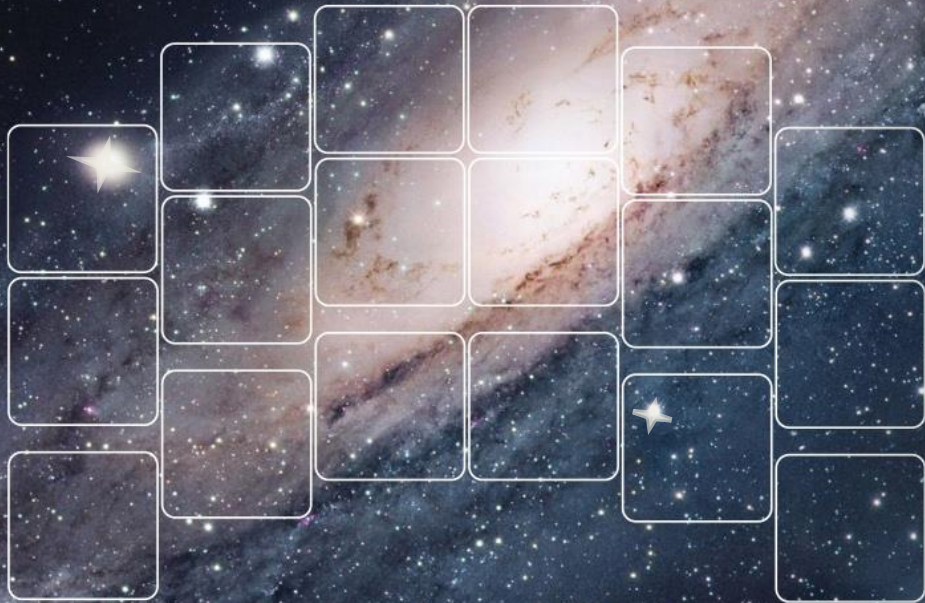
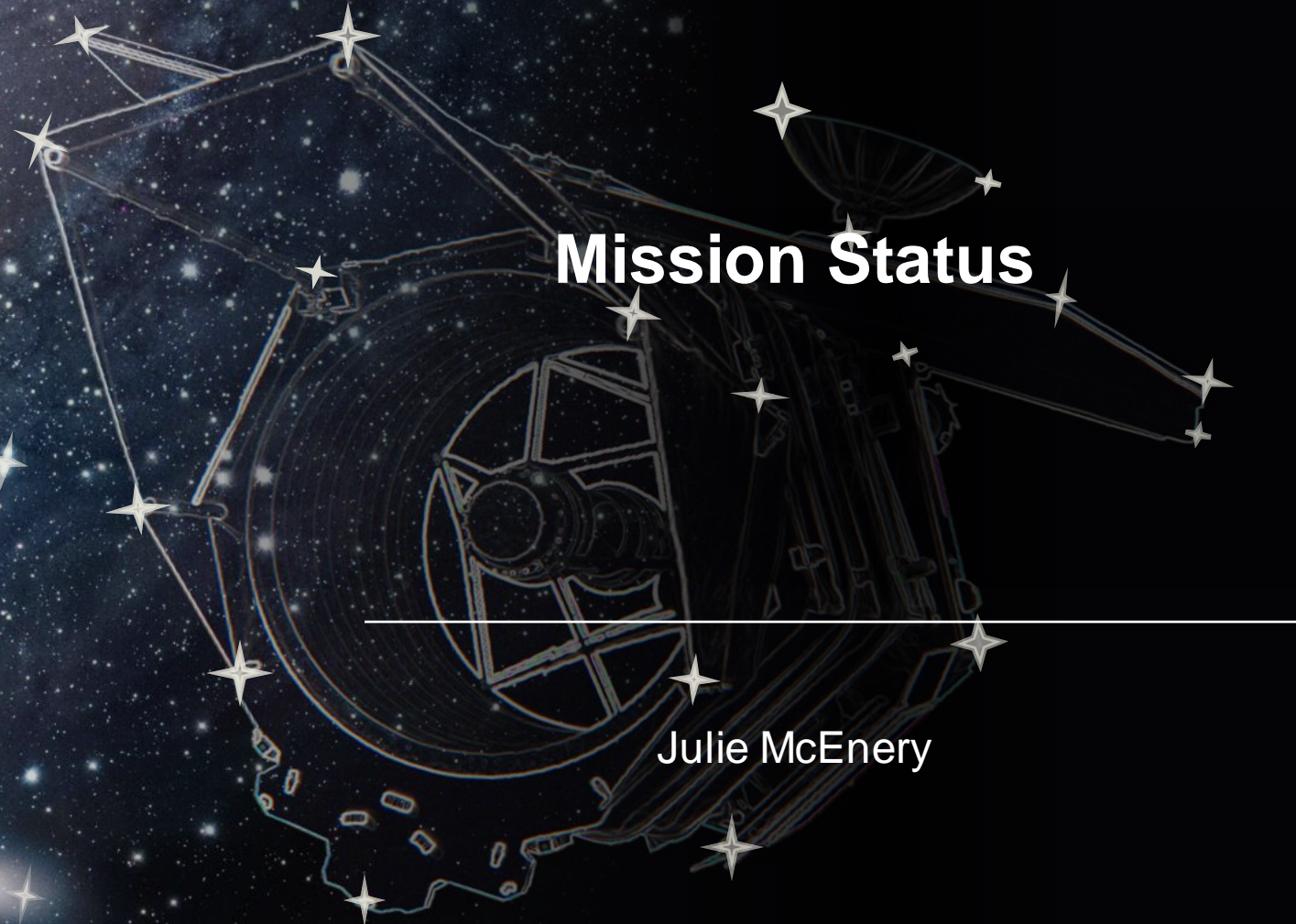


