

LSST Solar System Science Collaboration Update

Meg Schwamb
(Queen's University Belfast)
[@megschwamb](#)

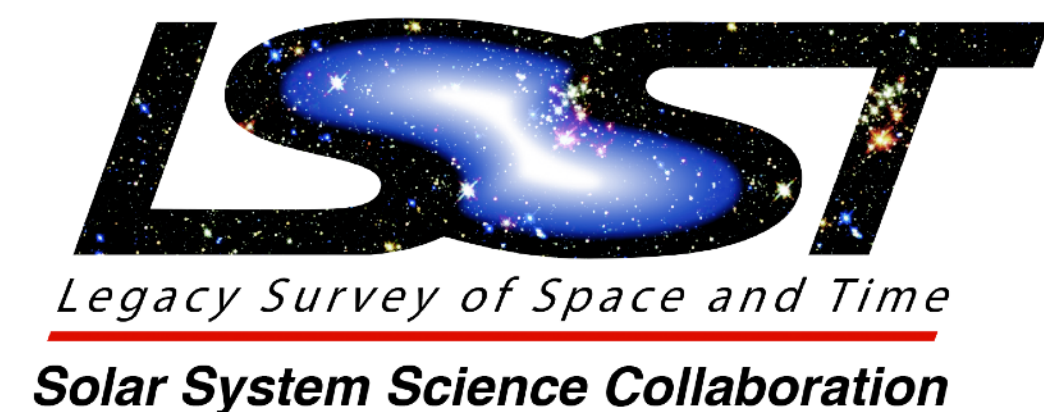
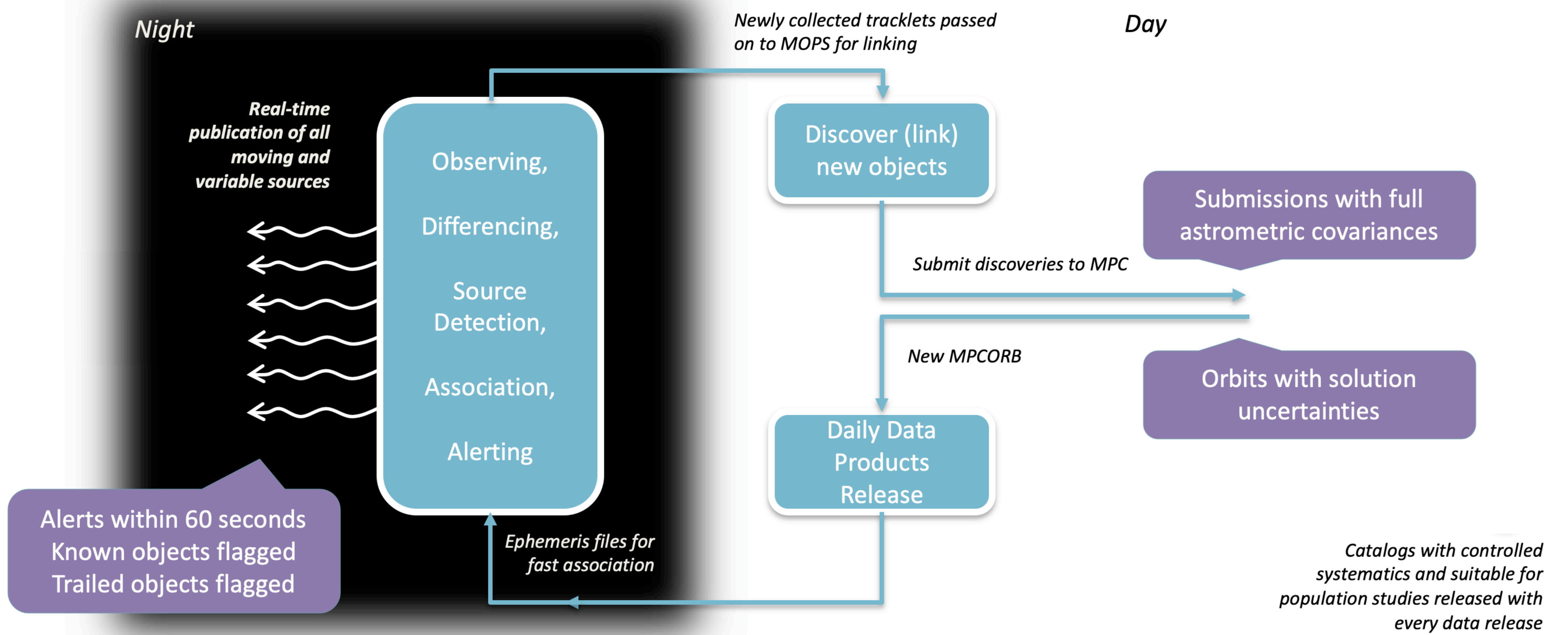
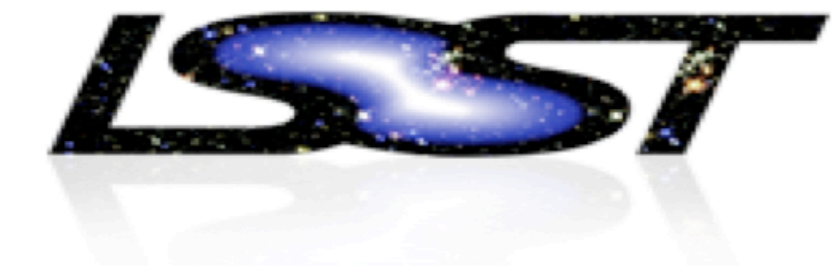


