

About the *Hubble* Cycle 21 TAC Ombudsperson Report

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Developing a time-allocation system that is both equitable and tuned to enable the highest-impact science is a key responsibility for every astronomical observatory. Like most observatories, the Space Telescope Science Institute employs a system based on community peer review; as at other observatories, those processes are reviewed periodically and, if necessary, modified to eliminate potential bias and better match community priorities. In that context, Matt Mountain, the Institute Director, decided to appoint an ombudsperson for the Cycle 21 Telescope Allocation Committee (TAC). The ombudsperson was asked to provide an independent review of the TAC process, and was also empowered to contact individuals in the community prior to the TAC meeting, to obtain a direct understanding of any issues that might have been raised with regard to the process. The conclusions and recommendations are summarized in a report submitted to the director, discussed with the Space Telescope Users' Committee (STUC), and released to the community. The ombudsperson's responsibilities do not extend beyond the TAC meeting; that is, s/he was not charged with contacting community members for feedback after the meeting.

Dr. Fred Lo, the former director of the National Radio Astronomical Observatory, agreed to serve as the Cycle 21 TAC ombudsperson. He attended the Cycle 21 TAC meeting held on 14–18 May 2013. The formal charge is given below, followed by his report, which was circulated to the STUC and discussed at their October 2013 meeting. Also below, we outline some of the actions taken in response to Dr. Lo's report to modify the procedures for the Cycle 22 *Hubble* TAC.

Actions

In consultation with the STUC, we have made a number of changes to the Cycle 22 TAC process to address the issues raised in the Cycle 21 report:

Workload – chairs

Both the ombudsperson and TAC members commented on the heavy workload for panel chairs. Panel chairs were required to submit preliminary grades for TAC proposals. They did not submit preliminary grades for panel proposals, but they participated in the review and grading of those proposals during the panel meeting. They were also asked to review a subset of the medium proposals. Separate panels initially reviewed the latter proposals, and only the highest ranked were put forward for TAC review. As a result, the panel chairs did not receive most of the medium proposals until midway through the TAC meeting.

In the future, we will employ a number of means to reduce the workload. Starting in Cycle 22, the chairs will be asked to run the panel meetings, but they will not vote on the proposals. This process is similar to that adopted in the current NRAO review, where panel chairs only vote on proposals if there are conflicts among panel members. We will also allow more time to review the medium proposals by using the preliminary grades to identify and circulate the top-ranked 40% prior to the TAC meeting. This will provide the chairs with more time to familiarize themselves with the proposals that are likely to be selected by the panels.

Workload – panelists

Some panels face heavy workloads, with between 80 and 90 submitted proposals.

We will reduce this workload by asking a subset of the panel to provide preliminary grades for each proposal. We are also advancing the deadline for submitting preliminary grades, which will enable us to construct and circulate the triage lists for each panel approximately one week before the meeting. All unconflicted panelists will discuss and vote on proposals at the panel meeting.

Schedule and panel seniority

A major reason given for declining service on the TAC is its coincidence with final examinations at many universities.

In an effort to improve the success rate in attracting more senior members of the community, we have adjusted the schedule by moving the Cycle 22 meeting to June. We note that the overall success rate for panelists' recruitment increased from 52% in Cycle 21 to more than 58% in Cycle 22. The success rate continues to be lower for more senior scientists.

Research areas

We recognize that certain sections of the community feel that they are at a disadvantage with the current TAC structure.

We are looking into how we can identify and mitigate such issues in an appropriate fashion.



Triage

We have analyzed the distribution of preliminary grades for proposals that were ultimately recommended for acceptance in the Cycle 20 and 21 reviews. We found that 79% and 75%, respectively, of the accepted proposals were in the top 30% of the preliminary rankings. In both cycles, 95% of the accepted proposals were in the top 50% of preliminary rankings, with a further 3% between the 50th and 60th percentiles. Our current procedures are to flag the top 60% of proposals for discussion, and triage lower-ranked proposals. Thus, the overwhelming majority of proposals are initially ranked well above the triage cutoff, suggesting that the current approach is reasonable.

Expertise

The Hubble TAC assigns time and, for U.S. proposers, recommends grant funding. As a result, NASA's conflict-of-interest rules govern the process and limits which panelists may discuss and grade specific proposals.

We have mitigated the effects to some extent by defining separate categories for major and minor conflicts. Panelists with minor conflicts (institutional, close collaborator) may contribute to the proposal discussion but may not vote.

Conflicts are a particular problem on the super-TAC, where the extensive teams associated with large and Treasury proposals can lead to multiple institutional conflicts.

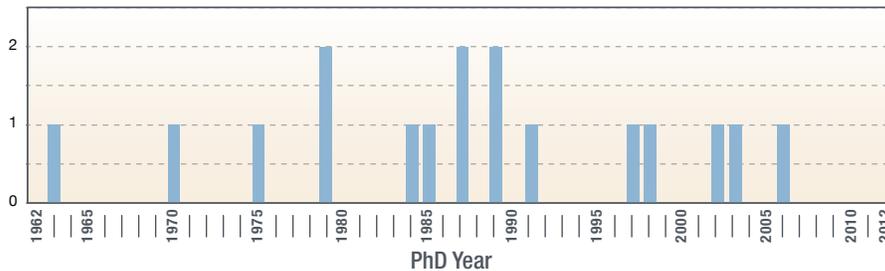
When those proposals are circulated to a subset of the panels and discussed by the panelists, the chairs are allowed to exploit their expertise.

