

## **STUC Report 11/18/11**

### **L.-G. Strolger (WKU), chair**

The STUC is pleased that HST continues to be a highly productive and efficient observatory. We commend the staff of the Space Telescope Science Institute and the Goddard Space Flight Center for their excellent and dedicated service. We, as with the rest of the community, are ecstatic about Dr. Riess's receipt of the Nobel Prize, and the STUC congratulates the Institute and GSFC on their important contribution to this award winning work.

At present, there are only few issues with the telescope and its instruments (e.g., gyro stability and COS sensitivity deterioration), and we are happy with the efforts to address and monitor them. Hubble is performing very well, having just made its millionth observation, and on the eve of the 10,000th publication using its data. The STUC applauds the timely response thus far under automated operations at Goddard, and appreciates the efforts to predict current gyro lifetimes and mitigate their deterioration. We encourage the institute to further develop community access to calibrations, specifically: (1) updates in PSF and focus modeling, (2) improvements to the wavelength calibrations and dayside/nightside count tagging with COS, (3) improved CTE correction algorithms for ACS and WFC3, and (4) UVIS filter flats and IR persistence corrections for WFC3.

The STUC is pleased with the progress of the MCT programs. The teams are returning excellent science, have disseminated some preliminary science products, and have submitted a few papers. Considering these presentations, the STUC reiterates the need for the institute to closely work with the MCT teams to further refine instrument calibrations, e.g., astrometry and photometry, as these teams have notable expertise and exceptional data. All three teams have found their Cycle 19 budgeting process to be excessively onerous. The teams have expressed concern over the budget policies for the remaining cycles of their programs, particularly (1) with the challenges of retaining students and postdocs given the lead time required to train and hire people, and (2) maintaining sufficient funds to complete their science and treasury products well after the last bits are collected in the next cycles. We encourage STScI and the HST Project to work together to address and clarify these longer-term funding issues, and make efforts to alleviate the budgeting burden. We expect only brief interim reports from the MCTs in the spring, with more extensive presentations next fall.

The STUC offers some comments and recommendations concerning the Cycle 20 science policies:

- (1) The demand for certain regions of sky has understandably made it difficult to allocate additional time in the same RA ranges in subsequent scheduling. The STUC supports the action to restrict ranges in RA for Cycle 20 to clear the back-log of observations in those regions. We also support the actions to not offer NICMOS in Cycle 20, and to discontinue support of Solaris operating systems in APT and STGMS.

(2) The STUC recognizes that 12 month proprietary periods on large survey programs, especially on fields of general community interest, potentially create bottlenecks in followup science that are exacerbated by Hubble's limited remaining lifetime. We therefore recommend that beginning Cycle 20, Large programs (over 100 orbits) have no proprietary period by default. Large program proposals should justify any requested proprietary period. The TAC panels should be given the ability to weigh proposal science justification separately from the proprietary status, and the option of awarding a program but denying the proprietary period request. The TAC should not otherwise adjust requested proprietary periods. The STUC found it unclear how to define "community access fields", and moreover found the case for proprietary time justified for smaller programs, regardless of pointing. We propose the following phrasing in the Cycle 20 call for proposals, similar to what is currently used for Treasury programs: "Data taken under the Large Program will usually have no proprietary period, although brief proprietary periods may be requested if that will enhance the public data value."

(3) We further recommend that Target of Opportunity requests for "rare" or "exceptional" targets, with low probabilities of execution over any one cycle, be permitted to submit multi-year proposals for up to two cycles. Again, we suggest the TAC panels weigh the multi-cycle status separately from science justification.

(4) The STUC notes that there may yet be some ambiguity in the proposal guidelines for joint proposals with HST, specifically in the HST duplication policies. We ask for further clarity in these calls which emphasize the HST requirement to scientifically justify known duplications.

The directorate's priorities for HST seem appropriate for the preparation for the NASA Senior Review, however we strongly recommend these ideas be further developed, both in terms of HST's lasting legacy and critical pathfinders for JWST. We also recommend the planning and implementation of these ideas be vetted by the community, perhaps in cycle-coincident solicitations for UV legacy observations and selections of deep fields.

The STUC is impressed with the ESO-ESA/Hubble efforts on behalf of the HST mission in education and public outreach. We encourage them to continue working closely with OPO to develop partnered releases. We also recommend that efforts be made to contact program PIs when developing the content for the Picture of the Week for content clarity. The STUC encourages ESA/ESO to continue their fruitful efforts at public outreach as this enhances the current forefront research and strengthens the NASA/ESA scientific relationship.

With the peak performance of HST and its instruments, the telescope is poised to continue its exceptional record of cutting-edge, high-impact scientific advances for the next 5-10 years. Especially considering possible delays in JWST, the STUC firmly believes that it is essential that HST maintains the necessary funding levels to adequately operate the telescope and support GO science. With this commitment, HST will retain its position as NASA's premier astronomical telescope.