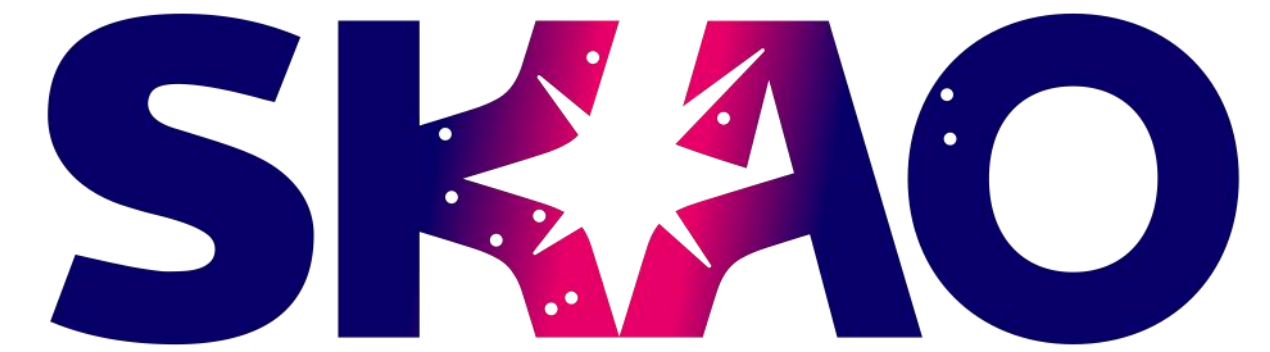




SKA Observatory: General Status

Thijs Geurts – Head of International Relations

01 SEP 2026
Swiss SKA Days Neuchatel



Content:

- **Birth of Observatory**
- **Science**
- **MID and LOW Telescopes**
- **Membership and funding**
- **Industrial partners**
- **Science diplomacy and wider impact**
- **Dark and Quiet Skies**
- **Switzerland in SKAO**



