SIMONS OBSERVATORY

A STATUS UPDATE

SIMONE AIOLA FOR THE SO COLLABORATION

(CENTER FOR COMPUTATIONAL ASTROPHYSICS, NY)

SA3CC 05/06/2025

SIMONS FOUNDATION

PARQUE ASTRONÓMICO ATACAMA, CHILE
SIMONS OBSERVATORY
22°57'31.9"S 67°47'12.6"W 5200m
www.simonsobservatory.org

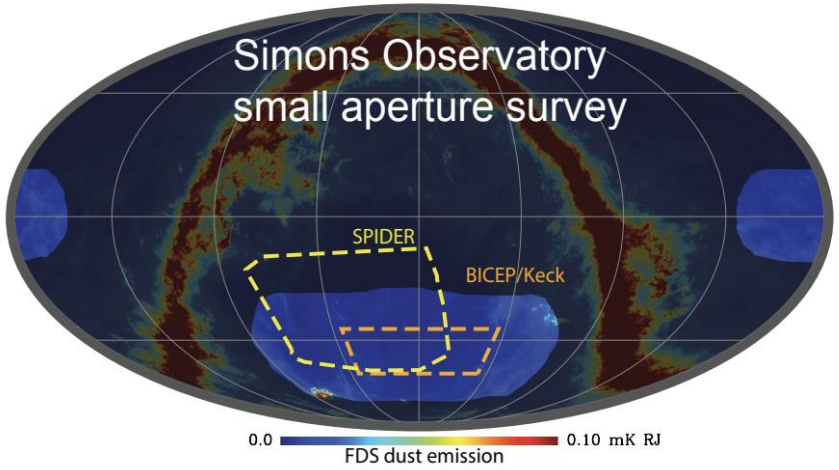
HEISING-SIMONS FOUNDATION

JSPS

NSF

UKRI

SIMONS OBSERVATORY (SO) — MULTIFREQUENCY MM SURVEY AND SCIENCE GOALS

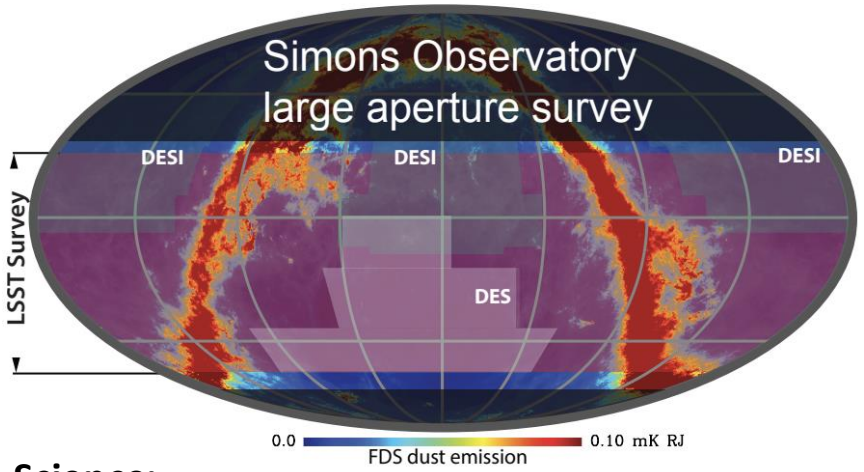


Science:

- high-risk, high-reward
- Signature of inflation

SAT Survey:

- low-dust 10% of the sky
- Large-Scale polarization, B-mode



Science:

- Primordial perturbation
- Neutrino mass
- Relativistic species
- Reionization
- Dark energy
- Galaxy evolution
- Transients

