STScI | SPACE TELESCOPE SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

Proposing for JWST

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JWST Project Scientist, STScI

Four JWST Science Themes

FIRST LIGHT & REIONIZATION

Webb will be a powerful time machine with infrared vision that will peer back over 13.5 billion years to see the first stars and galaxies forming out of the darkness of the early universe.

Read More▶

ASSEMBLY OF GALAXIES

Webb's unprecedented infrared sensitivity will help astronomers to compare the faintest, earliest galaxies to today's grand spirals and ellipticals, helping us to understand how galaxies assemble over billions of years.

Read More▶

BIRTH OF STARS & PROTOPLANETARY SYSTEMS

Webb will be able to see right through and into massive clouds of dust that are opaque to visible-light observatories like Hubble, where stars and planetary systems are being born.

Read More▶

PLANETS & ORIGINS OF LIFE

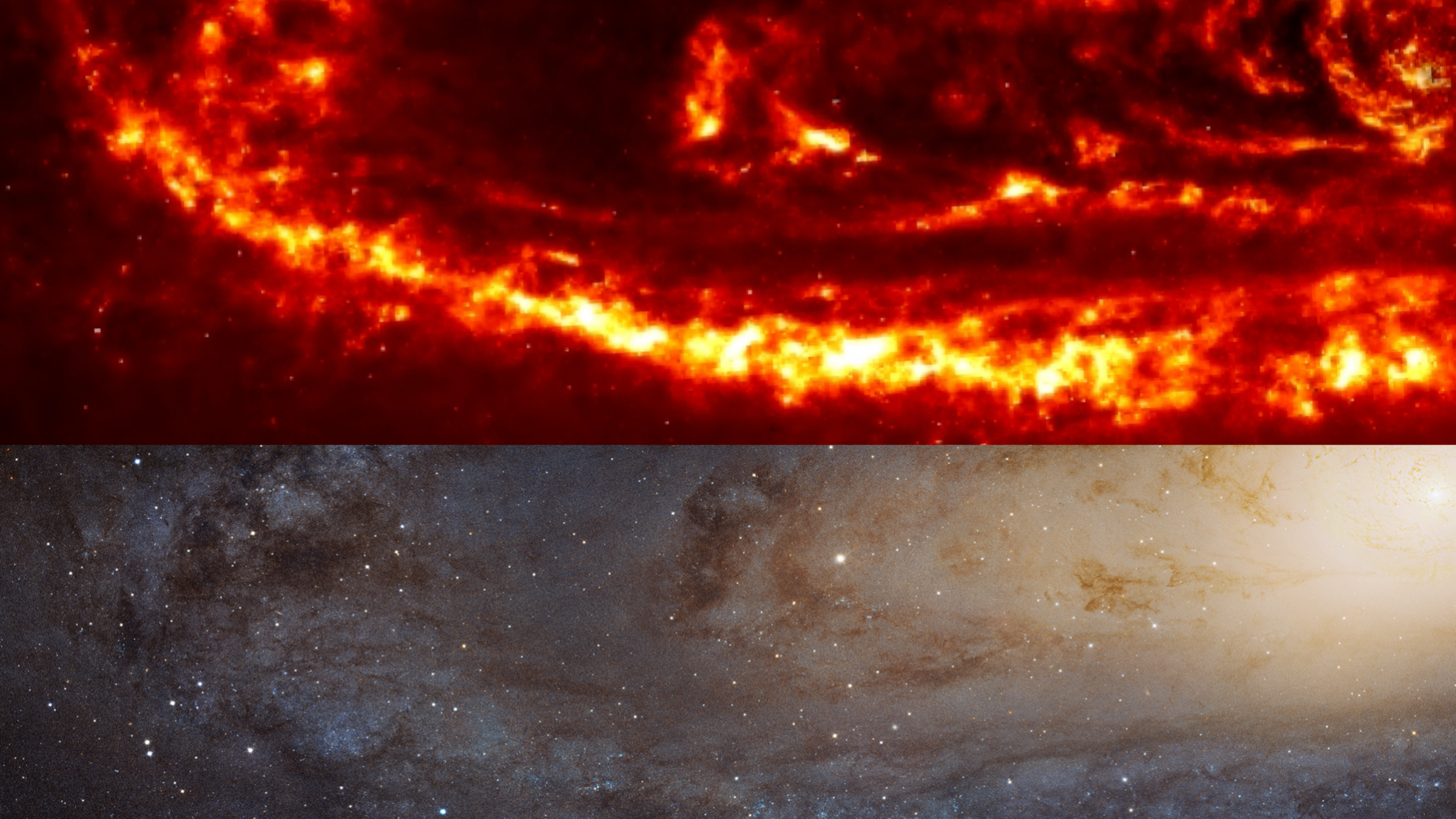
Webb will tell us more about the atmospheres of extrasolar planets, and perhaps even find the building blocks of life elsewhere in the universe. In addition to other planetary systems, Webb will also study objects within our own Solar System.

