



STScI | SPACE TELESCOPE
SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

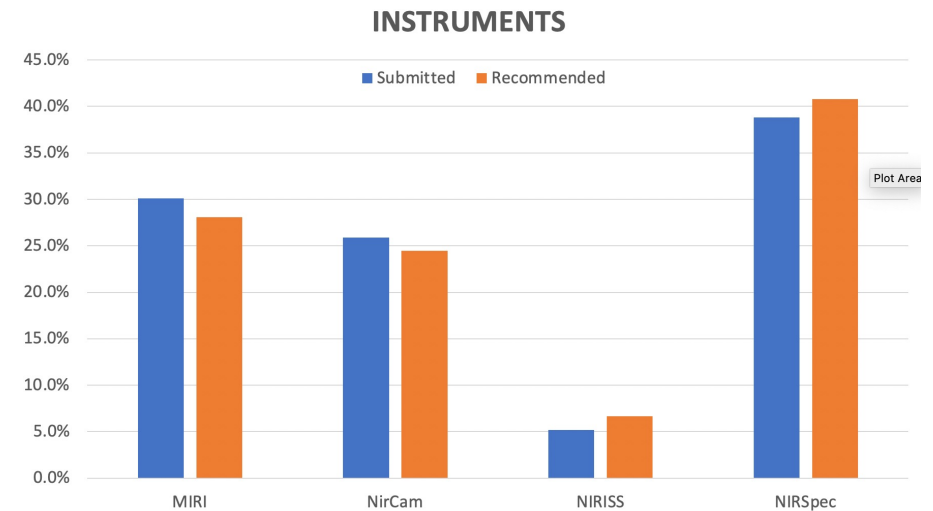
JWST Cycle 1 General Observer (GO) Program

STScI Townhall
238th Meeting of the American Astronomical Society



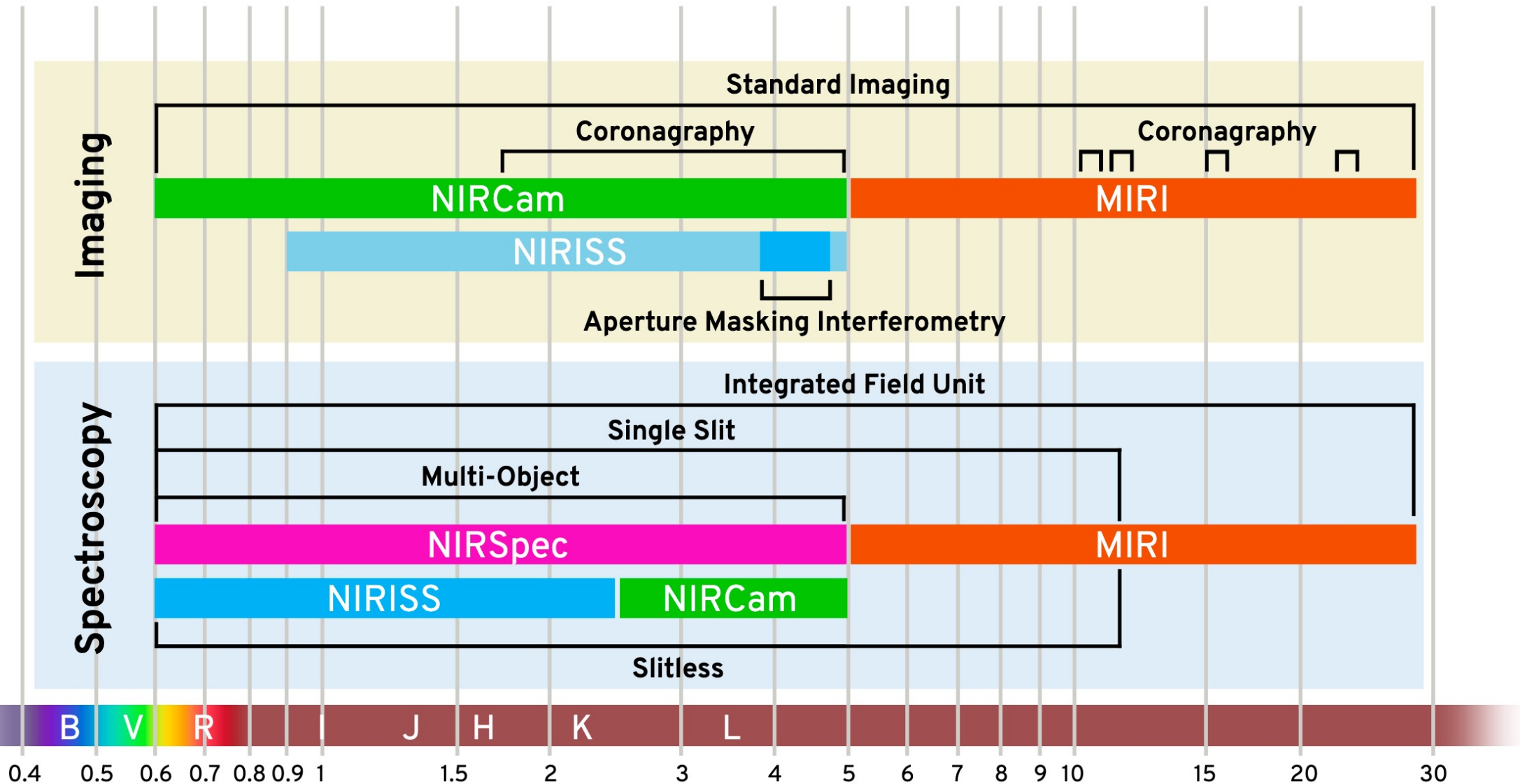
Executive Summary

- Offered up to 6,000 hours of observatory time for General Observers (GOs), with approximately
 - 3,500 hours for Small proposals (≤ 25 hours),
 - 1,500 hours for Medium proposals (> 25 hours and ≤ 75 hours)
 - 1,000 hours for Large proposals (> 75 hours)
- Acceptance Rate
 - GO 1 in 4 for proposals and Hours
 - Small 52% of time – 1 in 4.1
 - Medium 32% of time – 1 in 3.8
 - Large Rates 16% of time - 1 in 4.75
 - Archival Research 20/75 = 1 in 3.75
 - Regular 15 approved
 - Theory 5 approved
- Instruments: MIRI 28.1%, NIRCcam 24.4%, NIRISS 6.7%, NIRSPEC 40.8%
 - Imaging 30% vs Spectroscopy 70%
- For more information about the review, see STScI Newsletter article:
<https://www.stsci.edu/contents/newsletters/2021-volume-38-issue-01/the-jwst-cycle-1-go-ar-proposal-review>



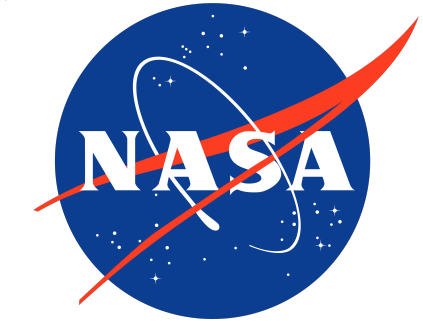


Instruments





GO Cycle 1 Principal Investigators (PIs)

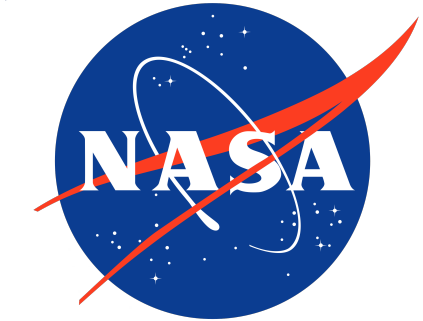


<u>Country</u>	<u>Submitted</u>	<u>Approved</u>	<u>Country</u>	<u>Submitted</u>	<u>Approved</u>
Australia	9	3	Italy	37	9
Austria	2	1	Japan	37	3
Belgium	6	1	Korea	4	
Brazil	5	2	Mexico	3	
Canada	43	10	Portugal	2	
Chile	14	1	Russia	1	
China	5	1	Spain	24	2
Denmark	16	5	Sweden	20	3
France	45	6	Switzerland	19	9
Germany	53	14	Taiwan	8	2
Greece	5	2	Thailand	1	
			The Netherlands	29	10
Hungary	1	1	United Kingdom	101	22
Ireland	3	1	United States	680	179
Israel	1				
CSA Proposals	44	10	ESA Proposals	374	91

Approximately 33.5% of successful proposals are led by PIs from ESA countries, 4% by PIs from Canada



