STUC June 2025 Report

STUC Membership

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1. Meeting Summary

The STUC met in person on June 2 and 3, 2025. At this meeting, we welcomed a new STUC chair, Ata Sarajedini (Florida Atlantic University), and three new members, Sarah Casewell (University of Leicester), Pippa Molyneux (Southwest Research Institute), and Kate Whitaker (University of Massachusetts at Amherst). Three members completed their term on the committee: Misty Bentz (Georgia State University), Saurabh Jha (Rutgers University), and Ian Roederer (North Carolina State University). We are grateful for their contributions.

We celebrate the 35th anniversary of HST operations. The observatory continues to operate with extraordinary scientific productivity. In 2024, there were a record 1,073 refereed papers based on HST data. Hubble and Webb continue to be the most popular NASA missions for users. Science and operational synergies between the three space telescopes (Hubble, Webb, and Roman) are being actively studied. The Outer Planets Atmosphere Legacy Program (OPAL) 10th anniversary is also being celebrated.

From the various presentations during the STUC meeting, we offer the following items of congratulations and pride:

- Successful Senior Review and its positive impact in the current budget environment.
- Increased stability of operations, recovery from past anomalies, and the subsequent smooth transition to Reduced Gyro Mode. In particular, there have been no anomalies in over a year.
- Nominal operation of the instruments and being proactive to ensure longevity and reliability of the observatory well into the 2030s, including restored redundancy on the Science Instrument Command & Data Handler.
- Superb work by the Office of Public Outreach for their award-winning visualizations of HST (+JWST) images.
- Completed HASP and ongoing HSLA work with commendable plans for future work on the HSLA.
- Continuation of an open access approach to Rocky Worlds observations making high quality science data products and tools available to the community (e.g., whether the systems are in eclipse or transit).

- Ongoing collaboration with the European Space Agency, including: HST being listed in the ESA Mission Extension Operations Review (MEOR); the extension of operations for 2027-2029, with indicative extension for 2030-2032; archive mirroring; and outreach activities, including the ESA distinguished lecture.

2. Concerns arising from the presentations

The STUC is concerned about potential risks to Hubble from a growing number of directions. These concerns include:

- The unprecedented uncertainty with FY2026 cuts to the NASA budget
- A persistent misconception in the community that Hubble's functionality is declining. For example, a misinterpretation of the reduced-gyro mode with a false conception that Hubble had only one operational gyro was sometimes present in the community. A more recent example, in the case of FGS2 glitches, the FGS2 and overall observing failure rates had increased to up to 50% in early 2025 due to lubricant aggregate or debris resulting in saturation and stalls. Mitigations implemented in Spring 2025 have reduced the overall observation failure rate to a few percent, similar to historical levels; however, knowledge of this recovery may not be wide-spread.
- The growing cost to support the NASA Hubble Fellowship Program (NHFP), which is approaching a threshold where more funding will go to NHFP than to the entire HST GO/AR program each year.
- The decline in the number of submitted proposals over the last several cycles - it is unclear what has caused this decline. Although we note that the success rate remains around 1 in 7 by orbits, demonstrating a sustained demand for Hubble observations and suggesting a shift to larger orbit requests.

3. Recommendations from the STUC (in no particular order):

- Continue encouraging the astronomy community to advocate for NASA Astrophysics and Science as a whole, rather than for individual missions.
- Closely monitor different aspects of proposal submissions (e.g., evolution of demand for the UV-initiative, unique HST modes, different science cases, GO only, country of PI institution, etc) to better identify the potential cause(s) of declining proposal submissions (e.g. lack of funding for science in the US, demographics of astronomers in ESA vs US, reduction in archival proposals, areas of science that are moving to other observatories, potential changes in HST support (ACS, WFC3 IR) and capabilities (reduced field of regard), none of the above or all of the above.)
    - The goal would be to build a better understanding of how the community is using Hubble differently than other observatories, to highlight Hubble's unique roles within a portfolio that includes Roman and Webb.

- Actively communicate recent technical successes to the community to foster engagement and support.
    - The goal would be to demonstrate that careful management of the instruments and resources have prolonged the lifetime of components (e.g. mitigation of glitches, high efficiency even with reduced gyro mode, successful recovery of redundancy in Science Instrument Command & Data Handler, recent agility in responding to a potential collision threat), to help combat the “Hubble on its last legs” misconceptions. Perhaps share a community fact sheet to highlight science productivity and capabilities.
- Make the community aware that the NHFP is approaching parity with the GO funding; additionally, NASA HQ may want to initiate a process by which the community is able to evaluate these priorities.
- We encourage OPO to continue to focus on the marketing of science results, including examples that emphasize the unique strengths of Hubble.
    - Visualizations of time-evolution studies over the 35 year baseline of Hubble (e.g., SN1987A, proper motion work, solar system planets, etc.)
    - Leverage the popularity of Hubble within the wider community (e.g., the positivity of the ‘Hubble Gotchu’ campaign) - This could also be a community led promotion to boost (literally) Hubble.
    - Highlight new historical records of science output through publications metrics
- We support STScI efforts to foster coordination and develop policies to avoid duplication issues for Flexible Thursdays.
- We request an update on the HST/JWST Long Term Variability Monitoring Working Group (and DDT recommendations) at the next STUC meeting.
- Develop a community engagement plan to determine how best to engage the community in further maximizing the scientific output of Hubble. The STUC believes it is important to involve the community in thinking about the big picture science that should be emphasized in the near future with HST.
- We support consideration of whether two in-person STUC meetings might be reduced to one in-person and one virtual for budgetary reasons, if necessary.
- We support consideration of whether having occasional joint STUC+JSTUC meetings might be useful.
- Inform successful proposers for Cycle 33 that funding may not be available until a few months into the start of the cycle.

We encourage the community to review the STUC meeting presentations, which are available at https://www.stsci.edu/hst/about/space-telescope-users-committee, and provide feedback to STScI and to the STUC via the link on the STUC webpage.