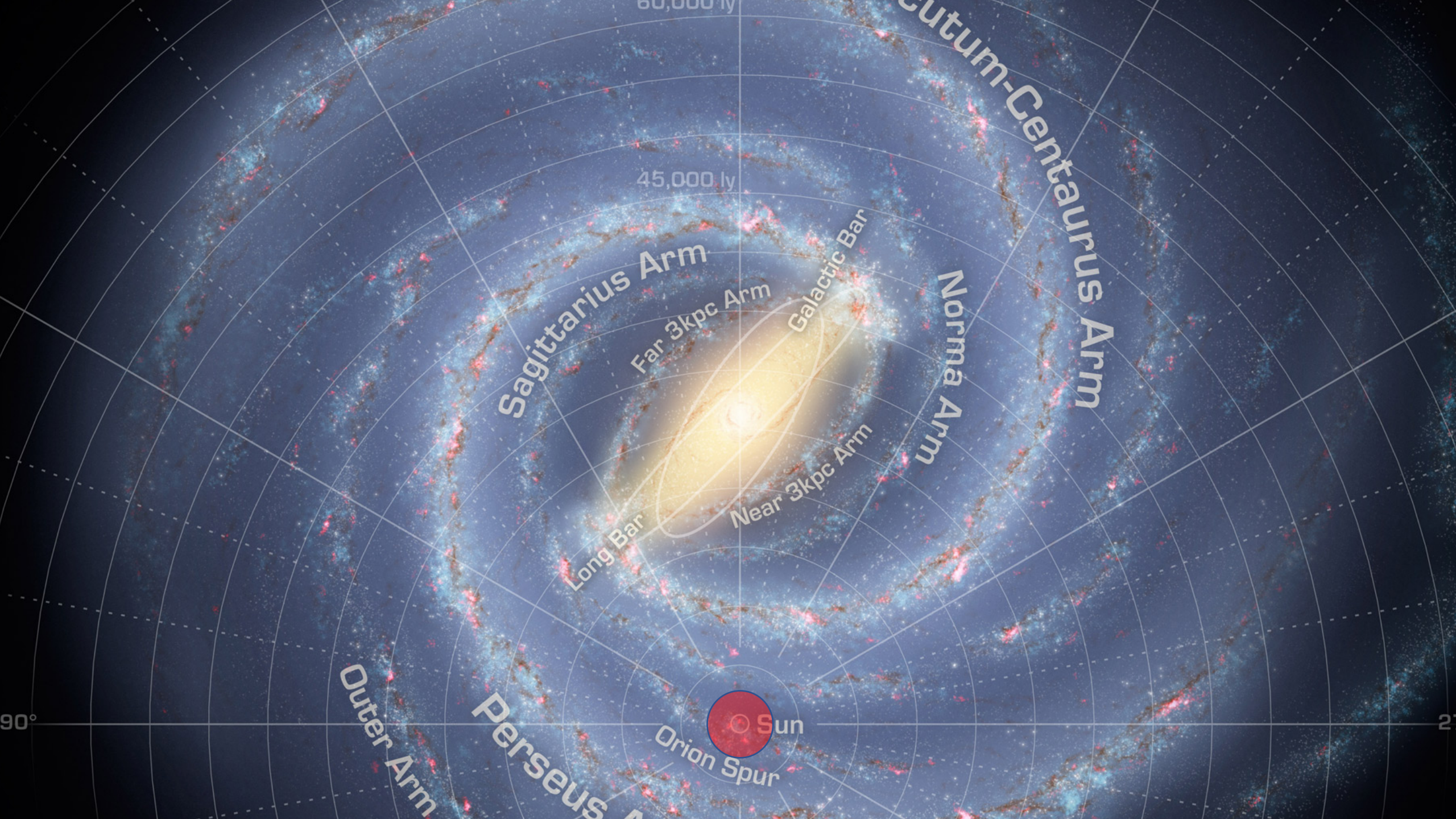
Read More▶

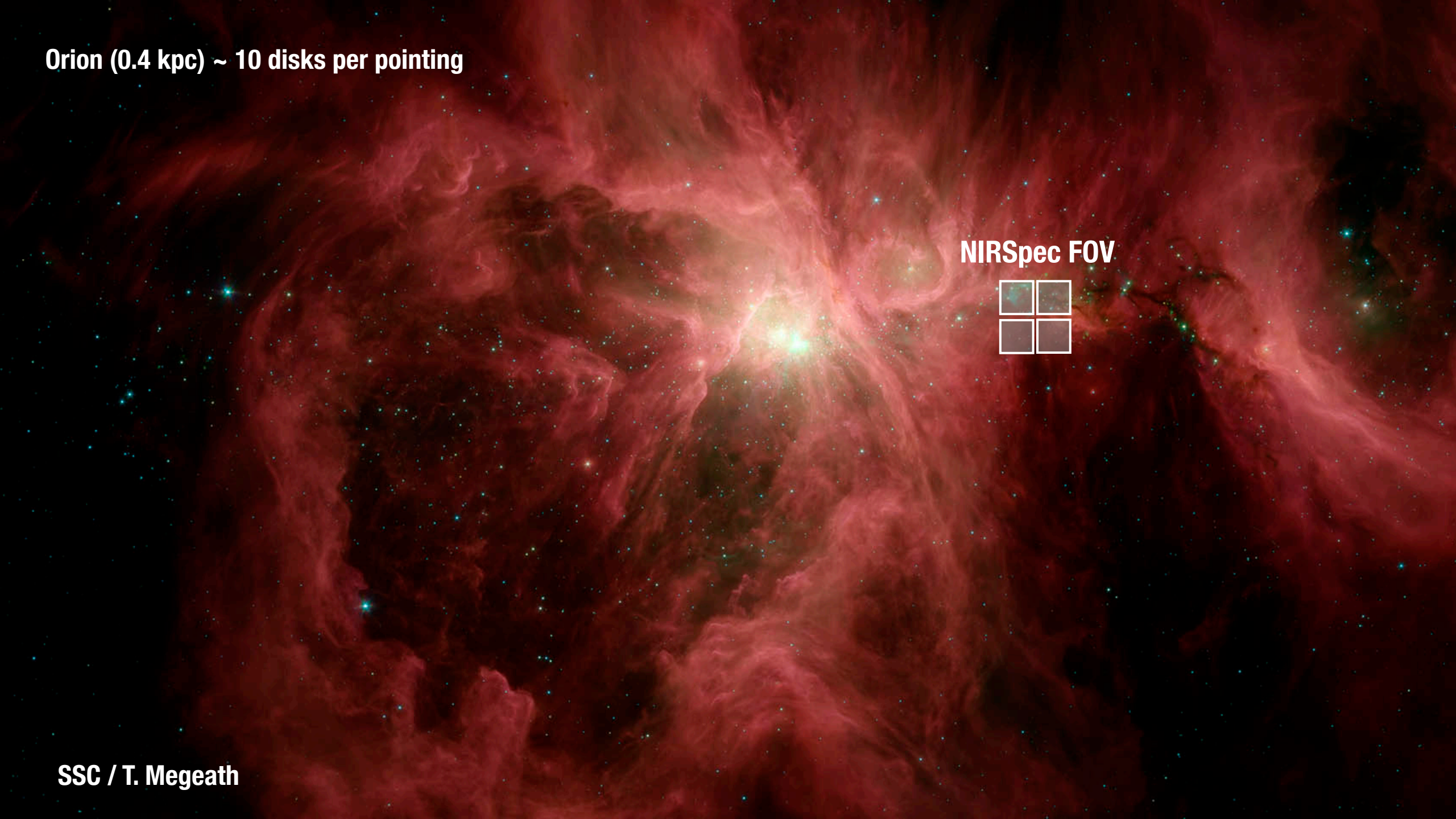
From jwst.nasa.gov

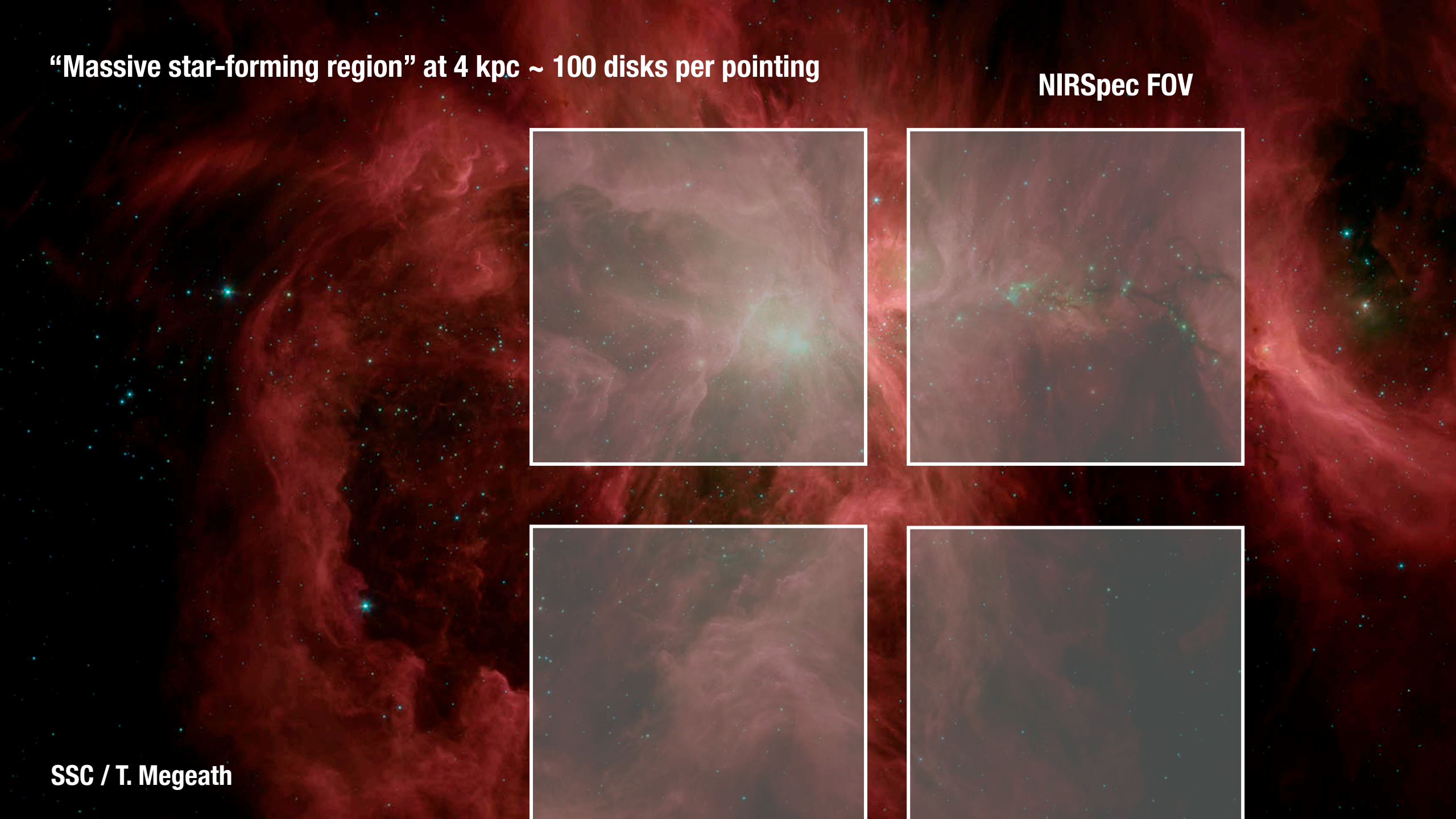
DISCOVERY SPACE

Webb will discover the unanticipated!