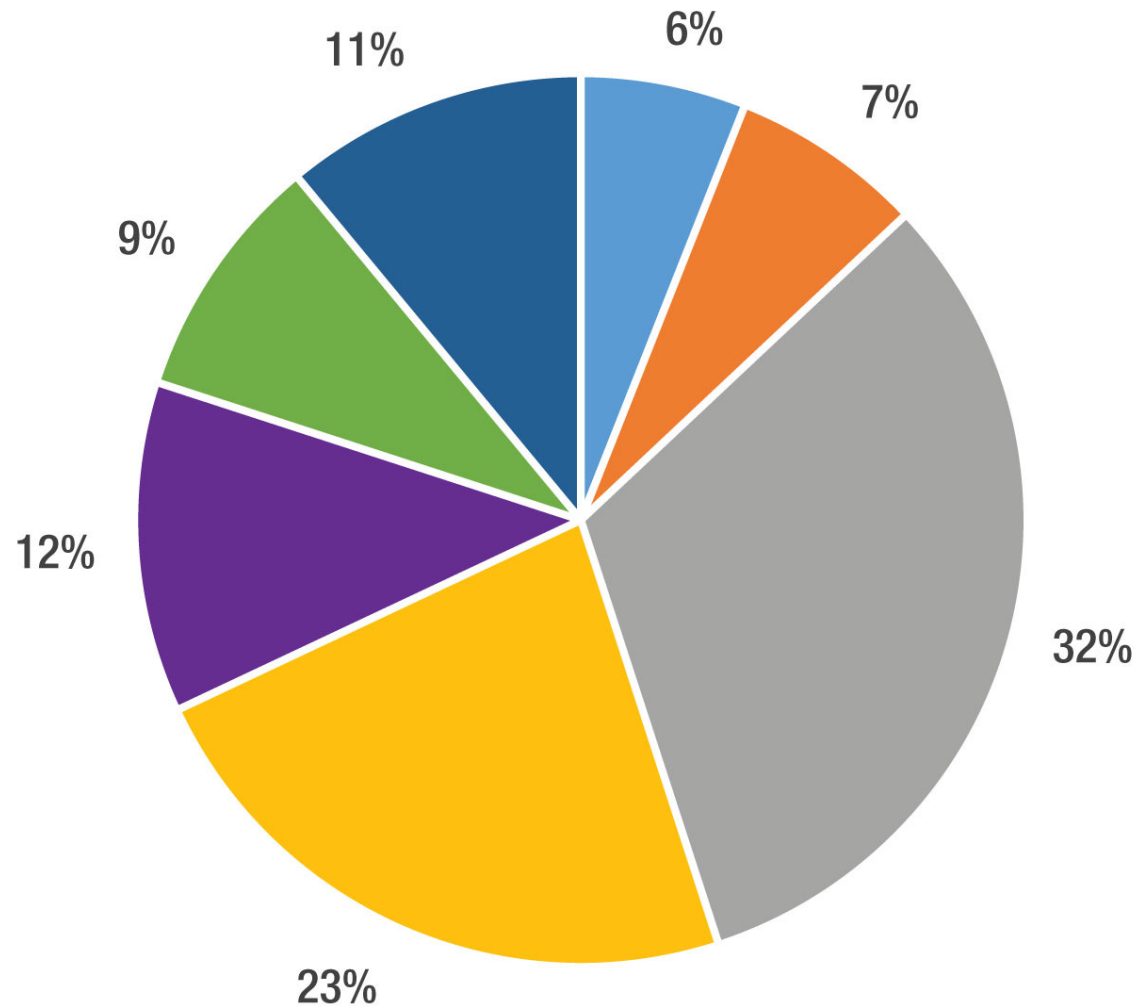
GO Cycle 1 Co-Investigators (Co-Is)










Country	Submitted	Approved	Country	Submitted	Approved	Country	Submitted	Approved
Abu Dhabi	2		Greece	32	6	Portugal	30	10
Argentina	2	1	Hungary	22	7	Russia	12	4
Australia	199	77	India	22	5	Serbia	6	2
Austria	24	9	Iceland	12	3	South Africa	13	3
Belgium	99	27	Iran	4	1	Spain	333	76
Brazil	44	15	Ireland	39	16	Sweden	170	50
Canada	352	72	Israel	38	21	Switzerland	305	121
Chile	183	43	Italy	576	149	Taiwan	43	10
China	89	27	Japan	389	104	Thailand	9	1
Cyprus	4		Korea	44	11	The Netherlands	399	134
Czech Republic	13	2	Lebanon	1		Turkey	3	1
Denmark	269	79	Mexico	35	5	Ukraine	7	4
Finland	19	3	New Zealand	4	1	United Kingdom	1051	301
France	677	147	Norway	10	3	USA	6339	2071
Germany	822	251	Poland	20	5			
						ESA Cols	5019	1423
CSA Cols	378	82				Total Cols	12767	3878



Science Categories

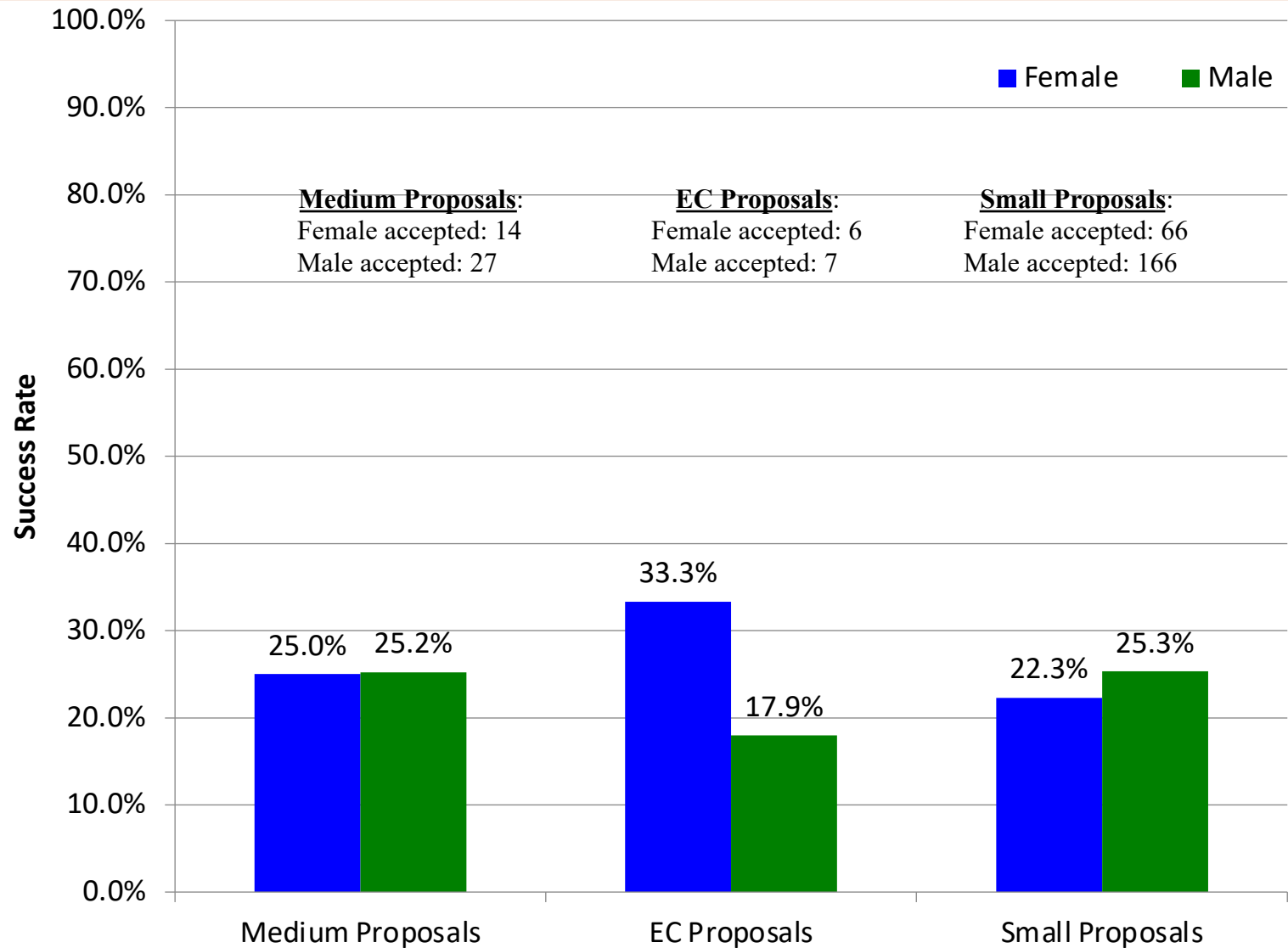


-  Solar System
-  Large-scale structure of the Universe
-  Galaxies and the IGM
-  Exoplanets and Disks
-  Stellar Physics
-  Supermassive black holes and their hosts
-  Stellar Populations and the Interstellar Medium



Dual Anonymous Review

- Proposal reviews are conducted with the identities of the proposal teams removed from the proposals.
- Each panel has a Leveler who helps to keep the panel discussion focused on the selection criteria.
- Once the proposals are ranked, then the panel may examine the Team Expertise.