Even so, it is possible that most of the relevant experts are not permitted to comment on a proposal.

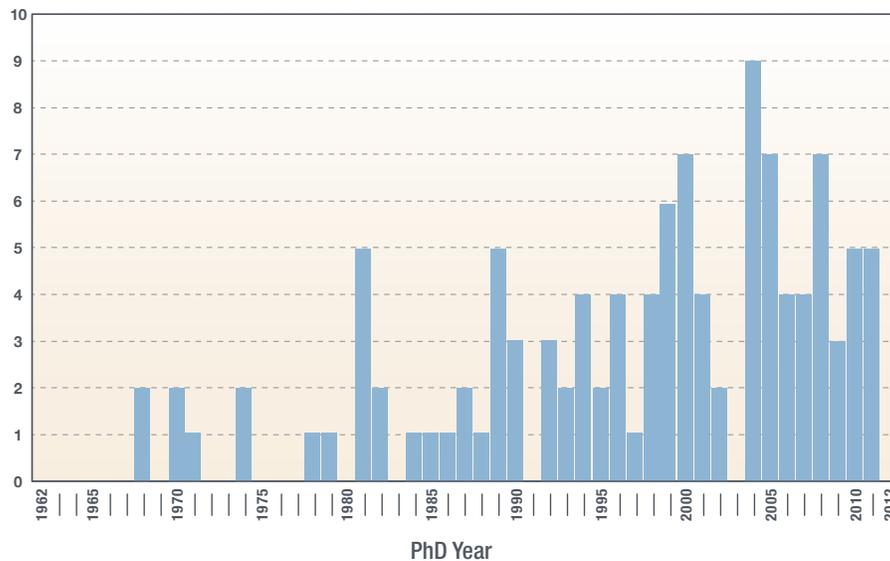
We will address this issue by obtaining three written reviews from community experts for each proposal reviewed by the super-TAC. Those experts will be chosen to avoid conflicts, and, as with NSF proposals, will be asked to comment on the strengths and weaknesses of each proposal, not whether they believe a given proposal should be awarded time. We will collect those reviews and distribute them to the super-TAC members prior to their submitting preliminary grades before the TAC meeting.

Dr. Lo has agreed to return as TAC ombudsperson for the Cycle 22 TAC and provide his perspective on these procedural changes.

TAC Members



Panel Members





Report to the Space Telescope Science Institute Director
The Ombudsperson's view of the *HST* Cycle 21 Telescope
Allocation Committee Process

Fred K. Y. Lo Distinguished Astronomer and Director-Emeritus, NRAO
June 2013

In response to some complaints and issues raised about the *Hubble Space Telescope (HST)* Telescope Allocation Committee (TAC) process, the Space Telescope Science Institute (STScI) Director, Matt Mountain, asked that I serve as an ombudsperson to observe the Cycle 21 TAC process and report my findings on the fairness of the process. Since I had gained some experience in this most important process of an observatory in my tenure as NRAO Director, via initiating an update of the NRAO TAC process and serving as Chair of the ALMA Board Subcommittee to formulate the ALMA TAC process, I agreed to serve, under a set of clearly defined charges to the ombudsperson (see Appendix).

Prior to attending the Cycle 21 TAC meetings in Baltimore, I talked on the phone to a number of *HST* users and to the relevant staff of the *Spitzer* and *Chandra* space telescopes about their TAC process, in order to gain the relevant perspective on the issues involved. I then attended in person a few panel meetings and essentially the entire TAC meetings, as an observer just watching and listening to the discussions.

Overall, I was very impressed by the dedication of the panel members and the chairs (who also constitute the TAC). I noted in particular the workload of the panel chairs was overwhelming, in my opinion. It was also clear the STScI staff very professionally organized the meetings.

Specific issues with the *HST* TAC process brought to the attention of the STScI Director included the following: (1) research areas that are not popular (in terms of proposal pressure) or topics that appeared to be old-fashioned (e.g., outstanding fundamental problems from years ago) had been overlooked by the TAC process, so that (2) astronomers in these areas have been “conditioned” and thus discouraged to submit *HST* proposals.

From my observations of the proceedings, talking to some panel members and users in these areas, I would judge these issues can be real. On the other hand, how much key science had been missed as a result was harder to tell. I believe these issues arose as unintended consequences of a process designed to address proposal pressure. Allocating time in proportion to proposal pressure is clearly the best way to satisfy the largest number of proposers. However, it is a reasonable question to ask whether responding to proposal pressure is the best or only way to elicit the best science. For example, should there be specific calls for “out of the box” proposals to use the Director’s Discretionary Time or special orbit allocations?