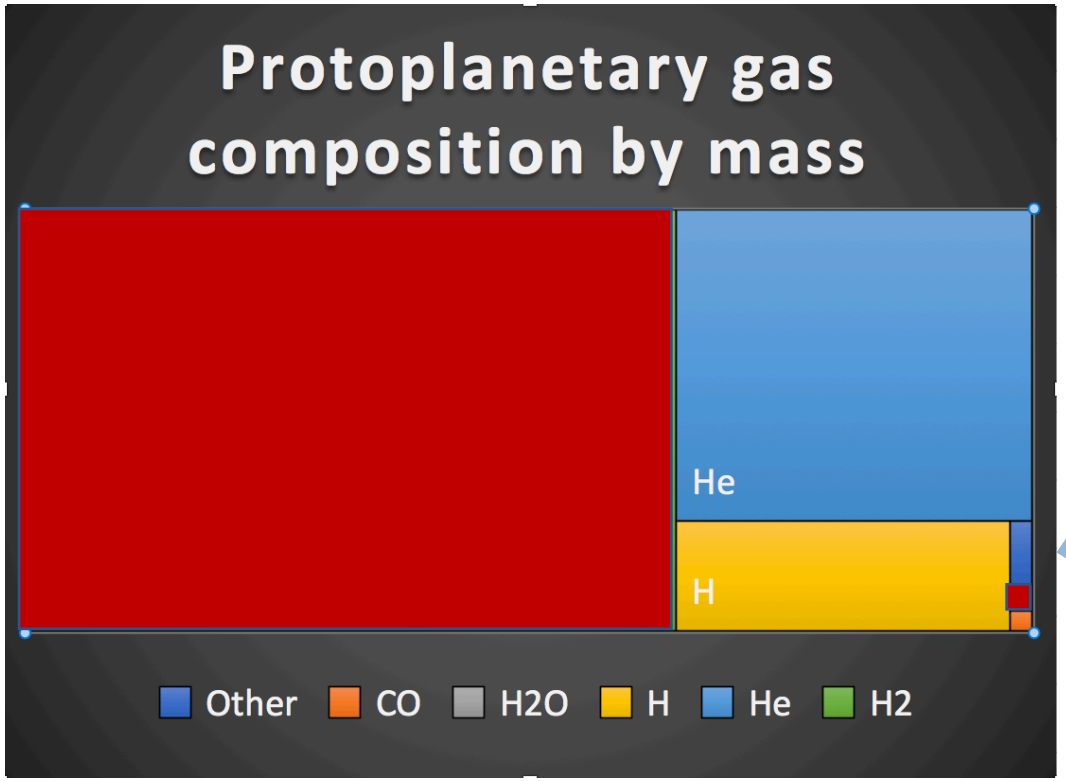

60,000 ly
45,000 ly
Scutum-Centaurus Arm
Sagittarius Arm
Far 3kpc Arm
Galactic Bar
Norma Arm
Near 3kpc Arm
Long Bar
Sun
Orion Spur
Outer Arm
Perseus
90°

