

Report of the Space Telescope Users' Committee (STUC) Meeting, June 1999

The Space Telescope Users Committee (STUC) met on 10th and 11th June 1999 in the Board Room of the Space Telescope Science Institute.

Attended: Bruce Balick, Debra Elmegreen, Chris Impey, Jay Frogel, Pat McCarthy, George Miley (Chair), Felix Mirabel, Sergio Ortolani, Dave Sanders, Hal Weaver, Bruce Woodgate.

Unable to attend: Susan Terebey

1. Functioning of STUC.

Because 4 new members, including a chairperson, had been appointed to STUC since the last meeting, the functioning and effectiveness of STUC was discussed at length, together with Steve Beckwith, the STScI Director and Dave Leckrone, the HST Project Scientist.

The purpose of STUC is to advise the STScI Director and the HST Project Scientist from the users perspective on the normal operations of the observatory and recommend changes and improvements to both instrumentation and procedures in order to maximize scientific productivity.

To carry out this task effectively it was decided that STUC should concentrate on its core mission and in general avoid duplicating the detailed work and discussions of the many other committees which are involved either in an advisory or an oversight role in the HST project.

One of the most important areas in which STUC can contribute to the project during the next few years will be in evaluating the radical changes that will have to be made to the operation of the HST in order that NGST start-up can be funded from a constant budget. STUC will advise on prioritizing the difficult trade-offs that will arise. In view of the demise of the Science Working Group, it was felt that it would also be useful for STUC to consider scientific priorities in certain cases concerning instrument developments and for determining the instrumental modes that will continue to be supported on Hubble.

Several measures will be taken to improve the effectiveness of STUC.

1. Future meetings will focus on in-depth discussions of particular issues relevant to the core STUC mission.
2. Oral presentations of information about the project as a whole will be de-emphasized at meetings. In general all presentations should be directed towards seeking STUC advice and if possible pose questions for STUC to consider.
3. Sub-groups of STUC will be set up with portfolios for particular STUC areas of interest. These sub-groups will (i) help define the inputs needed for STUC to consider these issues (ii) ensure that the most important aspects of an issue are discussed (iii) prepare first drafts of the written advice to be incorporated into a report (iv) formulate advice on issues needing a quick response which may arise from time to time between normal STUC meetings (v) provide conduits through which users can raise issues that might be relevant for STUC.

The following portfolios were allocated:

1. **Instrumental Issues:**
(including supported observing modes, calibration outsourcing and specific data analysis),
 - o ACS/ WFPC2: Elmegreen, Impey, Ortolani

- COS/ STIS: Weaver, Woodgate
 - NICMOS: McCarthy, Mirabel, Sanders
 - WFC3: Balick, Frogel, Terebey
2. **Operational Issues:**
- Proposal Handling and Scheduling: Ortolani, Woodgate
 - Software Analysis Tools: Balick, Terebey
 - TAC : Impey, Sanders
 - Targets of Opportunity: Mirabel, Weaver
 - Planetary Issues: Weaver
 - Archive: Impey
 - GO Funding: Balick, Elmegreen, Frogel

The STUC chairperson will write a short note for the STSCI newsletter to inform users about these changes and specifying the various portfolios.

2. Project Status

STUC compliments the HST Project in ensuring that a service mission (SM3A) to cope with the gyro failures was scheduled so rapidly. We also encourage the efforts that are being made to bring forward the delayed service mission SM3B, during which the ACS will be installed. We note that tradeoffs are presently being made in the instrument design by the COS team and enthusiastically await the additional HST capabilities which will be provided by the ACS. We applaud the inclusion of an infrared channel in the WFC3, note the important scientific/ funding tradeoffs that are being considered in the instrument design and welcome the decision to solicit user input on the choice of WFC3 filters by holding a workshop on 14th July.

3. Cheapops.

The survey of user's needs has provided an important foundation for designing the Cheapops program. STUC looks forward to working collaboratively with STScl management as planning proceeds on this program, which will profoundly affect the way the HST is operated. This topic will be a continuing matter for STUC attention during the next few years. STUC will begin an in-depth discussion of this topic at the November 1999 meeting.

