

Space Telescope Users' Committee Report: Apr 16-17, 2015

STUC Attendees: Marc Buie; Jane Charlton, Hsiao-Wen Chen, Michael Cushing, Annette Ferguson, Jenny Greene, Chris Howk, Soeren Larsen, Andrea Prestwich, Brian Siana (Chair), David Sing, Ann Zabludoff

The STUC is impressed with the continued efficient operation of the telescope and expanded capabilities of some of the instruments. With these new capabilities, and the nearly all-time-high demand in Cycle 23, the telescope will continue to do ground-breaking science for years to come. The massive efforts to promote the 25th anniversary are impressive, and will no doubt have a very high profile.

Mission Report

Both ACS and WFC3 appear to be supported at a high level, with a number of recent significant improvements, including correction of charge transfer losses, geometric distortion, and scattered light in ACS.

COS continues to perform well, albeit with some continued sensitivity degradation. The move to a new lifetime position (LP3) has required significant work on the part of the COS-STIS team, notably for extraction modifications and new calibrations (wavelength, flux, flat fields, etc.).

The STUC was concerned with the lack of progress on lingering, fundamental calibration issues with COS. In its last report, the STUC emphasized the importance of improving the wavelength calibration of COS. Little progress seems to have been made in this area, and most of that is a result of volunteered effort from the community. While the statement has been made on many occasions that the current wavelength solution is "within specs," there is clearly a demand from the COS community to do better and, indeed, some demonstration that it should be possible.

The STUC sees this as a fundamental calibration issue, and feels it is a problem that should be a high priority in order to maximize the return on UV spectroscopy. We encourage the Institute to investigate whether it is possible to allocate resources to address this issue, including considering the allocation of new personnel to help the team and whether specific observations might be used to facilitate a better wavelength solution. **We would like to hear about COS wavelength calibration progress at the next STUC meeting.**

Proposal Demographics

Previously, the STUC had heard that review panel members had higher proposal success rates. The STUC was shown additional analysis demonstrating that serving on a panel does not make the panelist more likely to be awarded time than in the previous or following cycle. In general, panelists are among the group of successful PIs. It is important to continue to avoid a feedback system that creates a two-class community.

We commend Neill Reid and STScl for their careful work in trying to isolate the source of the gender disparities in proposal acceptance rates present over many cycles. New efforts were made to identify where in the proposal review process the gender disparity arises. Over the analyzed cycles (19-22), female-PI proposals were triaged at a significantly higher rate, but this disparity is not enough to account for the gender difference in accepted proposals. Female-led proposals that made it through triage also had a lower acceptance rate than male-led proposals.

To attribute gender disparities to gender bias in the proposal review process, it is necessary to control for other variables tied to proposal acceptance rates, e.g., the quality of PI institution, PI seniority, and the number of orbits requested. As a first step, STScl tested for any advantage imparted by the PI's institution, ranked by impact and productivity. While female-led (and male-led) proposals from such "highly productive" institutions can sometimes be more successful than other proposals, female-led proposals from "highly productive" institutions are less likely to be accepted than male-led proposals from those institutions.

These results suggest that the role of unconscious bias during proposal review in introducing a gender disparity warrants further investigation. We urge STScl to continue to compile and evaluate these statistics. We recommend continued discussions with the other NASA observatories to better assess gender disparities and possible bias across all missions.

The gender disparities appear in Cycle 22 despite new and thoughtful procedures introduced into the proposal review. As any one cycle is not sufficient to assess meaningfully the effects of these procedures, we recommend continuation of the steps taken in Cycle 22: removing PI name from the front page, using only first initials, and highlighting the potential for unconscious bias and reminding reviewers of the proposal assessment criteria. Furthermore, the STUC supports focusing more strongly during triage and panel discussion on all five assessment criteria and addressing each in the panel comments to the TAC and proposers.

TAC

The STUC supports a continuing UV initiative and the continuing use of external reviewers for Large and Treasury proposals. Overall, the plans for the June 2015 panel/TAC meeting are going well, however there are some significant changes in the way the medium proposals will be handled.

The STUC is concerned that the procedure outlined for Medium proposal review for Cycle 23 is inconsistent with the Cycle 23 Call for Proposals. Specifically, the Call states "Those lying above the scientific cutoff line proceed to the TAC, where their scientific impact is assessed alongside the Large Proposals. The TAC then decides which Medium Proposals are recommended for approval." The planned procedure described to the STUC has the panels each ranking the medium proposals along with small proposals and then passing the highly ranked medium proposals to the mirror panels. The mirror panel chairs and/or subsets of their members will then decide their

relative ranking and an allocation given directly to the panels will be used in order to recommend proposals for selection. The TAC will receive a report about the decision, but will not actually read and rank medium proposals. STUC members urge STScI to clearly establish the procedure by which mirror panels will decide upon selected Medium proposals, and cautions against giving too much power in that to the chairs themselves. This is because of conflicts and simply to be sure the procedure is uniform.