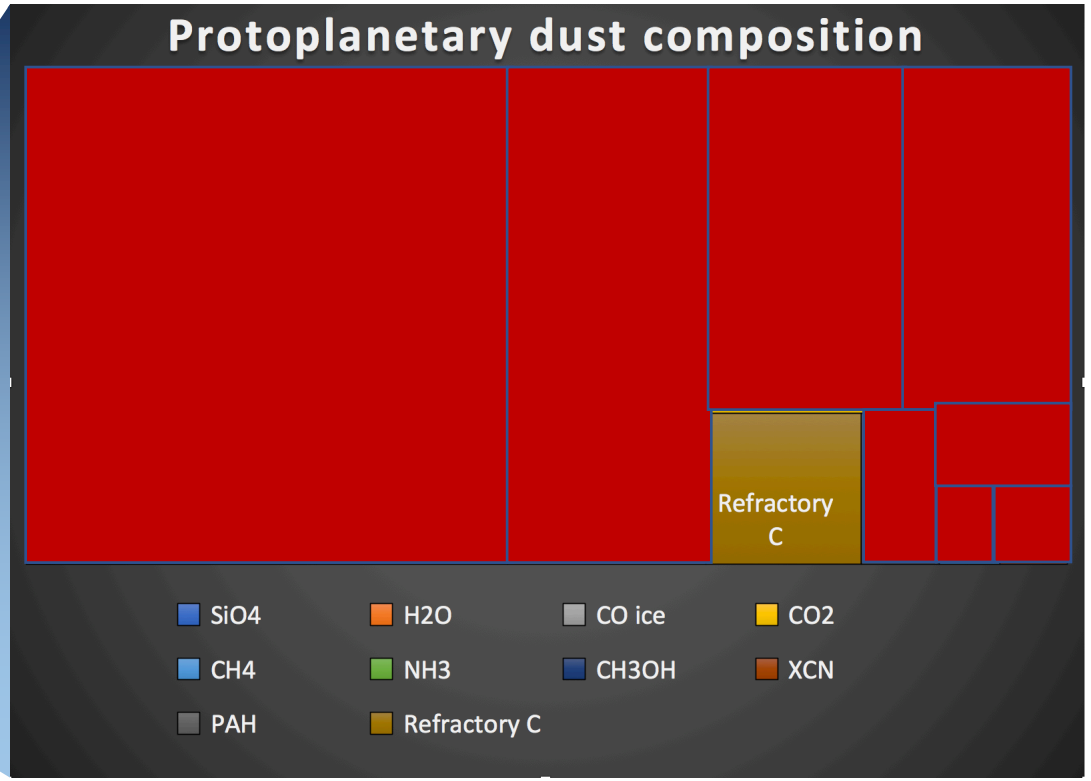

Orion (0.4 kpc) ~ 10 disks per pointing
NIRSpec FOV
SSC / T. Megeath


“Massive star-forming region” at 4 kpc ~ 100 disks per pointing
NIRSpec FOV
SSC / T. Megeath

Bulk composition of gas and dust in the ISM

The IR is needed to measure the bulk composition of the ISM (near and far)





AAS JWST events

- JWST Proposal Preparation Workshop
  - When: Friday, January 3, 8.30am-5.00pm
- JWST Town Hall
  - When: Sunday, January 5, 6.30pm-8.00pm
  - Refreshments courtesy of Northrop Grumman
- JWST Open House
  - When: Sunday, January 5, 9.30am-11.30am (IFUs)
  - Monday, January 6, 9.30am-11.30am (Grisms)
  - Tuesday, January 7, 9.30am-11.30am (NIRSpec MSA)
- JWST Exhibitors
  - NASA Booth (Questions about Project Status)
  - STScI Booth (Questions about Science operations, proposal planning)

Getting started

https://jwst-docs.stsci.edu/getting-started-guide

JWST uses single-stream proposal submission – observations are mostly defined at submission, with some exceptions.

1. Know the deadline – May 1, 2020
2. Follow @JWSTObserver on Twitter or Facebook for the latest news
3. Become familiar with the JWST capabilities, terminology, and documentation
4. Determine if your targets can be observed (check duplication and visibility)
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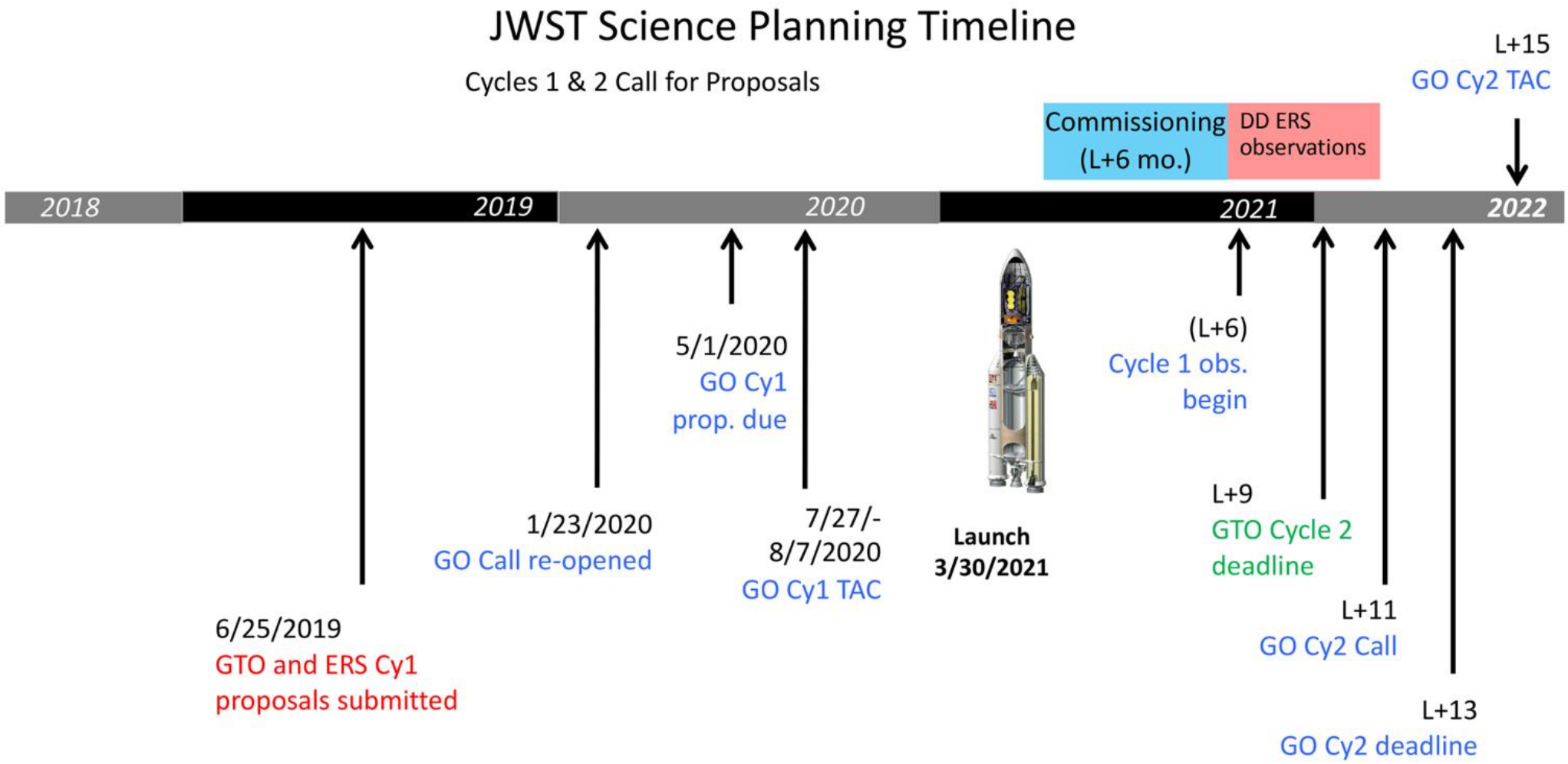
JWST Science Timeline