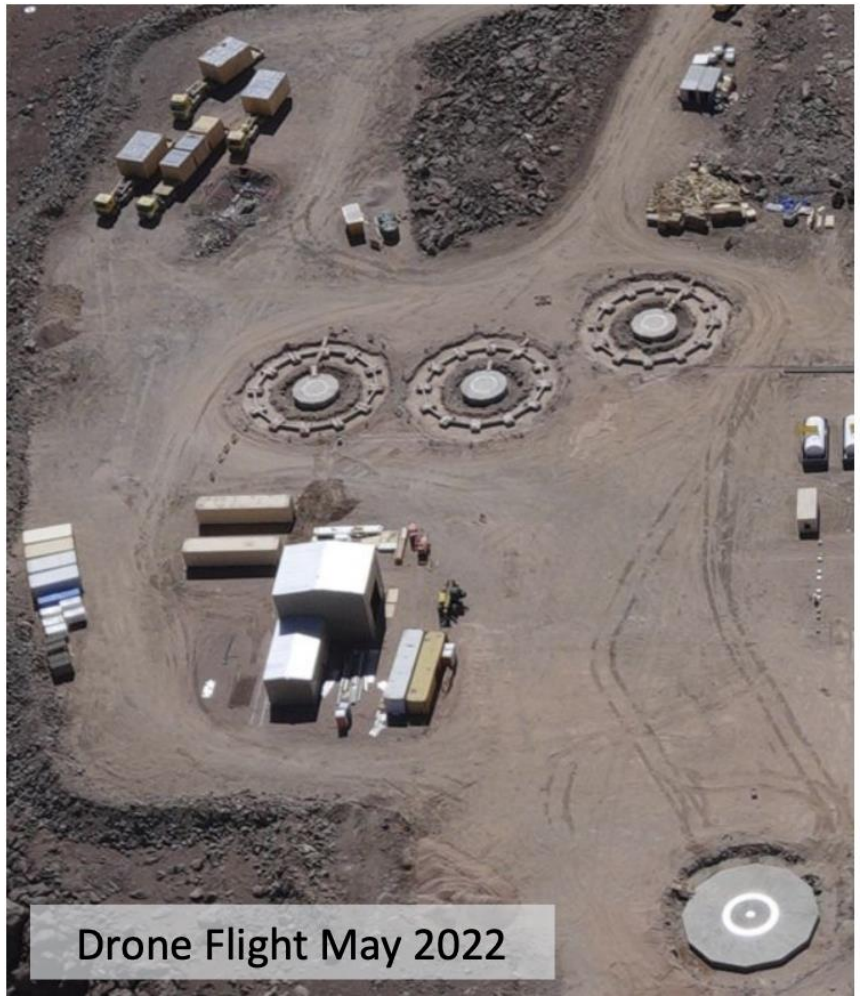
LAT Survey:

- 40% of the sky
- Overlap with Rubin Observatory/LSST and other LSS

Periodic data releases: CMB, lensing maps, source and cluster catalogs, transient events