The STUC learned of planned changes for Cycle 24 of the Categories and Keywords for proposals. There will now be six categories that correspond directly to the review panels, and proposers will be able to choose the category/panel when submitting the proposal. The STUC agrees with this simpler approach and was glad to hear that secondary categories can also be selected to provide extra flexibility. The planned rearrangements of topics seem reasonable to the STUC, as a more balanced panel workload will improve the review process. The new plan includes a distinct list of keywords for each category which will be self-selected by proposers and by reviewers and used to match proposals to more expert reviewers. The STUC supports this idea, though feels that not enough keywords have been listed for some categories in order that proposers can choose five of them. The STUC suggests using the Cycle 23 proposal keywords and panel opinions to expand the lists in preparation for Cycle 24 implementation.

Cycle 23 will see the introduction of a rolling TAC where short proposals that are timely (but not time critical) may be submitted and reviewed at regular intervals. The STUC supports fairly stringent constraints being imposed on these proposals so that they are not viewed as an alternate means of getting regular observing time. Additionally, we support the short proprietary time for data obtained via this channel. We suggest that the number of orbits allocated for these rolling TACs be determined as a specified fraction of the total requested and capped at a couple hundred orbits per year. In this way, it can be guaranteed that only high quality proposals are accepted in the event that the number of requested orbits is low.

Ethics Policy

The STUC heard details and clarifications about data ethics policy. It is good to hear that STScI is reviewing their policies regarding access to proprietary data and software, especially given the potential for unique software in preparation for JWST. The STUC noted that there were very few complaints (to the STUC) of any ethical concerns at STScI. However, we also note that many users are not aware of the STUC and its role in investigating such concerns. We recommend that both STScI and the STUC more widely advertise the role of the STUC in newsletters, social media, and personal conversations, especially in the lead up to future STUC meetings.

STSCI Perspective

STScI is in a period of flux at the highest levels, with the loss of the Director and an ongoing search for a replacement. We appreciate the efforts of the management team during the temporary reorganization during the search for a new director. The STUC appreciates the continued efforts of STScI to engage the solar system community and

applauds the creation of the Outer Planet Atmosphere Legacy Program. The Frontier Fields initiative also seems to be progressing well, and we look forward to seeing data from the last two recently approved fields.

HQ Perspective

The total funding of NASA astrophysics (including JWST) is projected to be flat at ~ \$1.3B through FY2020, including full funding for JWST, pre-formulation and technology work for WFIRST, SOFIA at a reduced rate, and funding for SMD's education program.

The budget for Hubble is projected to be approximately level through FY20, decreasing slightly from \$98M in FY15 to \$89M in FY20. The STUC is pleased that GO funding levels are expected to remain constant and NASA is following the HST Senior Review recommendation that "HST should be operated as a Great Observatory as long as it is scientifically productive".

E/PO Activity

The STUC commends the E/PO group on its contribution to the activities surrounding the 25th Anniversary celebration and strongly supports their submission of a proposal in response to the NASA SMD Science Education Cooperative Agreement Notice in order to continue their efforts in astrophysics E/PO.

The STUC recommends that STScI revisit the policy of limiting the credits added to HST images released to the public to "NASA/ESA". Although the STUC appreciates that a long author list can interfere with the aesthetics of an image, we believe that this one size fits all policy can in some instances unduly minimize the credit due to the scientists who help create the images. Although full credit to the scientists is given in the figure caption, it is often just the images that the public (including University officials), see.

ESA Update

ESA/Hubble continues to contract their outreach program to ESO/EPOD and there have been concerted efforts to raise awareness of the opportunities this presents for European astronomers to make press releases and publicize their results. This has proven very popular. A brief summary was given of the ESA/Hubble activities in support of the 25th anniversary celebration. There is a very exciting program of events, including a video competition which has attracted some very impressive entries.

MAST User Update

The MAST user interface has transitioned to a single sign-on (SSO) service interface. The transition appears to have been smooth and the plan is to include other STScI related services such as proposal tool, grants management, etc. in the near future. Members of the committee suggested that comments on individual proposals could be included in the SSO system for individual PIs.