

Roman Space Telescope

Roman Community Forum Project Status

October 26, 2022

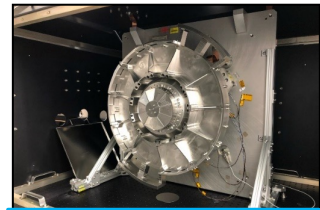
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- L3HARRIS TECHNOLOGIES • BALL AEROSPACE • TELEDYNE • NASA KENNEDY SPACE CENTER •
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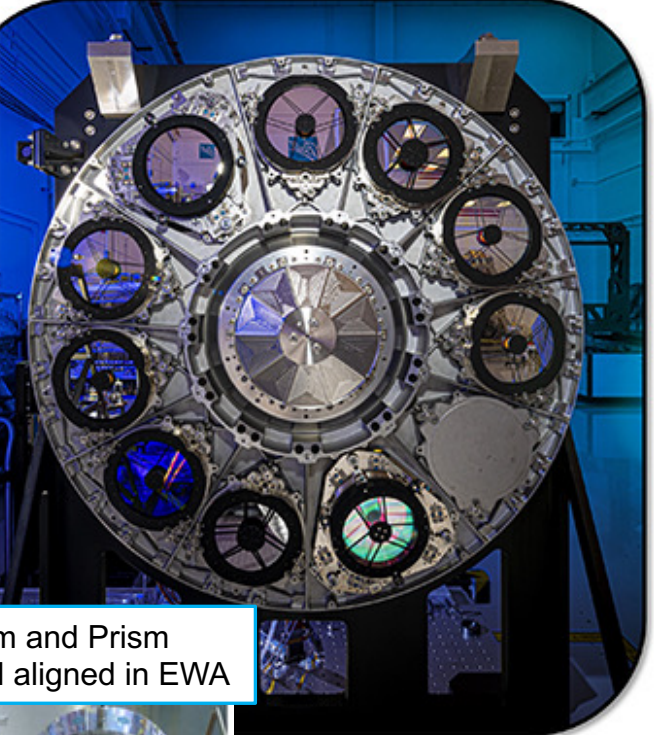
RECENT UPDATES

Wide Field Instrument (WFI) Integration Underway!

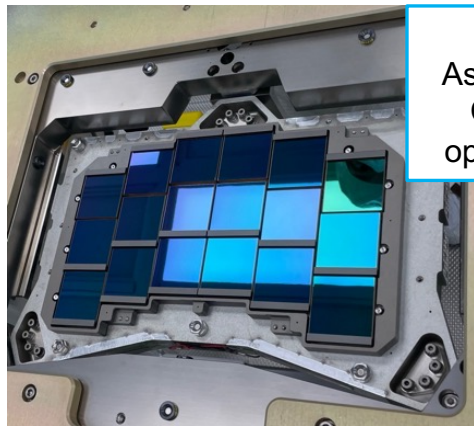
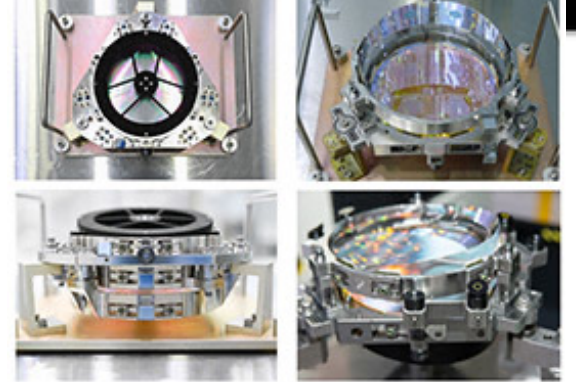
Ball and GSFC making good progress on WFI



Element Wheel Assembly (EWA) life test complete

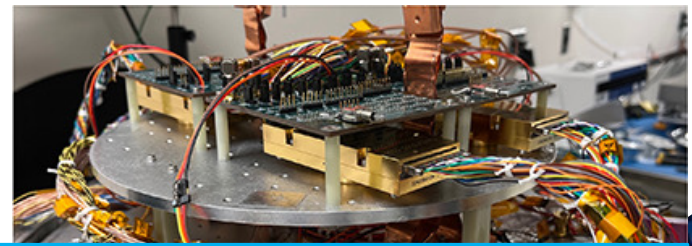


Flight Filters, Grism and Prism complete; installed and aligned in EWA



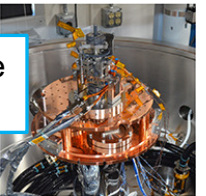
Flight Mosaic Plate Assembly with all Sensor Chip Assemblies and optical fibers is complete

