

Space Telescope Users Committee (STUC) Report:

Fall 2020 Meeting, submitted November 13, 2020

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Meeting Summary:

Due to COVID-19, this was the second remote STUC meeting. Presentations were made available ahead of time in order to focus meeting time on questions and discussion. The meeting consisted of approximately 4 hours of presentations on Thursday, October 15, 2020 and 3 hours of executive committee discussion and debrief to STScI and NASA on Friday, October 16 2020. Presentations on the following topics were made available to the STUC: reports from the HST project and mission status, including a dedicated report on the COS lifetime extension, statistics and results from the Cycle 28 review and preparations for Cycle 29, updates on the ULYSSES Director's Discretionary Time program, a recap of Hubble's 30th Anniversary celebrations, an overview of the new Hubble Image Similarity Database, and a request for STUC feedback on community engagement. This report summarizes the key issues that were discussed and the resulting recommendations. For a full account, the community is encouraged to review the STUC meeting presentations, accessible through <https://www.stsci.edu/hst/about/space-telescope-users-committee>.

Mission Status and Overview:

The STUC heard presentations on how the transition to remote work at STScI and Goddard has been accomplished fairly seamlessly (STScI expects to be remote through June 2021). The STUC appreciates all the efforts made by the Hubble teams at STScI and GSFC to keep Hubble going during the COVID pandemic. It is a testament to the ingenuity and hard work of team, including its decisive leadership, that Hubble not just continues to carry out its mission, but is carrying out new ambitious projects like ULYSSES, extending its outreach efforts, and revising its time-allocation and community outreach programs all while working remotely (acknowledging the individual stresses that many folks are under). The STUC was also pleased to hear of the continued progress on JWST, acknowledging the challenges faced for operations and proposal reviews with two flagships operating simultaneously, and looks forward to the science enabled with these two observatories flying at the same time in the next 18 months.

COS Lifetime Extension:

The COS instrument team presented a summary of recent work to extend the lifetime of the COS FUV modes to several times their original baseline lifetime. The great lengths STScI and the COS team are going to preserve HST's UV spectroscopic capability is widely acknowledged in the community. [The STUC encourages the COS team to work with the ETC and APT teams \(or via the instrument handbooks, call for proposals, etc\) to make overheads associated with the multiple positions clear to users so they can propose an appropriate exposure time.](#)

ESA Update and the Hubble Image Database:

The STUC was briefed on the new/extended contract between ESA and AURA, including the formalization of the work with JWST. This continued partnership is important to international space astronomy in the 2020s. We learned about the strong public support for HST's 30th birthday and that the HST/JWST conference in Stockholm was likely delayed until 2022. The STUC was also enthusiastic about the work done by the Hubble Image Database team, using convolutional neural networks to identify 'like images' across the HST imaging archives. We look forward to seeing this tool made available to the public.

ULLYSES:

The continued progress on the ULLYSES project is exciting. Dr. Roman-Duval briefed the STUC on the progress from the first data release of the massive stars and the start of the T Tauri star observations in November/December 2020. We also applauded the work put into the archive and the ULLYSES team's continued work with the low-mass star SAC to develop the supporting data plan to get those in place. ULLYSES has mobilized what is probably the largest collaboration of the international pre-main sequence star + disk communities ever assembled (large Chandra and XMM programs in place, legacy optical spectroscopy program at the VLT, etc), all motivated by the investment of HST observing time. [The STUC recommends that T Tauri star / M dwarf bright object protection activities be carried out with the coordination of the T Tauri star observing experts on the ULLYSES SAC.](#)

Cycle 28 results/process, Cycle 29 preparations/process:

STScI presented a review of the Cycle 28 proposal review process, including acceptance rates that were consistent with historical norms, and noted that 33% of accepted proposals were by 1st time PIs. The STUC also was encouraged to hear that the dual anonymous review appears to be supporting an equitable gender success rate with successful proposal percentages similar between male and female PIs. Acknowledging the challenges with implementing the HST review virtually and in coordination with the upcoming JWST cycle 1 review, the STUC received community feedback on concerns about the cycle 28 panel review process. There was feedback from community and STUC experience that small proposals were not given full consideration in the Cycle 28 evaluation process. [As a specific recommendation for Cycle 29 \(hopefully\) and Cycle 30-and-beyond \(definitely\), we suggest reconsidering if some fraction \(e.g., the top 40%\) of small](#)

proposals can be reviewed by a virtual/in-person panel, and support the improved proposal-to-reviewer connection.