2019-21: a milestone period for SKA



SKAO Convention signed: March 2019
Observatory born on 4 February 2021

**Green Light Given For Construction Of World's
Largest Radio Telescope Arrays**

29th June 2021





One global observatory, two telescopes, three sites



United Kingdom



Northern Cape, South Africa



Murchison, Western Australia

SKAO Science
Working
Groups



Cosmology



Cradle of Life



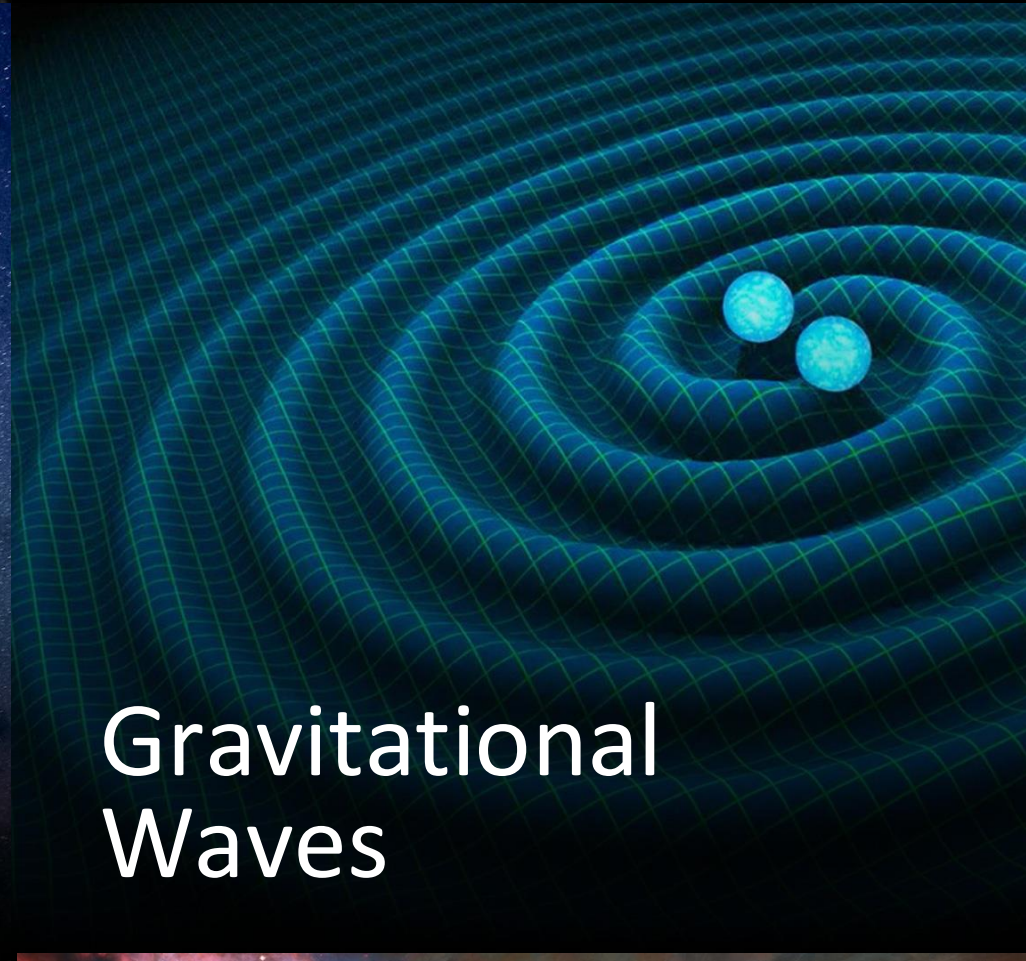
Epoch of
Reionization



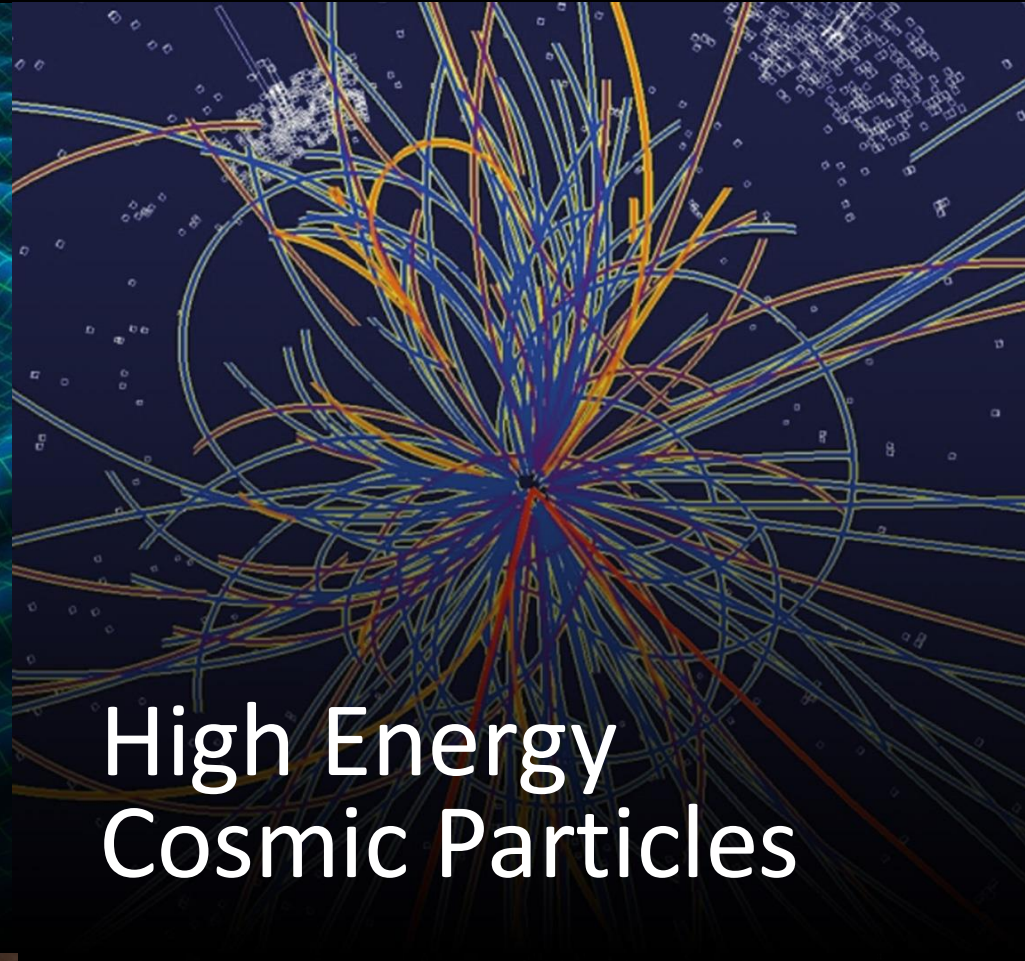
Extragalactic
Continuum



Extragalactic
Spectral Line



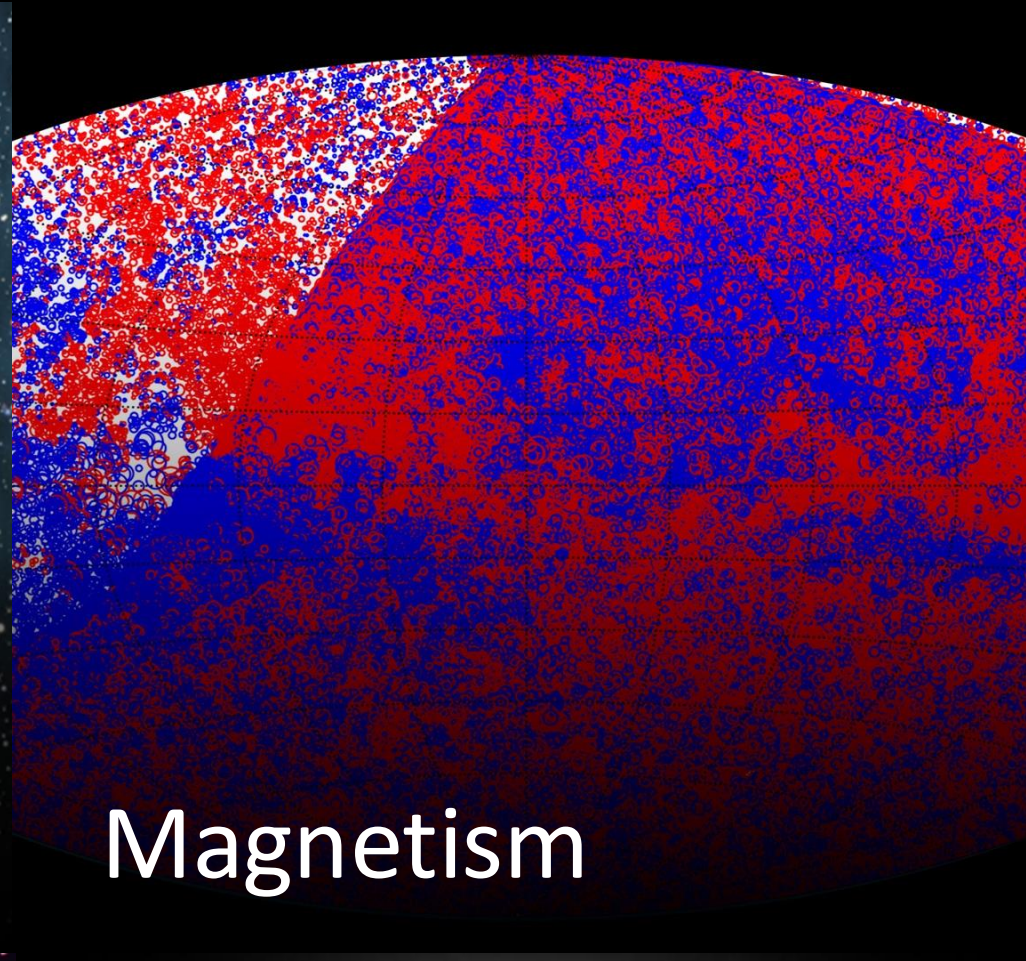
Gravitational
Waves



High Energy
Cosmic Particles



