

# THE NANCY GRACE ROMAN SPACE TELESCOPE



# Observatory Status

- **WFI:** Completed first part of Thermal Vacuum testing (see talk by Ami Choi)
- **Coronagraph Instrument:** Completed Functional Testing
- **Telescope (L3Harris):** Installed all major sub-assemblies of the integrated optical assembly.
- **Spacecraft/I&T:** Deployable Aperture Cover (DAC): completed DAC flight structure assembly in the Space Systems Development and Integration Facility (SSDIF).  
Command and Data Handling: Science Data Recorder (SDR) B completed EMI testing and started vibration testing. Spacecraft I&T activities continue with electrical integration of the Star Tracker & Inertial Reference Unit, six Reaction Wheels, and Wheel Drive Electronics to the Spacecraft Bus.

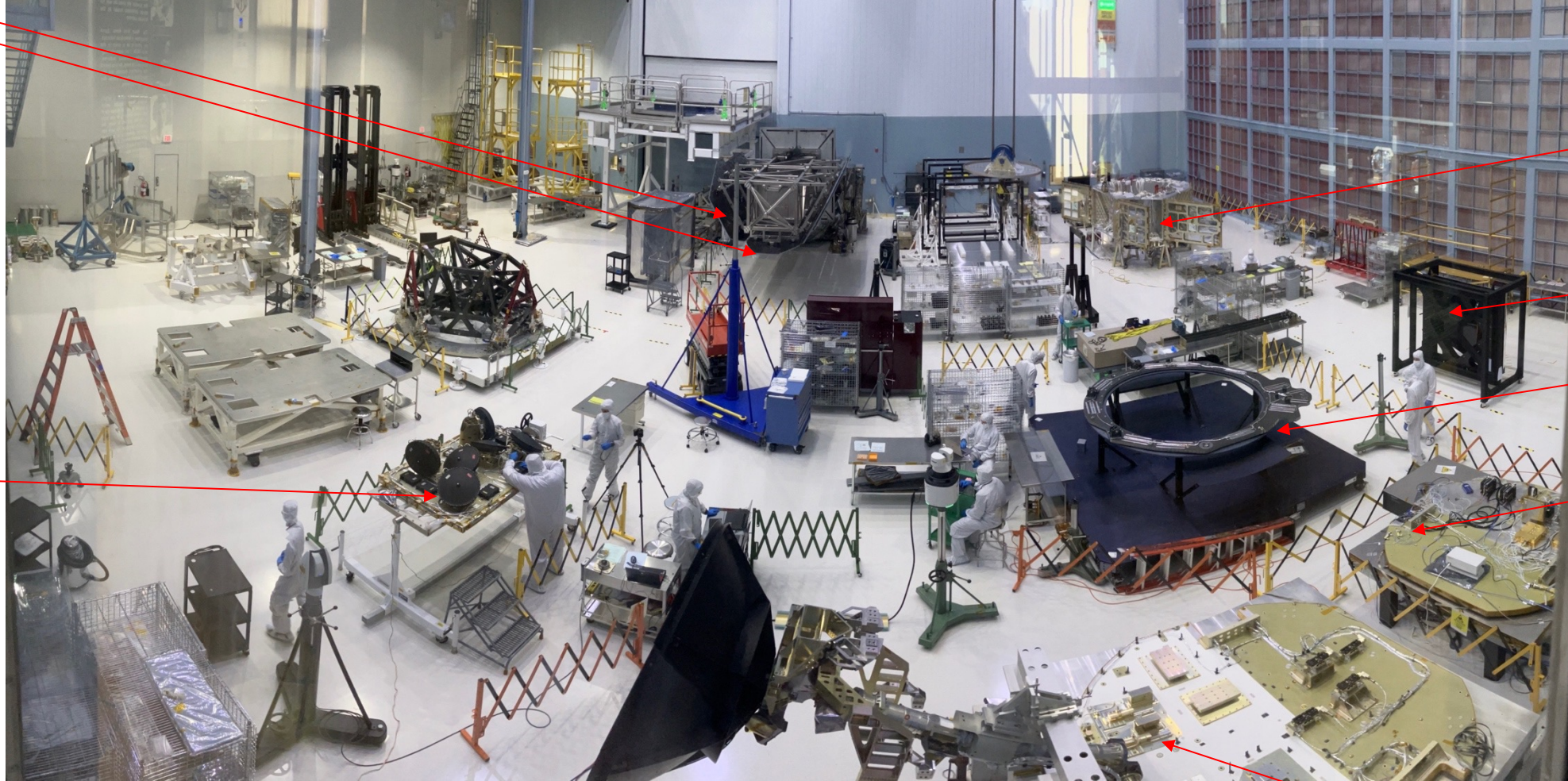
**Remain on track for October 2026 launch (well within launch commitment of May 2027)**

# Spacecraft Hardware in SSDIF

## SSDIF = Space Systems Development and Integration Facility

SASS-B Panels  
on OBA simulator

RW/RWIS  
Hardware



Spacecraft Bus

LISS Panel

DAC Panel

Spare  
Communications  
Panel

SASS = Solar Array Sun Shield  
RW/RWIS = Reaction Wheel/Reaction Wheel Isolation System  
DAC = Deployable Aperture Cover  
LISS = Lower Instrument Sun Shade  
OBA= Outer Barrel Assembly