NANCY GRACE R.ÖMÄN



SPACE TELESCOPE

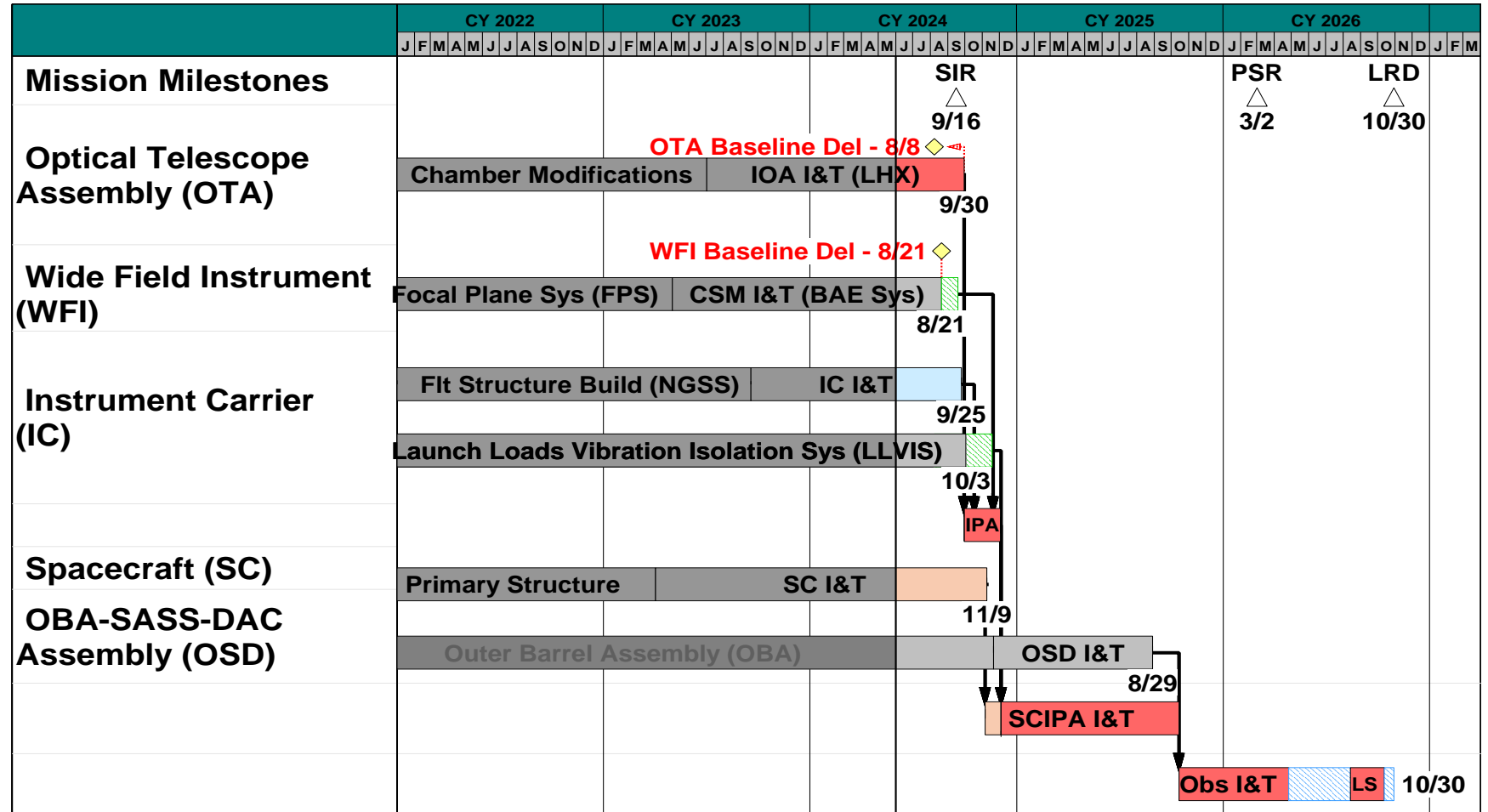


Mission Status

Julie McEnery

Project Schedule

- Launch 10/30/2026
- On track for Mission System Integration Review (SIR) in September 2024
- Wide field Instrument completed TVAC testing, completed EMI testing this week
- Coronagraph Instrument delivered to GSFC
- Optical Telescope Assembly complete, in environmental testing
- Spacecraft in midst of integration
- Spacecraft+payload testing begins Fall 2024