There was also ongoing concern about the expertise of the external reviewers with their assigned proposals. There was discussion prior to cycle 28 about adopting more of a mid-cycle-like approach to match reviewers and proposals. Both STUC members and interested members of the HST users community expressed concern that this was not done (or not done well) in the cycle 28 external review. The STUC suggests that STScI should consider implementation of some kind of “check box” to verify that the reviewer feels competent to review a given proposal (or comparable means of receiving reviewer feedback on their assignments). This might give some high-level information on how well STScI is connecting proposals with reviewers.

The STUC was supportive of the plan for renormalization of grades among reviewers and encourages STScI to consider a broader range of possible grades to allow the reviewers to correct for grade compression (e.g., a 1 - 10 grading system, with 10 being the highest). The STUC also heard about initial plans to introduce adjectival grading grids into the proposal review. While the introduction of adjective/grading may help reviewers to ‘build’ their grades, the STUC recommends that it should be combined with some possibility to quantify votes to enable ranking of close proposals.

HST/TESS Initiative:

The STUC discussed community input on the availability of non-conflicted reviewers and the preparation of the TAC for reviewing proposals responsive to the HST/TESS initiative introduced in Cycle 28. However, after discussion of these topics with STScI, the STUC does not have any consensus recommendations at this time. The STUC appreciated the overview of the HST/TESS initiative provided to TAC members and availability of the HST/TESS working group report, per recent STUC recommendations. The STUC acknowledges STScI’s process of selecting TAC members well in advance of a proposal deadline, and believes this helps to mitigate issues of expert reviewer conflict of interest.

Community engagement to the STUC (or increasing visibility and opportunity for public feedback on STUC activities and findings):

Initial recommendations include suggestions to:

- 1) better publicize STUC reports to generate feedback, add direct links to STUC information and feedback pages into Call for Proposal, encouraging people to reach out about HST website, time allocation process, or any other concerns
- 2) STScI-produced template slide about contacting the STUC that folks presenting talks based on HST data could show
- 3) A booth time at AAS (when they are back in person), which could create a list of action items for the STUC to discuss at the following meeting

- 4) A “Meet the STUC!” coffee/happy hour where ~two STUC members would host an informal zoom meeting (~once a month) for participants to learn about and provide input on the HST mission and its interface with the astronomy community

STUC discussion related to HST proposal selection and execution:

Long contiguous-orbit observing programs:

The STUC is supportive of the language suggested for the Cycle 29 Call for Proposals regarding long continuous observing programs. Many/all of the STUC were surprised to learn that 15 - 30 contiguous orbit programs existed. Consistent with previous STUC recommendations, we are supportive of the bounds that the Institute needs to put on these programs to ensure the continued efficiency of the observatory for all astronomical science. [We recommend that the Phase I proposal explicitly justify the scientific need for the Y continuous orbits if \$Y > 5\$ and this could be implemented with a required section in the Description of Observations that makes proposers justify the science need.](#)

If this additional justification does not mitigate the number of requests, the STUC could be supportive of limiting the number of Y+ contiguous orbit proposals at the beginning of the Phase II stage (governed by Phase I ranking) to support the mission planning staff.

Extended proprietary period for multi-epoch data sets:

Following the receipt of a community letter to the STUC, there was significant concern about ‘poaching’ in a range of long-term observing programs where multi-visit observations are required to meet the proposed (and peer-review accepted) science goals. This impacts the overall quality of the science results coming from HST and has a negative impact on early career researchers. [The STUC recommends maintaining proprietary access on multi-visit programs through the last visit of any target identified in the Phase 1 proposal as requiring the full suite of visits to complete the proposed science objectives.](#) This recommendation includes large programs that typically do not have a proprietary period. We also recognize that it is incumbent on the Phase I proposal to demonstrate why the science requires the full multi-visit dataset and to explicitly justify the expanded proprietary period. [We recommend that proposers be required to justify the need for an expanded proprietary period in the Phase I proposal. If the expanded proprietary period is not justified, we recommend the standard HST proprietary periods appropriate for the type of proposal \(regular GO, large GO, etc\) be applied.](#)