CHAPTER 1:

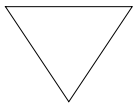
General Information

In this chapter . . .

1.1 About this Document

Two documents are of primary relevance for HST proposers: this *Call for Proposals* and the *HST Primer* (see Section 1.4.3). The Call for Proposals discusses policies and procedures, and explains how to submit a Phase I proposal. The HST Primer provides a basic introduction to the technical aspects of HST and its instruments, and explains how to calculate the appropriate number of orbits for your Phase I observing time requests.

The Call for Proposals is only available electronically in HTML and PDF formats. The HTML version is optimized for on-line browsing, and contains many links to related or more detailed information, both within the document itself and in other STScI documents. You are therefore encouraged to use the HTML version electronically. Nonetheless, some people may prefer to read a hardcopy, and with this in mind, the PDF version was optimized for printing.



In a hardcopy printout of the PDF version any links to information on the internet will appear as underlined text. You can look up the internet address of the corresponding link in Appendix D.

1.2 New and Important Features of Cycle 16

- Cycle 16 will start in July 2007 and is likely to be shorter than the usual duration of one year. NASA is in the early stages of planning for a Servicing Mission 4 (SM4) to the Hubble Space Telescope. Current plans are to schedule SM4 during the nominal Cycle 16 period, potentially as early as December 2007. Cycle 16 will terminate at that point. Cycle 17 will commence with the new suite of instrumentation, including Wide Field Camera 3 (WFC3), the Cosmic Origins Spectrograph (COS) and a refurbished Space Telescope Imaging Spectrograph (STIS).
- ACS suspended operations on June 19 2006 due to a problem with the Side 1 electronics. Operations were switched to the Side 2 electronics on July 2 2006, and the instrument is currently operating nominally.
- HST switched to two-gyro operations on 29 August 2005, and will continue to operate in this mode in Cycle 16. On-orbit tests indicate that there is little degradation in image quality, and hence scientific performance, while the overall observing efficiency is generally degraded by less than 5%; however, there are significantly tighter constraints in scheduling individual observations, and observers should use the information in the Two-Gyro Handbook and the web-based tools on the Two-Gyro Web Page or the APT (the Astronomer's Proposal Tool; see Section 1.4.6) to check the viability of their observing strategy. Full details of two gyro operations are given in the HST Two-Gyro Handbook.
- A new type of GO proposal, Survey Proposals, has been introduced in Cycle 16 in response to requests for an alternative proposal option for programs that are statistical in nature. Survey proposals are like SNAP proposals in that they allow a large pool of candidate targets to be specified from which a subset will be selected for execution. However, Survey proposals are GO programs, which will be ranked against Regular GO programs in peer review and, if selected, will be assigned a guaranteed number of orbits. Therefore, while specific tar-

gets are not guaranteed, Survey proposals are appropriate where is can be demonstrated that a fixed number of targets must be observed to accomplish the science goals of the proposal (see Section 3.2.3 for full details).

- Joint HST-Spitzer proposals have been expanded to include a new category, Coordinated HST-Spitzer proposals. This category, equivalent to Large/Treasury GO programs, accommodates proposals that require substantial allocations of time on both HST and Spitzer. These proposals will be considered by a Joint HST-Spitzer TAC, comprised of members of the separate HST and Spitzer TACs. *Proposers intending to submit a Coordinated HST-Spitzer proposal must submit a non-binding Notice of Intent by December 8 2007 (see Section 3.7.2)*
- Proposers submitting multi-cycle proposals should assume two-gyro operations for Cycles 17 and 18. Proposers should note that WFPC2 will not be available following SM4, and proposals using that instrument in Cycles 17 and 18 will not be accepted. In addition, some observing modes on NICMOS may be discontinued once WFC3 is available.

