JWST Update

Astrophysics Advisory Committee
13-October-2021

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Astrophysics Division Chief Scientist
Completed Observatory

Webb in launch configuration at the Northrop Grumman Space Park clean room prior to shipping
Getting Ready to Ship

Shipping container, roll-over fixture and Webb at Northrop Grumman
Other Perspectives

Aft-Flap walkout
STScI Webb Status

Science & Operations Center (S&OC) Status

- All Observatory control, science planning and science data processing operational systems are complete
- S&OC subsystems have been and will continue to be used to support Observatory integration and test
- Ground Segment “soft” system freeze currently in effect
  - “Hard” freeze (exemptions approved by Project Manager) starting October

Testing and Exercises

- Space Network & DNS RF compatibility completed July 28
- Last commanding between the Mission Operation Center (MOC) and the Spacecraft on the ground prior to launch has occurred
- Practice, practice, practice of the day of launch communications between and among the MOC, bMOC, DSN, TDRS and ESA’s Malindi ground station
- Launch Readiness Rehearsals (launch and commissioning) and Normal Operations rehearsals are in full swing
“The Launch Boat”
Activities to Launch

December 18, 2021
Webb Community Events

470 host sites in all 50 states
Events run from September to January
Locally run, but NASA provides expert speakers and materials upon request
Media Events

L-60 Arrival
- Begin the drumbeat toward launch when observatory arrives in Kourou

L-3 to L-0 Final Briefings and Launch
- Final pre-launch build-up from Kourou (and Goddard and STScI)
- Working with ESA and Arianespace on final timing

L-29 to L+200 Preparing for a new view of the Universe
- Bring the public along for the journey
- Provide transparency but respect for work of Mission Ops team

L-30 Science Briefings
- Two in-depth science briefings to excite public
- 1 – Broad Science Goals and ERO plan
- 2 – Targeted details and four instrument teams

L-0 to L+29 Unfolding and Journey to L2
- Bring the public along for the journey
- Provide transparency but respect for work of Mission Ops team

WEBB SPACE TELESCOPE
September 2021 AAAC
Commissioning

- LV Sep L+30 m
- MCC-1a L+12.5 h
- MCC-1b L+60 h
- Solar Array L+31 m
- MIRI ICE & FPE Power ON L+16 d
- MIRI CCC Unlock & open L+9.3 d
- NIRSpec MSA Power ON & Cont. Control L+2.7 d
- Ka-Band Activation L+25.3 d
- Deploy Complete L+25.3 d
- MCC-2 L+29 d
- NIRCams Power ON L+35.8 d
- NIRISS & FGS Power ON L+33.8 d
- NIRSpec FPE & ICE Power ON L+25.8 d
- Telescope Alignment Complete L+118 d
- Telescope Slew to Cold Attitude L+132.6 d
- Thermal Slew Ends L+147 d
- Slew to Cold Attitude L+132.6 d
- SI Commissioning L+118 d – L+180 d
- OTE Commissioning L+36 d – L+118 d
- Telescope Alignment Complete L+118 d
- Telescope Slew to Cold Attitude L+132.6 d
- Thermal Slew Ends L+147 d
- SI Commissioning L+118 d – L+180 d

- Observatory Milestones/ Major Activities
- Deployments
- OTE Commissioning Activities
- SI Activities
Cooling Drives Commissioning

- Observatory Stowed Cooling
- Sunshield Fully Deployed
- SI Contamination Control Heaters
- Cooler lines stay above water band while SIs cool
- Cooler Transition to Joule-Thomson Bypass Mode (State 4)

Temperature (K)

Day following Launch

Water band 160-140K
Telescope Comm.
NIRCam