

Large survey of Southern sky at submm wavelengths

Simons Observatory (SO) site: 5200m altitude at Atacama, Chile (-23°S)

30-300GHz, 6x Small and 1x Large Aperture Telescopes (SAT/LAT)

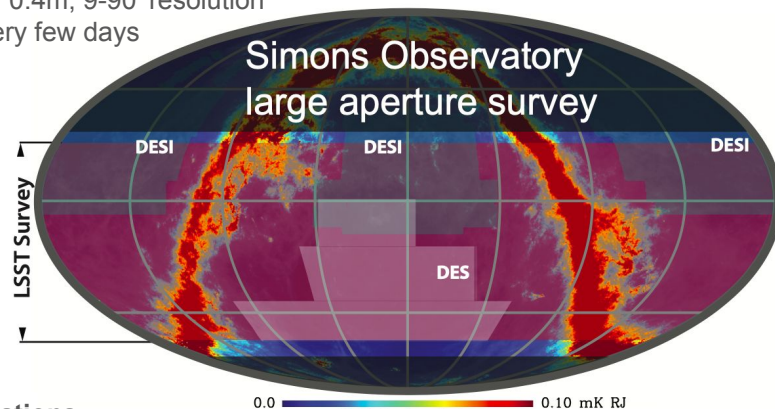
LAT: 6m, 1-7' resolution, SAT: 0.4m, 9-90' resolution

LAT surveys ~60% of sky every few days

Main aim: CMB & cosmology

But also: transients!

Asteroids, flaring stars,
active Galactic nuclei,
gamma-ray burst afterglows,
unexpected sources, etc.



Multiwavelength coverage of transient events

Understand across radio, submm, optical - need shared broker systems for real time alerts

Flaring stars at submm

From South Pole Telescope

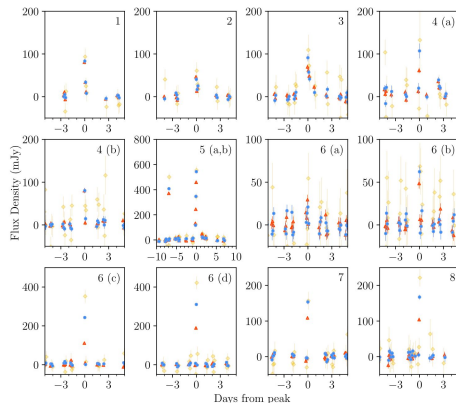
Guns et al. (2021), 2103.06166

Mix of stellar sources:

M dwarfs, RS CVn, BY Dra
variable, Rotational variable

~a few dozen detected by SPT
and ACT - SO will see many more,
can do population studies

Are these also flaring in optical?



Satellite constellations

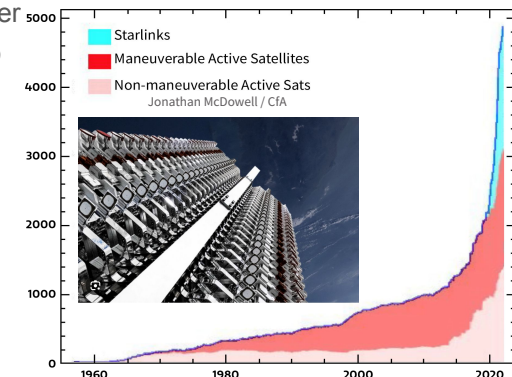
5k Starlinks already, but more + by other
companies: 1m satellites planned on paper

Optical and radio artificial transients (also
submm due to thermal emission?)

Need to predict, avoid false detections of
transients

IAU CPS working on
understanding impact
Please join and help!

<https://cps.iau.org/>



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