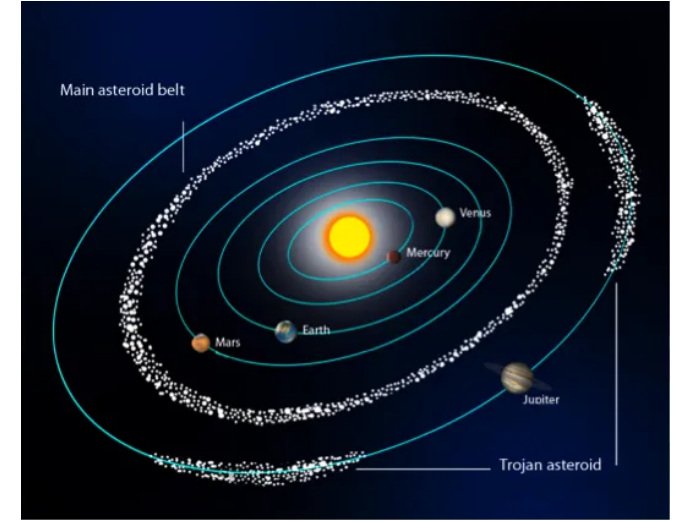


Approved Solar System Mission Support

Bondoc meteorite (stony iron mesosiderite)
that may have come from 16 Psyche



Callisto's Valhalla Crater



JWST will support future NASA and ESA solar system missions

- **NASA Discovery Mission Psyche** “Variability and Abundance on M-type Asteroid (16) Psyche” (PI Jarmak, PID 1731, 8.7 hours, 12 month exclusive access period)
- **NASA Europa Clipper and ESA JUICE** “Unraveling the primordial constituents and exogenic processes that shaped Callisto’s surface” (PI Cartwright, PID 2060, 3.4 hours, 12 month exclusive access period)
- **NASA Discovery Lucy Mission** to Jupiter’s Trojans “JWST Observations of Lucy Mission Targets” (PI Brown, PID 2574, 26 hours, 12 month exclusive access period)



Approved Protoplanetary Disk Observations

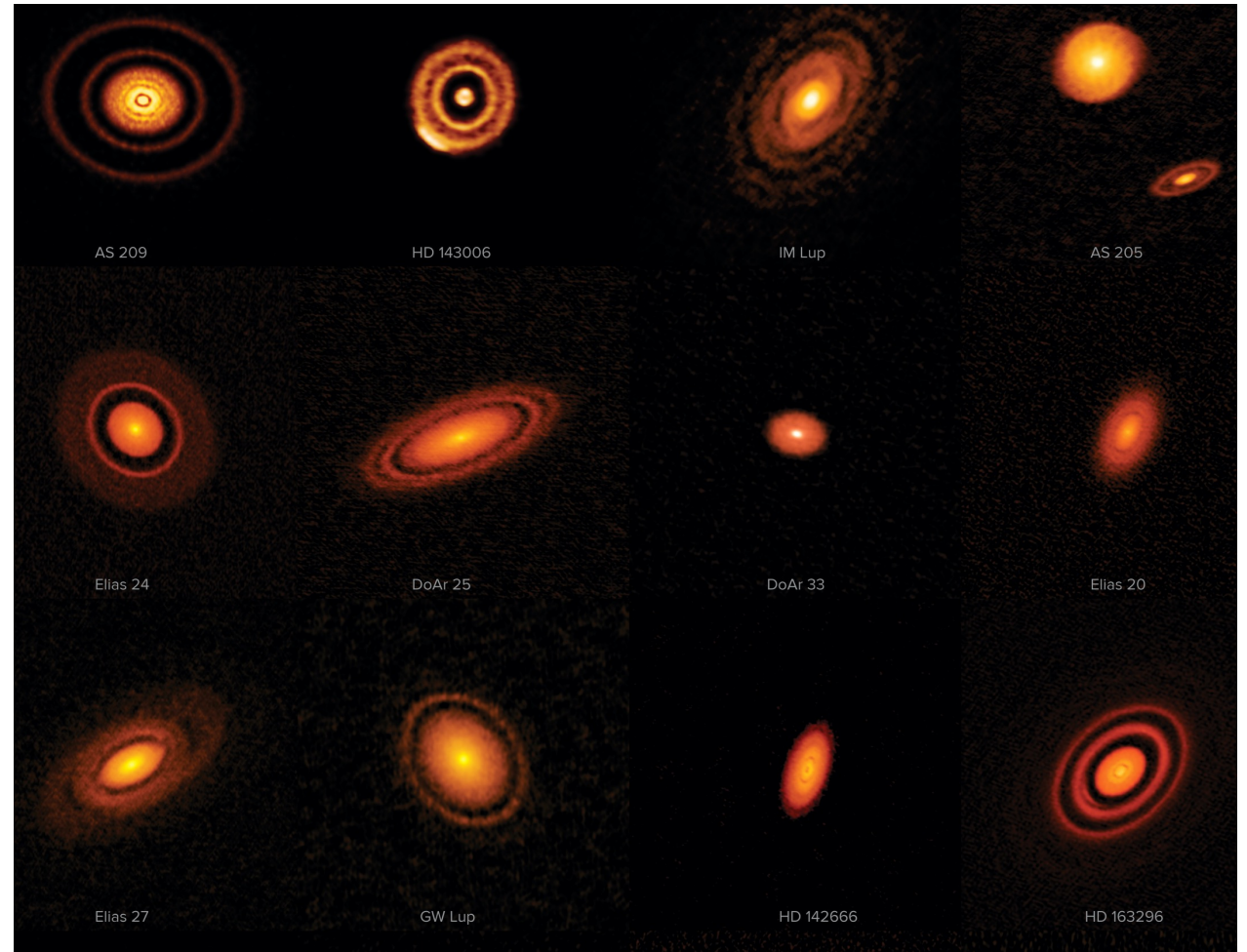
Study the chemistry of water and organics in the terrestrial planet forming regions (<5 AU)

- Obtain 5 – 28 micron spectra of more than 110 PPDs
- Understand disk dispersal processes
- Create inventories of major molecular species, H₂O, CO, CO₂, CH₄, NH₃, etc.

Use coronagraphic imaging to search for protoplanets in at least 12 disks

- May reveal a new population of exoplanets

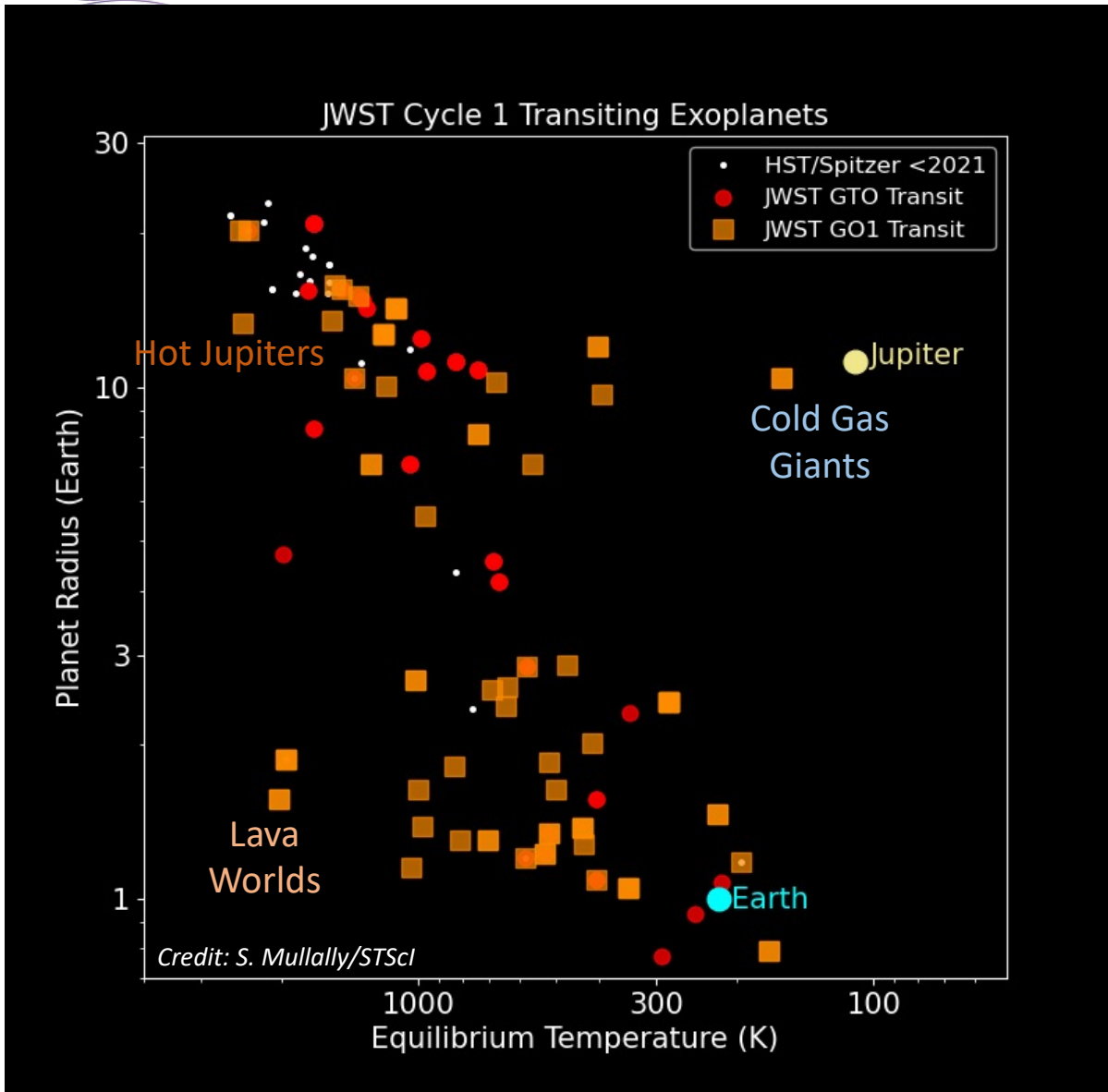
Example: “A DSHARP-MIRI Treasury Survey of Chemistry in Planet-forming Regions” (PI Salyk, Co-PI Pontoppidan, PID 1584, 27.7 hours, no exclusive access period)



ALMA-DSHARP, S. Andrews



Approved Transiting Exoplanet Observations



Webb gives a unique look at the diversity of exoplanets. Cycle 1 will peer into the atmospheres of exoplanets across a range of size, temperature, age and stellar environment.