JWST GO Cycle 1 structure

- Anticipate receiving 1000-1600 proposals for GO/AR programs in Cycle 1.
- Approximately 6000 hours of observing time will be available to General Observer (GO) programs.
- The approximate breakdown of observing time per size category is as follows:
  - 3500 hours for **Small Programs** (totaling less than 25 hours),
  - 1500 hours for **Medium Programs** (25 to 75 hours),
  - 1000 hours for **Large Programs** (>75 hours).

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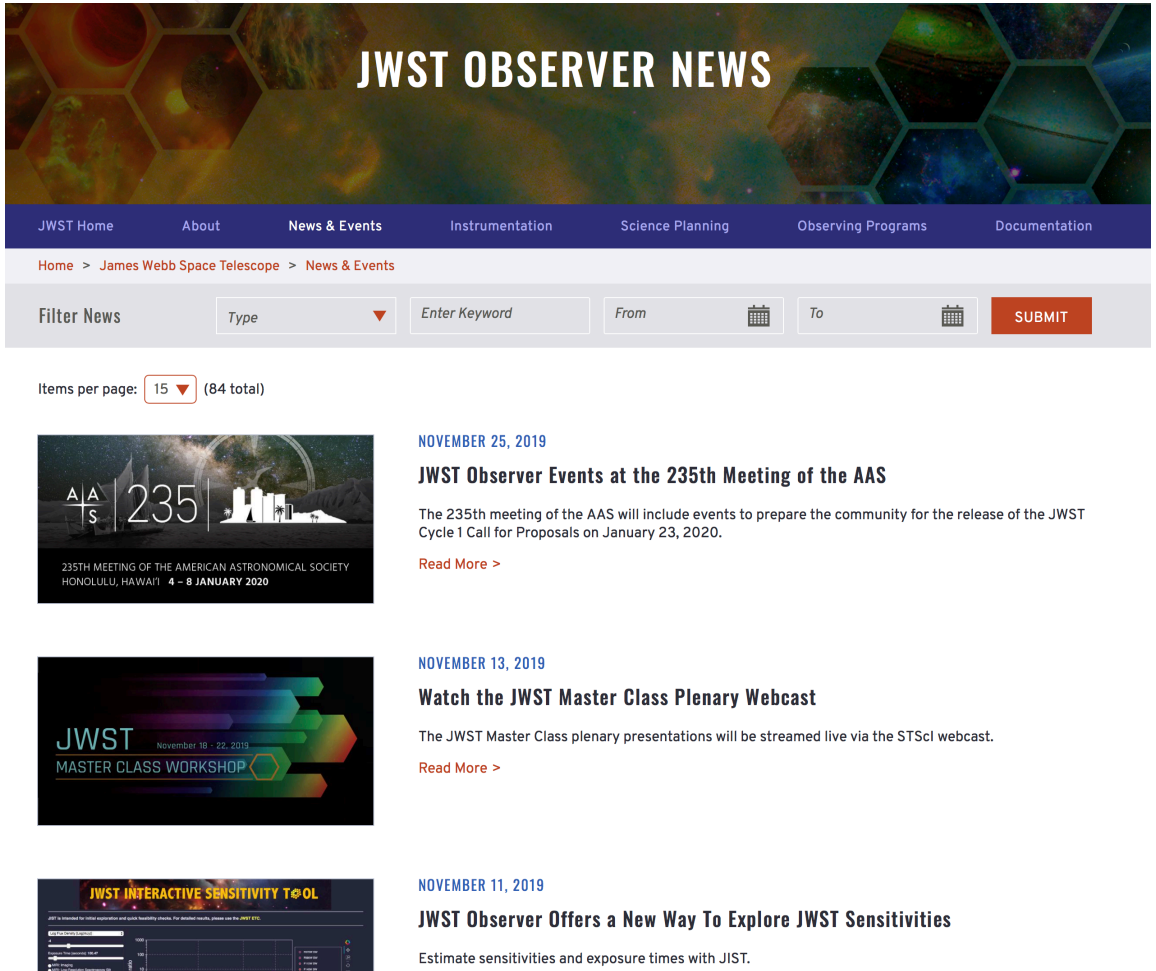
JWSTObserver News



JWSTObserver news is duplicated on

- jwst.stsci.edu
- Social media (Twitter+FaceBook)
- Email newsletter roundup
- You can also check the call for proposals' *Late Breaking News*

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Improved JDox navigation and new example science programs

Proposing Opportunities

- JWST Cycle 1 Proposal Opportunities
- JWST General Science Policies

Proposal Preparation

- Getting Started Guide
- Understanding Exposure Times
- Methods and Roadmaps
- Example Science Programs
- Observing Strategies
- JWST Duplication Checking
- JWST Observatory Functionality
- JWST Observatory Hardware