Instrument Command and Data Handling boxes complete and delivered to Ball for integration

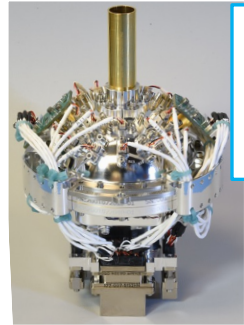


First 4 Flight Sensor Control Electronics (SCE) installed and undergoing functional test

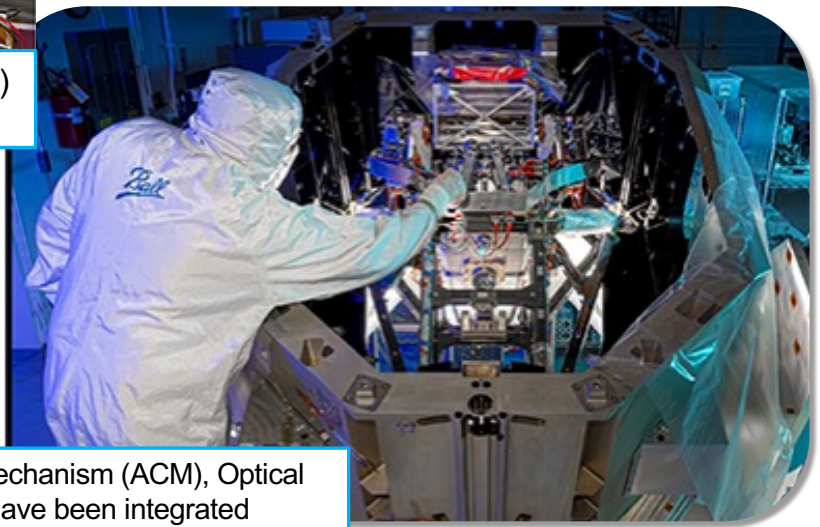
ACM actuator life test complete



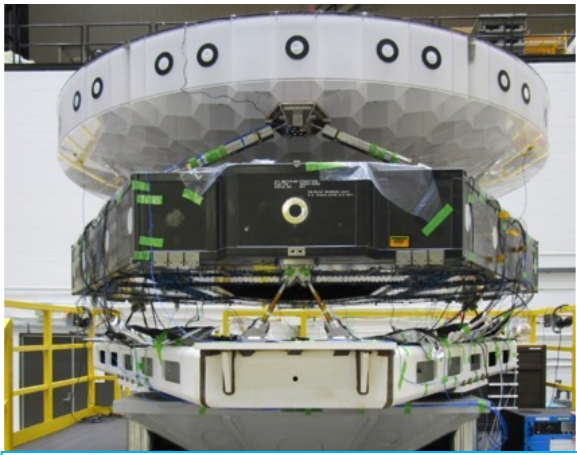
simplified Relative Calibration System (sRCS) Sphere Engineering Test Unit assembled and in test



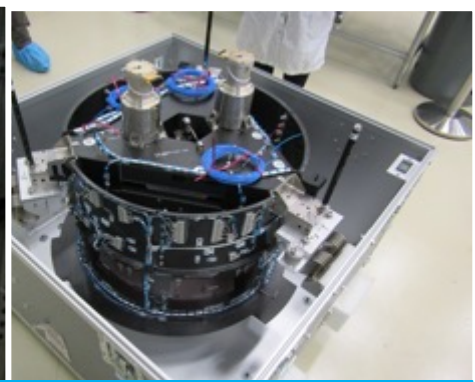
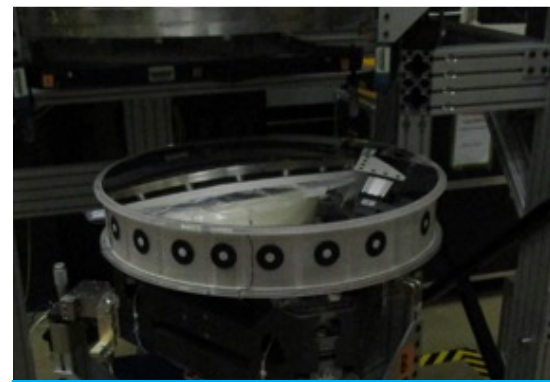
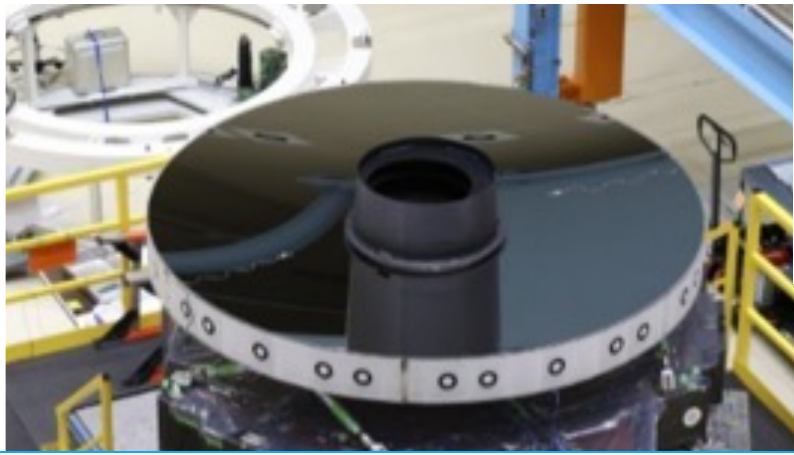
Alignment Compensation Mechanism (ACM), Optical Bench, and Enclosure have been integrated