Image Credit: Rubin Observatory/NSF/AURA

5+ million Solar System objects, 1+ billion observations!

	Currently Known	LSST Discoveries	Typical number of observations
Near Earth Objects (NEOs)	~20,000	200,000	(D>250m) 60
Main Belt Asteroids (MBAs)	~650,000	6,000,000	(D>500m) 200
Jupiter Trojans	~7000	280,000	(D>2km) 300
TransNeptunian Objects (TNOs) + Scattered Disk Objects (SDOs)	~3000	40,000	(D>200km) 450
Comets	~3000	10,000	?
Interstellar Objects (ISOs)	2	10	?

The 24-hr Solar System Processing Loop



See the handout at <http://ls.st/Document-29545> for a one-page summary!

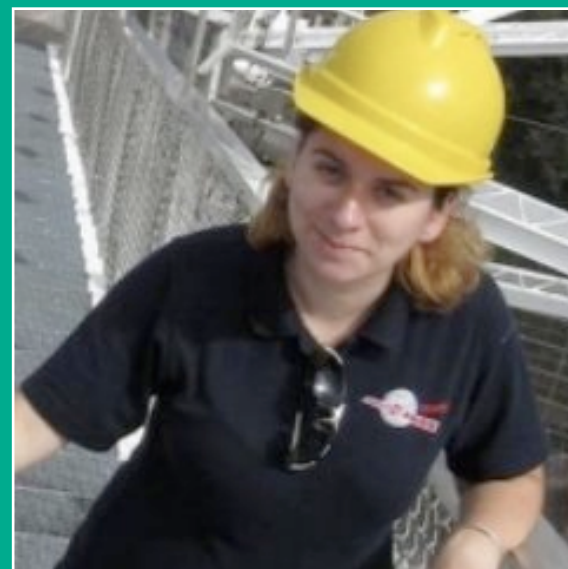
LSST Solar System Science Collaboration (SSSC)



Meg Schwamb & David Trilling
SSSC Co-Chairs



Darin Ragozzine & Gal Sarid
Publication Coordinators



Colin Orion Chandler & Agata Rożek
Early Career Representatives



Active objects Working Group (Lead: Mike Kelley): broadly consisting of all categories of activity in the minor planet populations: short period comets, long period comets, main belt comets, impact- or rotationally-generated active asteroids, etc



Community software/infrastructure development Working Group (Lead: Henry Hsieh): broadly consisting of people interested in helping build databases, software packages, etc to be used by the Solar System community on LSST data



Inner Solar System Working Group (Lead: Bryce Bolin): broadly consisting of the main belt, Mars/Jupiter Trojans, and Jupiter irregular satellites

