JWST Science & Operations Center status
Massimo Stiavelli

JWST User Committee
June 8th, 2020
Outline

• Development status and milestone
• JWST staff by area of responsibility
• Community training and resources
• Progress in selected areas
• Conclusions
HQ-level JWST Milestones

• Conduct Contingency Planning Rehearsal #3 Sep 2019
• Data Management Subsystem build 7.4 Delivered Nov 2019
• Conduct 4th Early Commissioning Exercise March 2020*
• Deliver Science and Operations Center release 2.1 April 2020
• Evaluation of Cycle 1 General Observer proposals October 2020**

* Completed ahead of schedule
** this is not established but it will be no earlier than October
COVID-19 impacts on STScI work on JWST

• Transitioned to recommended Work From Home (WFH) on March 13th. Transitioned to mandatory WFH on March 17th, only critical infrastructure staff is allowed in the building. Planning to remain on mandatory WFH till June 14 and transition afterwards to a few mission critical people allowed to come in while most continue to WFH.

• While working remotely we are continuing to perform most of the S&OC development, testing and preparation for operations and the science program.

• We are continuing to support the Call for Proposals. With the most recent deadline delay the TAC can no longer be held at the end of July and it will need to be rescheduled. The proposal deadline is still TBD.

• SOC 2.1 was delivered on schedule except for artifacts that have been obtained but are too large for electronic delivery. They will be delivered once office access is again possible.

• The joint Ball-STScI-GSFC Wavefront Team Practice 4 was restructured to be performed remotely and was successful.
COVID-19 impacts on STScI work on JWST

- Activities using to the MOC, the Observatory Testbed (OTB), and the Observatory Scripts Subsystem (OSS) certification labs have been impacted because they require physical access to the Muller building. As a consequence:
  - Remote OTB access was enabled to continue testing. In particular OTB testing of OSS guiding scripts was completed successfully from remote.
  - GSEG3 dry run and dress rehearsal have been postponed. We are currently executing a plan that allows us to support GSEG3 on July 7 with minimal in person footprint.
  - Completion of the certification of OSS 8.2 (flight version) has been delayed. All work that could be done on the OTB has been completed remotely but the work that requires physical access to the Cert Lab (JLAB89) will restart on June 15.
  - Checkout of the FOS hardware and software installation was completed and an partial acceptance test was completed remotely.
  - Installation of the second CTP in the OTB has been delayed.

- We are looking at plans to resume all activities in a safe manner.
<table>
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<tr>
<th>Subsystem</th>
<th>Build</th>
<th>Development Completion Date</th>
<th>I&amp;T Completion Date</th>
<th>Status</th>
<th>% of Requirements Delivered to Date</th>
<th>% of Requirements Verified to Date</th>
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<tr>
<td>Flight Operations Subsystem (FOS)</td>
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Angela has left STScI

Margaret has left STScI to become Director of the SOFIA observatory
**JWST Training events and material**

- **Master Class Community Workshops**
  - Almost 50 individual events worldwide (30 with STScI oversight, rest with ESA oversight).
  - Most successfully completed, some moved online due to Covid-19. Only a couple cancelled.
  - ~1600 JWST Pocket guides shipped
  - Full list of workshops available on
    - Europe/World: [https://www.cosmos.esa.int/web/jwst/results](https://www.cosmos.esa.int/web/jwst/results)
- **“Just-in-time” materials available for self-training**
  - Proposal planning tutorial videos on YouTube (so far >3500 views)
  - “Workshop-in-Box” : Recorded Master Class presentations, Topical homework, Step-by-step guides, Getting started checklist
  - Example science programs: 15 coordinated end-to-end examples available in JDox, ETC and APT. [https://jwst-docs.stsci.edu/jwst-example-science-programs](https://jwst-docs.stsci.edu/jwst-example-science-programs)
- **Latest news and updates available on JWSTObserver**
  - Jwst.stsci.edu, twitter, Facebook, and email newsletter

**Webinars to create an accessible record of the ERS science, technical implementation, and community deliverables**

- Inspiration for GO and archival proposers
- 20 minutes per team, 4 Wednesdays in March 2020 (on average each had 10-15 external live participants)
- All webinars were recorded and are posted on the JWSTObserver YouTube channel (~200 total views)
ETC Usage Metric

- ETC usage has been recorded since its 2018 public release
- Currently dominated by community workshops and training events
- Continuing to monitor usage throughout Covid-19 and up to the Cycle 1 deadline
- We are seeing signs of a decline in usage following the deadline postponement.
Cycle 1 calibration program

- Available on jwst.stsci.edu
- The programs are “as we currently expect”.
- Intended to inform GO Cycle 1 proposals, in general, and new calibration proposals.
- Organized according to instrument and absolute flux calibration
- Links to the program information tool for APT files.
- May be updated when the GO Cycle 1 program is known.

The absolute flux calibration of the James Webb Space Telescope follows a cross-instrument plan, with each science instrument observing stars from the same list of absolute flux standards. To improve the efficiency of the observations, they are grouped into separate programs for each class of flux standard: A dwarfs, solar analogs (G dwarfs), and white dwarfs. A fourth calibration program will repeat observations of the same standards on an approximately monthly cadence through Cycle 1 to serve multiple monitoring purposes. The details of this plan should be considered provisional and may change in response to system developments and the final science program.
AAS JWST events

- STScI and NASA booths
- STScI Town Hall on June 2, 1.40-2.40pm EDT.
- STScI staff available throughout the meeting to answer questions about proposals.
- Get the new edition of the JWST Pocket Guide at the STScI booth.
- Find the JWST Help Desk on jwsthelp.stsci.edu
- Very well attended JWST webinar (158 attendees)
Data Analysis

- See Klaus Pontoppidan’s talk
Telescope commissioning practices now use realistic simulated data

OTE-03: Secondary mirror focus sweep  
Tilt one primary mirror segment per exposure to identify its image

OTE-04: Segment identification

Wavefront team practice #4 (Apr 6-10, 2020)
Subsystem development high-lights

- APT development continues. It will include some minor changes to timing and is planned for fourth quarter FY2020 release.
- Continues development of tools: ExoCTK/PandExo and Data analysis tools and notebooks.
- Ongoing commanding work:
  - NIRSpec detector mode switching
  - MIRI reset frame
- Extensive testing of software in Normal Ops exercises.
A new 1 MW generator has been installed, has completed acceptance testing and is available in case of power failures.
Conclusions

Work at STScI has proceeded as planned in every area but in some cases with lower efficiency because of the COVID-19 situation. The most impacted areas are those that require access to institute facilities such as the MOC or the certification lab. Some workarounds have been established to continue to work by accessing hardware from remote. We are confident that STScI will be able to support the mission schedule when a revised one is developed.