- Study sub-Neptunes and super-Earths with Time Series spectroscopy

Example: "Seeing the Forrest and the Trees" (PI Batalha, Co-PI Teske, PID 2512, 141.6 hours, no proprietary period)

- Planets transiting active M dwarf stars, offering the best opportunity to explore the atmospheres of terrestrial worlds.

Example: "Tell Me How I'm Supposed to Breathe with No Air" (PI Stevenson, Co-PI Lustig-Yaeger, PID 1981, 75.6 hours, no exclusive access period)



Approved Kilonovae Observations

Understand the physics of neutron star mergers (kilonovae)

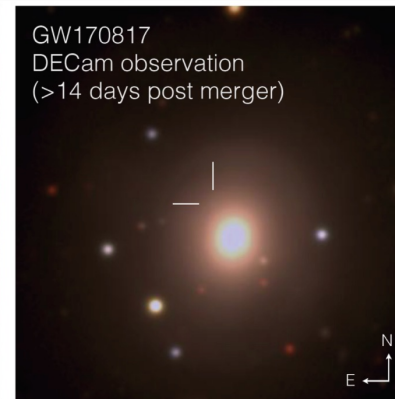
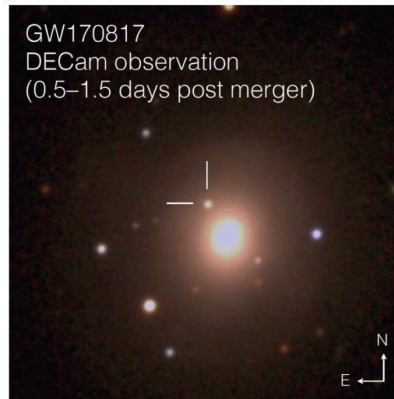
- Obtain infrared photometry and spectroscopy of up to 4 kilonovae
- Target of Opportunity observations, some triggered by detections of gravitational waves
- Makes use of NIRCam, NIRSpec, and MIRI

Understand the origins of r-process elements in the Universe

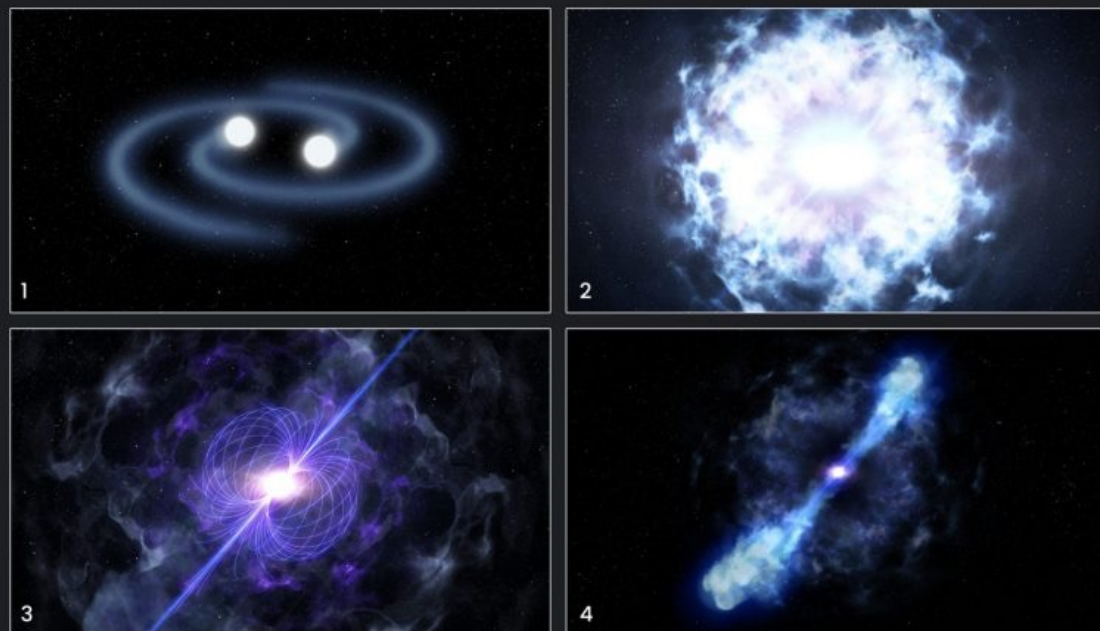
- Spectroscopic searches for r-process elements (e.g., rare elements like lanthanides, but also some of the gold of Webb's mirrors)

Example: "Nebular Spectroscopy of a Kilonova with JWST" (PI Kilpatrick, PID 1936, 14.9 hours, no exclusive access period, disruptive ToO)