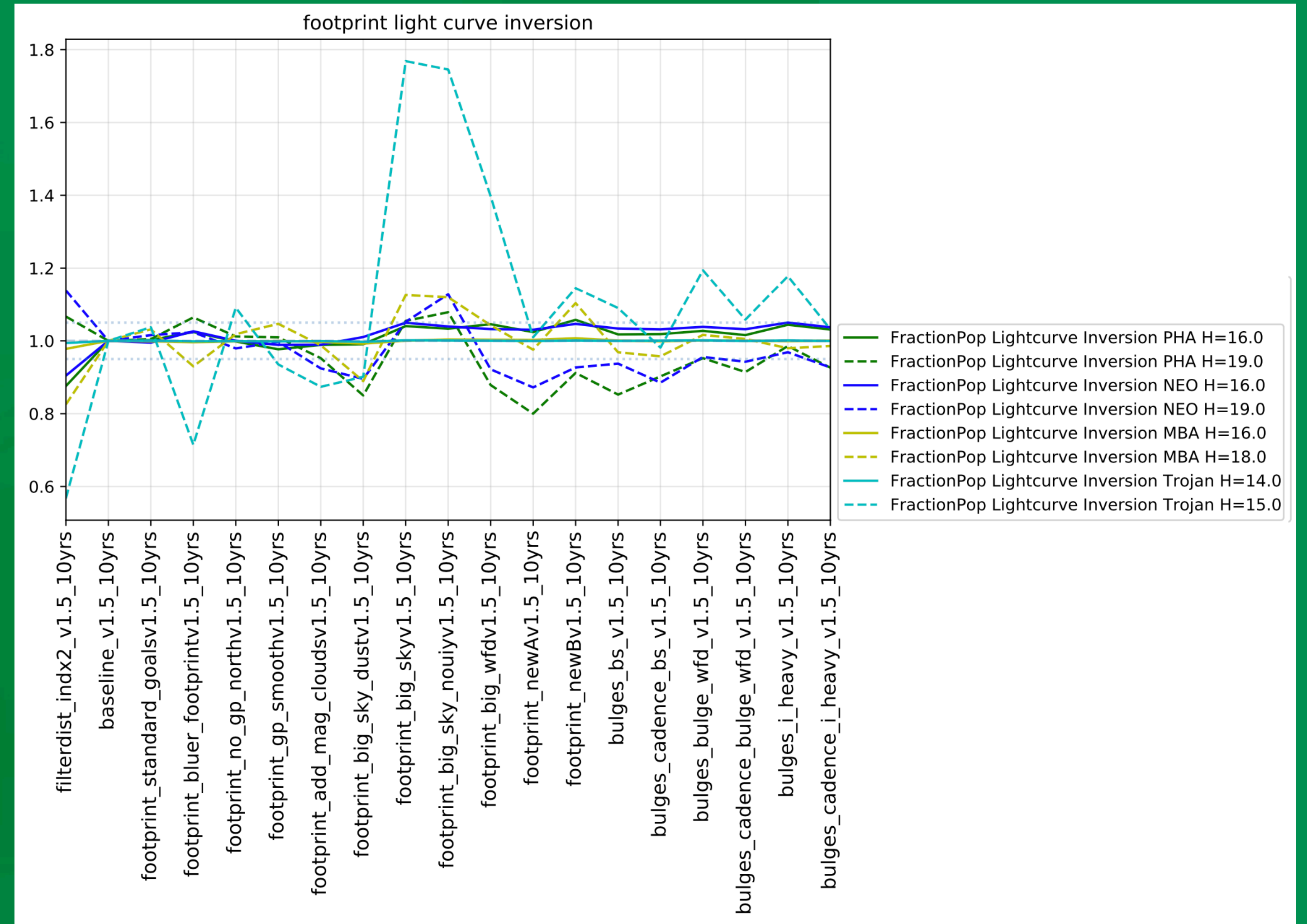


NEOs (Near Earth Objects) and Interstellar Objects Working Group (Lead: Sarah Greenstreet): broadly consisting of objects on orbits inward of or diffusing inward from the main belt as well as interstellar objects temporarily residing in the Solar System



Outer Solar System Working Group (Lead: Michele Bannister): broadly consisting of KBOs, Centaurs, Oort cloud, Saturn/Neptune/Uranus Trojans, and Saturn/Neptune/Uranus irregular satellites

