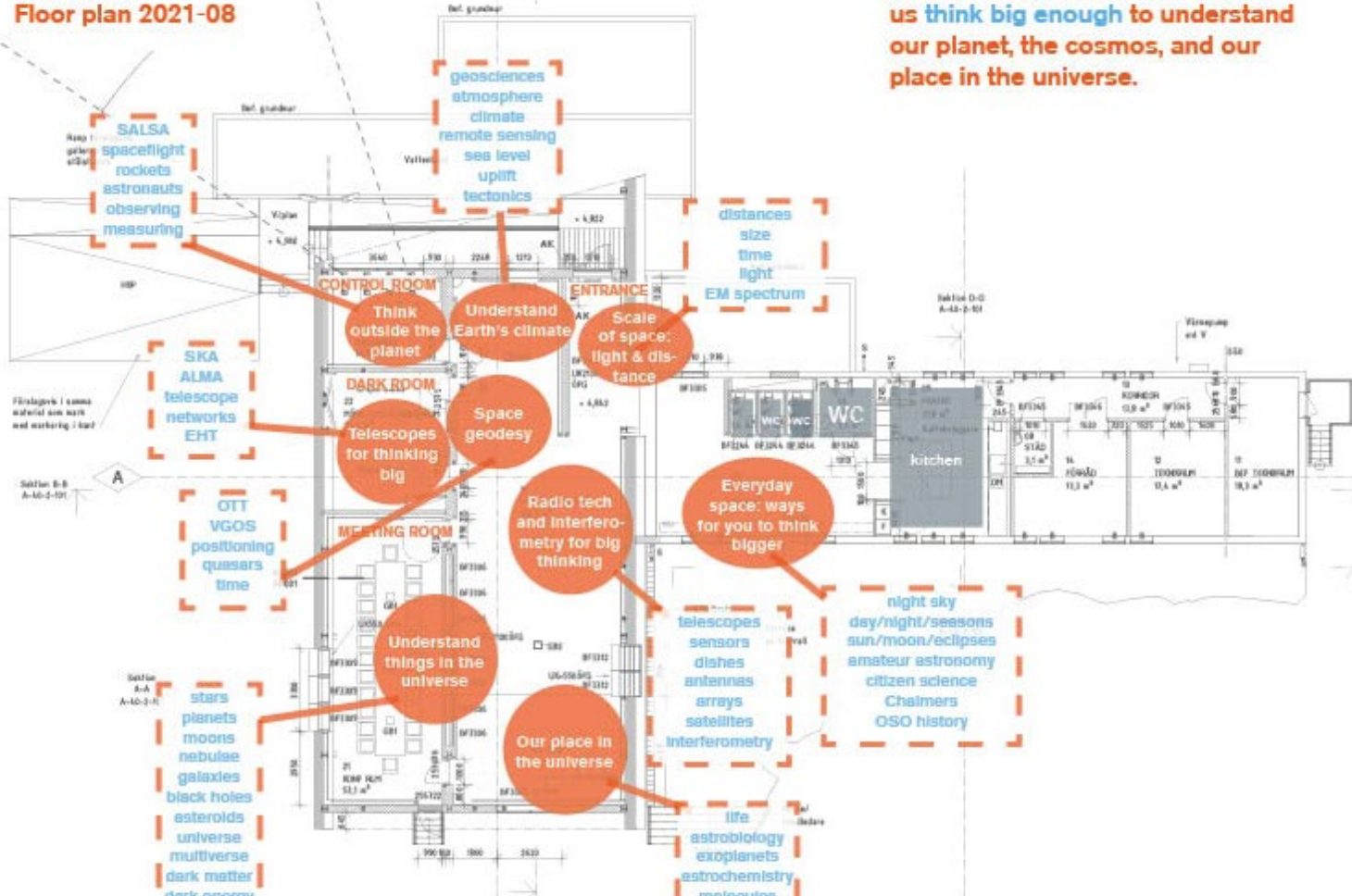


Onsala's new visitor centre

- for school kids (year 2 and up) and the public
- core target group: 10-15 year-olds
- surrounded by working telescopes
- gives access to **technology for exploring space and understanding the Earth**
- is a uniquely climate-friendly building project (aiming for 85% reuse)