- OBA – SASS – DAC integrated Fall 2025
- Final Observatory testing thereafter



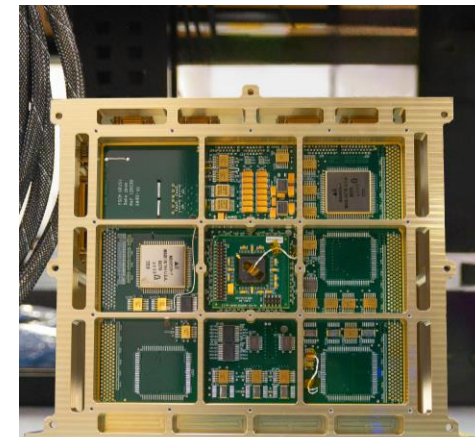
Flight Propulsion Module integrated with Spacecraft!



Solar Array Sun Shields (SASS-A) panels delivered from cell vendor



Science Data Recorders (SDRs)



Command and Data Handling (C&DH) boxes

Roman Instruments

Wide Field Instrument

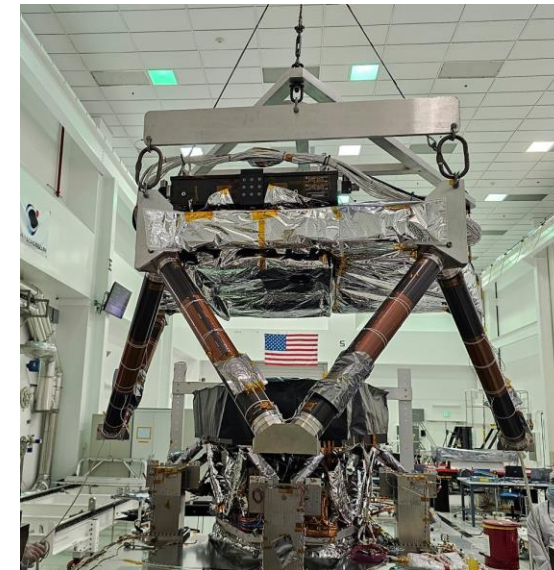
- Completed all environmental test
- Will be shipped to Goddard in August