Soares-Santos et al. 2017

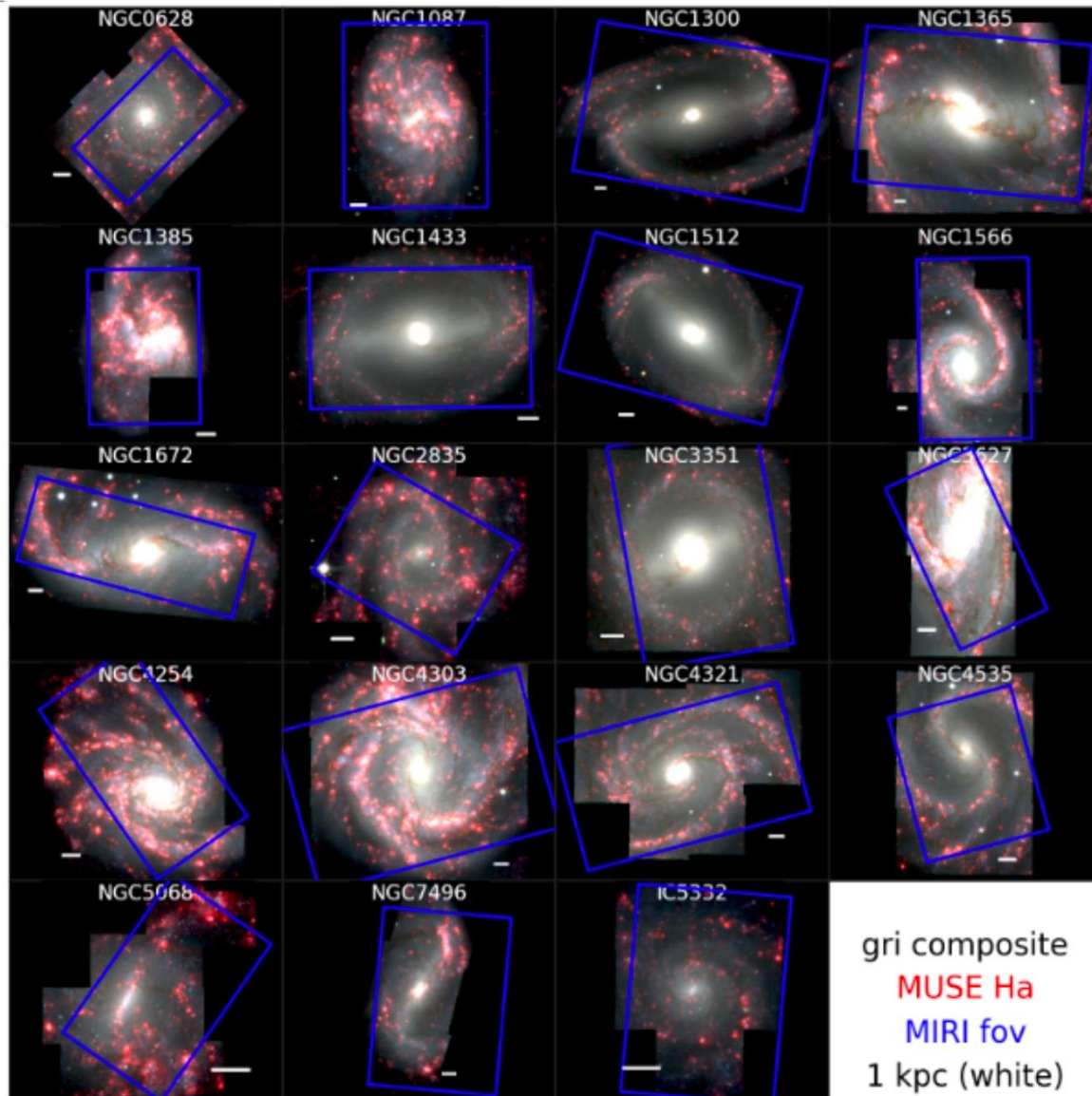


Collision Sequence for a Magnetar-Powered Kilonova Blast





Approved Nearby Galaxy Observations



Understand the stellar populations and ISM within nearby galaxies

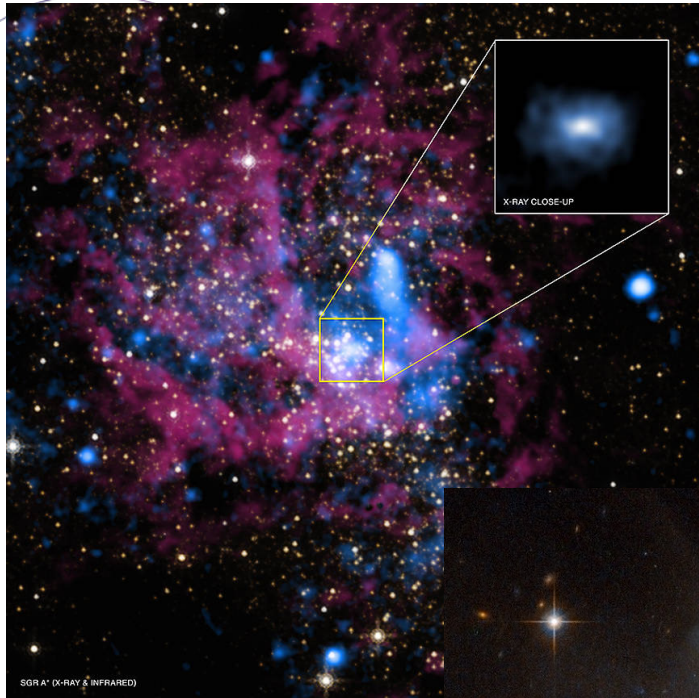
- MIRI and NIRCам imaging observations
- Complete inventory of star formation
- Accurately measure the mass and age of constituent stellar clusters
- Pinpoint the youngest embedded clusters,
- Reveal the physical state of the small dust grains that heat the ISM

Example: “A JWST-HST-VLT/MUSE-ALMA Treasury of Star Formation in Nearby Galaxies” (PI Lee, Co-PIs Sandstrom, Leroy, Schinnerer, Thilker, et al., PID 2107, 106.9 hours, no exclusive access period)

Courtesy Janice Lee



Approved AGN outflows and feedback Observations



Top: the Sagittarius A region in the Milky Way as seen by Chandra (blue) and near-IR by HST (red and yellow).



Bottom: the interacting ULIRG Markarian 273 as seen by HST.

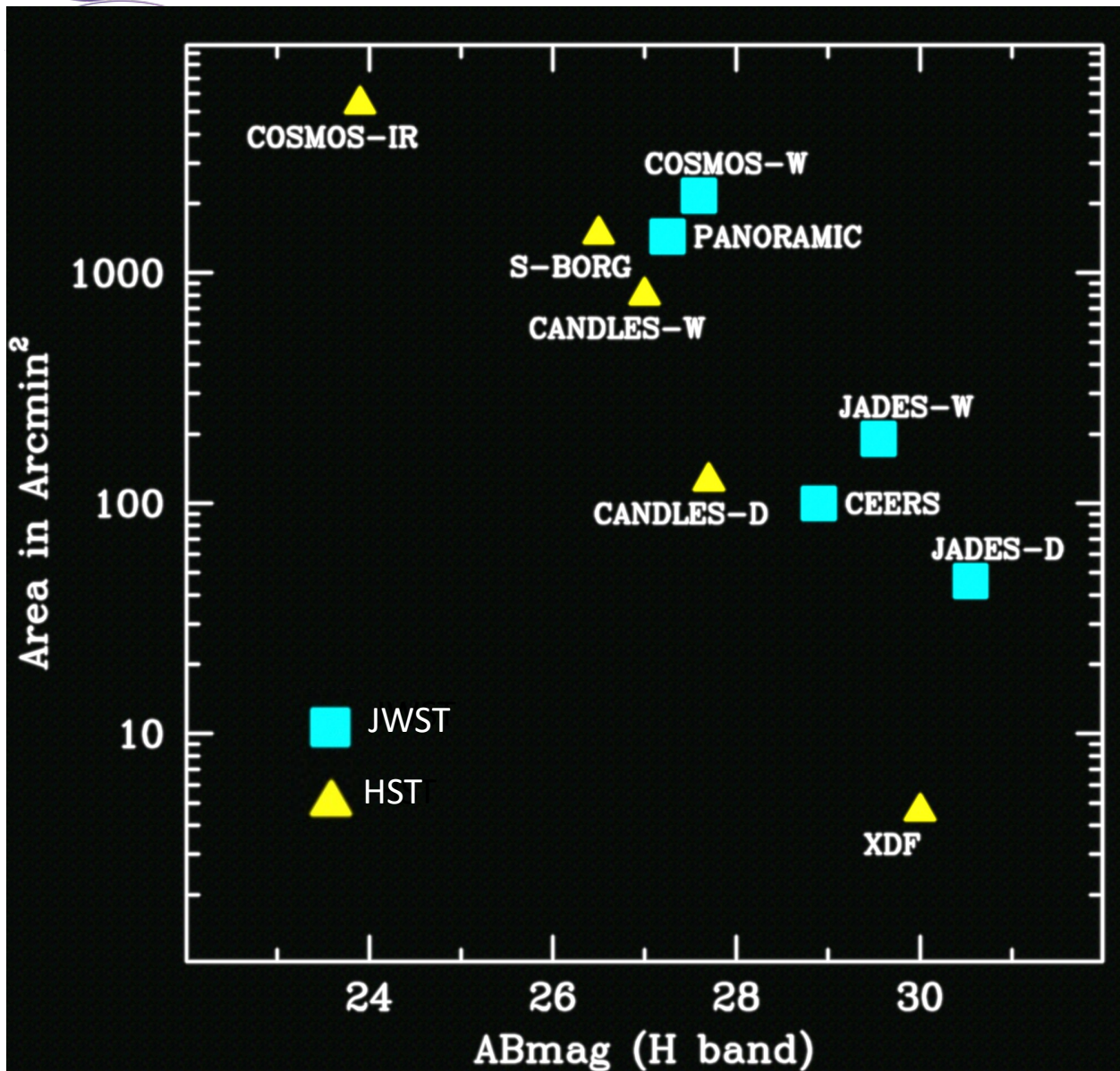
AGN outflows and winds are a powerful feedback mechanism on their host galaxies and even on the circumgalactic medium (CGM).

- obtain 5 – 28 micron spectroscopy
- characterize the molecular gas, dust, AGN, star formation and metallicity within the central regions
- determine the heating mechanisms for and estimate the energetics of outflows
- map the AGN's influence on the distribution of metals and star formation in different environments

Example: "Feedback around Supermassive Black Holes in Dusty Nuclei" (PI U, PID 1717, 27.6 parallel hours, no exclusive access period)



Approved Galaxy Imaging Surveys



Cycle 1 imaging surveys will

- image the sky using NIRCcam (and MIRI)
- provide the gold standard imaging data set for galaxy assembly studies
- study the sources responsible for the reionization of hydrogen
- probe the era of the First Galaxies, pushing beyond $z=10$

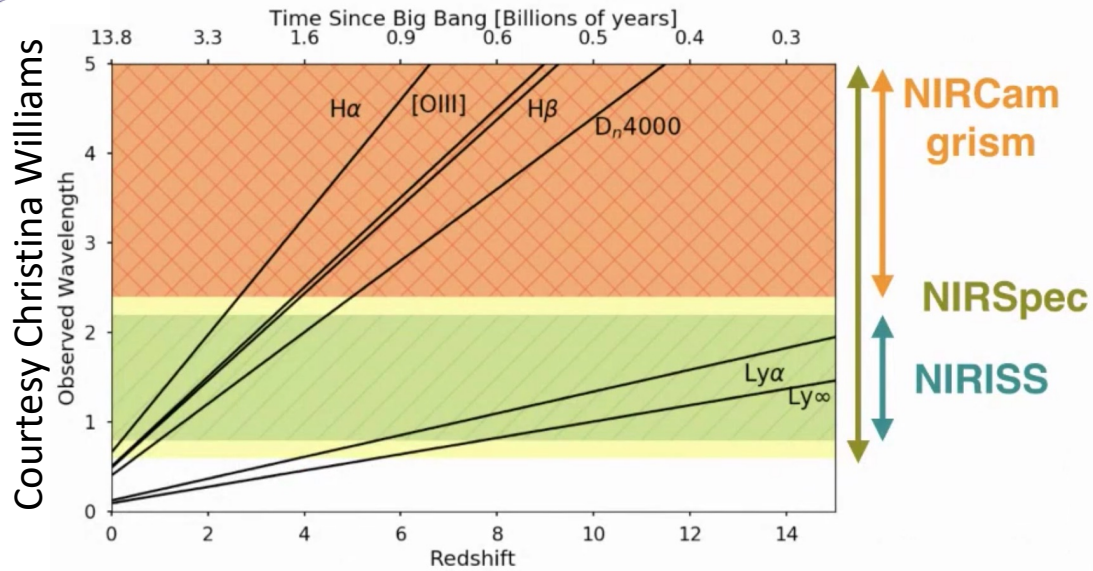
Examples:

“COSMOS-Webb: The Webb Cosmic Origins Survey”
(PI Kartaltepe, Co-PI Casey, PID 1727, 207.8 hours, no exclusive access period)

“PANORAMIC – A Pure Parallel Wide Area Legacy Imaging Survey at 1 – 5 micron”
(PI Williams, Co-PI Oesch, PID 2514, 150 pure parallel hours, no exclusive access period)



Approved Galaxy Spectroscopic Surveys



Cycle 1 Galaxy spectroscopic surveys will

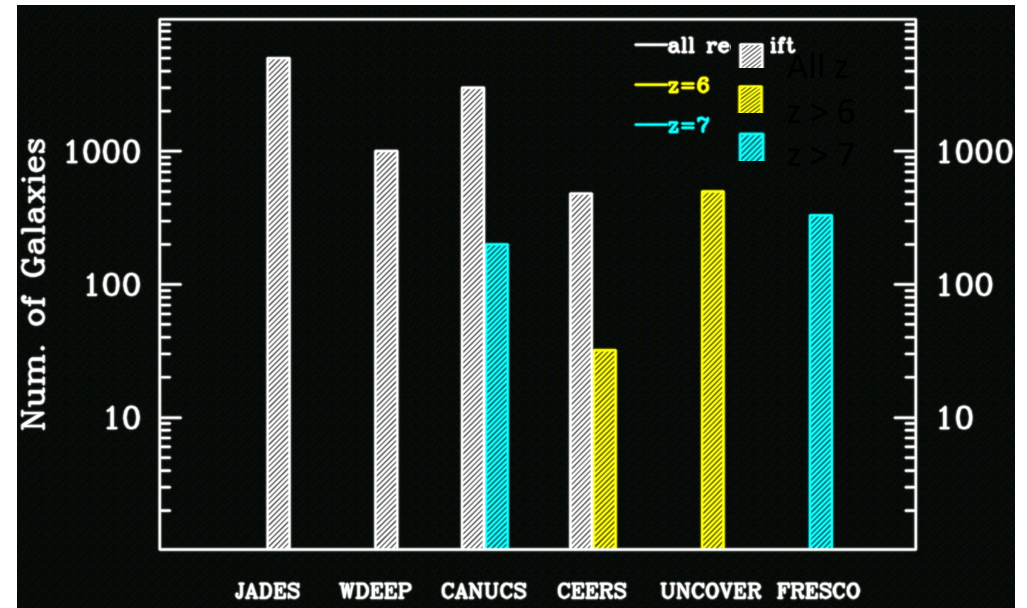
- observe thousands of galaxies using NIRCcam and NIRISS WFSS
- provide line diagnostics reaching redshifts up to 7 and beyond
- enable characterization of the physical properties of galaxies all the way to Cosmic Dawn

Examples:

“The Webb Deep Extragalactic Exploratory (WDEEP) Survey” (PI Finkelstein, Co-PIs Papovich, Pirzkal, PID 2079, 121.7 hours, no exclusive access period)

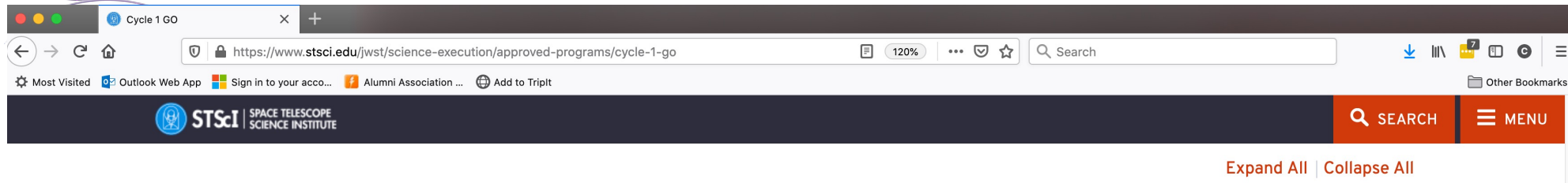
“UNCOVER” (PI Labbe, Co-PI Bezanson, PID 2561, 68.2 hours, no exclusive access period)

“FRESCO: The First Reionization Epoch Complete Survey” (PI Oesch, PID 1895, 53.1 hours, no exclusive access period)





JWST Approved GO Programs Available On-line



Exoplanets and Disks [+]

Galaxies [+]

Intergalactic Medium and the Circumgalactic Medium [+]

Large Scale Structure of the Universe [-]

Filter Table

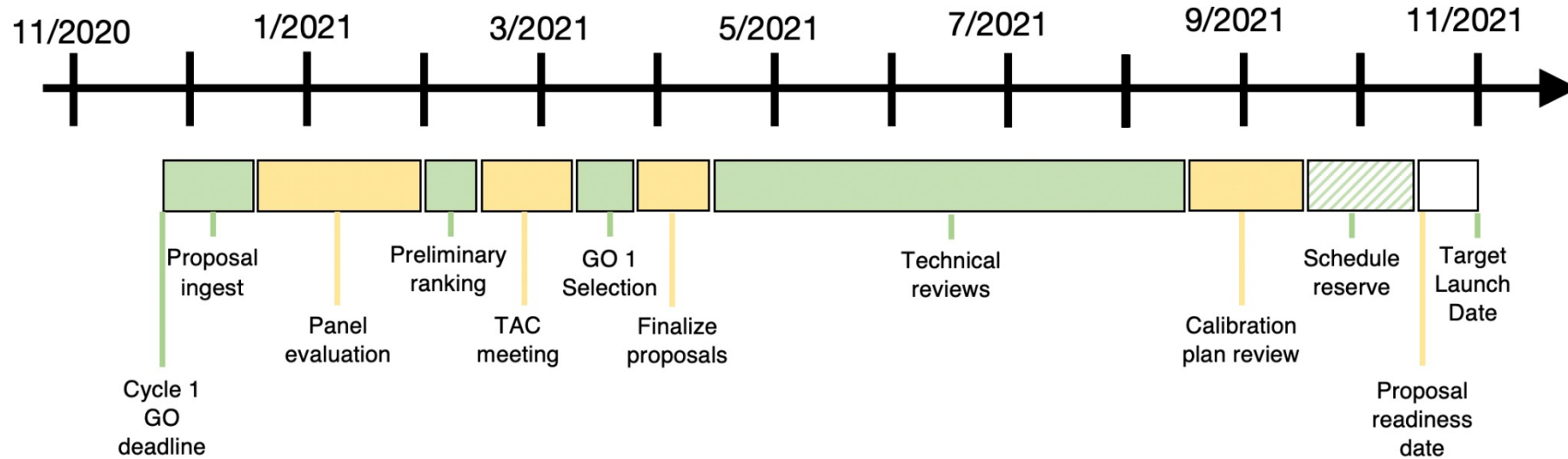
ID	Program Title	PI & Co-PIs	Exclusive Access Period (months)	Prime/Parallel Time (hours)	Instrument/Mode	Type
1638	Securing the TRGB Distance Indicator: A Pre-Requisite for a JWST Measurement of H ₂ O	PI: Kristen McQuinn	12	6.8/2	NIRCam/Imaging	GO
1727	COSMOS-Webb: The Webb Cosmic Origins Survey	PI: Jeyhan Kartaltepe Co-PI: Caitlin Casey	0	207.8/81.3	NIRCam/Imaging	GO, Treasury
1794	100% Gain in Precision and Accuracy of H ₂ O Measurement from JWST Stellar Kinematics of a Lens Galaxy	PI: Akin Yildirim Co-PIs: Sherry Suyu and Tommaso Treu	12	9.5	NIRSpec/IFU	GO

Approved programs can be viewed at <https://www.stsci.edu/jwst/science-execution/approved-programs/cycle-1-go>

In Cycle 1, the TAC allocated ~1585 hours of GO programs with no exclusive access period.