**Exhibition
Floor plan 2021-08**

**Radio and space technology help
us think big enough to understand
our planet, the cosmos, and our
place in the universe.**





SALSA for years 7-9

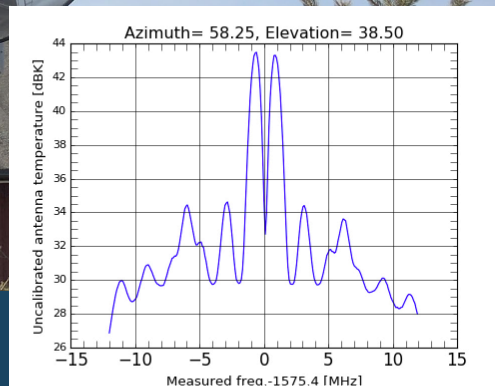
VR-funded outreach project

Two 2.3-m dishes, available online for remote observing

High-school projects (spiral arm mapping or Milky Way rotation curve)

Spectra of 21 cm line in the Milky Way - or satellites

Developing friendlier interface - and lesson plans for years 7-9





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Rymdskolan

Hands-on lessons in astronomy for year 8, led by young astronomers

Coordinated by Chalmers astronomers Kiana Kade and Chiara Ceccobello

Direct contact with underserved schools

Remote observing with Faulkes Telescope

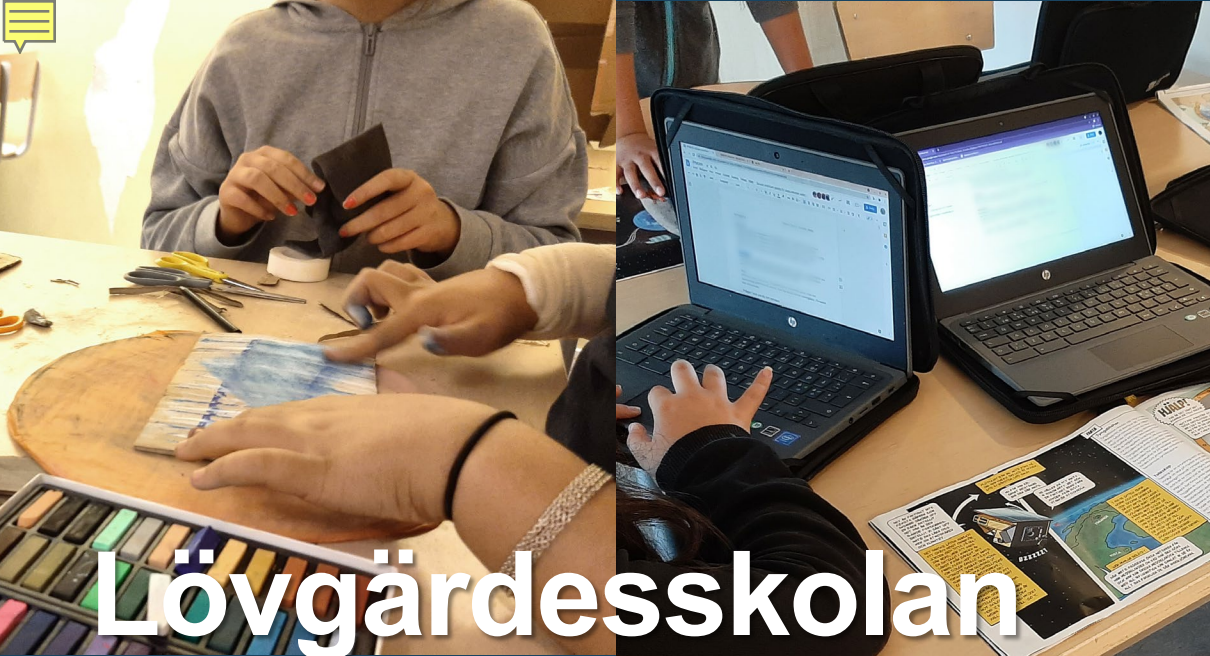
Image processing with online tool JS9



Student network



- Undergraduates** at Chalmers interested in space and communication
- Inspired by Portugal** (*Viver astronomia*, Retrê et al 2018)
- Workshops** every month, communication training in astronomy/space communication
- Outreach assignments**, e.g. schools Q&A, guided tours
- Realistic role models** for schoolkids