Coronagraph Instrument

- CGI has completed all environmental test
- Delivered to GSFC in May



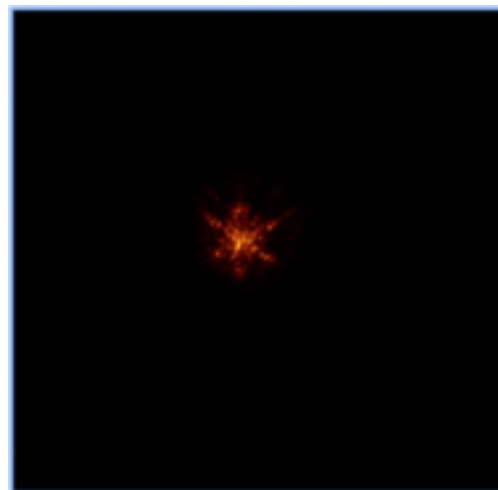
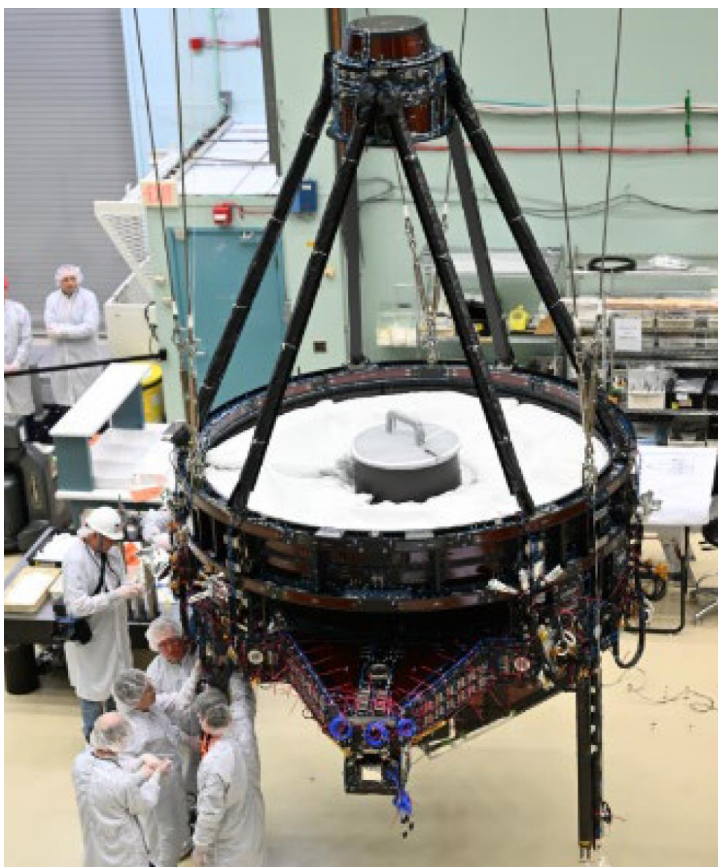
WFI has been deconfigured from vibration and acoustics testing and closed-out for thermal vacuum test



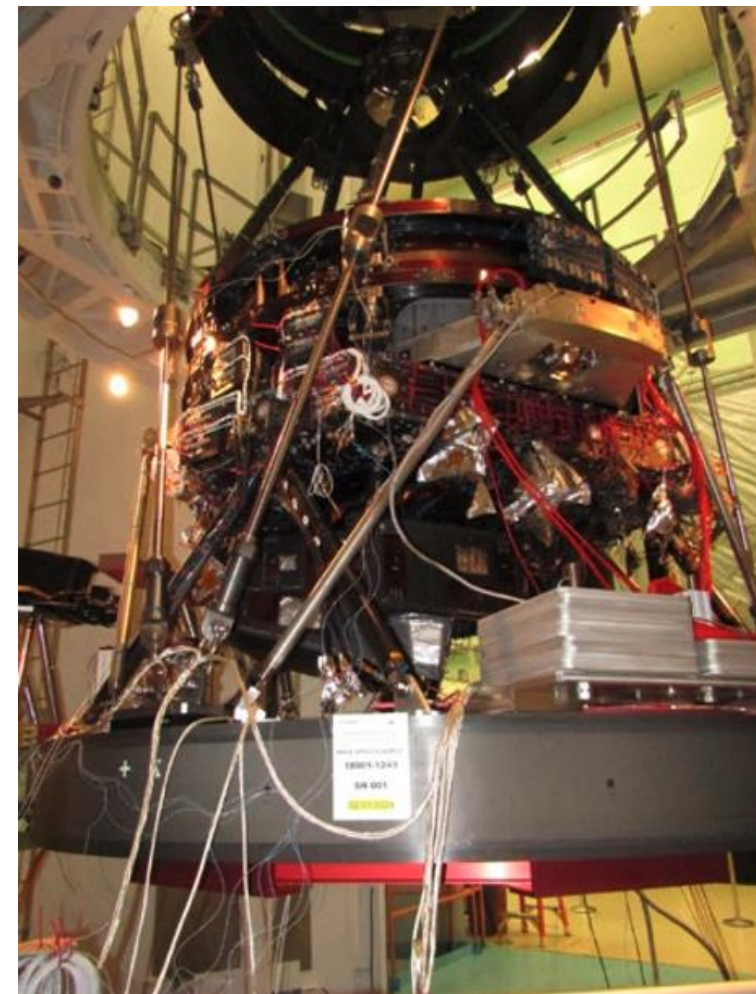
Source simulator being lifted for installation above Coronagraph