4. Targets of Opportunity

STUC applauds the initiative taken by the STScl to enable the more timely execution of TOO programs. This is a case where the impressive increase in efficiency of the scheduling process achieved by the institute during the last few years has resulted in a fundamentally important scientific payoff. Although the identification of gamma ray bursters has increased the scientific need for carrying out TOO projects, such projects inevitably cause disruption to the regular HST program. The TAC should be made aware of the real costs of such programs so that they can make a realistic scientific cost-benefit analysis during the allocation process.

5. Proposal handling and Scheduling.

We are extremely enthusiastic about the development of the Science Expert Assistant (SEA) as a replacement for RPS2. A prototype demonstrated to STUC showed that this program has wider applications than a mere RPS2 replacement. The graphical links between the HST instrumental capabilities and sky images and catalogues provide scheduling capabilities which can qualitatively

affect the scientific use of HST, in particular for parallel operations and serendipity discoveries. There are potential benefits of such a program are in allowing users to schedule their observations more efficiently and in reducing the load on STScI staff (e.g. PCs providing advice to users generating Phase 2 proposals). More reliable observation definitions should lead to fewer target failures.

We can foresee additional benefits of such a system beyond HST scheduling. The SEA will be important both for the scientific exploitation of the HST and as a test bed for optimizing the scheduling process of the NGST and possibly those of some ground-based observatories. The SEA could also provide a capability for general analysis of multi wavelength imaging data.

We therefore encourage the STScI to develop the present prototype version of SEA into a robust version as quickly as possible. During this development, benefits of individual added capabilities must be prioritized, costed and balanced against eventual losses in speed and performance. Members of the STUC look forward to working with the staff at the institute to help identify the most important features of this system. The sub-group of STUC that will concentrate on testing the SEA are Impey, Sanders and Woodgate. Miley will assist as a non-expert "guinea pig".

6. Tac Process.

We strongly endorse the changes that are being made to the proposal evaluation process for Cycle 9. The move towards fewer broader TAC panels is sensible. The new process is likely to be effective in encouraging and rewarding medium-sized and larger proposals, without imposing arbitrary discrete steps in proposal size. In addition, conflicts of interest in the TAC will be reduced. Although the burden of spending 8 continuous days at STScI may make it difficult to recruit panel chairs, fewer panel members will be needed than previously.

STUC endorses the pilot program to coordinate applications for joint HST and Chandra/ AXAF observations between the two TACs. We understand that this experiment will be reviewed after Cycle 9 and we would appreciate the opportunity of participating in this process.

7. Grants Administration.

STUC supports the efforts that are being made to streamline the administration of the NASA HST grants program, under the auspices of the GATOR project. We understand the difficulty of providing a predictive algorithm to account for the many factors needed to allocate grants optimally and welcome the decision of the STScI to continue allocating grants by a committee on a case by case basis. STUC looks forward to evaluating the new user interface for grants administration which is expected to be completed during the next year.

8. Second Decade Committee.

Encouraging the development of a strategic vision for the scientific exploitation of Hubble during the second decade of its operating life was an excellent initiative. Optimizing the scientific productivity of the HST during this period is vital because after the operation of the HST ceases, no UV/optical space observatory is presently planned.

We await the final report of the Second Decade committee with interest and are enthusiastic about most of the preliminary findings that were reported to us. STUC endorses the suggestions that are being made to (i) encourage large and survey-type programs, (ii) ensure that during the last decade of Hubble vital category of objects are observed for posterity, (iii) provide added value to archival data by encouraging the use of uniformity in observing modes (iv)

optimize large programs for more than a single scientific goal, where appropriate. STUC is anxious to review and comment on any new method the committee may recommend for selecting these so-called "Treasury Programs". Selection should be based on an open peer review process.

8. Dates of Next Meeting.

The dates of the next STUC meeting will be 4th and 5th November 1999.