HI Galaxy Science



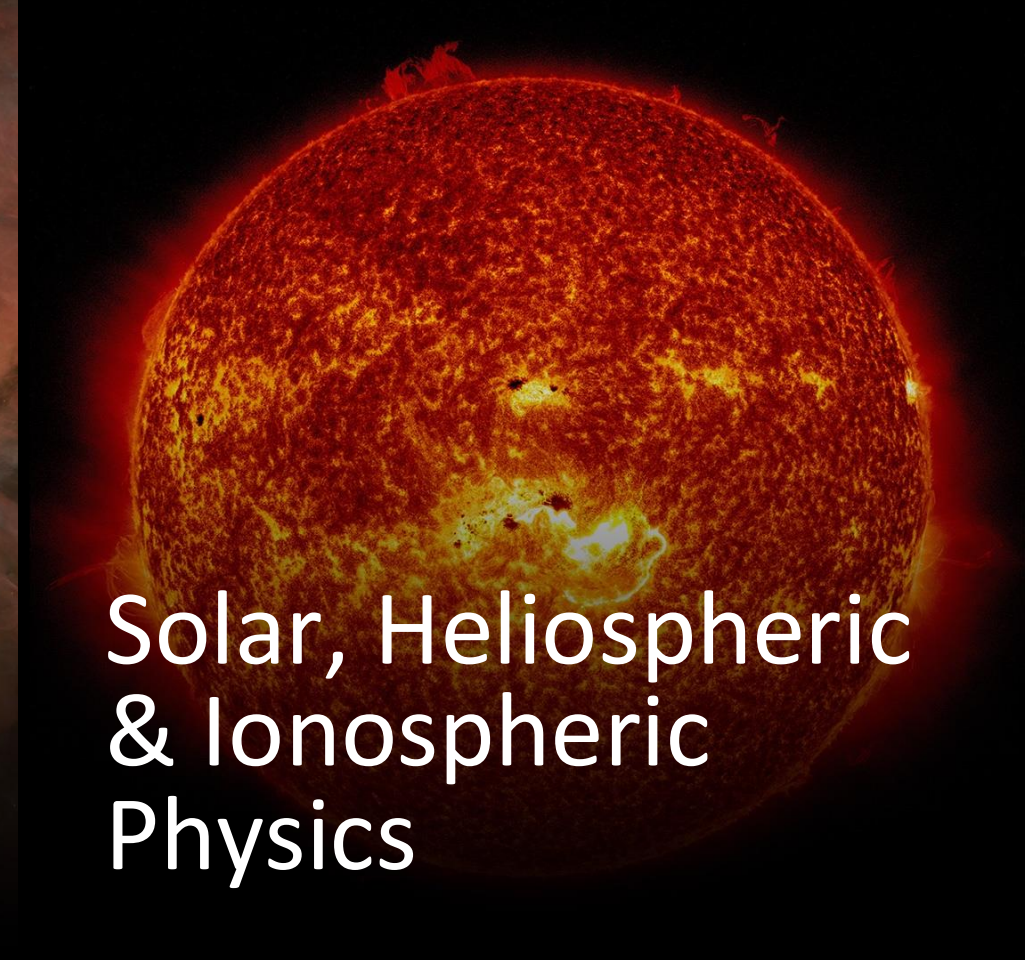
Magnetism



Our Galaxy



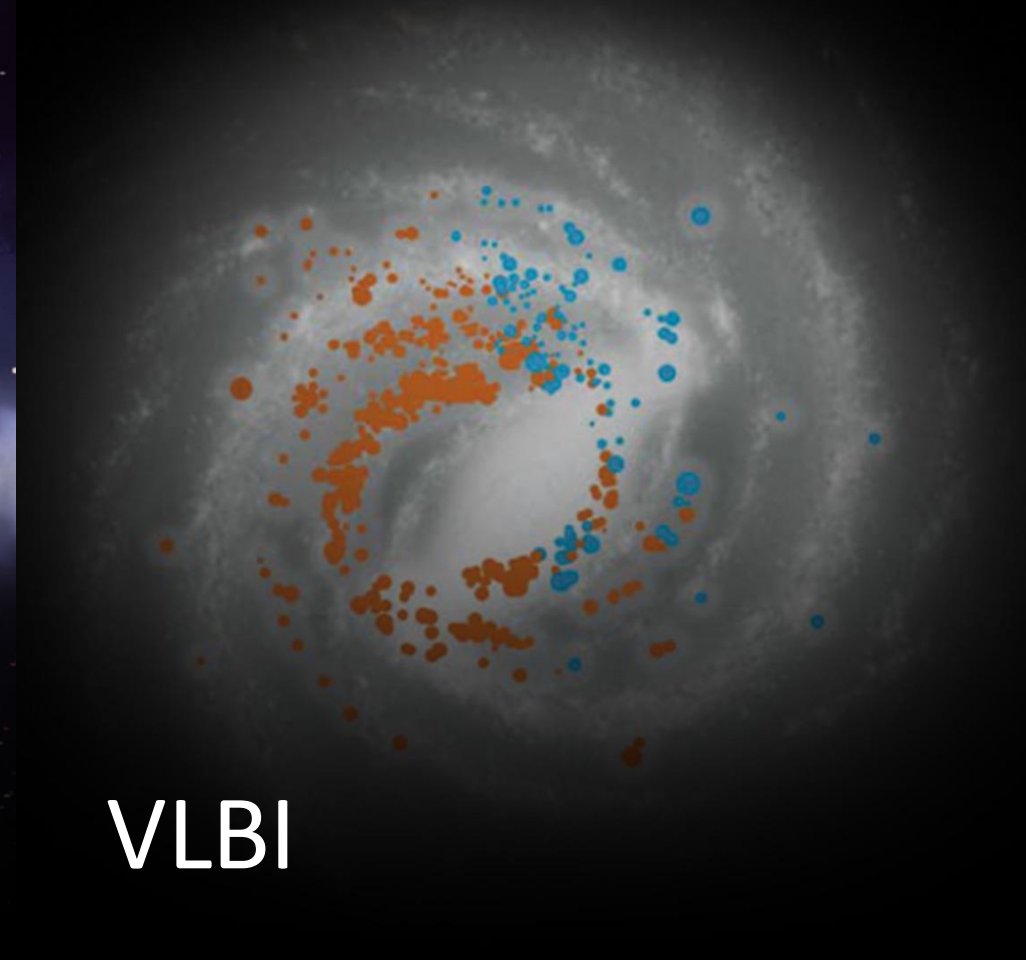
Pulsars



Solar, Heliospheric
& Ionospheric
Physics

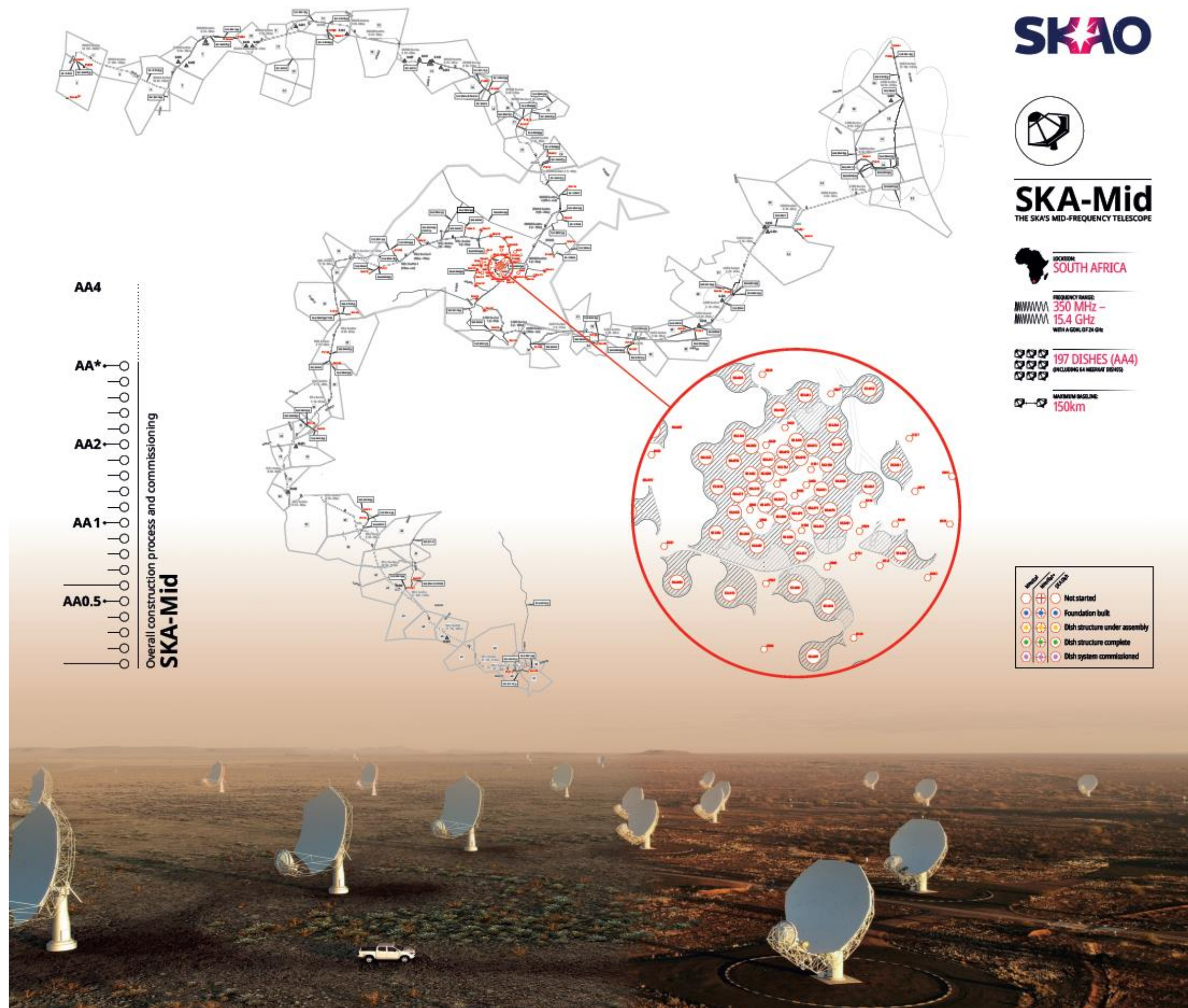


Transients



VLBI

SKA-Mid in South Africa

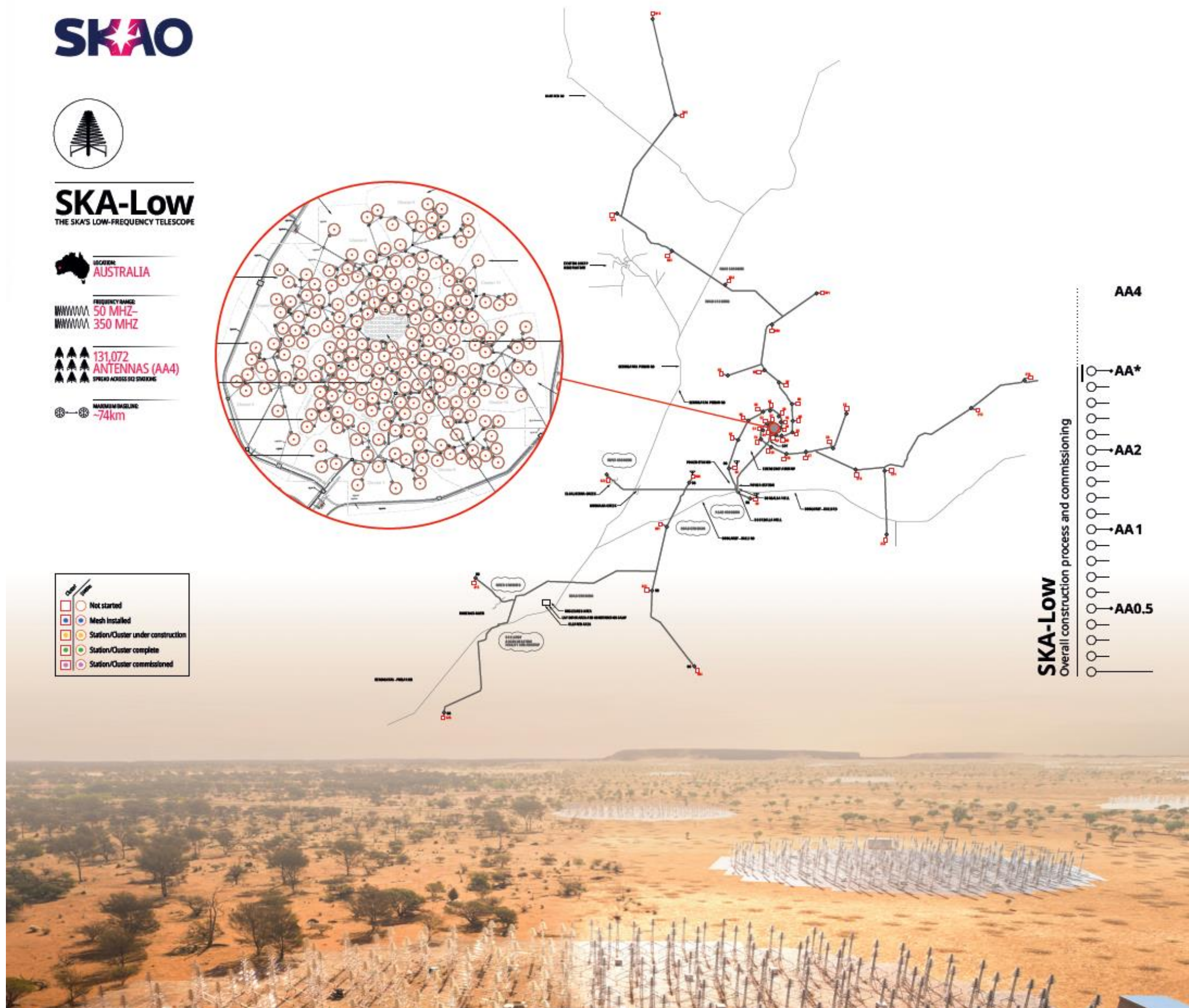


- 197 fully-steerable dishes, including the existing 64 MeerKAT dishes (and 14 MeerKAT+ dishes)
- Frequency range: 350 MHz – 15.4 GHz (potentially up to 30 GHz)
- Maximum distance between dishes: 150km
- 450km of roads/tracks, 650km of fibre, 250km of power cables and 109 SKA-Mid dish foundations



SKA-Low in Australia

