

Space Telescope Users Committee (STUC) Report

November/December 2023 Meeting, submitted February 16, 2024

STUC Membership

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Meeting Summary

The STUC met in person at the Space Telescope Science Institute (STScI) on November 30th and December 1st. The STUC heard presentations on updates from the STScI Director's Office, the HST Mission Office, the Goddard HST Project, ESA, the "Hubble UV Legacy Library of Young Stars as Essential Standards" (ULLYSES) project, Hubble Advanced Spectral Products (HASP), the Office of Public Outreach (OPO), a proposal for a new Transients panel, Cycle 31 TAC Results and Cycle 32 preparations, the Exoplanets DD Working Group, the Long-Term Variability Monitoring DD Working Group Report, NASA Headquarters, the Exclusive Access Period Survey, and a Grants Update. At the end of the 2-day meeting, the STUC presented their conclusions in a 1-hour debrief to STScI and NASA. 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>

Science Mission Office Welcome and Update

The STUC meeting began with recognition of STUC members Beth Biller, Kate Rubin, and Preethi Nair being thanked for their service, with this meeting marking the completion of their committee terms, and with the announcement that Harry Teplitz will be the new STUC chair for 2024. STScI staff member Brett Blacker was also recognized in advance of his retirement for his service to STScI and his 30 years as the TAC technical manager, and Aleksandra Hamanowicz was announced as the new TAC technical manager.

Laura Watkins provided updates on some previous STUC recommendations. In particular, a recommendation from the Spring 2022 STUC meeting was to implement a brief questionnaire about the climate of Hubble review panels. In response to this suggestion, STScI added 4 questions to the panelist surveys. The responses from the panelists for Cycle 31 were generally positive and encouraging — while there were only 47 respondents, all but 1 person provided positive responses.

A recommendation from the Spring 2023 STUC meeting was to broadly announce the new Multi-Cycle Treasury (MCT) Program initiative and include peer review by the community in the selection process. In response to these suggestions, STScI included the MCT opportunity in the Cycle 32 call for proposals and has begun advertising broadly, with more efforts to come including at the 2024 Winter AAS meeting. The MCT proposals will be reviewed by the HST Cycle 32 Executive Committee. Additional updates regarding STUC recommendations were scheduled for later presentations.

Observatory Status Update from HST Mission Office

Tom Brown presented an update from the STScI HST Mission Office. HST's scientific productivity remains extremely high, with oversubscription near all-time highs, and over 800 papers per year published in the last 5 years. Some recent exciting developments include the completion of the ULLYSES project and new spectroscopic products / tools for COS and STIS (see HASP section).

Hubble science continues to evolve. With high-z science shifting to JWST, Time Domain & Multi-Messenger (TDAMM) science is becoming an increasingly important capability of HST, given the observatory's sky coverage and UV/optical capabilities. A lot of effort is going into enabling TDAMM science with HST, in particular the new FlexDay ToOs and a new transients panel to be trialed in Cycle 32, to be discussed further in a presentation by Laura Watkins on behalf of the Science Policy Group. HST is critical to understanding a wide range of TDAMM science, from long-term evolution using the same science platform over a >30 year timescale (e.g. observations of the Stingray Nebula from 1996 to 2016), to precisely timed observations (e.g. synchronous observing with Solar System missions such as DART), to rapid response to transient phenomena (e.g. rapid response to high-energy transient phenomena such as SNe and gamma ray bursts). In particular, responding to high-energy transient phenomena leverages the excellent sky coverage available in 3-gyro mode. Gyro-3 is currently experiencing occasional erratic behavior, but this will have a relatively small science impact over the full mission lifetime. However, when another gyro fails and HST moves into reduced gyro mode (RGM) observations, this will incur a ~25% hit to overall science productivity, due to the resulting loss of sky coverage. At the moment, however, Target of Opportunity (ToO) observations, which require the current excellent sky coverage, have generally been executed within the requested response time.

All Cycle 27 and previous observations are now complete, with Cycle 29 and Cycle 28 observations 95% and 98.4% complete respectively. Cycle 30 is now 73.4% complete. Much of the backlog is from exoplanet programs, which often have stringent timing constraints, with 199 orbits remaining from exoplanet programs from Cycle 28 to 30, with good progress being made at clearing out this backlog. Most Cycle 30 large programs are now >70% complete. [The new](#)

flexible Thursdays mode will debut in Cycle 31, and the STUC looks forward to hearing about results from this mode and what impacts it has on overall scheduling.