SIMONS OBSERVATORY (SO) — SITE

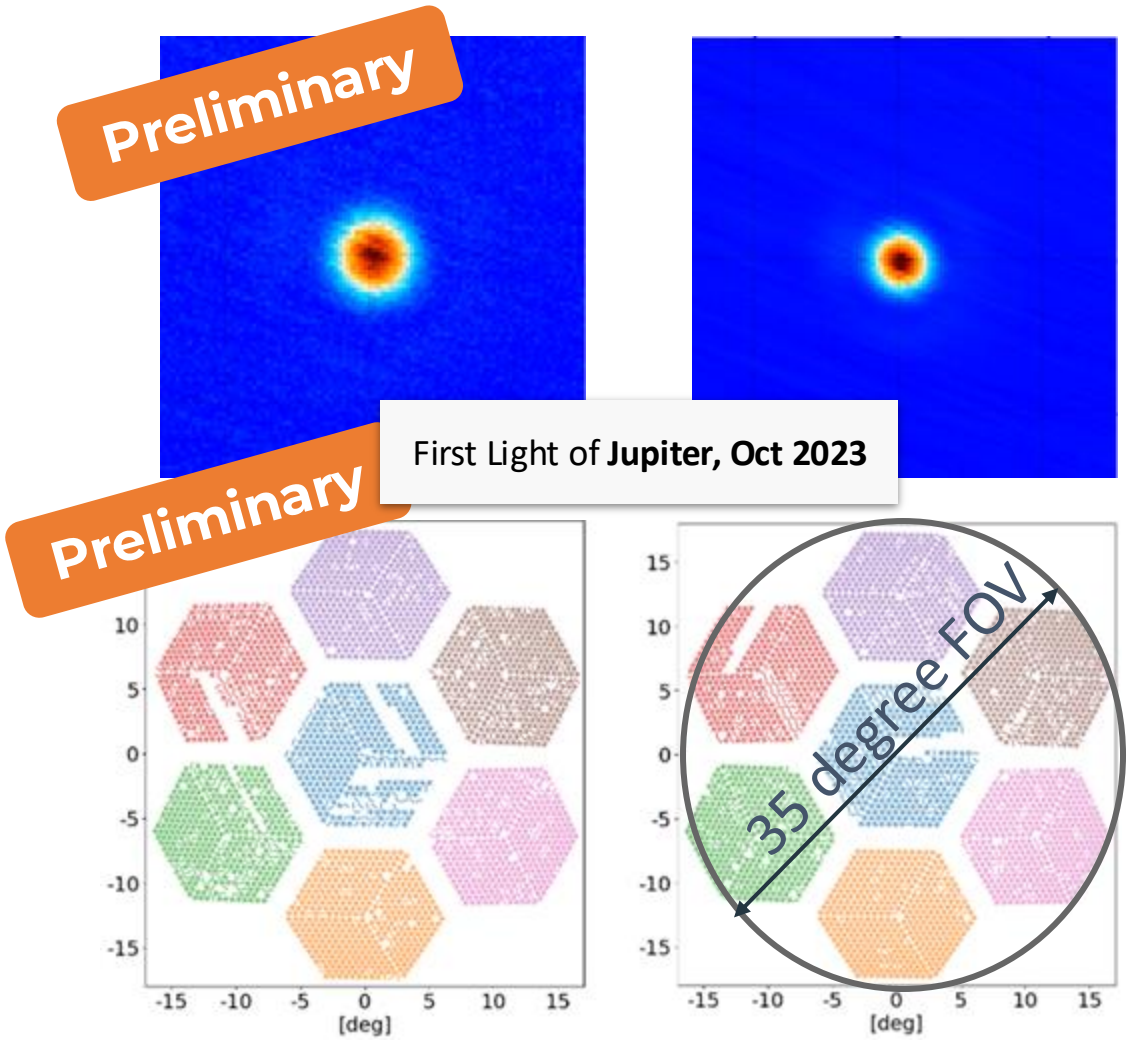
The Observatory is fully deployed and operational, including the DM component. Remote operations are ongoing daily.



SIMONS OBSERVATORY (SO) — LAT AND SATS

The Observatory includes 3 Small-Aperture Telescopes (SATs) and 1 Large-Aperture Telescope (LAT), with a total of 7,000 detectors on the sky.