The following features also deserve special mention, but have not changed since the last cycle:

- The Phase I proposal deadline for Cycle 16 is January 26, 2007.
- Starting in Cycle 12, a java-based software tool, APT (the Astronomer's Proposal Tool; see Section 1.4.6) is the interface for all Phase I and Phase II proposal submissions for HST. Please refer to Chapter 7, Chapter 8 and Chapter 9 for a description of how to prepare and submit your Cycle 16 Phase I proposal using APT. ***The Phase I LaTeX templates that have been in use for many years are no longer accepted.***
- The instruments offered for observations in Cycle 16 are: the Advanced Camera for Surveys (**ACS**); the Fine Guidance Sensor (**FGS**); the Near Infrared Camera and Multi-Object Spectrometer (**NICMOS**); and the Wide Field and Planetary Camera 2 (**WFPC2**). ACS was installed on HST in March 2002 during servicing mission SM3B. NICMOS resumed operations after the installation of a cryo-cooling system. Those instruments are working nominally at the time of writing this document (October 2006).
- STScI experience with scheduling Large and Treasury Programs in Cycles 11 through 15 has shown that some programs can introduce substantial difficulties in developing an effective and efficient long-range observing schedule. Proposers submitting Large and Treasury Programs are asked to include additional technical details

(e.g., orient constraints, tiling strategy for large mosaic programs and time constraints) in the "Description of the Observations" section (see Section 9.2) to provide information on the scheduling aspects of their program.

- In addition to the proposal categories that have existed for many cycles, STScI continues to solicit proposals in the categories of *'Treasury Proposals'* (see Section 3.2.6), *'Theory Proposals'* (see Section 3.4.4) and *'Legacy AR Proposals'* (see Section 3.4.2), all of which were started successfully in Cycle 11. Also, it remains possible to request observing time on Chandra (see Section 3.5), NOAO telescopes (see Section 3.6) and Spitzer (see Section 3.7) in combination with requests for HST observations.

1.3 General Guidelines for Proposal Preparation

Here are some suggestions to keep in mind when writing your proposal.

- *Stress why your science is critically important and why it requires HST.*
- *Write for the appropriate audience*.
  Review panels span a broad range of scientific expertise. It is therefore crucial that your proposal provides sufficient introductory material for the non-specialist, and explains the importance of the program to astronomy in general.
- *Explain clearly and coherently what you want to do and why.*
  Make sure to get your point across to reviewers who have to judge on order of 100 proposals in a few days.
- *If you have a project that requires a significant investment of HST observing time, do not hesitate to propose it.*
  In recent cycles, the proposal acceptance rate has been approximately independent of proposal size. Thus, the odds of getting a large proposal accepted are no worse than for a small proposal.
- *Make sure that what you propose is feasible*.
  It is the responsibility of the proposer to ensure that the proposed observations are technically feasible. Proposals that are not technically feasible will be rejected, so familiarize yourself with the technical documentation provided by STScI. In particular, make sure that your observations do not exceed bright object safety limits (see Section 5.1 of the HST Primer). Contact the STScI Help Desk (see Section 1.5) if anything is not clear, or if you are unsure about the feasibility of a particular approach or observation.

1.4 Resources, Documentation and Tools

1.4.1 Cycle 16 Announcement Web Page

The Cycle 16 Announcement Web Page provides links to information and documentation (including this Call for Proposals) that will be useful to you while preparing your proposals. This page will also provide any late-breaking updates on the Phase I process, and answers to frequently asked questions.

1.4.2 Phase I "Roadmap"

The Phase I Proposal Roadmap
http://apst.stsci.edu/apt/external/help/roadmap1.html
is a high level step-by-step guide to writing a Phase I Proposal. Links to the appropriate sections of various documents (Call for Proposals, Primer, etc.) are given for each step.

1.4.3 HST Primer

The HST Primer provides a basic introduction to the technical aspects of HST and its instruments, and explains how to request the appropriate number of orbits in a Phase I proposal. The HST Primer is accessible from the Cycle 16 Announcement Web Pages.

1.4.4 Two-Gyro Handbook

The Two-Gyro Handbook summarizes the impact of two-gyro operations on HST scheduling and observing efficiency. Should it prove necessary to update information on scientific performance, notification will be placed on the Cycle 16 Announcement page and relevant information will be provided at the Two-Gyro Science Mode Web Page. .