The STUC heard updates on STIS, WFC3, COS, and ACS, all of which are operating nominally. Considering that all instruments have been on sky for at least ~15 years, the STUC congratulates the instrument teams on their excellent efforts maintaining these instruments, providing updated calibrations to the community, and also developing valuable calibration / data analysis tools, delivered to the community via Jupyter notebooks hosted at STScI.

Hubble Project Update

The Goddard HST Project update was given by Jennifer Wiseman and Pat Crouse. The presentation began with a reminder that December 2023 is the 30th anniversary of Servicing Mission 1 and the installation of COSTAR. Recent science highlights were shared, demonstrating the complementary role of HST to other missions and thus the increased value of the science that can be accomplished. These examples included (1) HST+JWST observations of the galaxy cluster MACS0416, in which deep imaging created through multiple epochs allows transients to be found in addition to the study of very faint and distant objects; (2) HST+TESS observations of a transiting exoplanet LTT 1445Ac, where TESS observations alone were not sufficient to determine if the transit was grazing or not, but HST observations determined that the exoplanet was non-grazing and also that it is similar in size and density to Earth; and (3) HST observations of the DART impact of Dimorphos that have tracked the evolution of “boulders” that were ejected off the asteroid’s surface.

In keeping with the longstanding quip that “Hubble has troubles on holidays, evenings, and weekends”, gyro 3 operations resulted in significant issues over the Thanksgiving holiday. Issues had also been encountered in August, but adjustments made at that time had kept the performance at a high level until early November, when acquisition success rates began to be impacted, followed by the spacecraft entering safe mode on November 19, 21, and 23. The return to science after the November 23 safing event was delayed to allow for testing and troubleshooting, with return to science expected in early December. The three remaining gyros on Hubble are all of the “enhanced” design, and they are the longest running of any of Hubble’s gyros. The observatory can still operate very well in two gyro mode, however the observable area of the sky is significantly decreased. Current operations with three gyros, even with occasional safing events, are still more efficient than switching to two gyro mode. Fine guidance sensor 2 had several saturating events in April 2023, but it has done fairly well since then and there are no current concerns. The Science Instrument Control and Data Handler continues to be operated on the Side A electronics, and an approach and implementation plan to return to Side B is being developed, with an Overall Critical

Design Review expected in Spring 2024. [The STUC commends the team for all their efforts to keep HST up and running, and on the continued high scientific productivity thanks to these efforts.](#)

An FY24 budget has not yet been passed by Congress, but current expectations are that there will be a reduction below the FY23 level of \$93.3M. And while a recommendation from the 2022 Senior Review was to remove the Hubble Fellowship program from the HST budget line (without reducing the HST budget) in order to free up resources to offset inflation, this change is not expected to happen. For many years, HST has been operating on a flat budget. The 2022 Senior Review concluded that all the easy cuts to the operations and staff sides have already been made in order to stay within that budget, and there are no obvious places left for cuts that will not impact operations. The current budget situation is driven by 4 factors: after years of a flat budget, the program was cut by \$5M for FY23; there have been no increases to account for inflation; the Hubble Fellows program will likely need to continue to be supported by the HST budget and it cannot be reduced in size; and the FY24 budget is likely to receive additional cuts. At the same time, GO and AR program costs are increasing due to inflation, so larger grants requests are being submitted by the community.

[The STUC highlights the fact that Hubble continues to provide unique science capabilities and is an important piece of the larger NASA mission portfolio, and that such science capabilities require sufficient funding to maintain.](#) However, painful cuts are likely to be necessary in the near future — either to the HST grants program or to the instruments that are made available for science (or both). Based on the years of flat budgets, the STUC has previously strongly recommended that NASA HQ match the Hubble budget to inflationary rate. [Given that the current budget situation will require austerity beyond the flat budget situation of the last ~5 years and thus will have significant community impact, the STUC recommends ensuring that community input is solicited and strongly considered. In particular, the STUC recommends that STScI carefully consider how to mitigate the impact of the cuts on vulnerable early career researchers, to the extent possible given the current grant allocation process.](#)