Technical & Scheduling Reviews



All proposals will be subject to technical and scheduling reviews by STScI staff

Key scheduling issues:

- High data volume – may preclude parallel observations in some instances
- Uninterrupted observations – only allowable when scientifically required

Some programs may require adjustments that lead to longer charged times

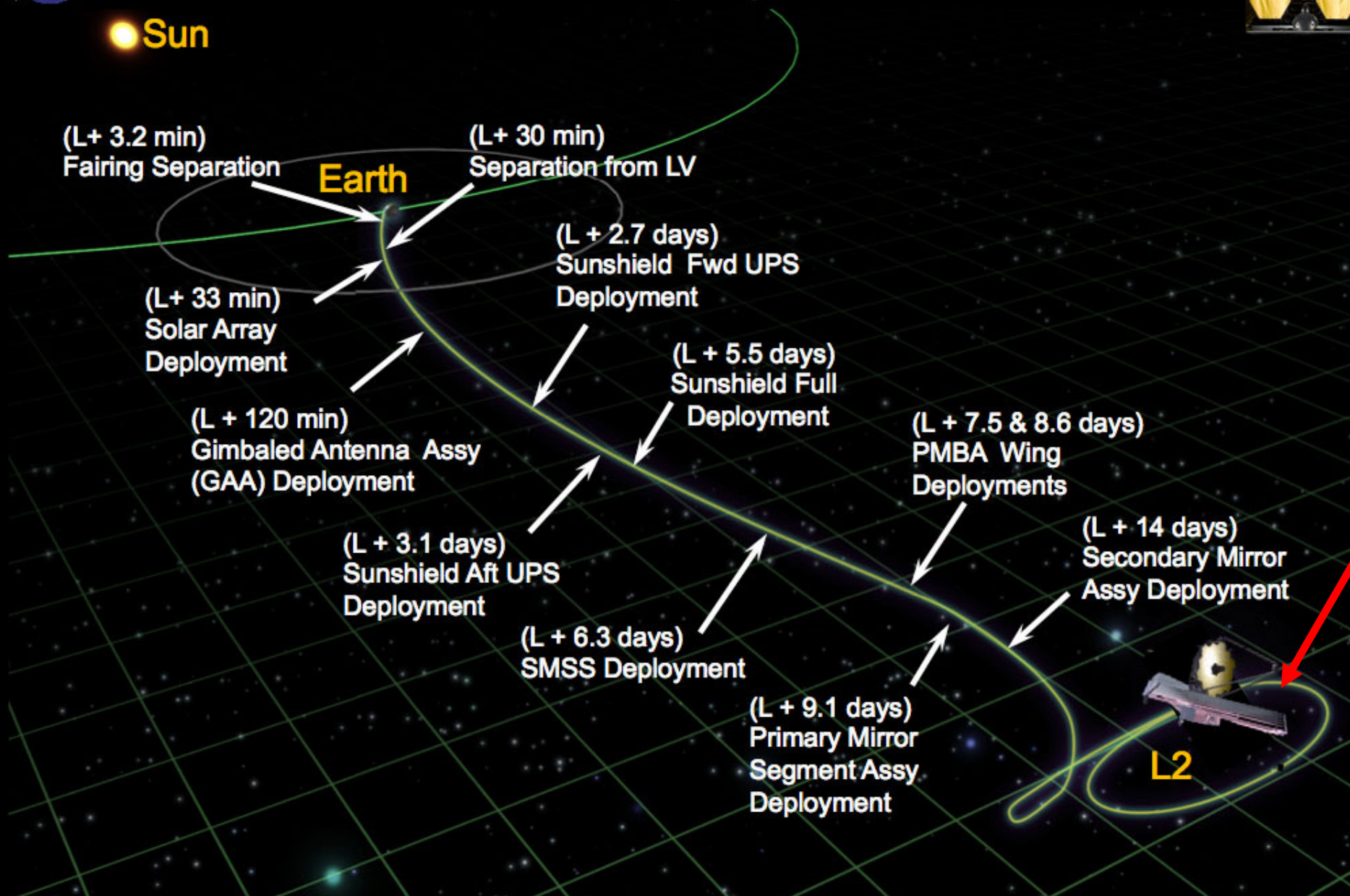
- We will be flexible in allowing some such adjustments in Cycle 1



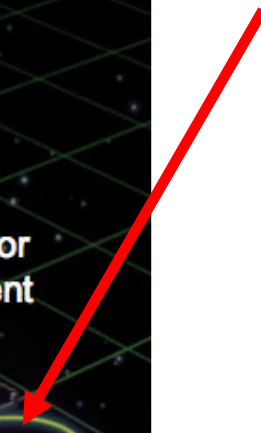
JWST Launch/Deployment Timeline



Sun

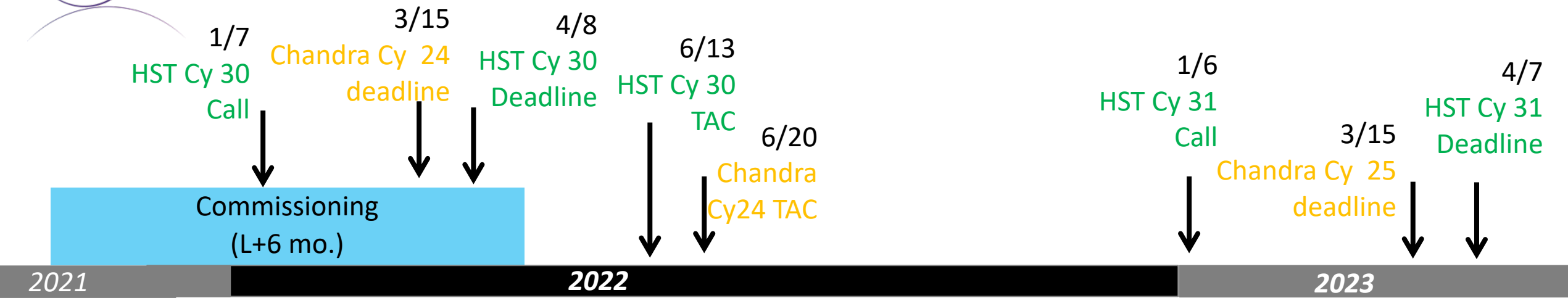


5.5 months of commissioning activities





JWST Science Timeline



Launch readiness
10/31 2021

L+6
Start of Cycle
1 science observations

L+8
GTO Cy2 Call for proposals

L+11
GO Cy2 Call for proposals

L+13
GO Cy2 Deadline

L+15.5
GO Cy2 TAC

L+18
Cycle 2 starts

HST & Chandra dates are estimates



Data Analysis Training Classes

JWebbinars

- Hands-on instruction on common data analysis methods for JWST observations.
- Entirely virtual classes with ~40 participants
- Virtual programming environment
- All materials are made available after the class



Past Events

- Pipeline Information and Data Products
- Introduction to the JWST Data Analysis Tools
- Pipeline: Imaging Mode
- Pipeline: Spectroscopic Mode

Future Events

- MIRI and NIRSpec IFU
- NIRCам and MIRI Point-Source Imaging
- NIRSpec MSA

Register at
<https://www.stsci.edu/jwst/science-execution/jwebbinars>



JWST Users Committee (JSTUC)

The Space Telescope Science Institute (STScI) and NASA Goddard Space Flight Center (GSFC) established the James Webb Space Telescope (JWST) Users Committee (JSTUC) to provide user advice to the observatory as a whole.

James Bullock, Chair	Stephane Charlot	Amanda Hendrix	Els Peeters
Kat Barger	Duncan Farrah	Tiffany Kataria	John Richard
Natalie Batalha	Alistair Glasse	David Lafreniere	Tommaso Treu
Saida Caballero-Nieves	Tom Greene	Mercedes Lopez-Morales	Dominika Wylezalek

The JSTUC welcomes the feedback from the astronomical community.

You can e-mail the JSTUC Chair from the JSTUC website:

<https://www.stsci.edu/jwst/science-planning/user-committees/jwst-users-committee>



JWST Events at the 238th Meeting of the AAS

The screenshot shows a web browser window with the URL <https://www.stsci.edu/contents/events/jwst/2021/june/jwst-at-the-238th-american-astronomical-society-meeting>. The page header includes the STScI logo and navigation links for SEARCH and MENU. The main content area lists three events:

- Exhibitor Webinar: The First Year of JWST Science**
Monday, June 7
1:30-2:00 p.m. (EDT)
Klaus Pontoppidan (JWST Project Scientist, STScI) will provide a preview of what to expect in JWST's first year of science.
- STScI Virtual Town Hall**
Tuesday, June 8
1:40-2:40 p.m. (EDT)
The Space Telescope Science Institute (STScI) serves the astronomical community through the operation of multiple NASA flagship missions including Hubble, JWST, and WFIRST, the development of advanced data and science archives, and the dissemination of astronomical information to the broadest public audiences. The STScI Town Hall will feature JWST GO Cycle 1 selection statistics and science.
- Special Session: The James Webb Space Telescope: Ready for Launch!**
Wednesday, June 9
12-1:30 p.m. (EDT)
The James Webb Space Telescope will finish its testing program and will be shipped to the launch site during the summer of 2021. This AAS meeting provides an opportunity to inform the community of the telescope's first-year science program and the scientific capabilities measured during ground testing. Speakers are drawn from JWST Science Instrument Teams, the NASA GSFC Project Science Team, and outside scientists. Talks will include highlights of the first-year science program, and the expected performance of the instruments and telescope. There will also be a talk about what the community can expect over the coming year as the telescope goes through launch, commissioning, and the start of science operations.