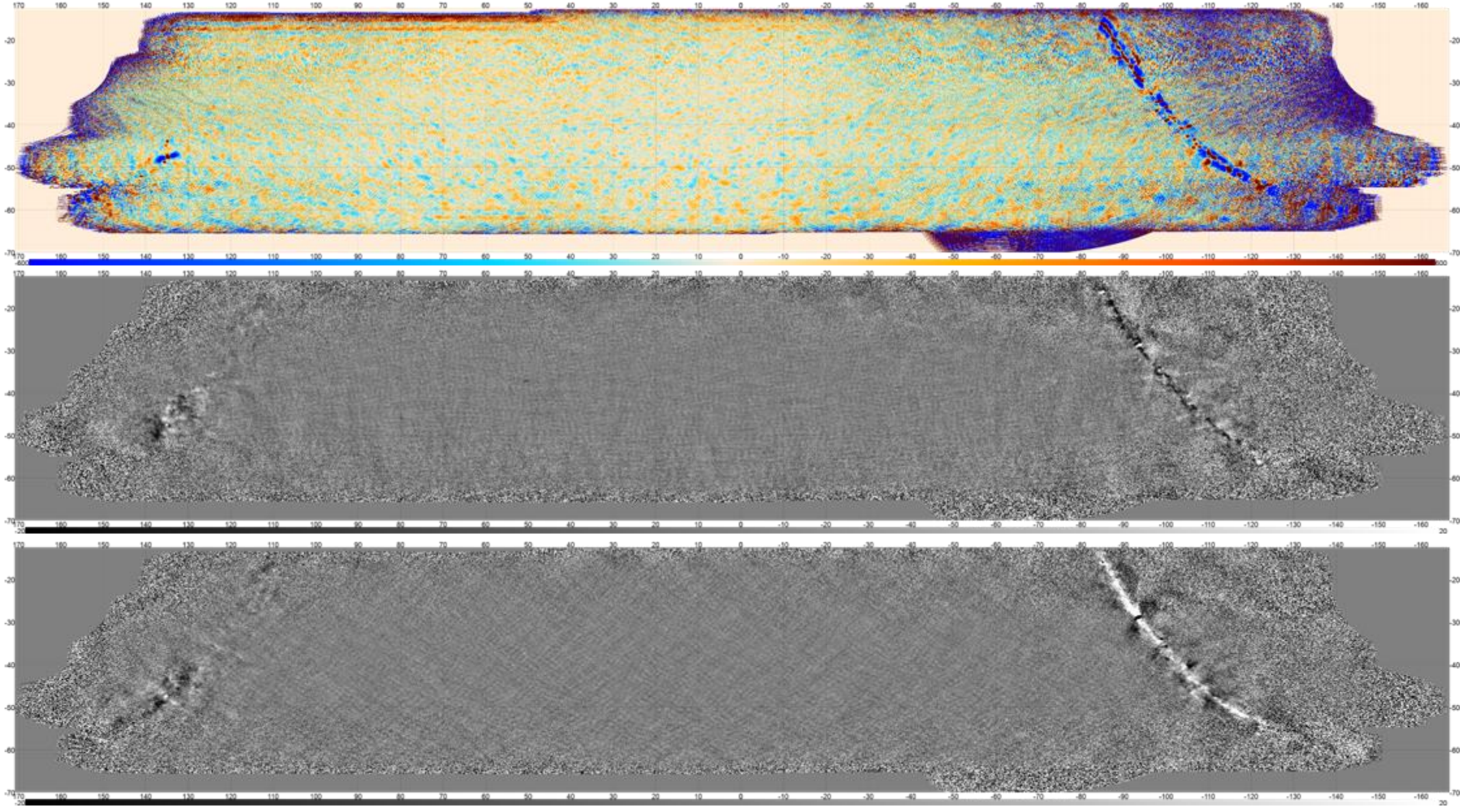
SOME SATS RESULTS



- All 3 SATs had first light and have gone through extensive commissioning. Starting full science operations soon.
- SO Collaborators at all career stages are using the DM infrastructure and tools to analyze the data