ESA Update

Chris Evans gave an update from the ESA Office which is now composed of 31 staff at STScI including science staff, admins, and research fellows. The ESA science program committee has approved extension of HST support to 2026 with an indicative extension to 2029. The ESA Office continues with a strong outreach program which includes combined Hubble and JWST operations coordinated with the Office of Public Outreach at STScI and NASA. They continue to run the Picture of the Week program, which is popular on social media platforms, and showcases reprocessed images from the Hubble archive. Chris showcased a recent research highlight from Hubble of a luminous fast blue optical transient which was led by someone who is now an ESA

fellow at ESTEC. In Spring 2024 there will be the 7th installment of the Hubble and JWST meeting to be held in Porto, Portugal focused on Stars, Gas, and Dust in the Universe. ESA continues to also run the ESA Distinguished Lecture award which features a leading European astronomer to showcase science from ESA missions and to foster collaboration with the ESA science faculty at STScI through a dedicated visit and presentation associated with the award. The 2024 candidates are under review and the awardee will be invited out to STScI in the summer. Finally, ESA is also engaging in the preparation from Habitable Worlds Observatory with a call for nominations as ESA representatives to the NASA START committee already underway. [Overall the STUC found that the presentations on the ESA side showed that the collaboration continued to be strong and productive.](#)

ULLYSES Update

Julia Roman-Duval, along with Alex Fullerton, Will Fischer, and Jo Taylor, presented an update on the ULLYSES (Ultraviolet Legacy Library of Young Stars as Essential Standards) project. ULLYSES is the largest HST program executed to date (~1000 orbits) and has collected a spectroscopic reference sample of a wide range of young stars, with ~500 orbits used to extend the spectroscopic library of O and B stars to low metallicities (10%-50% solar) and ~500 orbits to build a spectroscopic library and obtain time monitoring of T Tauri stars (<10 Myr, <1 solar mass). ULLYSES observations were completed in July 2023.

Over the course of the project, ULLYSES will have 7 data releases, with DR6 occurring on March 21, 2023, and the final release, DR7, planned for December 12, 2023. Two papers describing the survey are near circulation, with the first focusing on goals, design, and initial results and the second paper focusing on observations, calibrations, and high-level science products. 18 peer-reviewed publications based on ULLYSES data have already been published or submitted and a workshop at STScI is planned for March 2024. A number of coordinated ground-based programs have grown out of the ULLYSES project, for both high-mass and low-mass stars, including X-SHOOTU and PENELLOPE.

The upcoming DR7 will include the complete ULLYSES dataset and implement a number of improvements relative to earlier releases including: 1) a homogenized target naming convention, 2) new fields in the database/catalog, including intrinsic colors for massive stars, Gaia parameters, and radial velocity, 3) interactive preview plots of co-added products using the python plotly package, 4) expanded and improved documentation, 5) a number of updates to the co-adding code, 6) new Jupyter notebook tutorials and walkthroughs, and 6) a new generic wrapper to co-add any COS or STIS data.

The scientific framework of ULLYSES was designed by the community, via a UV legacy working group, with the program then being implemented by a dedicated team at STScI. Thus, ULLYSES serves as a valuable model both for the planned HST MCT programs in Cycle 32 and beyond, as well as for the DDT programs to be designed by the current Exoplanet and Long-Term Monitoring working groups. Thus, the closeout and evaluation of ULLYSES will also serve as an important model for the eventual end to these future programs as well. [The STUC congratulates the ULLYSES team on completing observations and the upcoming DR7, the 18 peer-reviewed publications so far, and the valuable plotting tools using plotly delivered to the community.](#) The STUC looks forward to seeing what science and model developments follow from the project. After an investment of ~1000 orbits, the STUC requests that STScI consider an evaluation of the program (as well as for future similar programs) and to determine metrics for success for such programs. The team has provided a broad suite of data exploration and visualization tools which is mostly integrated with MAST, except for the plotly previews. Given the value to the community of the plotly previews, the STUC recommends completing the integration with MAST in the near future to allow the community to fully explore the ULLYSES data within MAST.

Hubble Advanced Spectral Products (HASP)

John Debes presented an update on behalf of the Hubble Advanced Spectral Products (HASP) team. HST has an enormous spectral legacy, with ~10,000 unique objects spectroscopically observed by COS and STIS, and with over 64,000 datasets from more than 3200 programs to date. To extend and improve on the legacy of these spectra, HASP provides automated visit level and program-level coadds of 1-D spectra for both public and proprietary COS and STIS data and also combines coadds of all modes into a high-quality, “quick-look” spectrum.