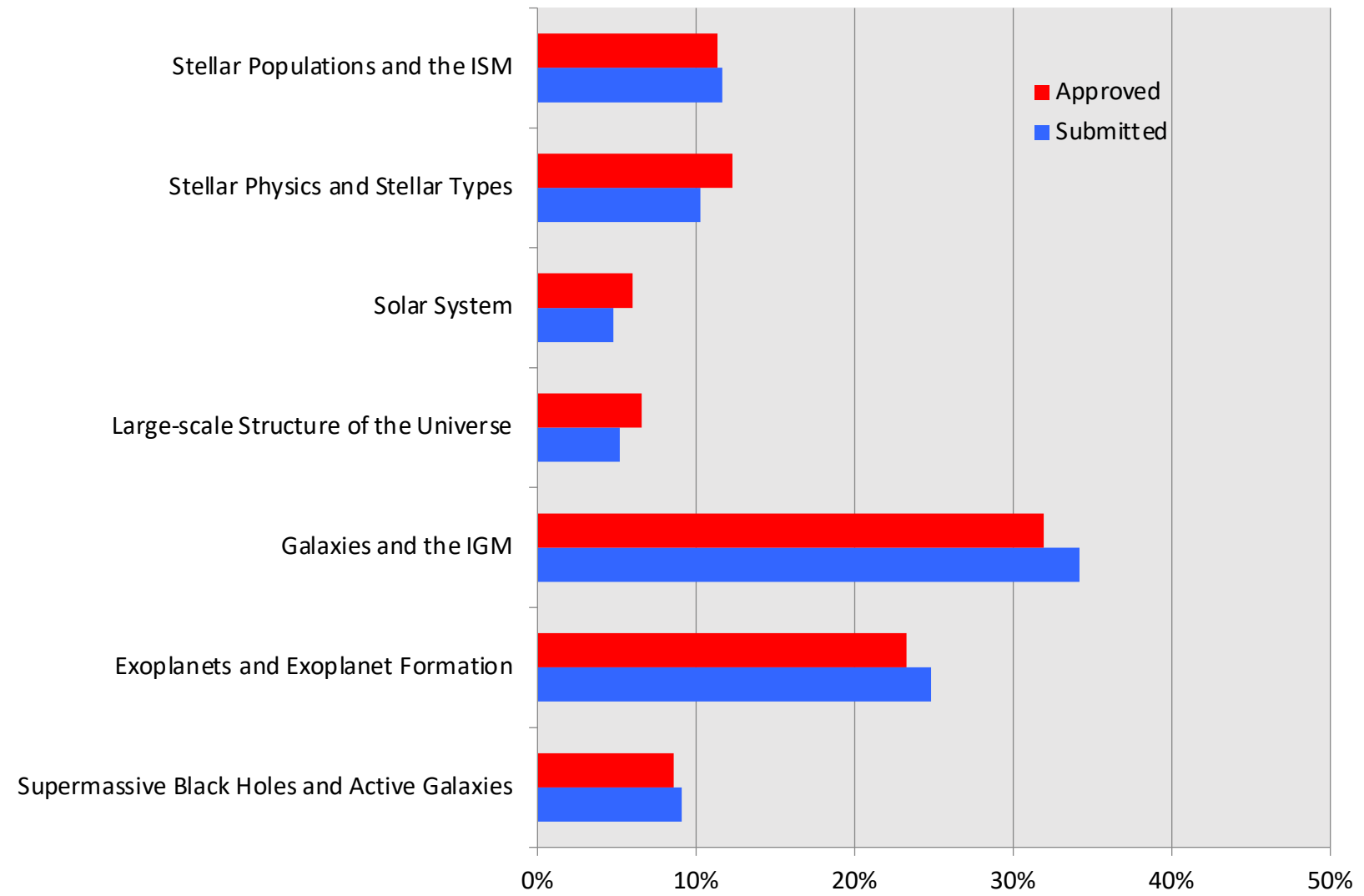
Presentation slides and recordings will be posted at <https://www.stsci.edu/contents/events/jwst/2021/june/jwst-at-the-238th-american-astronomical-society-meeting>

A deep blue and purple nebula with wispy, ethereal clouds of gas and dust. The background is a dark, star-filled sky with numerous bright, multi-pointed stars. The text "Backup Slides" is centered in a clean, white, sans-serif font. A thin, horizontal orange line runs across the middle of the image, just below the text.

Backup Slides

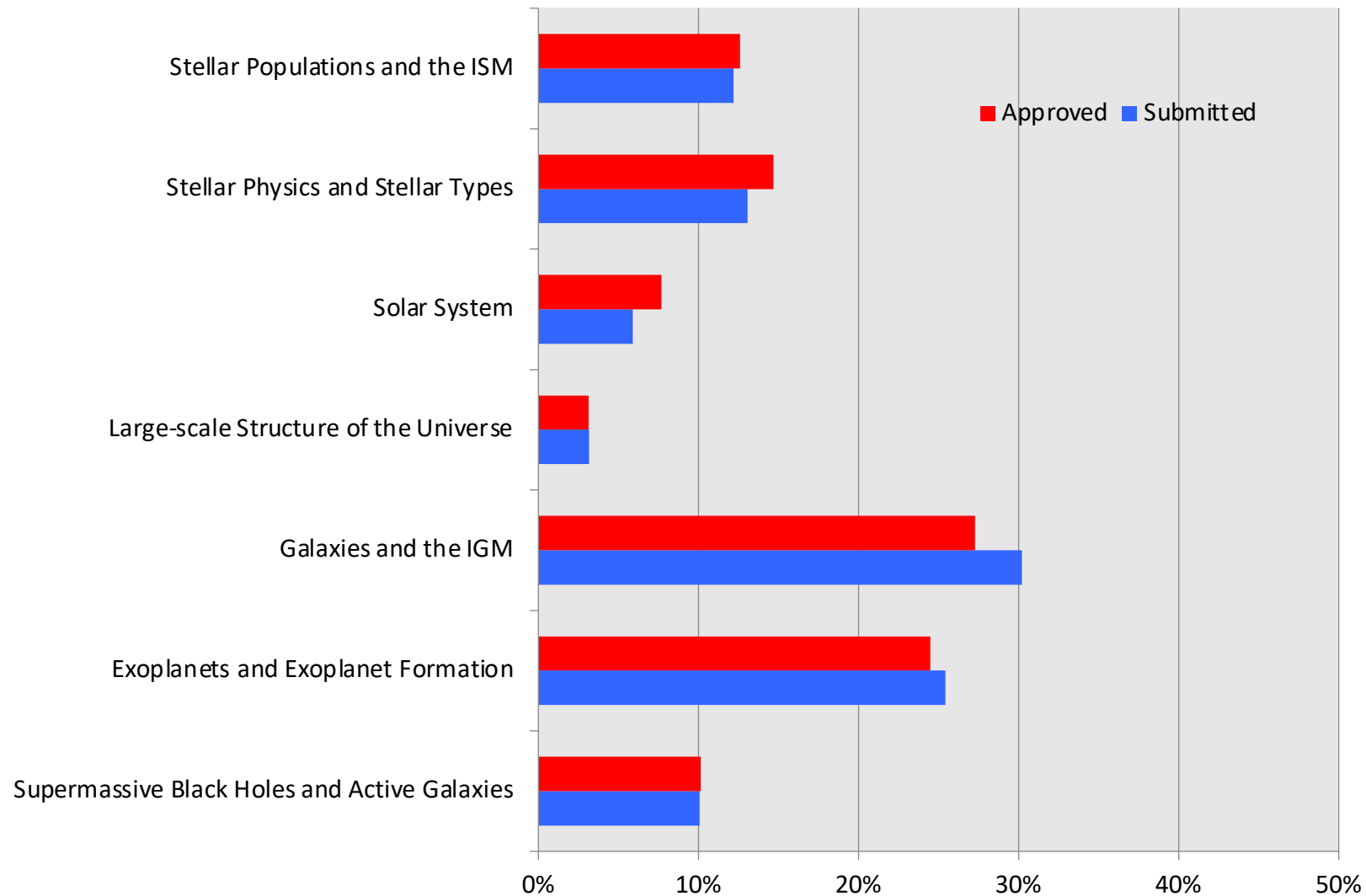


Science Category Distribution for Hours





Science Category Distribution for Proposals





Gender Stats

- Fraction of proposals with female PIs is higher than HST Cy 28
 - JWST Cycle 1 – 31.6%; HST Cycle 28 – 28.5%
- Fraction of female-PI accepted proposals
 - JWST Cycle 1 30.1% (86/286); HST Cycle 28 27.3% (52/190)
- Triaged Proposals
 - 151/370 for female PIs, 40.8%
 - 313/802 for male PIs, 39%

	JWST Approved	Cycle 1 Submitted	Success Rate	HST Approved	Cycle 28 Submitted	Success Rate
Proposals	286	1172	24.4%	190	1080	17.8%
Female PIs	86	370	23.2%	52	308	16.9%
Male PIs	200	802	24.9%	138	772	17.9%



PI Seniority