Telescope

- The Optical Telescope Assembly (OTA) team assembly is complete
- Starting TVAC this month

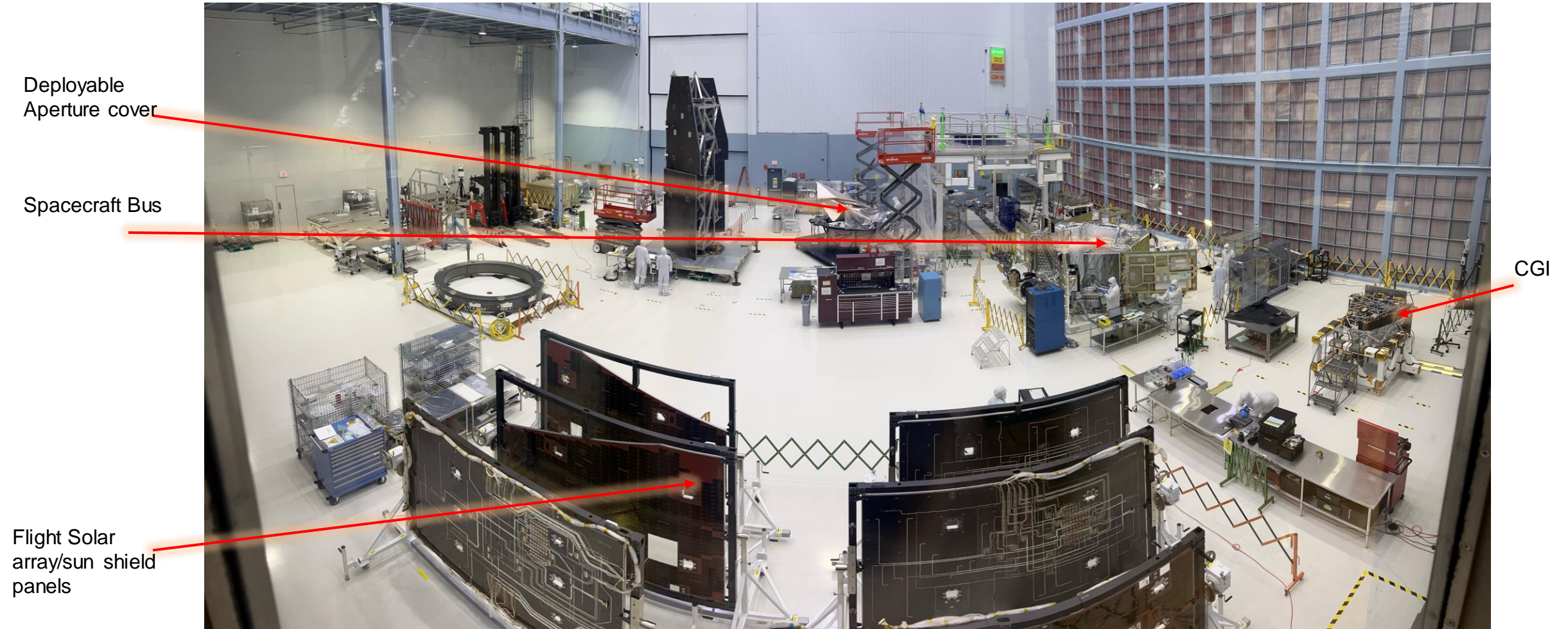


First image of a point source, i.e., the first star
Pre-optical alignment, in-air, double-pass, and known gravity sag



Imaging Optical Assembly (IOA) in Chamber III B

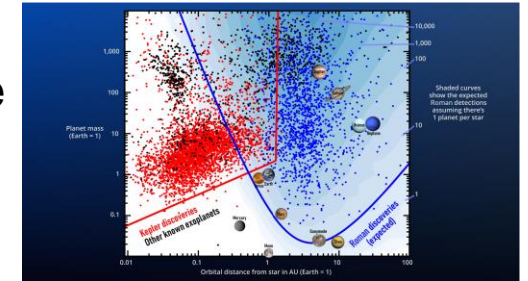
Spacecraft Hardware at Goddard (May)