2020-2021 Action- Giving Input on LSST Cadence Decision



SSSC Cadence Note:

http://lsst-sssc.github.io/Files/SSSC_cadence_note.pdf

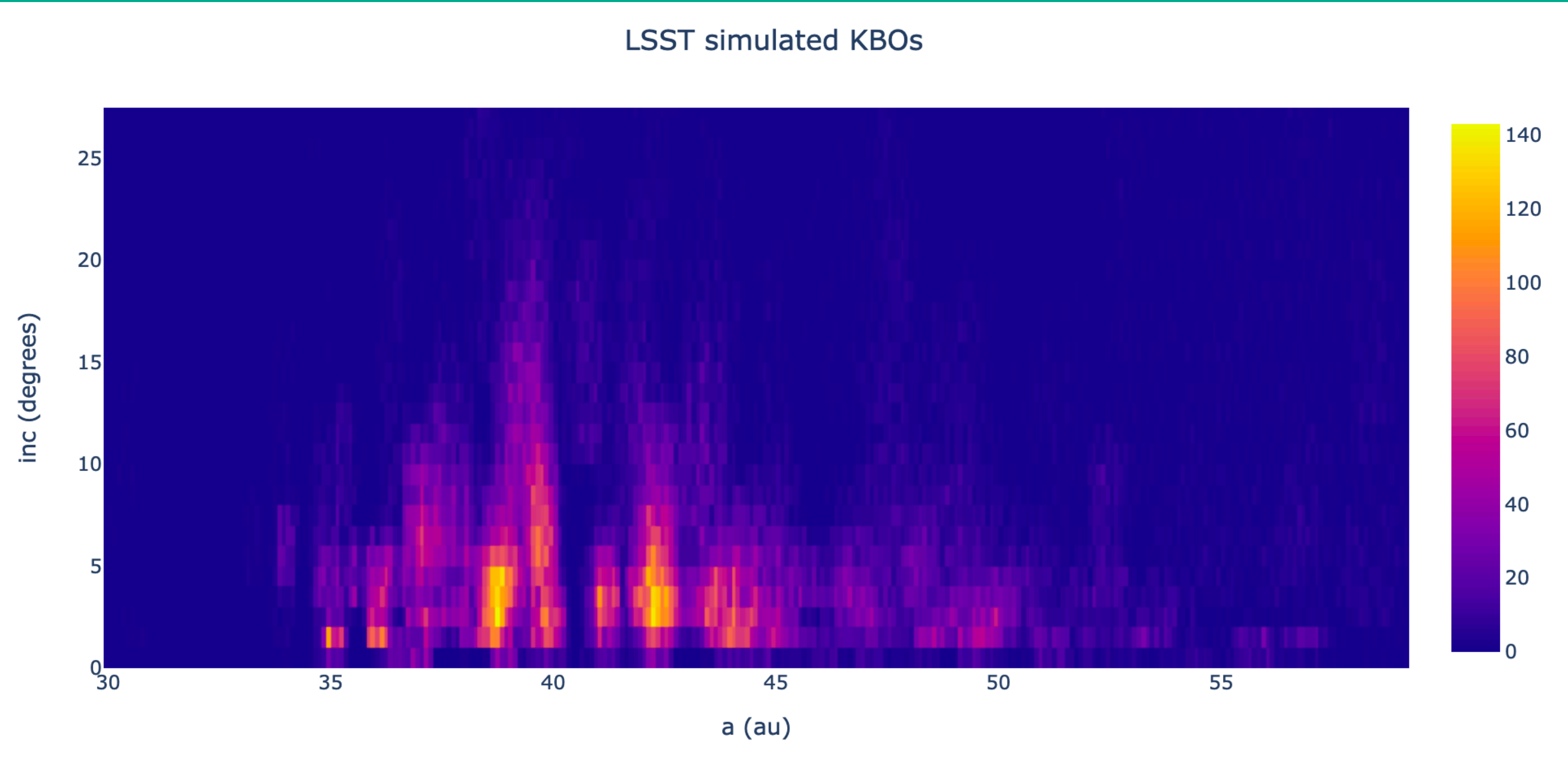
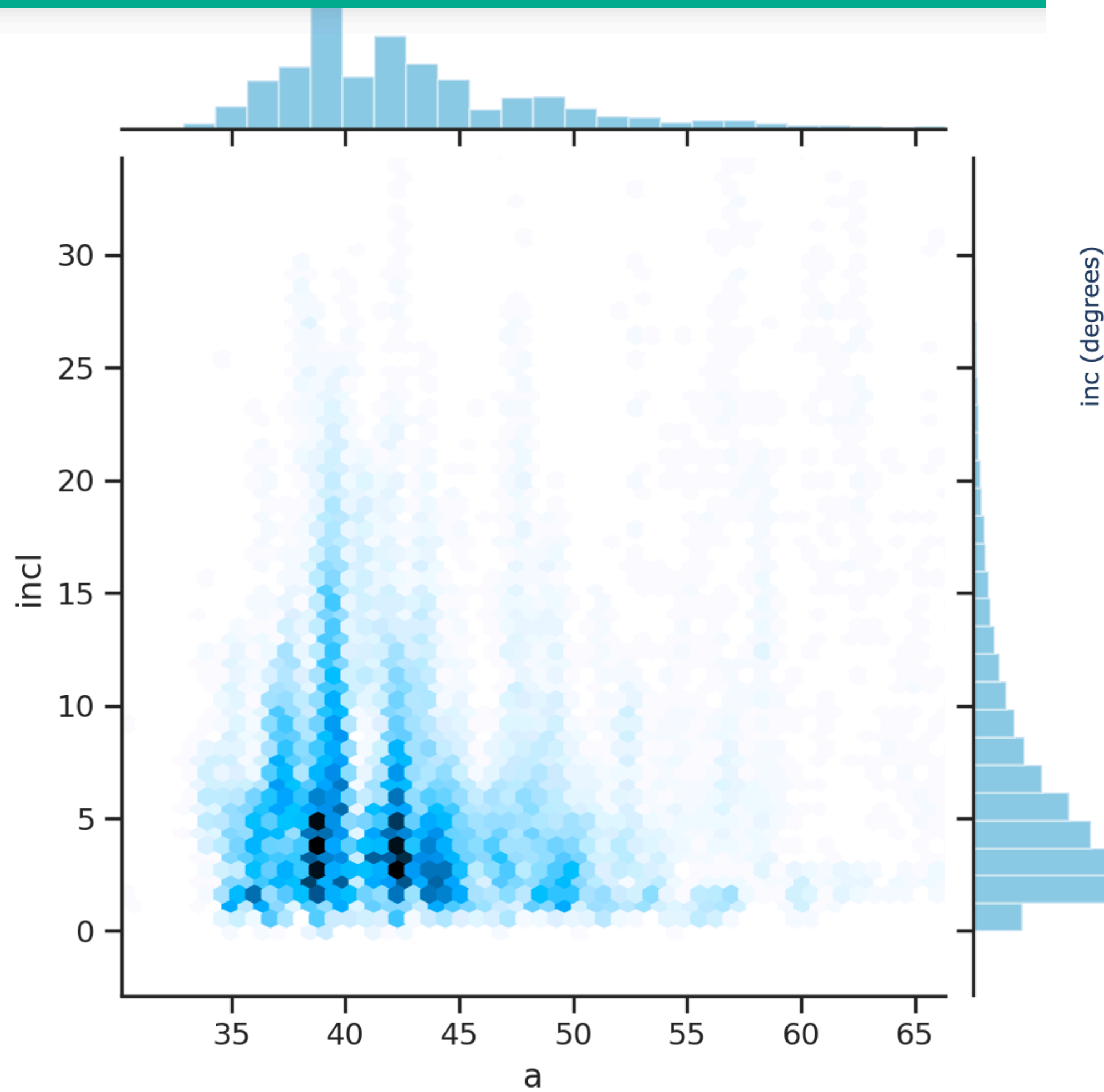
2021 Goals - Thinking about Observing Follow-up