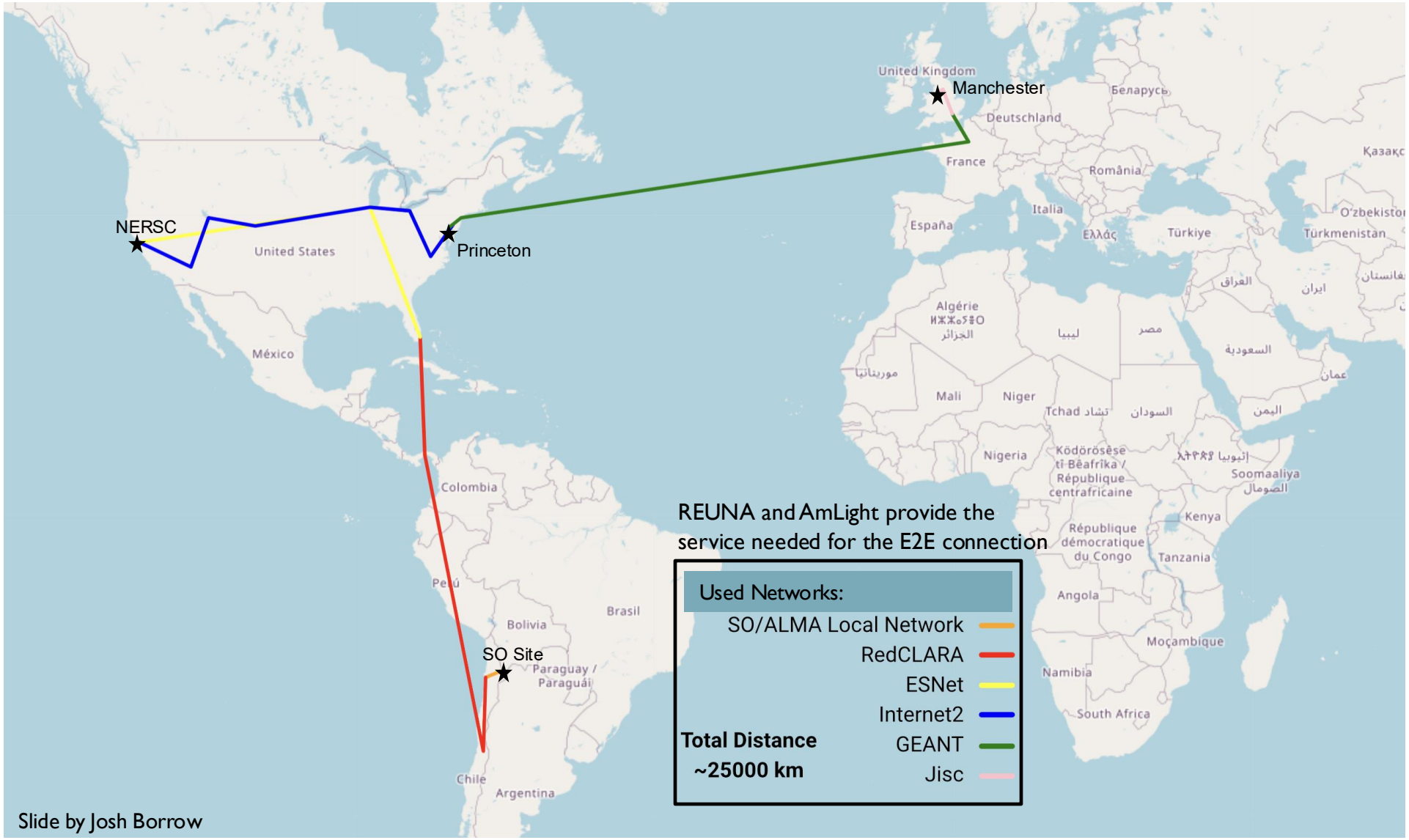
Slide by Susanna Azzoni

SOME SATS RESULTS



Slide by Susanna Azzoni

DATA PATH


United Kingdom
Manchester
Deutschland
France
España
Italia
Ελλάς
România
Беларусь
Türkiye
Қазақс
Türkmenistan
O'zbekiston
العراق
ایران
افغانستان
Algérie
الجزائر
ليبيا
مصر
السعودية
عمان
اليمن
السودان
Tchad تشاد
Mali
Niger
Nigeria
Ködörösêse ti Bêafrîka / République centrafricaine
إثيوبيا
Soomaaliya الصومال
Kenya
République démocratique du Congo
Tanzania
Angola
Moçambique
Namibia
South Africa
NERSC
United States
Princeton
México
Colombia
Perú
Brasil
Bolivia
Paraguay / Paraguái
SO Site
Chile
Argentina
REUNA and AmLight provide the service needed for the E2E connection
Used Networks:
SO/ALMA Local Network
RedCLARA
ESNet
Internet2
GEANT
Jisc
Total Distance ~25000 km
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SO MISSION CONTROL