Optical Telescope Assembly (OTA) Integration Underway!



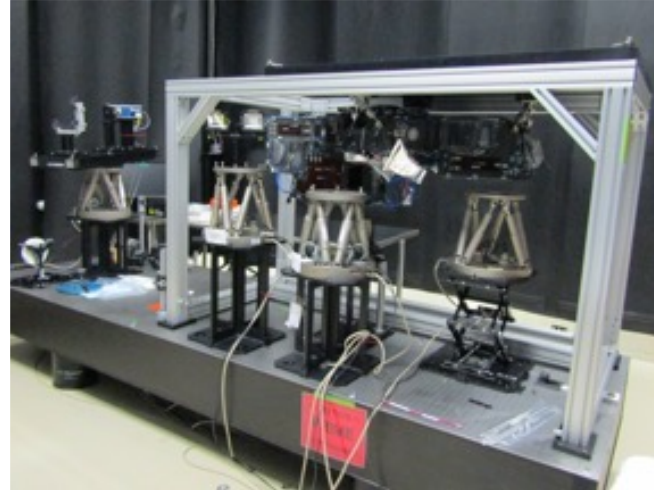
Primary Mirror Assembly (PMA) vibration testing complete!



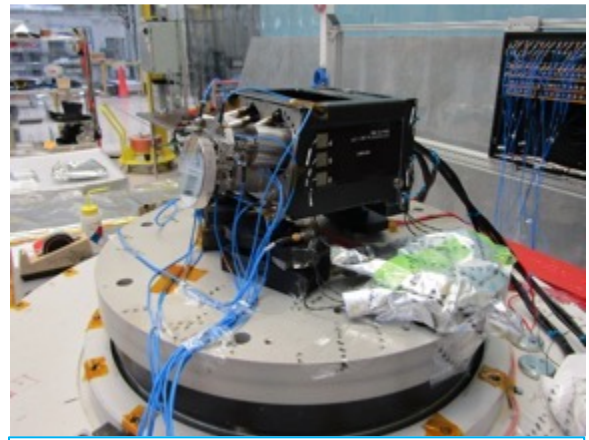
Secondary Mirror / Secondary Optical Assembly (SOA) complete