- 131,072 log-periodic antennas, arranged in 512 stations
- Frequency range: 50 – 350 MHz
- Maximum distance between antenna stations: 74km
- 230km of tracks, 670km of fibre, 325km of power cables and 103,000 steel mesh sheets for station ground-planes



The SKAO logo is displayed in a bold, white, sans-serif font at the top center of the slide. The background of the slide is a photograph of a radio telescope dish silhouetted against a sunset sky, with other dishes visible in the distance.

SKAO

2025 year in review

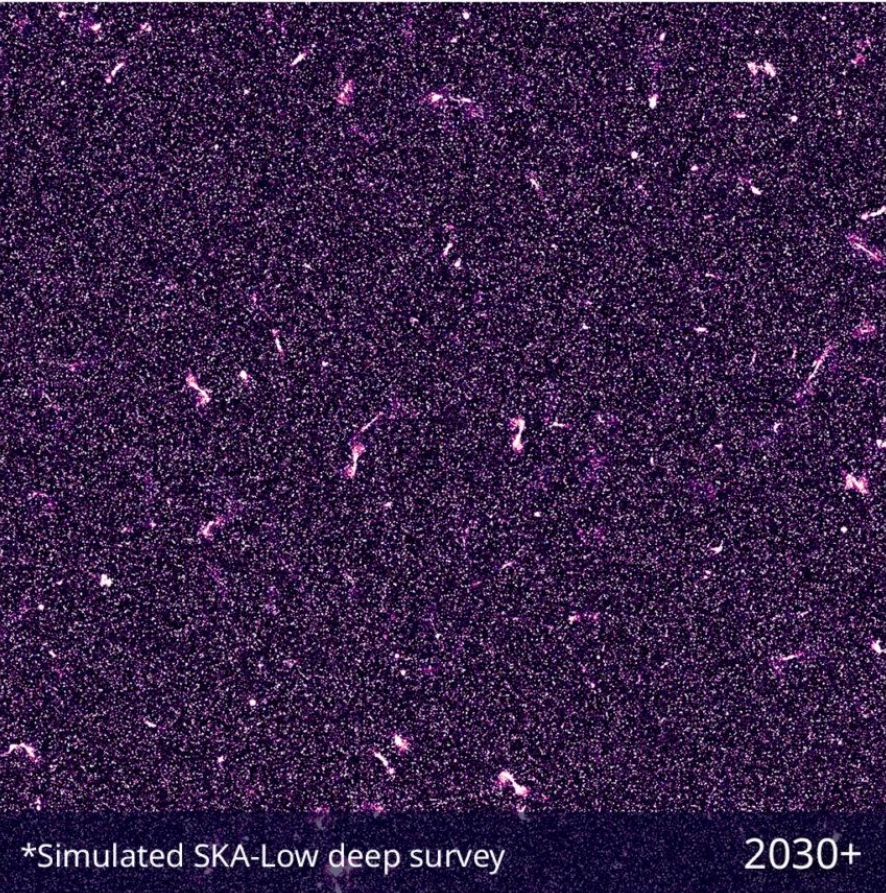
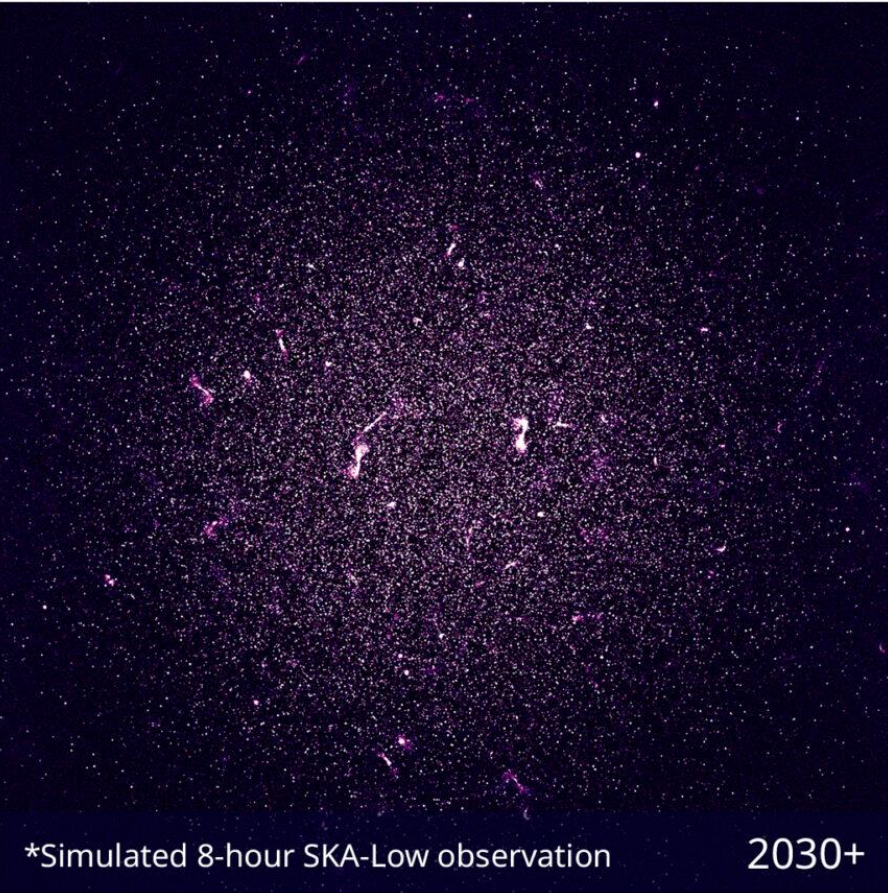
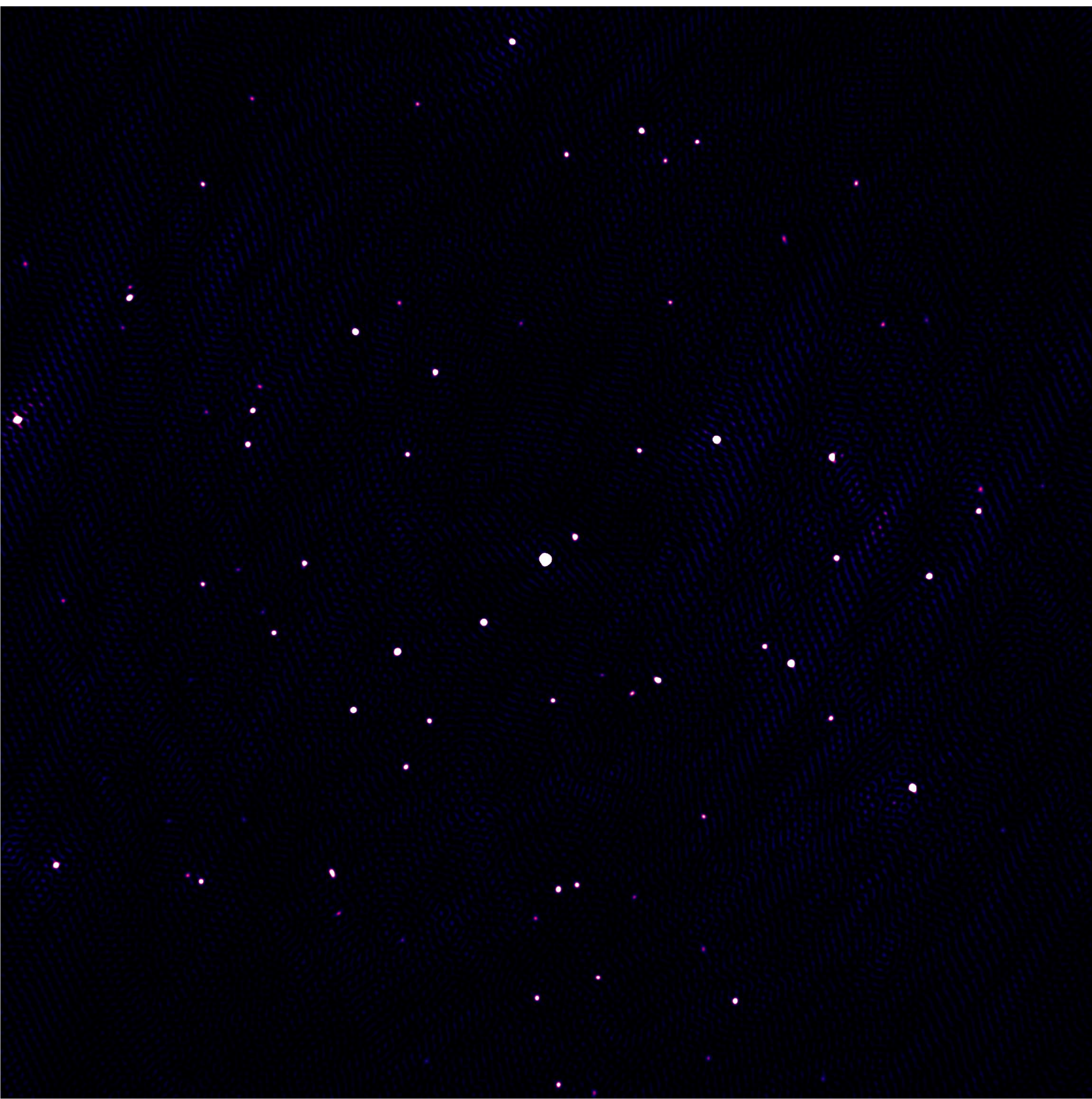
The SKA telescopes begin to take shape