[The STUC congratulates the HASP team on developing a powerful way to automatically combine spectroscopic data sets from COS and STIS.](#) Especially exciting is that these tools will be built into MAST and automatically update when new data is available, including proprietary coadds for PIs with proprietary data. We welcome the addition of notebooks that allow users to produce custom coadds. [Members of the STUC suggested that the team make available to users a notebook or code snippet that produces the default pipeline coadd and to consider the long-term usability of these tools \(e.g., with major Python/Jupyter updates, etc.\).](#)

Office of Public Outreach Update

[The STUC appreciated the continuing excellent work of the Office of Public Outreach.](#) We were glad to note that public interest in Hubble has not waned because of JWST. The STUC were especially excited by the revitalization of Space Telescope Live to show what Hubble and JWST

are currently observing, including more details about the targets and instruments. We encourage publicizing this resource through social media and particularly on platforms beyond Twitter. We also eagerly await the upcoming release of the three-dimensional Pillars of Creation; the brief preview we saw looked amazing.

Transients Proposals

Laura Watkins, on behalf of the Hubble Science Policies Group (SPG), updated the STUC on current handling of, as well as future plans for HST proposals on transient phenomena. There are multiple routes for HST proposals focused on transient phenomena: main-cycle target of opportunity (ToO) proposals, mid-cycle proposals, and director's discretionary (DD) proposals. Target of opportunity proposals include non-disruptive (> 21 days), disruptive (2-21 days), and ultra-disruptive activations. FlexDays once per month are scheduled with no time-critical programs, so that ToOs can be planned on short notice with minimal disruption to the overall schedule.

Response time for transient observations is an issue. For DD proposals, response time includes time for reviewing the proposal, and this was inside the 21-day disruptive response time for only 30% of all DD proposals in 2021 to 2023, and DD proposals simply cannot access the ultra-disruptive regime. For ToOs, response time starts from the activation request (because the proposal is already reviewed by the TAC) and is generally shorter than requested.

Transient proposals are expected to increase with new time-domain surveys coming online, and Cycle 31 had 40% growth in ToO proposal numbers compared to Cycle 30. STScI is reacting by adding a new panel on the TAC for high-energy transients. The Transients Panel will exclude Solar System ToOs, microlensing ToOs, and AGN/SMBH ToOs. These initiatives adapt to changing trends in astronomy with growing emphasis on Time-Domain and Multi-Messenger (TDAMM) studies. [The STUC strongly supports plans to include a Transients panel in Cycle 32 and also urges the SPG to consider how they will evaluate the outcome of adding such a panel to the peer-review as a whole. The STUC also encourages the SGP to carefully consider the name and description provided to the community for the new review panel proposed for Cycle 32, because astronomical “transients” are not always the same as “ToO” objects.](#)

Cycle 31 TAC Results and Cycle 32 Preparations

The STUC heard a report from Claus Leitherer on behalf of the Science Policies Group (SPG) about HST Cycle 31 results and plans for Cycle 32. Cycle 31 was a short (10-month) cycle due to the challenge of multiple HST and JWST proposal deadlines within the 2023 calendar year. The

Cycle 31 review process was conducted using a similar process as in previous years, and the overall picture of proposals received, proposals approved, and demographics of the proposers was not measurably different than in recent years, either. The STUC congratulates the SPG on the substantial, sustained narrowing of the gender gap in approved proposals, and the increase in the percentage of new PIs for approved proposals (~30% of all proposals) across the last five normal cycles since the dual-anonymous peer-review mode was adopted, compared with the much lower percentages in prior cycles (< 10%). The STUC was curious whether the SPG had data to assess whether this change was a result of a change in panel behavior or a change in proposer behavior; the SPG members present suggested that they may be better equipped to answer questions, such as this one, based on the results of the anonymous demographic survey they plan to circulate among JWST Cycle 3 proposers in the near future, and the STUC would be curious to receive that followup in the future. The STUC was informed that the plans for HST Cycle 32 largely continue with the current model, and they include a return to the standard 12-month period.

The STUC suggests that the institute develop ways to ease the workload on the Executive Committee, because the STUC is concerned about this workload in light of the need to review both Large and Multi-Cycle programs in Cycle 32. One potential suggestion was to expand the number of at-large members.

Exoplanets DD Working Group Report

Seth Redfield presented a general progress report from the Exoplanet DD Working Group, with Laura Kreidberg presenting details on the Exoplanet DD Working Group's proposed DD program design. The WG focused on two areas: science priorities for exoplanet programs with JWST and HST, and development of a specific concept for a 500-hour JWST DD program for Cycle 3. Some preliminary recommendations were presented at the meeting, but the WG is continuing to finalize its recommendations.