1.4.5 Instrument Handbooks

The Instrument Handbooks are the primary source of information for the HST instruments. You should use current versions of the Instrument Handbooks when preparing a proposal. They are available for all instruments, including former instruments that may be of interest for Archival Research. Instrument-specific concerns related to two-gyro observations are included in the appropriate Instrument Handbooks. The

Handbooks are distributed electronically, and can be accessed from the HST Instruments Web Page. This page also provides links to more detailed technical information, such as that provided in Instrument Science Reports.

1.4.6 The Astronomer's Proposal Tool (APT)

The Astronomer's Proposal Tool (APT) was introduced in Cycle 12 as the interface for all Phase I and Phase II proposal submissions for HST. The Cycle 16 version of APT has some minor bug fixes and enhancements included, but is basically the same system that was used in Cycle 15. See the What's New button in APT for details on the changes. The APT Web Page contains information on the installation and use of APT.

1.4.7 The Visual Target Tuner (VTT) and Aladin

The Visual Target Tuner (VTT), used to display HST apertures on images of the sky, has been replaced by a new tool based on the Aladin Sky Atlas interface. This change provides more options for future enhancements, and brings a variety of benefits to users including access to a wide variety of images and catalogs, as well as more capabilities for displaying and manipulating images. Detailed information about the new Aladin-based tool can be found on the APT Wed page.

1.4.8 Exposure Time Calculators (ETCs)

STScI provides Exposure Time Calculators (ETCs) for each of the HST instruments. Please use these electronic tools to estimate how long you need to integrate to achieve the signal-to-noise ratio required for your project. The ETCs will also issue warnings about target count rates that exceed linearity and safety limits. The ETCs can be accessed from the individual instrument Web pages, which in turn are accessible from the HST Instruments Web Page.

1.4.9 HST Data Archive

The HST Data Archive is a part of the Multimission Archive at STScI (MAST). The HST Data Archive contains all the data taken by HST. Completed HST observations from both GO and GTO Programs are available to the community upon the expiration of their proprietary periods. Observations taken under the Treasury and public parallel programs carry no proprietary period.

The MAST Web page provides an overview of the HST Data Archive, as well as the procedures for retrieving archival data (see also the introductory description in Section 7.2 of the HST Primer). A copy of the HST Data Archive is maintained at the Space Telescope - European Coordinating Facility (ST-ECF; see Appendix A.2) in Garching, to which European requests should normally be addressed. The Canadian Astronomy Data Centre (CADC; see Appendix A.3) also maintains a copy of HST science data (only), and is the preferred source for Canadian astronomers.

1.4.10 Duplication checking

The HST Data Archive provides access to several tools that allow you to check whether planned observations duplicate any previously executed or accepted HST observations. See Section 5.2.2 for details.

1.5 STScI Help Desk

If this Call for Proposals and the materials referenced above do not answer your questions, or if you have trouble accessing or printing Web Documents, then contact the STScI Help Desk. You can do this in either of two ways:

- Send e-mail to help@stsci.edu.
- Call 1-800-544-8125, or from outside the United States and Canada, [1] 410-338-1082.

1.6 Organization of this Document

1.6.1 Policies, Procedures and General Information

Chapter 2 summarizes the policies regarding proposal submission. Chapter 3 describes the types of proposals that can be submitted. Chapter 4 describes the types of observations that are possible with HST; it includes discussions of special requirements. Chapter 5 addresses policies regarding data rights and duplications. Chapter 6 describes procedures and criteria for proposal evaluation and selection.

1.6.2 Preparing and Submitting Your Proposal

Chapter 7 outlines the steps to follow when preparing and submitting a Phase I proposal. **A proposal consists of a completed APT proposal form and an attached PDF file.** Chapter 8 describes the items that must be filled out in the APT proposal form; this information is also available from the context-sensitive 'Help' in APT. Chapter 9 describes the items that must be addressed in the attached PDF file.

1.6.3 Information Pertaining to Accepted Proposals

Chapter 10 provides information on the implementation and scheduling process for accepted proposals. Chapter 11 describes Education/Public Outreach (E/PO) proposals. Chapter 12 provides information on budgets, grants and funding policies.

1.6.4 Appendices

The appendices provide a variety of additional information, including contact information (Appendix A), lists of scientific keywords (Appendix B) that can be used in proposals, a glossary of acronyms and abbreviations (Appendix C) and a list of internet links used in the document (Appendix D).