Proposing Tools

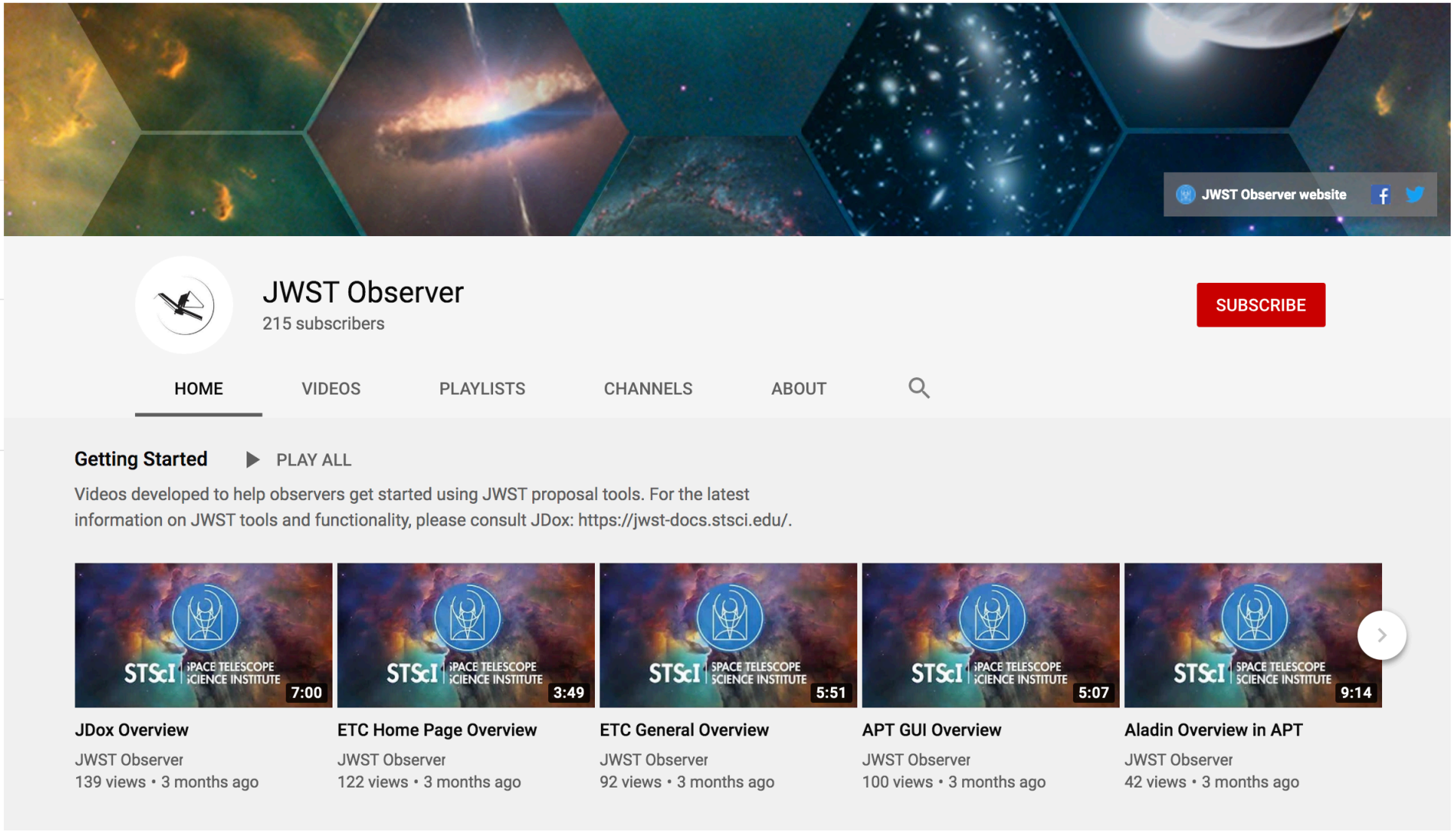
- Exposure Time Calculator
- Astronomer's Proposal Tool
- Observation Templates

Example science programs by instrument

Table 1. Example science programs

Program reference #	Prime instrument(s) and template(s)	Parallel instrument and template (if any)	Example science program title (links go to the relevant articles)
MIRI			
28	MIRI MRS	---	MIRI MRS Spectroscopy of a Late M Star
(See other MIRI examples in the Multi-instrument section.)			
NIRCam			
22	NIRCam Imaging	MIRI Imaging	NIRCam Deep Field Imaging with MIRI Imaging Parallels
29	NIRCam TIme-Series	---	NIRCam Time-Series Imaging of HAT-P-18 b
30	NIRCam Grism Time-Series	---	NIRCam Grism Time-Series Observations of GJ 436b
37	NIRCam WFSS	---	NIRCam WFSS Deep Galaxy Observations

New video tutorials



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MAST portal and program information tool

Home > James Webb Space Telescope > Observing Programs

To obtain information about a specific program, enter the **Program ID** or the **Investigator's Name** and hit one of the buttons to the right of the entry box.

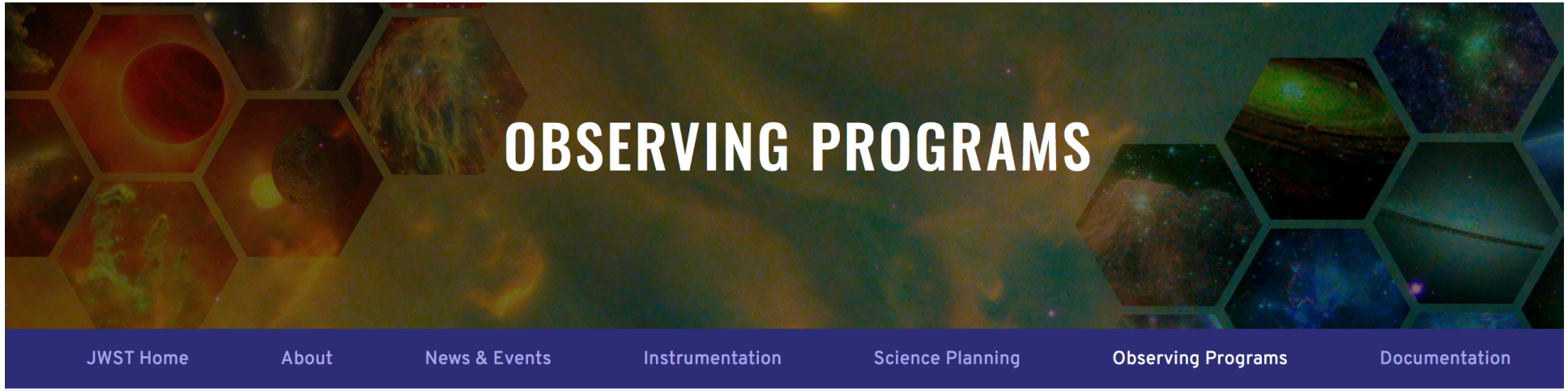
When entering an investigator's name, either just the **LAST** name or both the **FIRST** and **LAST** name may be specified.