First SKAO image

17th March 2025
4 SKA-Low stations
85 radio-galaxies
7-hour integration
25 MHz bandwidth
150 – 175 MHz
Noise level ~5-6 mJy/bm
70 arcsec resolution
25 sq degrees (100 full moons)
Central source is 56 Jy



SKA-Mid



2026

40 dishes

in boats, bits and boxes on site

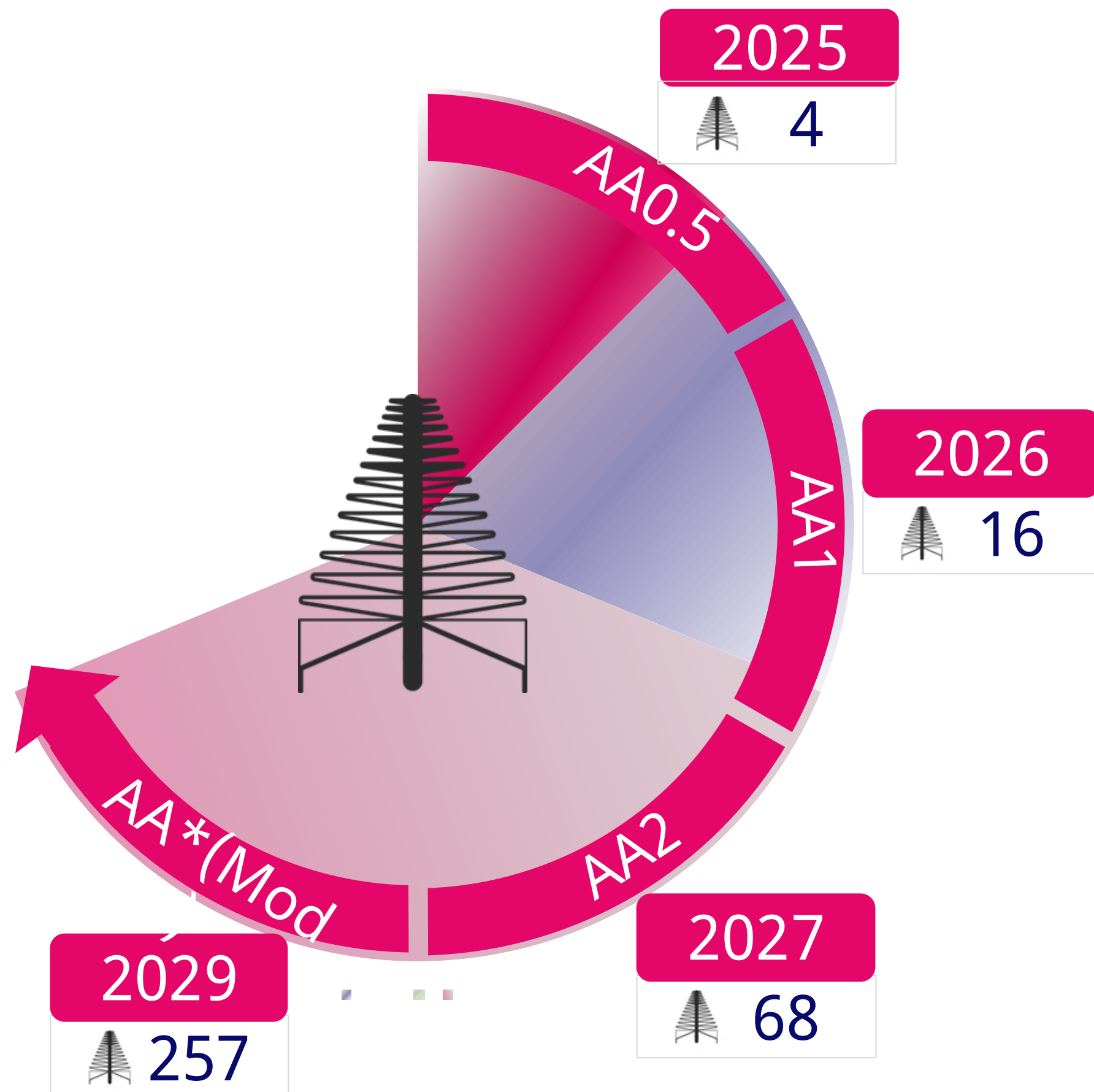
2027

35 'big lifts'



