

Space Telescope Users Committee (STUC) Report:

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Meeting Summary:

The STUC saw presentations on the following topics: STScI outlook (Sembach), HST Project Update (Wiseman, Crouse), HST Mission Office Report (Brown), HST TAC (Leitherer, Strolger), Instrument Status Reports (Baggett, Debes, Oliveira, Grogin), NASA HQ Perspective (Still), Data Analysis Tools (Tellerud), ULYSSES DD Program (Roman-Duval), New HST Website (Christian), ESA Update (Nota), & HST2025-preparing for the future (Mackenty). This report summarizes the key issues that were discussed, and recommendations of the STUC. [For a full account, the community is encouraged to review the STUC meeting presentations, accessible through <http://www.stsci.edu/institute/stuc>.](http://www.stsci.edu/institute/stuc)

Mission Status:

STScI has been very proactive in managing and monitoring all aspects of the Great Observatory, and the instrument teams are doing exceptional work to optimize performance and lifetime. Publication rates are at historically-high levels, demonstrating the continued strong productivity of the observatory. The observatory itself remains in good condition, with instruments operating nominally, but with some growing challenges, particularly related to gyro performance. This past year brought home that Hubble is an aging facility, and even though the telescope's productivity remains incredibly high, it is time to start planning for the future and Hubble's legacy.

Given that HST is an aging facility, and there is a 50% probability of going into 1-gyro mode within the next 2-3 years, the [STUC recommends that the Institute start more actively informing \(without alarming\) the community of this likelihood, including the loss of specific capabilities but also the minor impact on the main science capabilities.](#)

A number of strongly constrained proposals on the long-range plan (LRP) have been finished off, enabling HST to reduce the long tail from previous cycles. Looking forward, the STUC recognizes both the difficulty and importance of supporting time-constrained

observations, and also the importance of completing unconstrained observations in a timely manner in order to maintain progress in all HST science areas. Given the impact on scheduling, [in a future meeting the STUC would like to see statistics on the demand from the community on ToO, transients, and highly constrained observations. We would also like to remain informed of how well the requirement for proposers to justify observing constraints in their Phase 1 proposals is working.](#)

The STUC commends the Hubble team for its work to optimize the scheduling of these challenging programs, and supports efforts by STScI to require justification for constrained programs during Phase I. We also [recommend that STScI work towards more strongly enforcing deadlines for submitting HOPRs, since delayed submissions adversely affect the LRP.](#)

Finally, we applaud the leadership's continuing effort towards a more equitable distribution of telescope resources to enable the best science through the dual-anonymous proposal review process.

Instrument Status:

The instrument teams continue to improve calibration and make the results available quickly to the community. The COS team in particular, is doing a fantastic job of exploring ways to extend the life of the instrument, in addition to calibration work. Extending the lifetimes of instruments (whenever possible) will be critical to making sure that HST is available beyond 2025. In some cases, science programs can be carried out with either STIS or COS. [The STUC recommends that the Director consider adding options or incentives for proposers in Cycle 28 and beyond to request STIS rather than COS, when appropriate, to extend the life of COS for as long as possible.](#)

There is a working group in place for ULLYSES, and they have started considering many of the aspects and details of implementing this large program. They plan to use the expertise of the scientific community to report on progress quarterly. [The STUC recommends that at least half of the membership of the hot and cool star Science Advisory Committee consists of experienced UV spectroscopic observers.](#) Given that this program will likely execute over 3 years, there is a reasonable chance that Hubble will be in 1-gyro mode for part of the observations, and it is important that the working group plan for that possibility. [The STUC also recommends that the working group try to finalize targets as quickly as possible, to allow planning for complementary observations with ground-based facilities.](#)

TAC:

The cycle 28 proposal selection process for Hubble will be intertwined with that for JWST. We believe that the Institute has identified a good process, one that pulls from previous experience with panels and off-site expert reviews. The STUC endorses the new panel review format with the following recommendations:

- [Proposals going for external review should have at least 5 reviewers](#)
- [We recommend that external proposals with a high dispersion in the grades be further assigned to the relevant on-site panel for further discussion and review](#)
- [We recommend that panel chairs continue the process of reviewing all comments in their panel after the rankings have been made, with particular attention paid to potential discrepancies between grades and comments](#)

ESA:

The science videos produced by ESA on a range of topics (eg. reionization) are a great way of disseminating science. The STUC suggests that ESA consider additional ways of enhancing their accessibility (e.g., adding captions/transcripts, creating documents suitable for reading software, translating these to braille and to spanish, etc). It was also mentioned that converting these to planetarium-format shorts and distributing for free might be a fun way to celebrate Hubble's upcoming 30th birthday.

WEBSITE:

The new HST website design looks [to have improved a bit](#) from the last STUC meeting. The STUC feels that it is incredibly important to make it as easy to use and intuitive as possible, given the prominent role it plays for the scientific and broader community. Having each instrument page follow a similar template is a good step. Some STUC members have found it difficult to find basic information in the new format, for example filter zeropoints for the different cameras, which used to be easily accessible. Some old links to helpful pages now go to generic HST pages, and not to the original content. One potential solution would be to set up the old URL's to auto direct visitors to the new pages where the information can be found. [The STUC urges the Institute to ensure that calibration and other information used by the community on a regular basis is easy to find.](#) Three STUC members volunteered to help with further testing: Anne V., Francesco F., & Rupali C.

LOOKING TO THE FUTURE:

The STUC strongly appreciates the development of new python-based tools, which we expect will eventually be used widely by the community. We discussed ways to reach as many scientists (including some of us older ones) and make them as science-enabling as possible. A few suggestions to consider:

- hold training workshops for students on the software
- create an ambassador program to train people who will bring the tools & knowledge to their institutions (similar to ALMA, JWST programs)
- make demos/videos for a YouTube channel. This is one area where the STUC (in collaboration with ST) could put out a survey to the community to find out which tools would be most helpful.

As part of that survey, the STUC would gather input on the most useful tools, including the type of tool (GUI vs. script) as well as specific tasks.

The STUC believes that the 'Hubble Fellows' program is critical for developing scientific talent in our field, and strongly recommends that it continue through the JWST era (possibly keeping Hubble as the fellowship name for historical reasons)

HST's legacy will continue through its data archives. The STUC endorses the need to support a useful archive that is transparent and user-friendly. The STUC also realizes the necessity and benefits of the presence of in-house experts, who are critical in enabling the community to use the data. This is particularly essential for passing on the skills to the next generation of scientists. The STUC also considered options for training younger scientists (students and postdocs) to master these data, and may have specific recommendations in the future.

For the next STUC meeting, some specific topics we would like to hear about:

- Preliminary plans/brainstorming results for future of HST archive, tool development, additional funding to support science programs, etc. It was noted that AR proposals should still be encouraged and funded even after HST retires, especially given that JWST will likely not offer those for the first few Cycles
- Statistics on submitted/accepted ToO/transient/highly constrained proposals (e.g., transiting exoplanets, transient follow-up, etc). Statistics from the next two cycles will enable the STUC to make recommendations on any shifts on operation planning for highly constrained / disruptive observations.
- Metrics of the performance of the dual-anonymous proposal review system.
- Preparations for Hubble's 30th anniversary