Program ID #: 1208 Get Program Information Clear Field

Investigator: First Name Last Name Find PI Programs Find PI and CoI Programs Clear Fields

Comments to: JWST Help Desk

Archival proposals can be based on ERS and some GTO programs



Science Observations with JWST

Learn more about the approved JWST observing programs:

- Program Information lookup tool
- Approved ERS programs
- Approved GTO programs

These links provide access to JWST data and tools to facilitate the translation of that data into scientific knowledge:

- Data Analysis Toolbox
- Mikulski Archive for Space Telescopes (MAST)

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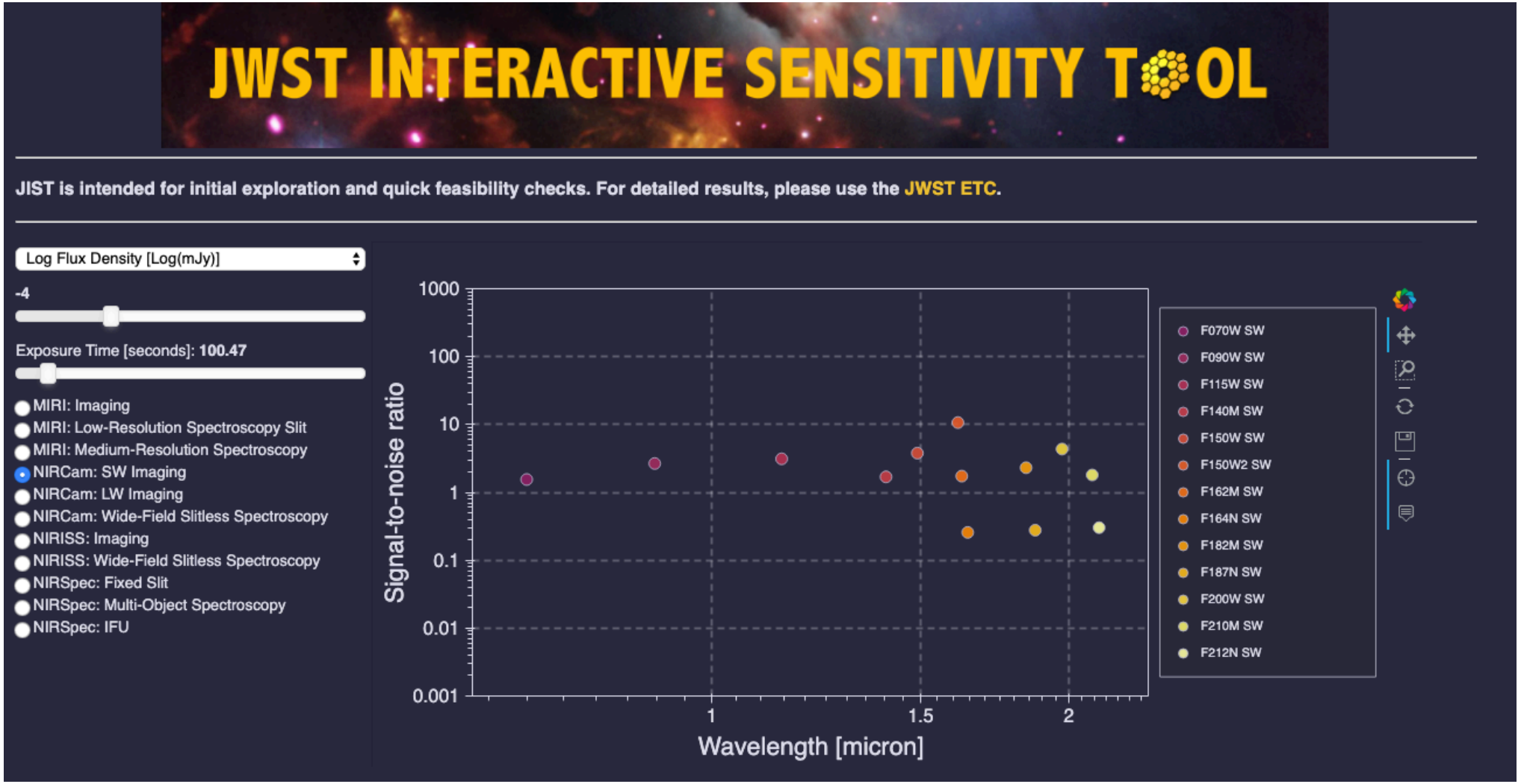
JWST Interactive Sensitivity Tool (jist.stsci.edu)



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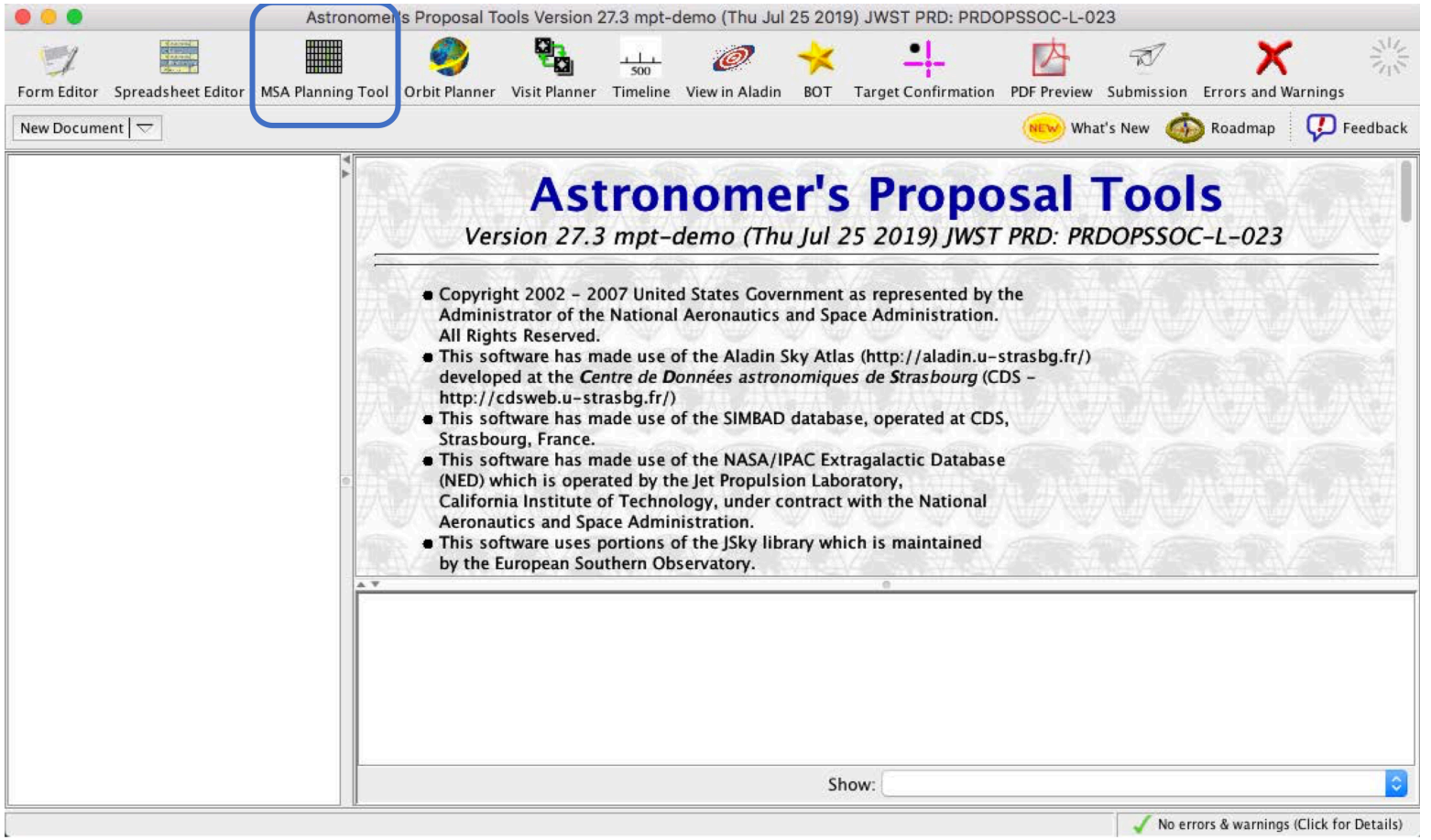
APT release schedule during the Cycle 1 call