All infrastructure complete

SKA-Low



2026

69 stations complete

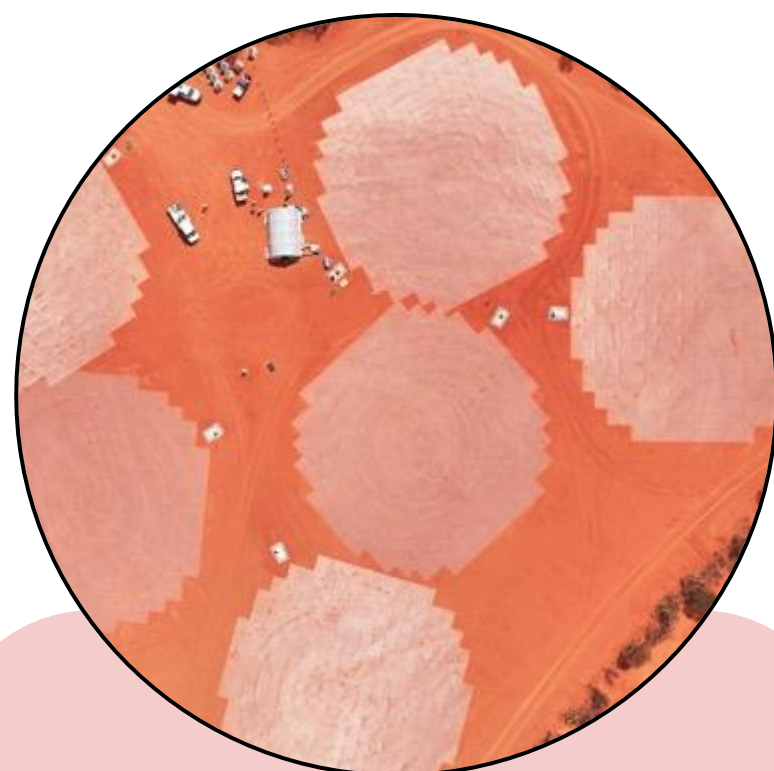
Major infrastructure complete



SKAO milestones

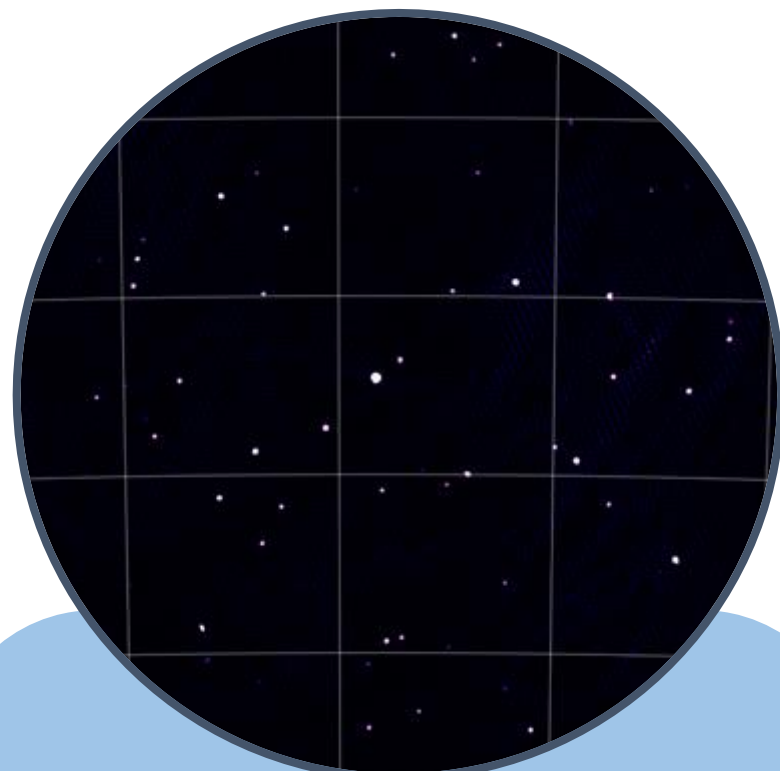
Community involvement starts

Credit: I. Heywood, SARAO



Construction

- Building antennas, dishes, roads etc!
- Followed by Assembly, Integration and Verification



Commissioning

- SKAO activity
- Collaborative across system verification and science commissioning



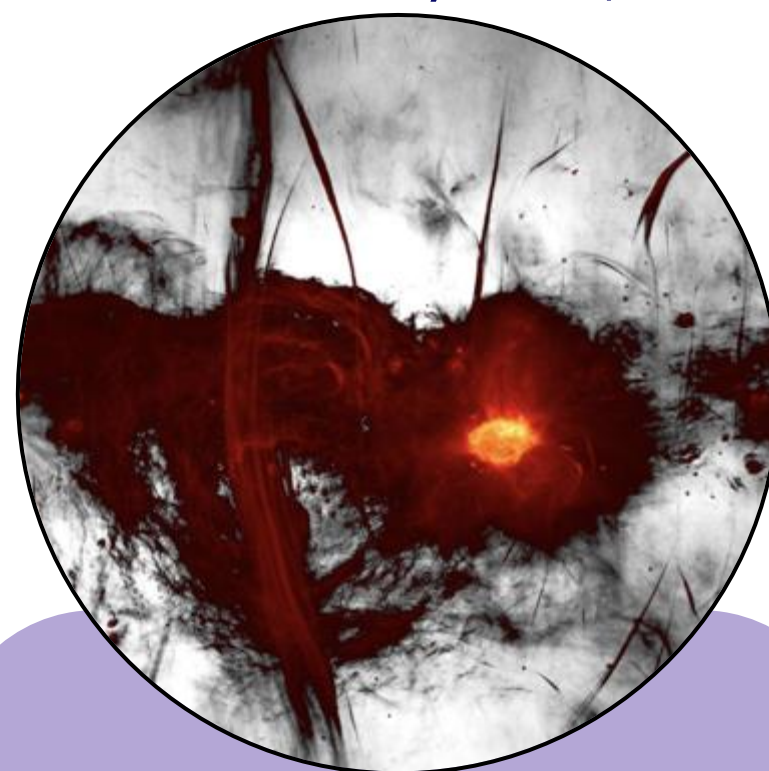
AA2



AA*

Science Verification

- A dress rehearsal of the end-to-end process for every mode of operation
- The community will submit target ideas
- Once modes and pipelines are working, data will be publicly available for scrutiny
- Build trust and foster early science return



Cycle 0

- Shared-risk PI projects
- SRCNet resources ready for users
- Proprietary period applies