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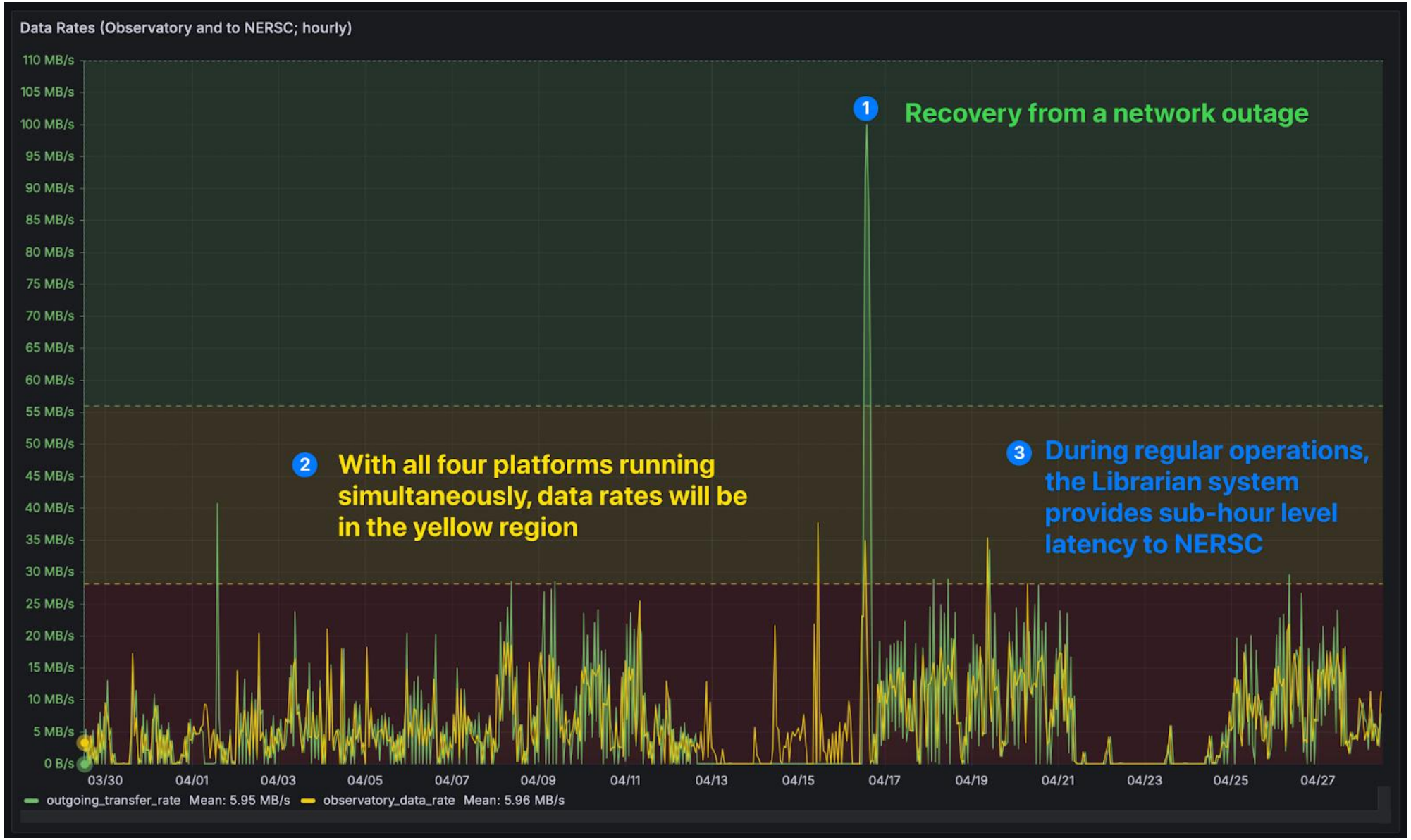
SO MISSION CONTROL