- Our understanding of the observatory and its performance has improved.
- We are working hard on providing you with the best available sensitivities and timing model.
- Changes are relatively minor – there is no reason to wait for the last version!
- APT release schedule (note new version numbering system)
  - 2020.1.1 (January 21, 2020)
    - Includes the new NIRSpec Multi-Shutter Array Planning Tool (MPT).
  - 2020.2 (Early March, 2020) – To be used with your final proposal submission.



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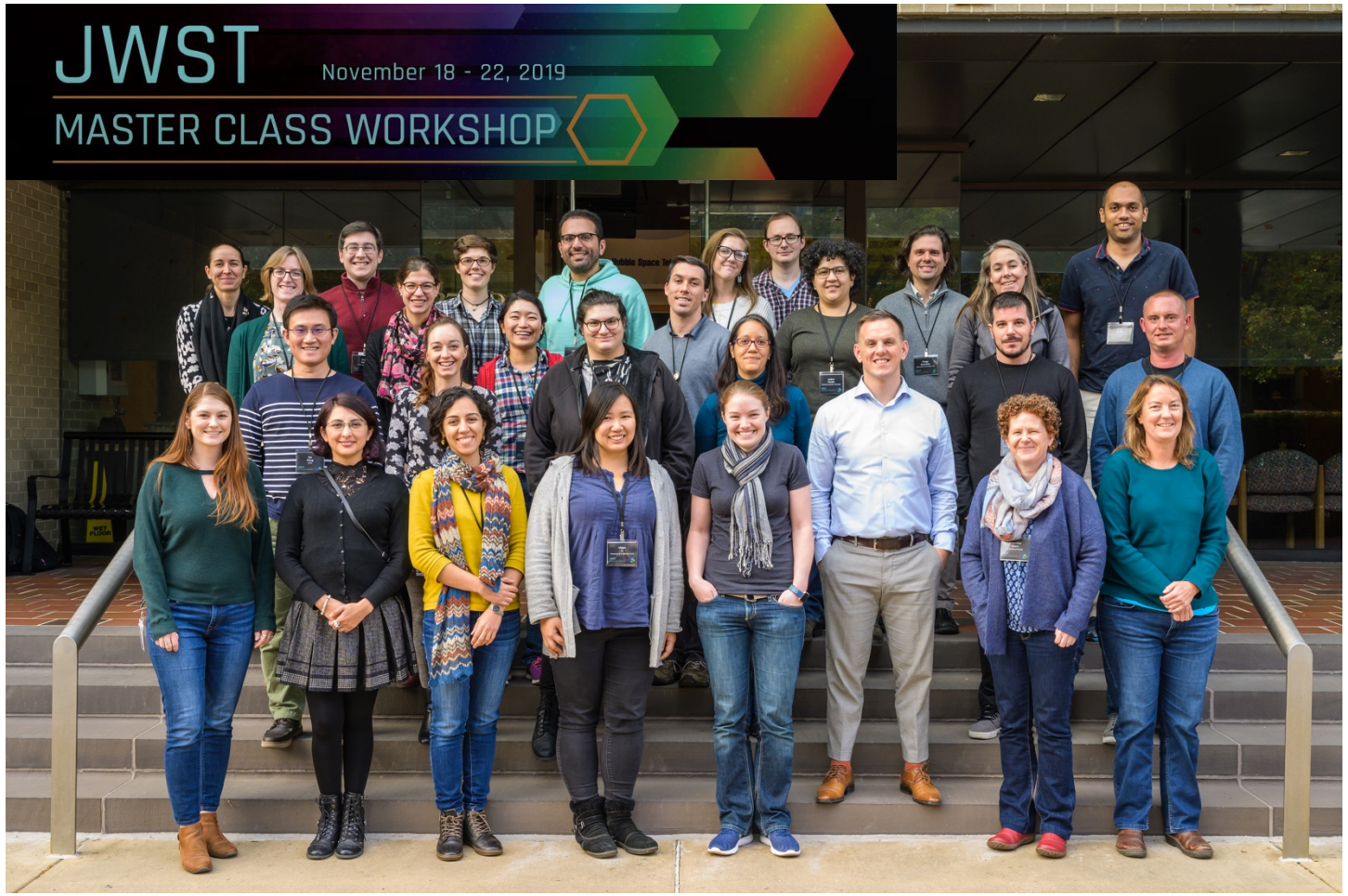
Training opportunities

- JWST Town Hall Presentation by Katey Alatalo



- 1st JWST Master Class – training the trainer
  - Intensive 4.5 day workshop at STScI
  - Took place November 18-22, 2019
  - Cohort of 28 participants
- Local community workshops
  - **The Master Class Graduates committed to hosting local training workshops**
  - >30 workshops being planned
  - January-March 2020 time frame
  - Supported remotely by STScI
  - http://www.stsci.edu/jwst/science-planning/proposal-training
- All teaching materials collected in a "Workshop-in-a-box"
  - Also useful for self-teaching