Science themes responsive to the Astro 2020 Decadal Survey were identified. Three town halls were hosted by the WG to advertise an online community survey to complete as well as the opportunity to submit 1-page white papers. Input was taken from the survey provided to the community (>70 responses) and the 46 white papers received, which commented on key science themes, observation timing, scale of resources desired, and concepts for the DD program. The WG identified a 10^4 -hour scale for the anticipated overall total of exoplanet data over JWST's lifetime, spanning giant exoplanet, sub-Neptune, and rocky exoplanet targets. In addition to JWST observations, HST UV data was identified as important for stellar and exoplanet atmosphere characterization, and the WG recommended robust support for simultaneous JWST/HST observations of exoplanet systems. The current practice of applying a separate proprietary period for each individual observation, starting at acquisition of the individual observation, was seen as

not being sufficient to protect the ability to do science that cannot be done with an incomplete dataset. Thus, in these cases, the WG recommended longer proprietary periods that start counting from the last observation within a program. Funding levels of ~\$10K/hour were requested for the exoplanet DD observations, in addition to program management support from STScI.

Many 500-hour DD concepts were suggested to the WG. Based on community suggestions, the DD recommended a survey of M-stars rocky worlds to determine how commonly such planets have atmospheres, because it had the strongest link to the "pathway to habitability" theme from Astro2020. The program would observe 2-15 eclipses per target, for 15-20 targets, with each eclipse yielding a lightcurve in the MIRI F1500W filter. The TRAPPIST-1b JWST transits found data consistent with no atmosphere, but validated this approach. The observations would distinguish between tidally locked bare rock, rapidly rotating bare rock, and a CO₂ atmosphere. Targets found to have an atmosphere could then be characterized by additional JWST observations outside the 500-hour survey. . In addition to the 500 hours of JWST time, 220 orbits of HST time would be required to fully characterize the UV output of the host star, which might have a significant impact on exoplanet atmospheric properties. Interim Director Levenson anticipated that the overall DD program would be distributed over many years. [The STUC were excited to hear about the winning DD concept and look forward to reading the full working group report. The STUC commends the working group on their highly successful community outreach efforts.](#)

Long-Term Variability Monitoring DD Working Group Report

The STUC heard a progress report from the Long-Term Variability Monitoring DD Working Group, delivered by working group co-chairs Saurabh Jha and Dana Casetti. The working group's charter is to "collect community input, identify key science themes, and make recommendations for HST/JWST long-term variability monitoring programs and a JWST DDT program for high-redshift transients." The working group put out a call for community input in Summer 2023, and has since collected substantive community feedback via an online survey, white papers, and a virtual town hall.

The report emphasized the strong community interest in the science that is enabled by long-term variability monitoring, and that the current proposal process is not well-suited to addressing this science area. The working group is considering recommending several new policies to better support long-term variability monitoring (e.g., creating a panel specifically for long-term proposals / pre-allocation of orbits for a long-term pool).

The working group is also aiming to design a JWST DDT program that is capable of detecting Population III supernovae, and which will simultaneously detect many other kinds of high-redshift

transients. This would address a key JWST science goal to observe the first generation of stars and galaxies. The fields that would be targeted and observing modes are still being discussed.

The working group will make interim recommendations before the end of 2023, and produce their final report in early 2024. [The STUC commends the working group on their very successful effort to collect and consider input from a broad cross section of the community, and looks forward to their recommendations.](#)

NASA Headquarters Update

Astrophysics Division (APD) Director Mark Clampin presented an update on NASA HQ's assessment of the current budget situation and plans to deal with upcoming challenges. He also reviewed the current NASA fleet of missions, providing the context that Hubble is in its extended mission phase.

Dr. Clampin explained that the fiscal year 2024 (FY24) NASA budget was uncertain at the time of the presentation. A bipartisan agreement in June 2023 included expectations for the coming years. However, congressional negotiations suggested that the FY24 NASA appropriation could be lower than expected. Both House and Senate drafts included numbers below the FY23 levels. Furthermore, NASA programs have been impacted by recent inflation and by post-COVID supply issues. These challenges require NASA HQ to balance the portfolio of missions and science, which will require some difficult choices. NASA will base decisions on long standing Astrophysics Directorate principles.