Roman's Core Community Surveys

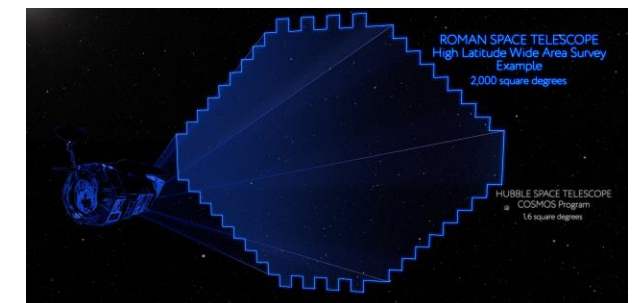
Three ambitious surveys of unprecedented scale to address key questions in Cosmology, Exoplanets and Astrophysics

Galactic Bulge Time Domain Survey: Observe ~2 sq deg towards Galactic bulge every 15 mins. Monitor >200 million stars to discover exoplanets via the microlensing technique. Exoplanet discovery machine (~100, 000), black hole finder, groundbreaking stellar studies and more



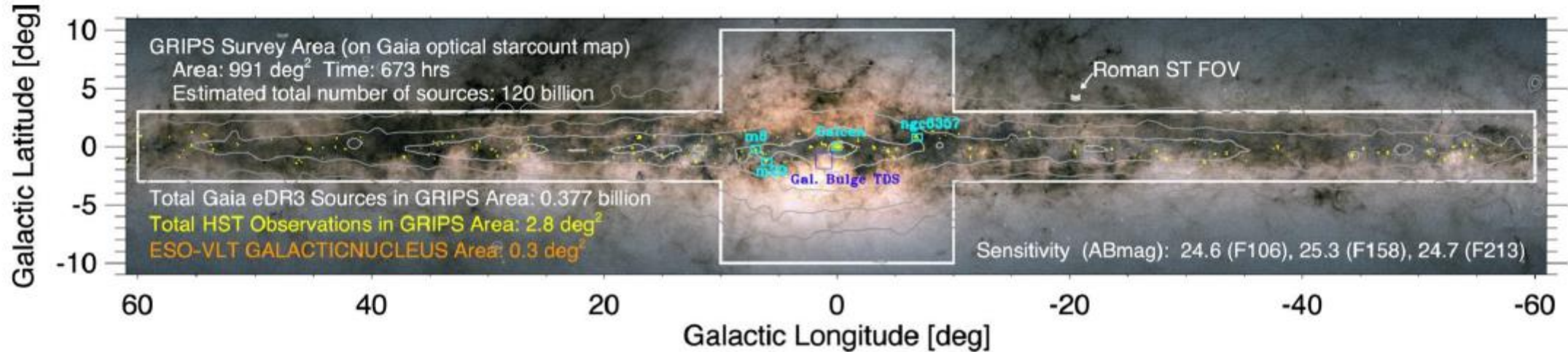
High Latitude Time Domain Survey: Observe ~20 sq deg every ~5 days. Monitor millions of galaxies to detect supernovae (and use these to map expansion history of universe). Will also find tidal disruption events, merging neutron stars, gamma-ray burst afterglows, outbursts from active galaxies and much more

High Latitude Wide Area Survey: >1700 sq deg to measure shape of >100 million galaxies in multiple colors. Precise (spectroscopic) redshifts of >10 million galaxies. Use these to study expansion history and growth of structure in the Universe. Also study everything else in that region of sky.



Three survey committees are busy evaluating extensive community input. On track to produce candidate survey designs by October 2024.

Galactic Plane General Astrophysics Survey



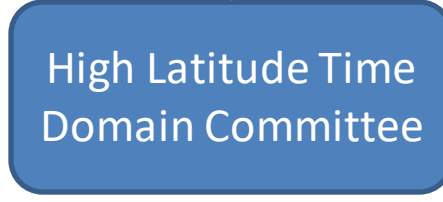
- Selected via early definition astrophysics survey process ([arXiv:2404.14342](https://arxiv.org/abs/2404.14342))
- Roman can survey complete inner galaxy to depths of 23-25 mag
 - Improves on previous GP surveys by factor of 10 in resolution and factor 20 in depth
- Huge Potential in this largely unexplored discovery space
 - includes studies of the *Galaxy's structure and dynamics* in stars and dust, the environmental dependence of *star formation*, the coevolution of the *Galactic nucleus* and its resident *supermassive black hole*, the evolution and properties of *flaring and variable stars*, *compact-object binaries*, and the potential for detecting *Galactic supernovae*
- Strong synergies with Rubin
 - which could provide high cadence coverage at visible wavelengths
- Reasons to define survey now:
 - Such a survey would require a high level of coordination between stakeholders across multiple disparate subfields of astrophysics that have traditionally interacted relatively little
 - Enable development of coordinated surveys at other wavelengths to amplify science yields