- How can the SSSC be most useful?
- Helping link interested proposers together?
- How do we learn from the astrophysical transients community?

(virtual) LSST Solar System Readiness Sprint
June 22, 24, & 29th

2021 Goals - Software Development with Simulated Solar System Data Products and Precursor Datasets

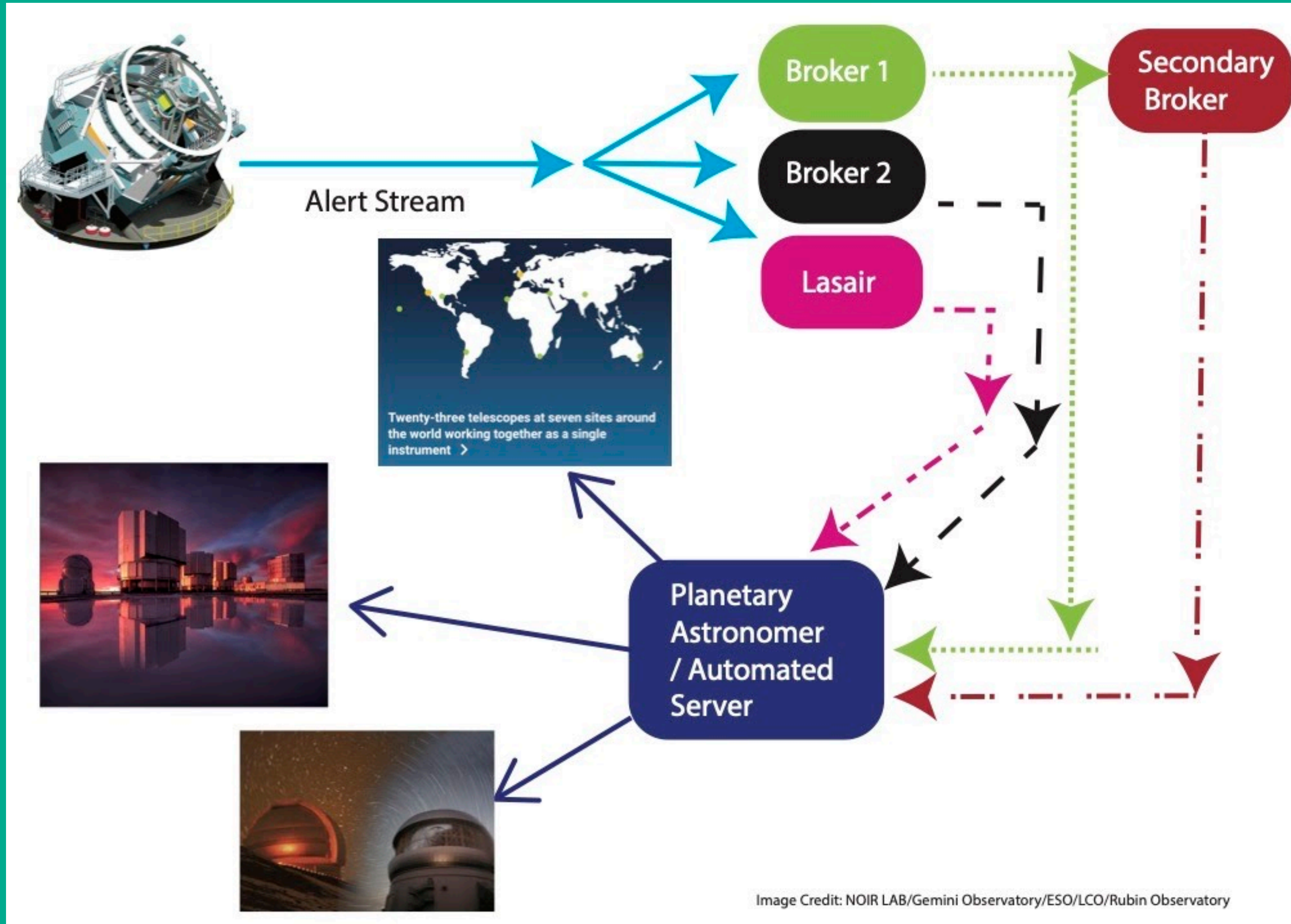


What is the SSSC doing for early career researchers and supporting a diverse research community?

In the future more virtual events + the yearly in-person readiness sprint

	# of Attendees	# of women and gender minorities	# of ethnic / race minorities	# of early career
2018 Sprint (Seattle) LSSTC funding	25	5	3	9
2019 Sprint (Chicago)	14	2	1	3
2020 Sprint (Virtual)	53	14	6	20

SSSC and LSST:UK members exploring opportunities for Solar System Science with Lasair



More details can be found on the SSSC's webpage

[Home](#) [About](#) [News](#) [Code of Conduct](#) [Charter](#) [Publication Policy](#) [Working Groups](#) [Science Cases](#) [Data Products](#) [Docs](#) [Membership](#) [Software](#) [Blog](#)

LSST Solar System Science Collaboration

Over its 10 year lifespan, [the Vera C. Rubin Observatory's Legacy Survey of Space and Time \(LSST\)](#) will catalog over 5 million Main Belt asteroids, almost 300,000 Jupiter Trojans, over 100,000 NEOs, and over 40,000 KBOs. Many of these objects will receive hundreds of observations in multiple bandpasses. The LSST Solar System Science Collaboration (SSSC) is preparing methods and tools to analyze this data, as well as understand optimum survey strategies for discovering moving objects throughout the Solar System.



www.lsstsssc.org