A major consideration is the recommendations of the 2010 and 2021 Decadal Reports, which include the Roman Space Telescope, the Habitable Worlds Observatory (HWO), Probe missions, and an increased emphasis on time domain and multi-messenger astrophysics (TDAMM). In addition, NASA has a strong commitment to maintaining the Research & Analysis (R&A) program. Together with these broad goals, NASA must protect missions in development, the opportunity for future missions, and international partnerships. The commitments need to be balanced against the cost of successful and important large missions like Hubble in their extended operations phase.

Dr. Clampin described the NASA budget as divided between discretionary and non-discretionary projects. The latter category includes Roman, JWST, and the R&A program, which together account for more than half of the APD budget. The discretionary category includes Hubble, Chandra (10% together), and a wide range of smaller projects that account for the remaining third of the budget.

NASA HQ is considering a range of potential reductions to meet a lower funding level, including reducing the budget for Chandra and Hubble. Given the importance of these missions, and their continued tremendous contributions to science, NASA will convene a “mini Senior Review” to advise on how to approach these missions going forward. The review will take place after the President’s budget is announced in April.

Following the briefing, Dr. Clampin answered questions from the STUC. Naturally, the STUC is very concerned about potential cuts to the Hubble budget, and asked about the size of possible cuts. Dr. Clampin clarified that it was too soon to give an exact number, but that he would provide guidance to the Hubble Project as soon as possible. The STUC also emphasized that some parts of Hubble’s budget may be necessary to basic operations so other parts would feel disproportionate pain if cuts were made. **The STUC recommends that the mini-SR look specifically at the impact of potential cuts to the community research component of the Hubble budget.**

The STUC also asked about the status of the Hubble Fellowship program within the Hubble budget. Dr. Clampin clarified that even though there was discussion of moving it outside of the Hubble budget at the time of the last Senior Review, that is not possible this year.

In concluding remarks, STScI Director Dr. Nancy Levenson thanked Dr. Clampin for the latitude NASA HQ gives the Institute in supporting the community. She asked if there were particular parts of the Hubble portfolio that HQ wants to see emphasized. Dr. Clampin stated that the goal is to maximize the science. He finished the discussion with a reminder that the budget difficulty isn’t something that anyone expected, and that we are working together to solve it. He reiterated the importance of NASA’s commitment to future generations of scientists.

Exclusive Access Period Survey

The STUC heard a presentation from Laura Watkins on the results from STScI’s survey of the opinions of the astronomical community regarding exclusive access periods (EAP) for HST and JWST data. The survey included responses from 1,171 participants. The survey covered a broad range of questions and collected numerous demographic characteristics. **The STUC would like to highlight the fact that the results showed that a large majority of respondents (~70-80%) support an exclusive access period and feel reducing it to zero for general observer (GO) programs would have a negative impact on the community and science.** The remaining respondents are split between those who favor moving to a zero exclusive access period policy (~10-15%) and those who feel that a move to zero EAP would have no impact on their research. These opinions are held regardless of the respondents' career stage, geographic region, institution size, and research field. For archival data, respondents felt that, on average, there would be no impact on their research though the opinion is more evenly divided. Overall, respondents who are in favor of an EAP view

more potential downsides to moving to zero EAP for both science and equity issues within the scientific community. [The STUC notes that there is a strong disconnect between policy makers and the scientific community on the role of EAP for different mission types.](#)

Grants Update

Neill Reid presented an HST strategic overview, which focused primarily on the current NASA budget and its implications for the Hubble grants program. HST grant funding is generally assessed through the Financial Review Committee (FRC) process. In Cycle 31, the total budget request is about \$44 million. This is significantly greater than the expected allocation of \$26 million for a 10-month cycle. In addition, there are expected to be reductions in the overall HST budget to meet the FY24 congressional budget allocation.

Given that financial landscape, there will be a hybrid approach adopted for the FRC and allocation of funds to individual GO and AR projects. The FRC will review programs for consistency with the work described in the original proposal and focus on the proposals requesting more than \$185,000. Individual budgets will be adjusted to incorporate reductions, and then a scaling formula will be applied to the revised program totals to match the total available funds from NASA. The reductions are structured in a progressive way that place a higher proportion of reductions on more expansive (\$/orbit) programs, preserving a broader pool of viable programs.

[The STUC recommends in light of the new fiscal landscape at NASA, that a working group should be established to discuss the budgeting process and the role of the FRC. A working group has already been convened to examine the JWST FRC process; the STUC recommends exploring whether any of the JWST FRC working group recommendations might be relevant for HST funding as well.](#)