Community Survey Definition

- **Set up and charter a tiered committee structure to do the work of recommending survey definitions based on community input**
 - Committees include representatives of all science areas to be addressed by each survey (determined from white paper submissions etc)



Provides recommendations on balance between each of the core community surveys, and the general astrophysics survey allocation above 25%



Evaluate white papers, solicit additional community input, evaluate survey options against science metrics, produce recommendations for survey with options for enhancements/descopes

HLWAS Definition Committee Members



Ryan Hickox
(Dartmouth, Co-chair)



Risa Wechsler
(Stanford, Co-chair)



Micaela Bagley
(UT Austin)



Keith Bechtol
(Wisconsin)



Michael Blanton
(NYU)



Chris Hirata
(Ohio State)



Elisabeth Krause
(Arizona)



Nikhil Padmanabhan
(Yale, GRS PIT)



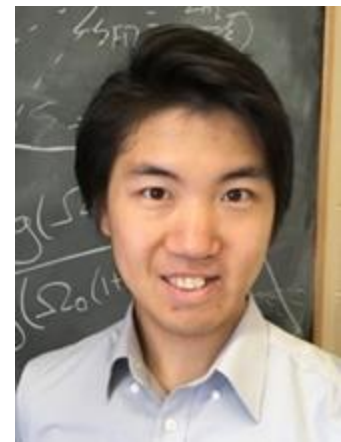
Ismael Tereno
(Euclid)



Anja von der Linden
(Stony Brook Univ.)



David Weinberg
(Ohio State)



Aaron Yung
(STScI)

HLTDS Definition Committee Members



Brad Cenko
(NASA/GSFC, Co-chair)



Masao Sako
(Penn, Co-chair)



Alessandra Corsi
(Texas Tech)



Michael Fasnaugh
(Texas Tech)



Sebastian Gomez
(STScI)



Rebekah Hounsell
(GSFC/UMBC, SN PIT)



Takashi Moriya
(NAOJ)



Gordon Richards
(Drexel)



Russell Ryan
(STScI)



Schuyler van Dyk
(IPAC, RAPID PIT)



V. Ashley Villar
(Harvard)

GBTDS Definition Committee Members



Jessie Christiansen
(NExScI/Caltech, Co-chair)



Dan Huber
(UH/USyd, Co-chair)



Annalisa Calamida
(STScI)



Jennifer Sobeck
(IPAC)



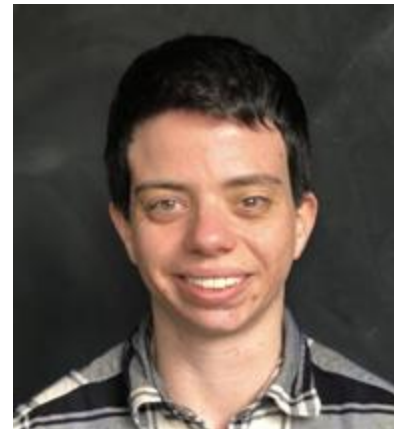
Matthew Penny
(LSU)



Ben Montet (UNSW)



Hans-Walter Rix (MPIA)



Kris Pardo (USC)



Jessica Lu (Berkeley)

Additional members: solar system liaison & ESO representative

Observations with other facilities act as a multiplier for Roman science

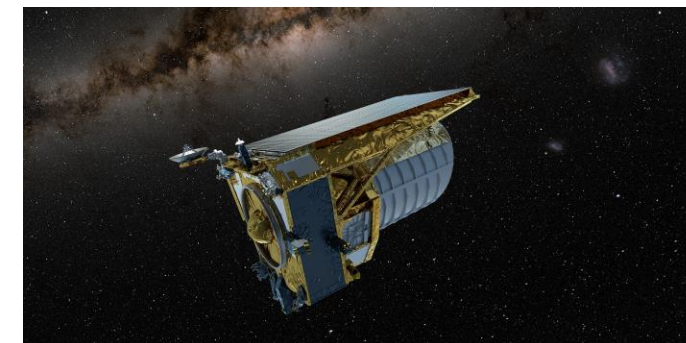
Vera Rubin Observatory: Deep very wide area survey in visible wavebands. Extends Roman observations into the visible band. Roman provides better angular resolution images, which will improve Rubin catalogs. Pathfinder for community definition of surveys at flagship level observatories. Pathfinder for astronomy science platform (i.e. bring people to the data)



Subaru Telescope: Provides wide field optical imaging and spectroscopy. 100 nights available for Roman community as part of agreement with JAXA. Community workshop in July 2024 to discuss ideas/plans for Subaru observations. Subaru-Roman planning meeting + SUPER IRNET workshop July 22-26, Beppu Japan

https://www.ir.isas.jaxa.jp/Roman_V/index.html

Euclid Mission: Space-based optical/near IR survey telescope. Complementary cosmology surveys. Pathfinder near-IR survey telescope at L2.