Aft Optics Structure (AOS)
Thermal-electric work in progress



Tertiary Optics Module Assembly (TOMA) configured for alignment



Tip Tilt Fold Assembly (TTFA)
vibration testing complete

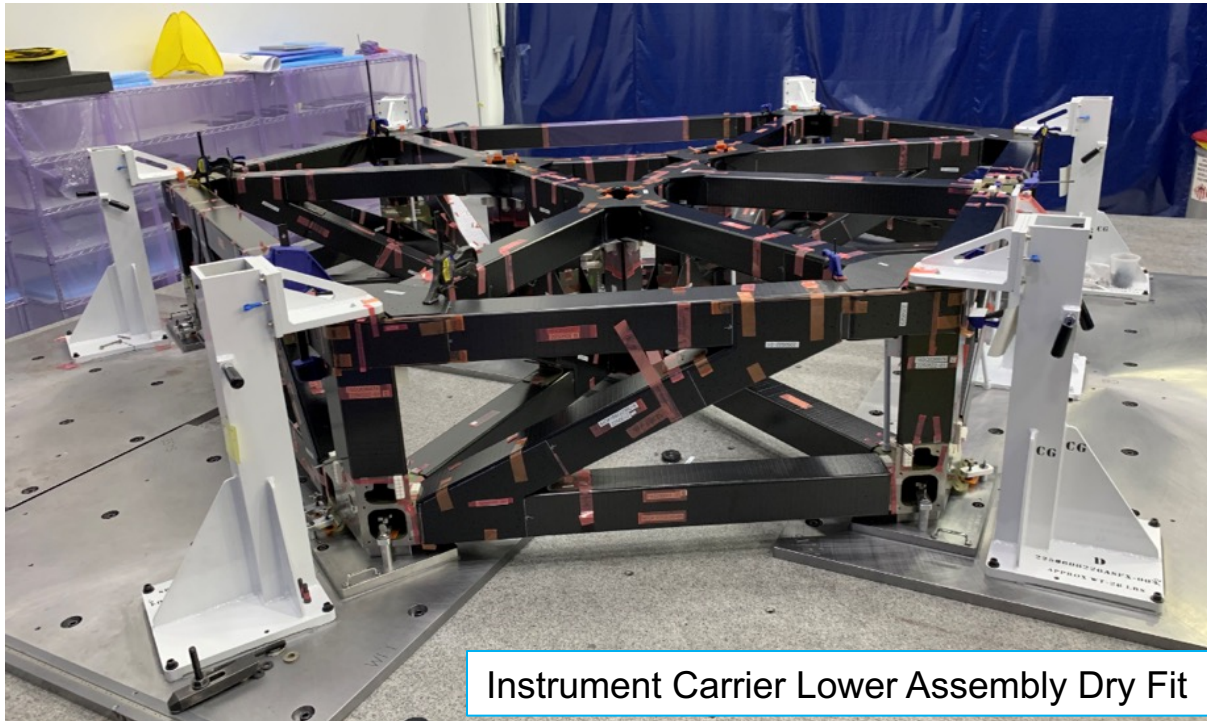


Secondary Mirror Support Tubes (SMST) complete

L3Harris in Rochester, NY, is making good progress on the OTA

Instrument Carrier Structure Assembly Underway!

- Lower structure assembly is in bonding. Nodes for upper assembly are the critical path and have been tracking to schedule
- Launch Loads Vibration Isolation System (LLVIS) Engineering Development Unit parts in fabrication
- New issue reported by Northrop Grumman indicates out-of-tolerance fittings in the partially bonded lower assembly. Repair plan is in work; rework expected to be complete within available slack



Instrument Carrier Lower Assembly Dry Fit



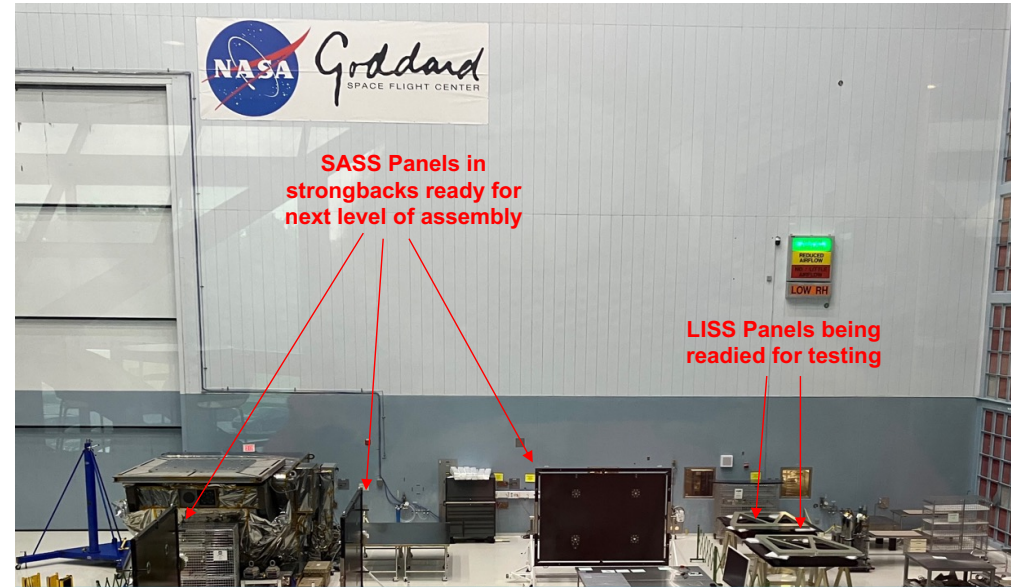
Instrument Carrier Upper Assembly
Titanium Fitting - fabrication nearly complete

Spacecraft Bus Assembly Underway!