Now

Now

Mid 2027

First half 2029

2030



Now

Now

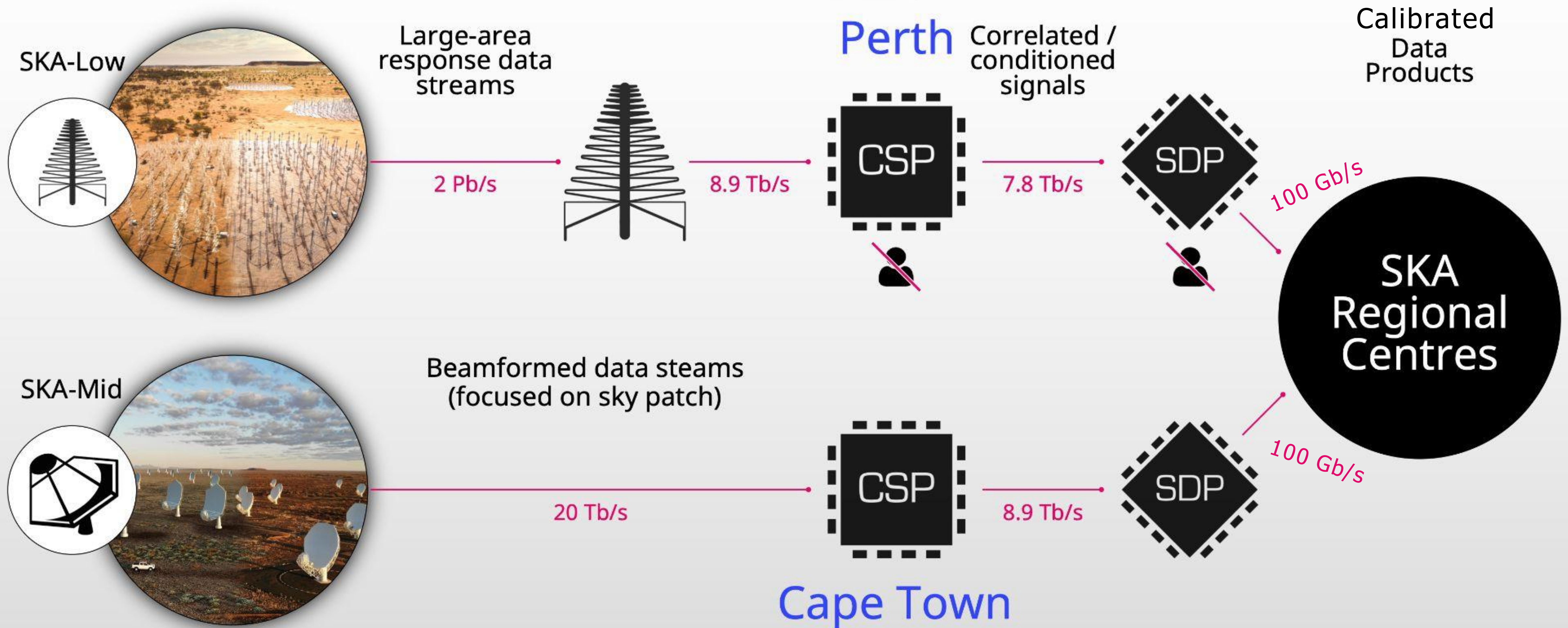
First half 2029

First half 2031

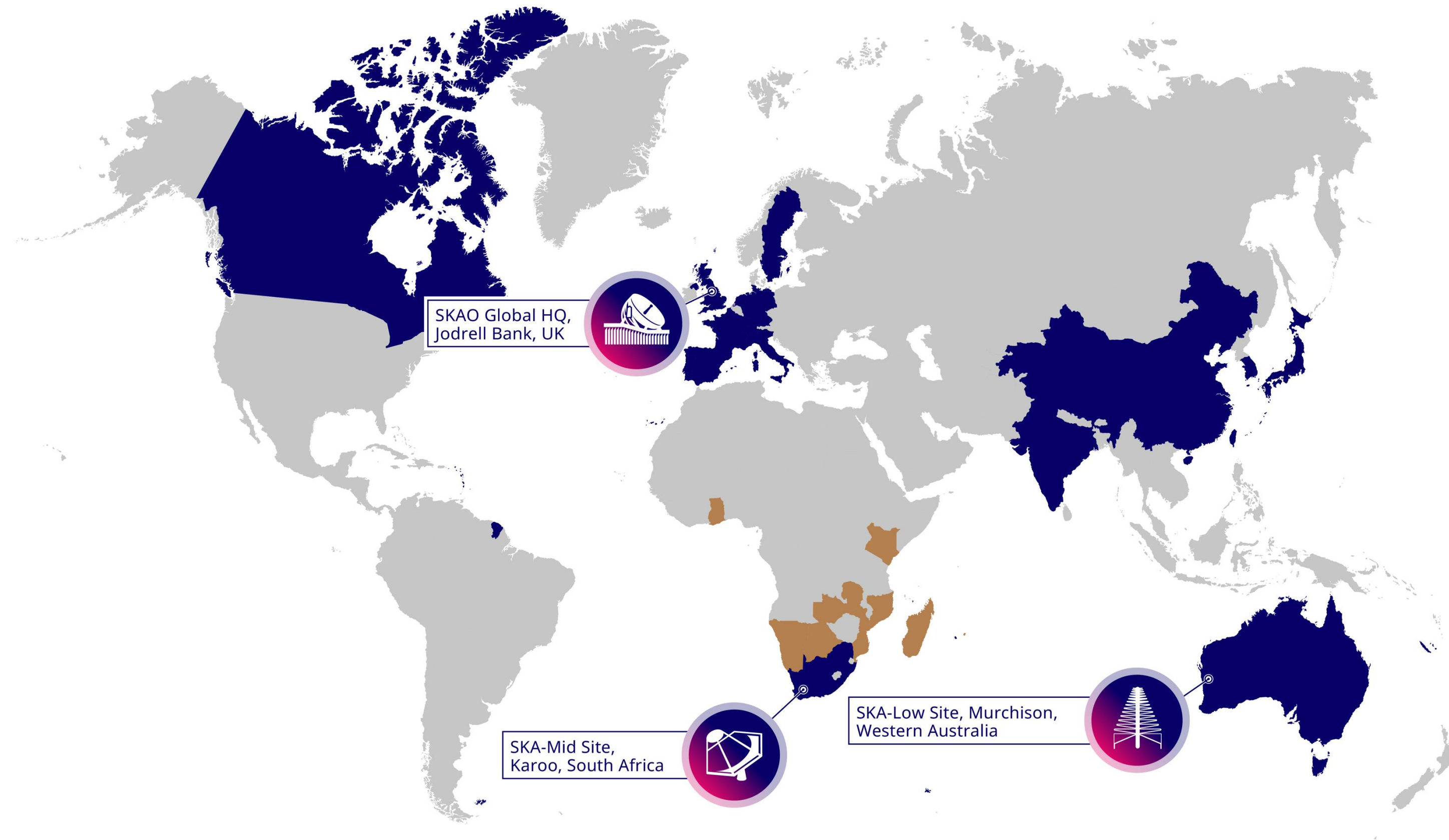
2032



SKA Regional Centres: SKAO data processing stages



Membership



Members:

Australia, Canada, China, France
Germany, India, Italy, Netherlands
Portugal, South Africa, Spain,
Sweden, Switzerland, UK

Intending to join:

South Korea

Membership discussions:

Japan, Poland, Ireland, Indonesia,
Thailand.

■ SKAO Partnership - includes SKAO Member States and SKAO Observers* (as of June 2026)

