

HST 2020 Vision

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Context

- HST anticipates continuing operations through 2020
 - Cycles 23-27, potentially Cycle 28 (2020/21)
- Our goal is to maximise the scientific return over the next 5 years
 - ~4,000 orbits available/cycle
- Following discussions with the STUC, we issued a call for white papers to the general community

Call for White Papers

We solicit brief white papers from the community describing initiatives that will enhance significantly Hubble's scientific legacy from the next 5 years of observations. These papers, which must have a length of no more than 3 pages, can address **any** aspect of the Hubble program. For example,

- JWST will be launched in 2018. Are there specific programs that Hubble should undertake now in preparation for that launch, or during the period of overlapping observations, that take advantage of Hubble's unique capabilities? What types of synergistic observations should be included in our plans?
- Are there observations from other ground- or space-based observatories that should be more closely linked to Hubble observations over the next few years?
- Are there specific science questions that should receive greater emphasis over the next five years? If so, why?
- Should Hubble devote a greater proportion of observing time to specific demographics (e.g., ph.d. thesis students)?
- Transient phenomena and the variable universe represent a growing focus of astronomical research with the development of large-scale synoptic surveys such as the Palomar Transit Factory, Pan-STARRs and its descendants and, eventually, the Large Synoptic Survey Telescope. Should HST make a special effort to optimize its observational program for those phenomena? If so, how?
- Given that Hubble's lifetime is finite, are there changes to the time allocation process that should be made to encourage or enable quicker response to new discoveries?

Call for White Papers

White papers should summarize the anticipated science objectives, conveying a sense of their import, urgency, and timeliness. They should explain why those objectives cannot be accomplished under the present time allocation system. White papers should also include a preliminary assessment of feasibility of the proposed changes.

THE DEADLINE FOR THE SUBMISSION OF WHITE PAPERS IS MARCH 4, 2015. [deadline was adjusted from February 20th to allow for the planetary NASA Discovery Program on February 18th]

The white papers will be reviewed by a small advisory committee including the Head of the HST Mission Office, Ken Sembach, the Head of the Science Mission Office, Neill Reid, and representatives from the Space Telescope Users Committee. All submissions will be held confidential. The committee will make its recommendation to the Director within 6 weeks of the white paper deadline, and those recommendations will be discussed with the STUC at its April 16-17, 2015 meeting. [Due to other factors (e.g. Director search), the detailed review still needs to be conducted.]

Results

We received a total of 20 white papers by the March 4th deadline

Wide range of science topics

Some common themes:

More scope for “riskier” programs

Generally in terms of science return e.g. longer-term programs

Opportunities for larger-scale programs

12/20 white papers mentioned this theme

Support for future missions

JWST called out specifically, but not exclusively

Time domain programs

Next Steps

- Following prior discussions with the STUC, we will be implementing an HST program for JWST mission support starting in Cycle 24.
- We also plan to implement the rolling TAC initiative during Cycle 23 (more on that shortly)
- We ask for the STUC's assistance (2-3 volunteers) in conducting further review of the white papers to assess the potential for implementing additional initiatives

Creating more proposal opportunities

- A “rolling TAC” – a mechanism for allowing proposers to submit in-cycle proposals for timely, but not time-critical, programs
 - Analogous to Gemini program
 - Discussed originally with the STUC in May 2014
- General parameters
 - Orbits drawn from the GO pool
 - Limited total allocation for the cycle (~200 orbits)
 - Specific criteria for compliance:
 - Proposals could not have been submitted to the standard call
 - Individual proposals limited to less than 5 orbits
 - Generally scheduled at a single epoch
 - Proposals should be for “static” sources
 - Time-dependent phenomena are reserved for DD proposals
 - Observations should have minimal constraints to enable easy scheduling
 - Programs may request a limited proprietary period
 - Up to 2 months

Fast Response proposals

- We will run a pilot implementation of this program in Cycle 23
 - Call to be issued in June 2015
 - Proposals to be submitted as standard GO *via* APT
 - Proposals will be assessed for compliance by STScI staff
 - Non-compliant proposals will not be sent for review
 - Compliant proposals will be distributed for review to recent TAC members in October 2015 & January/February 2016.
 - Reviewers will complete a standard review form. Criteria will include:
 - Science is timely & justifies execution prior to the standard cycle
 - Science is comparable in quality with recent TAC-approved proposals
 - Successful proposals will be scheduled as rapidly as possible once Phase IIs are submitted
 - Those proposals will be eligible for funding, budget-permitting
 - Unsuccessful proposals may be submitted in response to the Call for Proposals for the next cycle

Summary

We have received 20 community white papers outlining initiatives to enhance Hubble's scientific legacy over the next 5 years

We ask for the STUC's assistance in assessing these suggestions and devising appropriate implementation methods

We plan to run a pilot implementation of the rolling TAC program in Cycle 23