Lövgårdsskolan



Project with Slottsskogsobservatoriet, Göteborg city, Poseidon, Cobham Gaisler
Years 4-5: "micro lessons", eclipse viewing, observatory visits
Space day: making model research station - and animations in Scratch
Long-term commitment (M. Archer et al 2021)

Credits

Astronomdagarna participants in **bold**



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ONSALA OUTREACH TEAM

Andri Spilker, Chia-Jung Hsu, **Iskra Georgieva**, Kiana Kade, **Mamiko Sato**, Sara Piras

VISITOR CENTRE

Gunnar Elgered, **Elvire De Beck**, Mathias Fredrixon, Santiago Arellano, Kristell Pérot, **Eva Wirström**,
Chalmersfastigheter, White arkitekter, NCC

EXHIBITION TEAM

Mamiko Sato, **Iskra Georgieva**, Sara Piras

UPPRYMD / SALSA

Andri Spilker, Jean-Baptiste Jolly, Eskil Varenius, Chia-Jung Hsu

RYMDSKOLAN

Kiana Kade, Chiara Ceccobello

LÖVGÄRDESSKOLAN

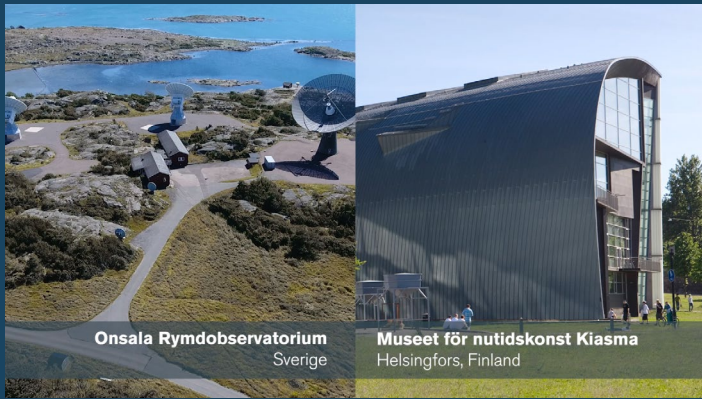
Slottsskogsobservatoriet, Göteborgs stad, Poseidon, Cobham Gaisler, **Elvire De Beck**, Dorotea Blank

FUNDING

Chalmers, Hasselblad Foundation, Vetenskapsrådet



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Climate-friendly building project

Financed centrally by Chalmers (20 MSEK) with a substantial contribution from department SEE

Climate-friendly building project, applying reuse and circularity

Tendering in CO₂ equivalents – aim for 85% reused building material

Building is well underway. First visits early 2022, inauguration expected spring 2022

1 MSEK grant from Hasselblad Foundation for exhibition costs



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New visitor centre at Onsala Space Observatory

technology for exploring the universe

values

inspiring
scientific
sustainable
locally accepted
listening
optimistic

mission

Engage kids and the public to find out about how we can explore the universe and the Earth in scientific and sustainable ways

vision

Central to Chalmers' space initiatives and to its interaction with society; premier location to experience space-related tech and global telescopes (e.g. SKA)

strategies

Close visitor contact with science, technology and telescopes; sustainability, reuse and circularity; extend exhibition in time and space by digital and other means; involve local experts and schools in exhibit development

business values

Attract new students and partners to Chalmers; strengthen space in West Sweden; strengthen Chalmers & Sweden in global science infrastructures

feasibility

Working exhibition ready 2021 at low cost with realistic plan for further development

logistics

Minimal disturbance to rest of facility's work; no increase in resource needs; synergies with existing outreach projects



White arkitekter