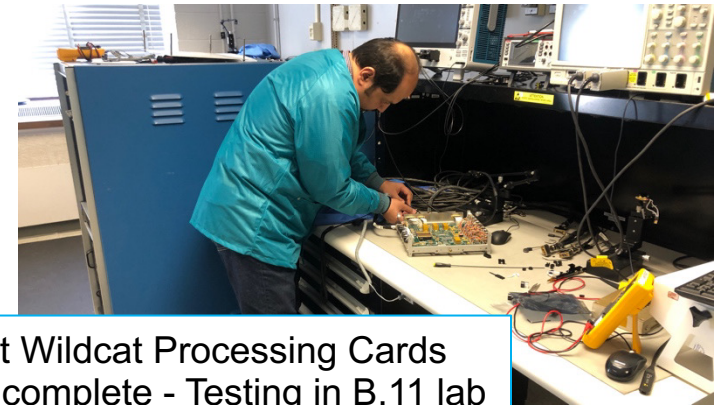
- Spacecraft structure, SASS, and LISS panels delivered
- Spacecraft Engineering Test Unit (ETU) avionics boards complete; flight builds in process
 - First flight boards complete: Flight Wildcat Processor Cards (WPC) delivered to Spacecraft and Instrument Command and Data Handling (C&DH) teams



Spacecraft Bus primary structure in B.5 high bay



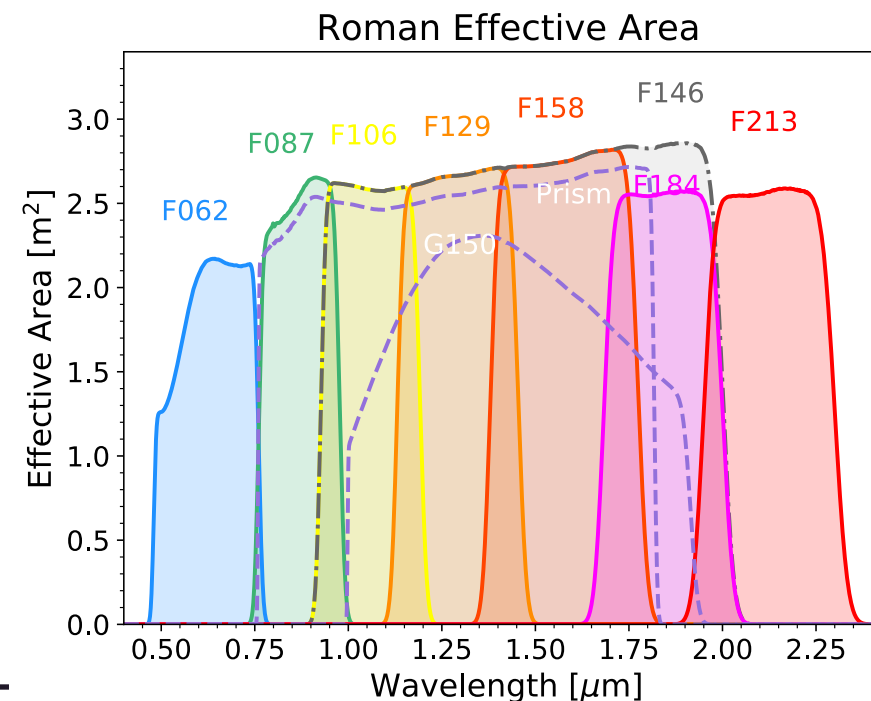
Solar Array Sun Shield (SASS) and Lower Instrument Sun Shade (LISS) Panels in the B.29 SSDIF Clean Room



Flight Wildcat Processing Cards (WPC) complete - Testing in B.11 lab

- **Continue building and testing components, assembling the main elements**
 - WFI, CGI, S/C, IC, OTA
 - Will be ongoing next ~1.5 years
- **Performance characterization**
 - Already have nearly all component-level data
 - Filter characterization is ongoing – esp. field-angle dependence
 - Instrument-level WFI characterization will occur during WFI thermal vacuum testing
 - Detector readout optimization is ongoing

Plot based on measured properties of the flight SCAs, mirrors, prism, grism.
Filter transmission still from a model, but apart from small ripple the actual transmission is as good or few% better.



**THE ROMAN PROJECT REMAINS ON
TRACK FOR LAUNCH IN FALL 2026**