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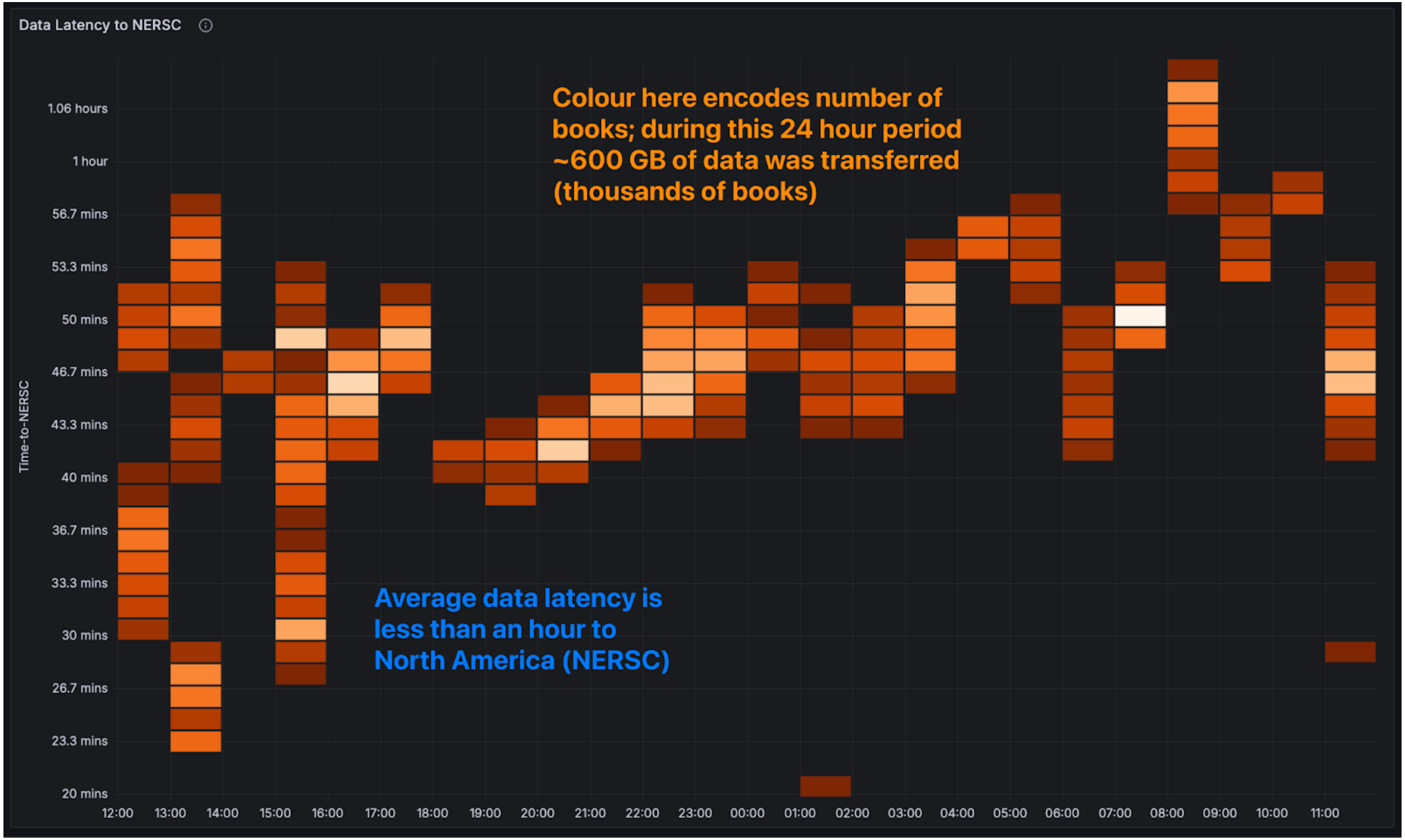
SO MISSION CONTROL