How Roman Observations Will Confront Theory

July 9 - 12, 2024 • Caltech campus and online

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Registration

Invited Speakers

Venue & Local Information

Important dates

Agenda

Posters

Instructions for Presenters

Code of conduct

Join Mailing List

The Nancy Grace Roman Space Telescope is a NASA observatory designed to settle essential questions in the areas of dark energy, exoplanets, and infrared astrophysics. The telescope has a 2.4-m primary mirror, the same size as the primary of the Hubble Space Telescope (HST). The Roman Space Telescope will have two instruments, the Wide Field Instrument, with a field of view that is 100 times greater than the HST WFC3/IR, and the Coronagraph Instrument technology demonstration, which will perform high contrast imaging and spectroscopy of individual nearby exoplanets. Roman will have a primary mission lifetime of 5 years, with a potential 5 year extended mission. Preparations are on track to target a launch in October 2026 and no later than May 2027.



The goal of this 4-day conference is to bring together inclusively members of the community to discuss how observations with the Nancy Grace Roman Space Telescope will confront and challenge theories, from exoplanets to the edge of the Universe. The conference will focus mainly on the Core Community Surveys -- the Galactic Bulge Time Domain Survey, High Latitude Wide Area Survey, and High Latitude Time Domain Survey, which will occupy the majority of the primary mission -- as well as the Coronagraph Instrument technology demonstration. However, there are boundless theories that will also be addressed and tested by the wide variety of General Astrophysics Surveys. This conference, to take place on the Caltech campus and online, will be an active and exciting confluence of both observers and theorists to outline the potential breakthroughs that could be made possible during the lifetime of the Roman Space Telescope.

If you have any questions, you can email us at [romanssc AT ipac.caltech.edu](mailto:romanssc@ipac.caltech.edu).

SOC: Lee Armus (Caltech/IPAC), Etienne Bachelet (Caltech/IPAC, co-chair), Sebastian Gomez (STScI), Takahiro Morishita (Caltech/IPAC, co-chair), Claudia Scarlata (UMinn), Hee-Jong Seo (Ohio U), Adam Smercina (UWash), Aaron Smith (UTexas), Takahiro Sumi (Osaka U), Maria Vincenzi (Duke U), Schuyler Wolff (UArizona)

LOC: Frank Aragon, Etienne Bachelet (co-chair), Alexandra Greenbaum, Seppo Laine, Wanggi Lim, Takahiro Morishita (co-chair), Schuyler Van Dyk

<https://conference.ipac.caltech.edu/roman2024/>

WFI Working Groups

- **Goal: lower barriers for access to Roman science by providing opportunities to engage with Roman independently of proposal selection**
- **working groups that cut across all science areas**
 - Forum for people to work together on topics/methods that cut across science areas
 - Brings together Science community, science centers, and project
 - Have been very successful over past 5 years
 - What's new is that we broadened access to allow anyone interested to join (rather than limiting to members of selected teams)
 - Included wiki space, streamlined signon etc

Software

Calibration

Simulations

Photo-Z

Observation
Planning

Keeping in touch with Roman



- **Join the Roman news mailing list**
 - sign up to the mailing list by sending an e-mail to Roman-news-join@lists.nasa.gov (no text in the body is required, put Roman in subject)
- **Join the Roman Science Community (provides access to Roman working groups)**
 - <https://outerspace.stsci.edu/display/RSWGS>
- **Monthly Roman Community Forum**
 - 4TH Wed of each month at 4pm EDT
 - https://asd.gsfc.nasa.gov/roman_forum/
- **Monthly Roman Virtual Lecture Series**
 - <https://roman.ipac.caltech.edu/Lectures.html>
- **Got a question?**
 - roman-help@bigbang.gsfc.nasa.gov (This will send your question simultaneously to the help desks of both Roman Science Centers (help@stsci.edu and roman-help@ipac.caltech.edu)).