Another concern raised was whether reviews of proposals were unduly influenced by the sociological factors of competing groups. Very importantly, I did not sense any egregious bias (scientific or otherwise) in the discussions of the scientific merit of the proposals in the TAC meetings and the panel meetings that I sat through. I did note a very few instances of personal scientific preference and undue (and even mistaken) concerns on scheduling practicalities getting in the way, but at a level that I deemed as par for course in any process that relies on personal judgment. A more proactive but appropriate monitoring of such exchanges by the panel and TAC chairs, and the STScI staff on technical and scheduling issues, should help confine the focus of the discussions mainly on scientific merits.

One concern that came up in my initial background check was the balance of the senior versus junior members on the panels and TAC. I could not judge the balance in the panels and how the balance affected the panel discussions, as I only sat in on only a few panels very briefly, but the TAC composition and the level of discussions appeared reasonable. I have since been provided with the distributions of PhD years of the panel and TAC members in Cycle 21, shown as Figure 1. The distributions indicate that the panel membership is somewhat skewed towards junior scientists, whereas the TAC membership is more evenly distributed.

Apparently, the success rate of recruiting senior astronomers to serve on the panels has become progressively lower over the years, and it is not for want of recruiting efforts by the STScI staff. This is a crucial community service issue that the STScI needs to address together with the Astronomy community at large.

From observing the TAC process, what became obvious very quickly was the very heavy workload on the panel chairs. The panel members had to review ~70 small proposals plus advise the panel chairs on ~7 medium and large proposals. On the other hand, the panel chairs had to review the small proposals in their panels plus ~90 medium and large proposals that cover all science categories. Getting all the evaluation and voting done during the week of meetings seemed especially daunting for the panel chairs/TAC members. While the TAC members discharged their duties admirably well, I wonder if this overwhelming burden can result in less than optimum evaluation of the large and medium proposals that asked for very significant resources from the *HST*.

Since all TAC members (chairs of the 14 panels of 6 scientific categories) voted on all the large and medium proposals, a significant fraction of the TAC may not have had the appropriate expertise on any given individual proposal. While two experts led the TAC discussions of each proposal, the non-expert TAC members tended to take part only by listening to the discussions of the experts. So, one could argue a significant fraction of the votes on the medium and large proposals may have been based largely on indirect assessment only. This potential problem can also be aggravated by a reduction of expert TAC members who could not vote due to potential conflict of interest.

Another issue that should be examined is the triage of the large proposals. Currently, the triage was based on preliminary grades by the panel chairs submitted within the first days of the TAC proceedings. While in principle the triaged proposals could be salvaged for further consideration by the TAC, in practice the TAC members were so busy that there was insufficient time and attention to examine the triaged proposals systematically for salvage. I had an uneasy feeling about whether the current triage process allowed the possibility of “throwing away the baby along with the bathwater.”

To address the concerns noted above on the large and medium proposals, perhaps some variation of the following procedures should be considered for adoption by the *HST* TAC process: (1) asking the panels to review small, medium and large proposals within their scientific categories, but only recommend time allocation for small proposals, which would ensure the review and grading of large and medium proposals are by experts, (2) mailing out the large and medium proposals to additional expert referees for written reviews, which would ensure sufficient expertise for the review, minimize potential conflict of interest and engage more senior astronomers. Given the above, (3) the TAC should be able to focus more on the broader views and issues in combining and balancing the panel recommendations on the small, medium and large proposals, which would also make the job of panel chairs/TAC members more manageable and I suspect more satisfying.

Finally, one of my charges is to assess the utility of the ombudsperson and recommend how frequently such a position should be incorporated in the TAC process. As ombudsperson, I specifically watched for how the process itself worked and would question (in my mind) the established procedures, whereas the TAC and the panel members, rightly so focused solely on the scientific evaluation within the established TAC process. From the perspective of assessing the TAC process, the ombudsperson was necessary. If the TAC process will be changed significantly for Cycle 22, I would think it is important to have an ombudsperson to judge how well the revised process works. Once the TAC process is stabilized, it is perhaps not necessary to have an ombudsperson for every cycle.

Appendix: TAC Ombudsperson Charter

The Telescope Allocation Committee (TAC) ombudsperson is charged by the STScI Director to investigate issues and complaints brought forward by members of the astronomical community with regard to the allocation of telescope time by a TAC process supervised by STScI. The ombudsperson is encouraged to make direct contact with community members to obtain further information on specific issues as the need may arise. Any such interactions should be treated as confidential.

The ombudsperson will observe the TAC process and consult with the STScI Director or designate to clarify any issues that might arise. S/he will conduct an independent assessment of the fairness of the process, and advise the Director on potential improvements that could be adopted for future TACs.

In addition, s/he will provide the Director with an assessment of the utility of the role of "ombudsperson" within the TAC process, and will advise on how frequently such a position might be incorporated in future TACs.

The ombudsperson will produce a report for the Director on the TAC process. The report will be made available to the community.

Specific issues for *HST* Cycle 21: The ombudsperson is asked to pay particular attention to discussions of proposals for Solar System, AGN, deep field and IGM research.