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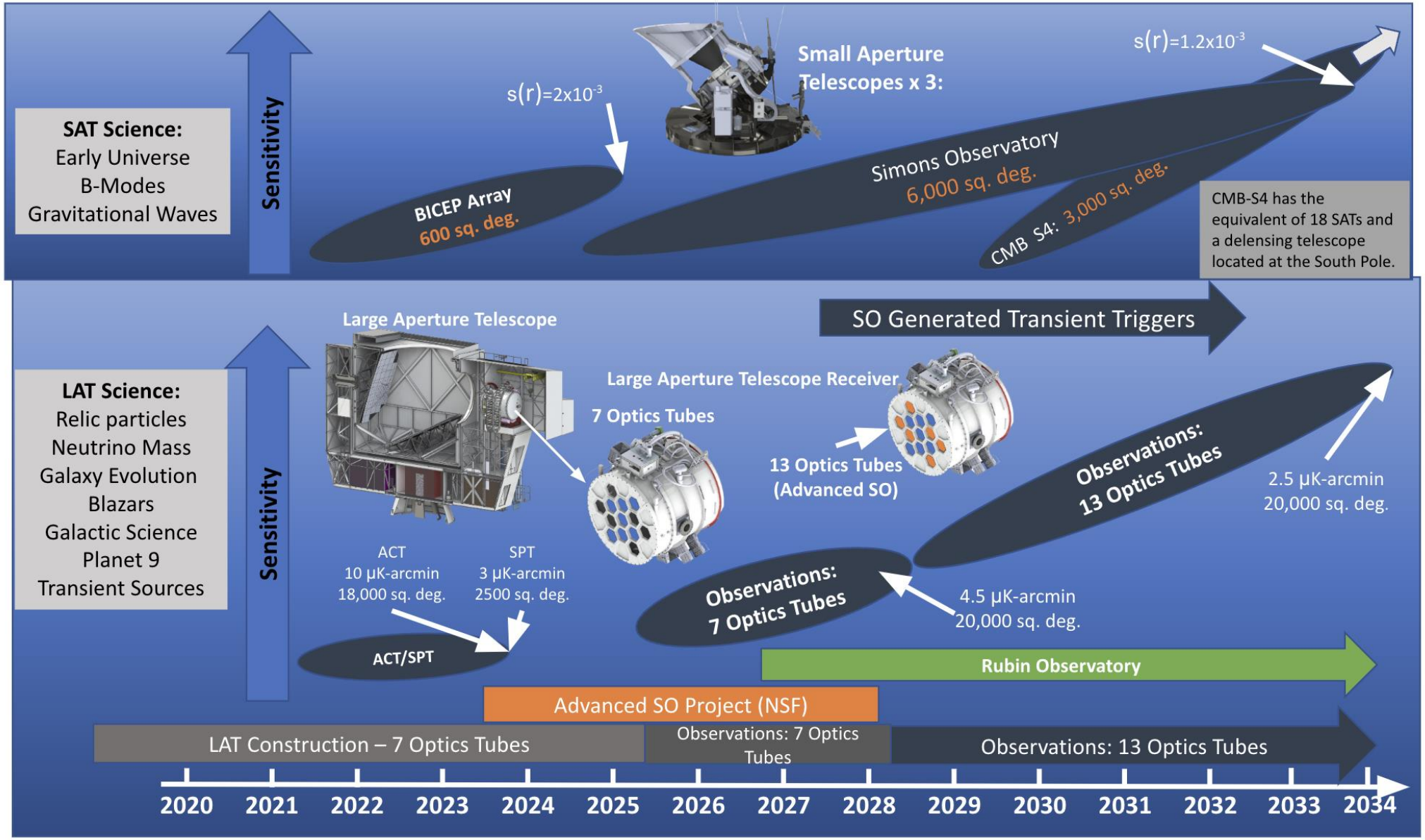
SIMONS OBSERVATORY (SO) — SO TIMELINE AND EXPANSIONS



SIMONS OBSERVATORY (SO) — SO TIMELINE AND EXPANSIONS