🇦🇺 🇨🇦 🇨🇳 🇫🇷 🇩🇪 🇮🇳 🇮🇹 🇵🇹 🇿🇦 🇪🇸 🇸🇪 🇨🇭 🇬🇧

* 🇰🇷

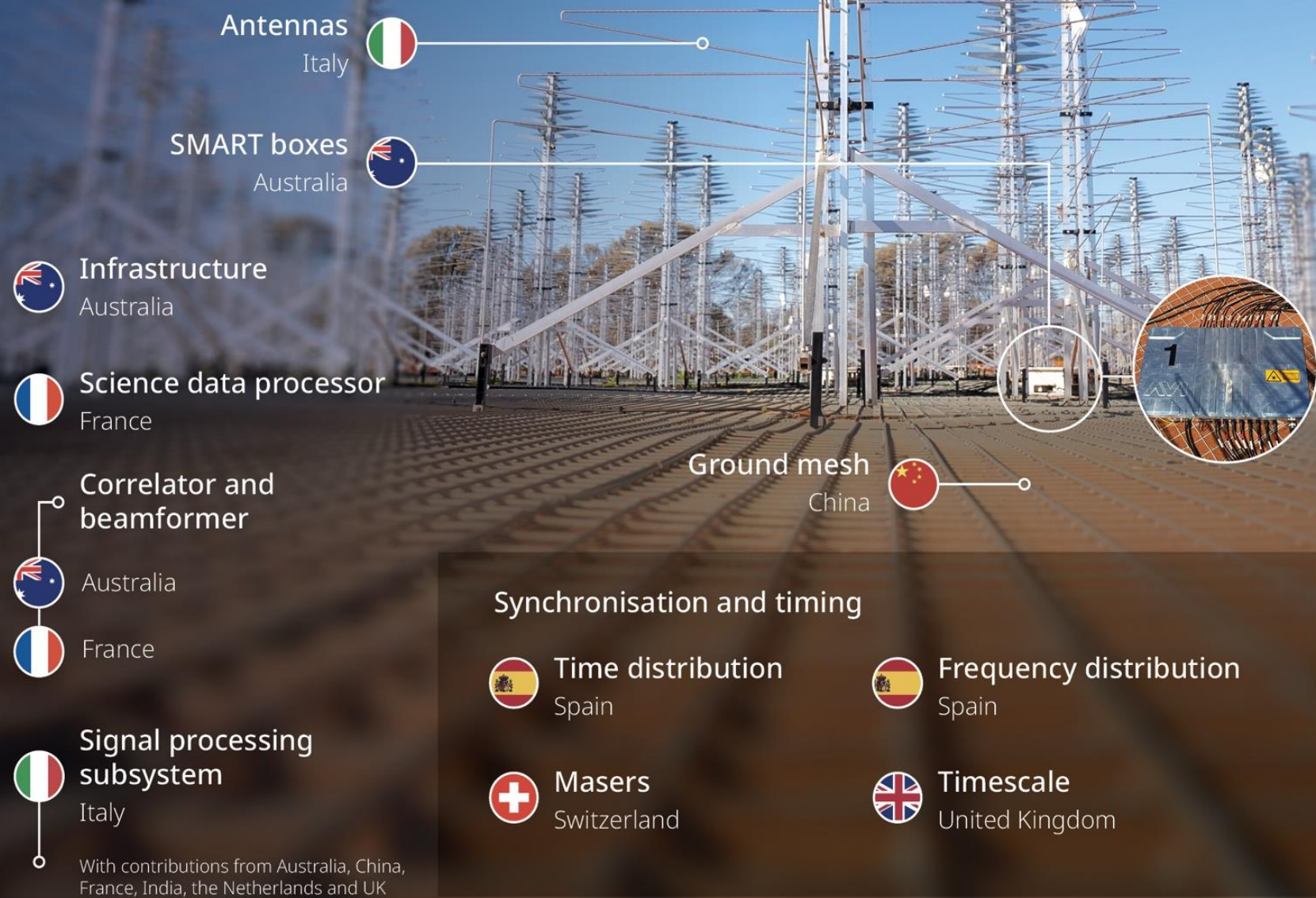
■ African Partner Countries

🇸🇩 🇬🇭 🇰🇪 🇲🇰 🇲🇻 🇲🇼 🇳🇪 🇳🇮 🇳🇬 🇳🇪



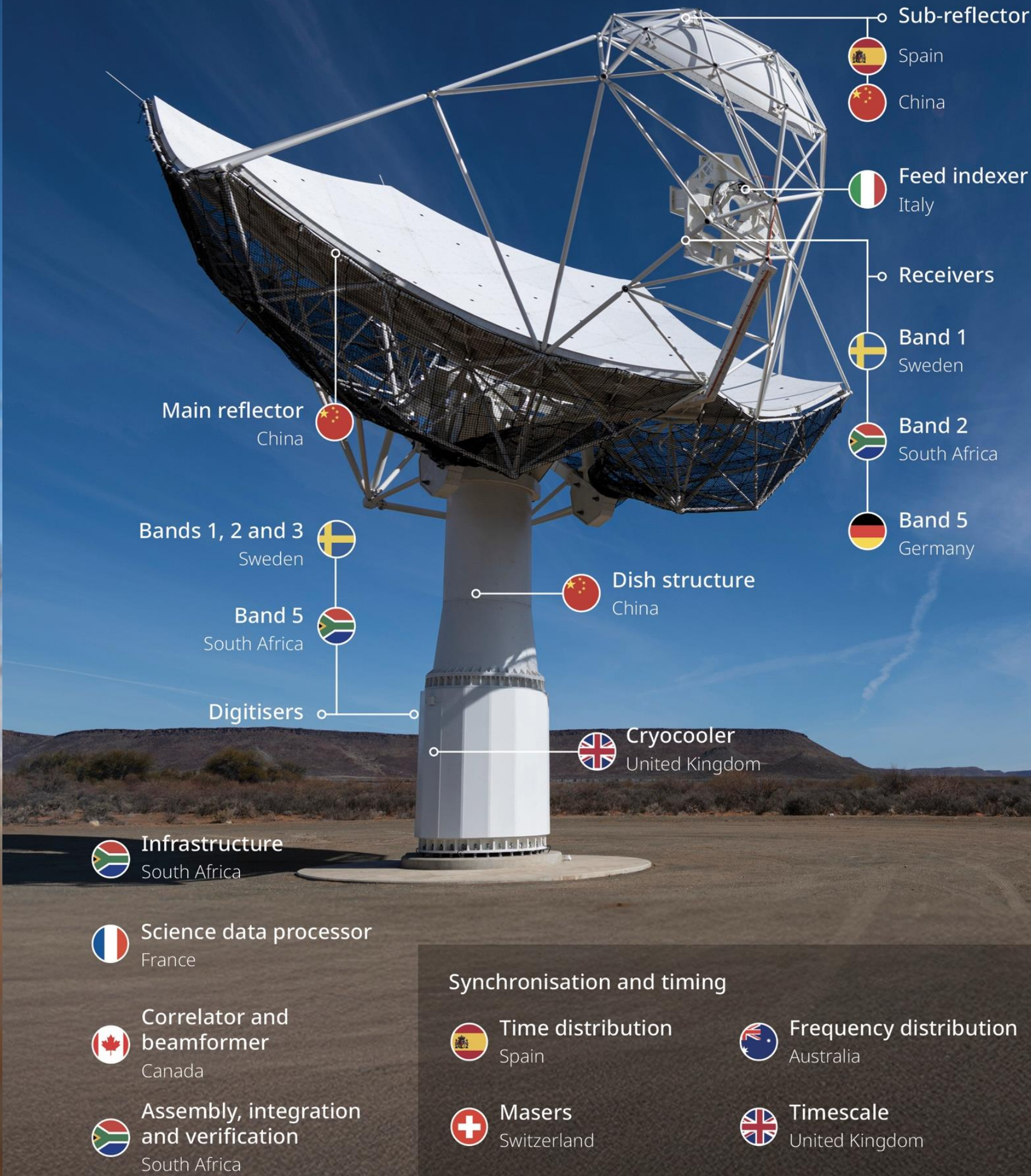
Driving industrial innovation globally

Hardware and software for the SKA telescopes are being manufactured and developed across SKAO member states before being shipped to the telescope sites in Australia and South Africa. This global model leverages industrial expertise, fuels innovation and skills transfer, and spurs public-private partnerships. Above all, it reflects the strength of the collaboration at the heart of the SKAO, with thousands of people worldwide helping to deliver this groundbreaking facility.



Software, networks and computing - Resources from 30+ suppliers in 10 countries:

- Australia
- France
- Italy
- Portugal
- Switzerland
- China
- India
- the Netherlands
- South Africa
- United Kingdom



Software, networks and computing - Resources from 30+ suppliers in 10 countries:

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SKAO = Science Diplomacy



Wider impact – addressing global challenges

The UN Sustainable Development Goals give us and our member states a common language to talk about how a science facility contributes to global challenges.

Some examples:

- SDG 4 Quality Education** SARAO HCD, training, apprenticeships, etc.
- SDG 8 Decent Work** Local hiring, SME pipeline, field-tech programme, etc.
- SDG 11 Sustainable Communities** Upskilling local communities, uplifting local economy
- SDG 10 Reduced inequalities** Indigenous partnerships and beyond compliance practices
- SDG 15 Life on Land** Heritage walkovers, land rehabilitation, etc.

Other SDGs...



Credit for this graphic:



Office of Astronomy for Development

Astronomy for a Better World!

Protecting of Dark and Quiet Skies through Spectrum Management



The importance of Spectrum Protection in a changing environment

- As space activities continue to increase in number of satellites and complexity, posing greater threats to radio and optical astronomy
- We need continued access to a clean spectrum is as important as the performance of our receivers, software and infrastructure



Night Sky circa 2030:



Switzerland in SKAO

- One of the founding scientific and technical communities in the SKA... Full member since 2021 – Swiss SKA community among world's best in radio astronomy



2026/2027 focus:

- Preparing funding arrangements 2030+
 - Detailed discussions with Members
- Construction and delivery: Readiness for first science verification phase 2027....
 - Construction challenges – preparing the telescopes for operation
- Community engagement and preparation
 - In Member States and between groups/communities
- Preparing an SKA Science Regional Centre network ready for first science
- **Maintaining focus on the vision:**
 - **The uniqueness of SKAO in the world, the science promise, as a uniquely sustainable endeavour**



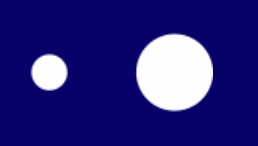


It is foreseen that SKAO Committee of Council will further discuss these items on September 15th.

Together with our partners, we are engaged in one of the great scientific endeavours of the 21st Century



We recognise and acknowledge the Indigenous peoples and cultures that have traditionally lived on the lands on which our facilities are located.


www.skao.int