STScI | SPACE TELESCOPE SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

New Program Initiatives

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Discovery Director's Discretionary Proposals

Standard Director Discretionary (DD) proposals are for rapid follow-up of time-critical events

- Supernovae, GRBs, Kilonovae, comets, etc

We have implemented a new class of DD programs for non-transient discoveries

- Aim is to enable observations of compelling scientific urgency that *significantly* accelerate scientific discovery.
- Examples of potentially appropriate Discovery DD time requests include:
  - The timely follow-up of new discoveries that provide a critical link in the understanding of phenomena that would have significant impact on the broader field;
  - Small-scale pilot or test observations that would have an extraordinary impact on the broader field if they were successful.
- Examples of observations that are *not* suitable for Discovery DD time request include:
  - Observations that are a subset of larger observing programs planned for future cycles;
  - Observations that were proposed in a recent regular proposal cycle, and were rejected, and for which the available information and/or observations have not substantially changed;
  - Observations that do not have significantly compelling scientific urgency, and would therefore be more appropriately evaluated by the TAC review process during a standard observing cycle.

Director's Discretionary Proposal Statistics

So far in calendar year we have received 49 DD proposals

- 46 Time-critical DDs
  - 16 accepted,
  - 1 under review
- 3 Discovery DD
  - 1 accepted
  - 2 under review
- Recommended time limit for Discovery DDs is <10 hours
- All three proposals ask for substantially larger time allocations

All accepted DD programs are available here
https://www.stsci.edu/jwst/science-execution/approved-programs/directors-discretionary-time

Very Large Programs

- Discussed at JSTUC meeting in September 2023 and endorsed for Cycle 4. Not yet implemented due to focus on other high priority items.
- Goal: to provide an opportunity for the community to address high impact scientific questions that require observations on a scale difficult to accommodate within the standard time allocation process.
- Proposed implementation for Very Large (VL) Programs:
  - Require at least 300 hours.
    - Cycle 4: largest time request = 367 hours; 6 proposals > 300 hours; 13 proposals 200-300 hours.
  - Could include future cycle observations if scientifically justified.
  - Zero exclusive access period.
  - Reviewed by the Executive Committee (EC) along with Large GO, Treasury GO, and Legacy AR.
  - Allocation process similar to Mediums.
    - VL proposals need to be ranked above the 1N line to be considered for implementation.
  - Nominal allocation of no more than 1500 hours.
    - EC has discretion to recommend allocation of residual orbits to EC and discussion panel programs.
- **Questions for the JSTUC**
  - Should we ask for broad community involvement in proposal teams?

Long-Term Monitoring Programs

- Time-domain astronomy was highlighted as a key priority in the Astro2020 Decadal Survey.
- The Long-Term Variability Monitoring Final Report highlighted areas where HST and JWST can make significant contributions.
- Long-Term Monitoring (LTM) Programs will be implemented in HST Cycle 33.
- Goal: Proposers are encouraged to
  - Capitalize on past observations by measuring long-term astrometric, photometric and/or spectroscopic variations.
  - Propose first-epoch observation to lay the foundation for future time-domain work. The TAC will be instructed to assess the science impact of the full program, not just the current cycle observations.
  - Request observations beyond the 3-cycle limit for Future Cycle programs. Proposers should specify the required cadence.
  - Joint HST-JWST programs will be allowed

Long-Term Variability Monitoring Final Report QR code:

Long-Term Monitoring Programs

- Proposed implementation:
  - Long-Term Monitoring programs will be monitored to ensure appropriate progress, but if approved, they will not be subject to TAC review for future observations.
  - Introduce a new Long-Term Monitoring (LTM) check box in APT
    - To highlight the LTM aspects of the program.
    - To enable longer Future-Cycle observations in APT up to 5 cycles (beyond the standard limit of 3 cycles)
  - No extra time will be made available, and no additional weight will be given in grading.
  - Long-term monitoring programs cannot be ToOs (Future-Cycle ToOs remain limited to 3 cycles).
- **Questions for the JSTUC**
  - Do you endorse implementation?

Alternate Targets Programs (initial discussion)

- Goal: Allow proposers to provide target pools instead of single targets when there are multiple targets that could fulfil the science goals.
- Rationale:
  - Removes the necessity of over-justifying the sample selection (no need to justify why a particular target, when could be any other that fulfills certain characteristics).
  - It could provide schedulers with greater flexibility, though this needs to be explored in more detail.
- Example: Divide targets into multiple target pools and specify that N objects are required from each target pool (e.g. very metal-poor, metal-poor, and not-so-metal-poor galaxies). When N is reached, the target pool is disabled. Could also consider prioritization within each target pool.
- Feasibility and implementation in LRP and by PCs has not yet been evaluated.
- User-facing aspects to consider:
  - How to calculate overall program time when integration times can differ from target to target.
  - Impact on duplications.
- **Questions for the JSTUC**
  - Do the science benefits warrant exploring feasibility?

High Risk/High Return Proposals (initial discussion)

- Consensus response from a committee tends to be averse to risks, favoring programs with a more guaranteed science return, especially when resources are very limited.
  - This includes ToO allocation of rare phenomena with very low probability of trigger (e.g. kilonova, nearby SN, interstellar objects, once-in-a-lifetime comets) → Discussed in *Community ToO Programs* Talk by Mercedes
- Goal: to encourage the community to be bold, while maintaining scientific rigor and minimizing risk from an observatory science perspective.
- Proposed implementation:
  - Introduce a “high risk/high return” flag.
  - The TAC panel ranks them together with the other proposals in the panel, but the time comes from a separate allocation (to avoid the perception that there is a direct impact on the other programs being considered). If any of the proposals end up above the 1N line, they can go forward to the Director for consideration.
  - Proposals limited to 10-15 hours. No more than one per panel, limited pool of N hours available for all.
- **Questions for the JSTUC**
  - Do you see science benefits given high proposal pressure?