Flight Communications Panel w/  
Deployed High-Gain Antenna

# Calibration Working Group

- Responsibilities of the Calibration WG include:
  - Advise the Project on issues concerning WFI performance and data quality
  - Maintain knowledge of expected calibration accuracies
  - Follow ground tests and support evaluation of their results as appropriate
  - Develop on-orbit calibration plan tailored to meeting Mission science objectives, including resource estimates
  - Create ad-hoc study teams to address specific questions (e.g., RCS performance requirements)
  - Report regularly to broader Roman community

- **Recent Meetings**

Date	Topic (w/ link to notes)	Presenter
11/21/23	<a href="#">Brighter Fatter Effect and Spot Analysis on H4RG-10 detector at PPL</a>	Andrés A. Plazas Malagón
11/07/23	<a href="#">TVAC1 Focal Plane Noise and Dark Current Results</a>	Bob Hill
9/26/23	<a href="#">candle project</a>	Susana Deustua
9/12/23	<a href="#">WFI TVAC1 calibration activities</a>	Eric Switzer
7/18/23	<a href="#">Euclid NISP passband variations</a>	Mischa Schirmer
6/20/23	<a href="#">Talbot illuminator setup for spare detector characterization</a>	Christopher Merchant

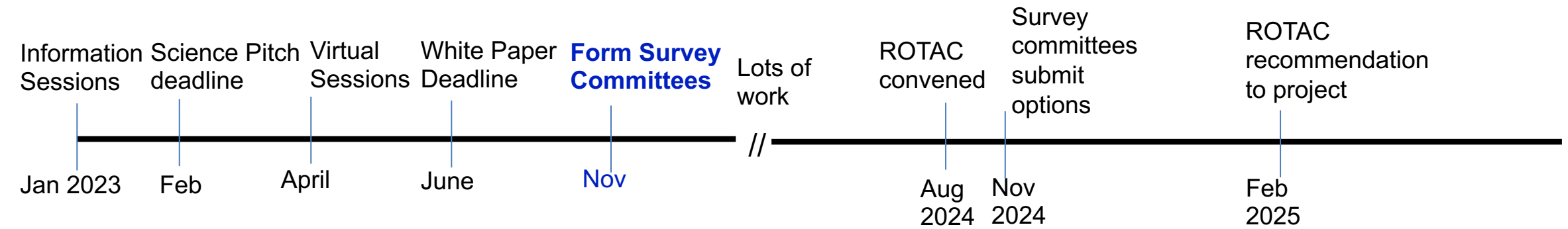
# Software Working Group

- *The Roman Software Working Group is a forum for discussion of issues related to the processing, distribution and analysis of the data from the Wide-Field Instrument (WFI). This includes discussion of algorithms and software in the pipelines to be operated by the Science Operations Center (SOC) and the Science Support Center (SSC) as well as discussion of the needs and plans for analyzing the data created by the outside of the SOC and SSC default standard pipelines. The working group will also discuss aspects of support for data analysis beyond the pipelines. This includes topics such as databases and archive services, the computing and data-storage infrastructure to be provided on with the cloud-based Roman Science Platform, and community-contributed software and data products.*
  
- **Recent topics**
  - Summary of Project Infrastructure Team software and Pipeline plans
  - Discussion of “Improving JWST Data Products workshop” and implications for Roman
  - Ramp fitting algorithms
  - Overview of IMCOM image combination algorithm
  - Uncertainty arrays – level 3 data product concept

# Plan for new working groups

- **Simulations Working Group**
- **Survey definition working group**
  - Place to discuss science drivers, simulations, observing constraints etc
  - Includes science community + experts in scheduling, observatory performance etc
  - Good place to preview information that is being conveyed to the survey definition committees

# Core Community Survey Definition



- **Appointed two co-chairs for each committee**
  - Galactic Bulge Time Domain Survey Committee: Dan Huber, Jesse Christiansen
  - High Latitude Time Domain Survey Committee: Masao Sako, Brad Cenko
  - High Latitude Wide Area Survey Committee: Ryan Hickox, Risa Weschler
  
- **Committee membership almost finalized**

# Early Definition Survey Option

- **Option to define one of the General Astrophysics surveys early**
  - Up to 1 month survey to be executed within the first two years of the mission
    - Allows for a substantial survey but doesn't lock down early observations
  - Survey will be defined via community process (similar to the core surveys), no PI
- **Committee has completed deliberations**
  - On whether to recommend proceeding with an early definition survey
  - Ranked list of survey options
- **Results will be announced soon**



# Roman Science Conference July 9-12 2024

## How Roman Observations Will Confront Theory

July 9 - 12, 2024 • Caltech campus and online

**Home**

**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/>

# AAS meeting plans

- **Roman Town Hall: Thursday, Jan 11 12:45pm**
- **Roman Splinter Sessions:**
  - Building the Roman Supernova Pipeline: Monday Jan 8 9:30-11:30am
  - Maximizing the science of Roman with Simulations Jan 9 2:00-3:30pm
  - A discussion of science drivers for defining Roman's Core Community Surveys Jan 10 9:30-11:30am
- **Roman Special Sessions**
  - The Future of Galactic Plane Science with the Roman Space Telescope
- **Roman table at the NASA booth**
- **Roman presence at STScI and IPAC booths**
- **Program of Roman Hyperwall talks**

# 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](mailto: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://asd.gsfc.nasa.gov/roman\\_signup/](https://asd.gsfc.nasa.gov/roman_signup/)
- **Monthly Roman Community Forum**
  - 4<sup>TH</sup> Wed of each month at 4pm EDT
  - [https://asd.gsfc.nasa.gov/roman\\_forum/](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](mailto: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)).