

## ALMA North America Science Advisory Committee

Face to face meeting  
Charlottesville, 28-29 September 2011

The ANASAC wishes to commend the NAASC for the activities leading to the preparation and execution of the ALMA Cycle 0 proposals. Our perception, as well as the sentiment gathered from the community, is that it was very well done – from the outreach tasks (for example, the Community Days) to the managing of the helpdesk. This is an excellent start for the science activities of ALMA.

We also wish to acknowledge Carol Lonsdale's leadership as the head of the NAASC, as she steps from that position onto other duties, and wish the incoming NAASC director Al Wootten a successful tenure. On the ANASAC, Alberto Bolatto is stepping down as the chairperson, and Rachel Osten will take on that role for the next year.

Below are the ANASAC recommendations on a number of topics discussed during our recent meeting.

### Proposal evaluation process

The ANASAC discussed in detail the lessons from the Cycle 0 process. Drawing from the experience its members have with other large facilities (for example HST), we wish to highlight the importance of attaining maximum transparency and serving a wide community while avoiding the possibility of real or perceived persistent scientific biases. Going forward, we encourage the JAO to identify science assessors who are diverse in terms of science expertise, prior collaboration, and present institutional affiliation, as a means of ensuring a broad perspective during proposal review. In that regard we suggest:

1. Avoiding the appointment of referees with a recent history of significant collaboration or belonging simultaneously to the same institution to serve in the same science area.
2. Enlarging and widening the composition of the panels and implementing a shorter service time (faster cycling of referees – perhaps 2 instead of 3 years), with the goal of broadening the range of referee perspectives. For Cycle 0 there were 6 referees per panel. Constituting larger panels (HST for example has 9 members per panel) that incorporate a wide range of expertise is desirable, as it involves the wider non-radio community without sacrificing relevant radio expertise.
3. If referees serve in consecutive ALMA calls, it is important to reshuffle them among the panels.

4. Number of people doing triage. With the goal of incorporating a broad range of perspectives it would be desirable to increase the number of referees involved in a triage decision, which was 4 in Cycle 0.
5. Widening the composition of the panels should simplify the process of recruiting referees, as they would be drawn from a larger pool. To further ease the recruitment, we recommend to be flexible with the mode of referee participation, allowing the possibility of write-in or telecommuting referees to supplement the face-to-face review.

### Technical assessment of proposals

The ANASAC discussed the topic of whether the technical assessments should include all proposals or only those that are highly ranked by the scientific assessment process. Since ALMA is a general use instrument that should reach out beyond the traditional radio community we think it is important that all proposers have access to a technical assessment as part of the community education effort at least during the early cycles. We recognize, however, the logistic difficulties in technically assessing all proposals with uniform criteria. We did not reach a strong consensus, but have the following recommendations:

1. There should be clear information available to the proposers (e.g., a knowledge article) on “common technical errors” and how to avoid them.
2. It is very important that accurate and realistic overheads are incorporated into the OT.
3. For scientific evaluation of a proposal it is crucial that the referees understand the observing time required in order to correctly estimating the cost-to-benefit ratio of any project. That should be included in a technical assessor’s report, if performed before the science ranking.
4. If technical assessments are not to be provided to the science referees before proposal ranking, proposals should be “accepted pending technical assessment” (as in HST). Also, rejected proposers should be clearly informed that they could request a full technical assessment of their proposals by the NAASC.
5. We note that other NRAO facilities technically assess all proposals, suggesting that it is possible to do so in a meaningful way for ALMA. Doing so would be in agreement with NRAO’s “One Observatory” philosophy. We note further that providing very specific instructions is key to attain uniformity of criteria among the technical assessors.
6. A subset of the ANASAC expressed strongly the view that the JAO's decision to restrict technical assessment to “accepted” proposals is a bad one, and every proposal should be assessed. Refinement of the OT may be able to avoid some of the issues with miscalculated overheads seen in Cycle 0, but there are likely to be new aspects of Cycle 1 proposals (e.g., use of the ACA) that will be tricky for the OT to deal with. In this context, depriving science assessors of technical feedback will undermine the quality of their assessment (especially as panelists' backgrounds diversify), while providing

technical feedback only to successful proposers will give the most help to the people who need it least. For Cycle 3 and beyond, once ALMA's capabilities have stabilized, OT functionality has been further developed, and some expertise has built up in the user community, it may be possible to cut back on technical assessment (a similar transition took place for HST).

### Maintaining the process for establishing observatory policies

A well-defined process exists to establish JAO policies, which includes consultations with the board, the directors, and the ASAC. We urge the JAO to follow this process in as much as it is possible, and not to short-circuit it in the name of expeditiousness (as it seems to have occurred with the changes to the format of feedback to proposers that were abruptly implemented at the APRC meeting, to give one example). Short-circuiting the proper process reduces the transparency of the organization, and it is prone to cause confusion at the very least.

### Public information about successful proposals

Following the goal of transparency, we strongly agree with the policy that the PI names, proposal titles, abstracts, and targets of all high priority proposals be made public in order to achieve the degree of transparency of the "Great Observatories" program. Allowances could be made (at the discretion of the ALMA director) for sensitive targets to be left unpublished until observations are obtained, or exceptionally even afterwards.

### Execution priority of Cycle 0 projects, including fillers

With the goal of transparency in mind, we recommend that a clear policy be in place for the execution of Cycle 0 projects, in the event that some of them cannot be executed for lack of time or in keeping with the "best efforts" policy. In particular, we suggest focusing on execution priorities according to TAC rankings in as much as it is possible.

### Considerations for Cycle 1

The ANASAC learned that Cycle 0 projects were considerably more complex than anticipated. We suggest that the Cycle 1 call include clear information about what types of projects can be executed efficiently given the current status of the instrument. We also reiterate that including realistic overhead information in the OT is extremely important.

### ALMA development projects

The ANASAC hopes that the call for NA development projects goes out post-haste, as the process to select ALMA developments seems to be well under way in ESAC and EASAC countries. We have two recommendations to make, following the overarching principles of transparency and “science first”:

1. On the topic of the approval path for development projects, although we did not reach complete agreement within the ANASAC, we believe that the constitution of a JAO development project evaluation panel separate from the ASAC but containing members drawn from it as well as technical experts drawn from the regional selection panels is probably desirable in order to increase the transparency of the selection process.
2. On the topic of guaranteed time in exchange for new developments, the ANASAC believes it is a possibility, depending on implementation. We recommend to keep foremost the principle of “science first”. We suggest that a way to implement that is for the “guaranteed time observers” to write proposals and compete through the standard review process. If their proposal is not approved (because others exist of higher scientific quality), the GTOs get to keep their guaranteed time and apply again. This guarantees that the observatory produces the best quality of science. The Chandra X-ray observatory implements a similar version of this idea, where the GTOs compete through the standard review process whenever conflicts of targets are identified with general observer proposals.

### Outreach activities

The ANASAC recommends the NAASC compile statistics in order to assess the success in reaching the different segments of the user community. We suggest the compilers look at: names of PIs/cols in proposals to identify “broad-brush” level of radio expertise (as well as names of people who participate in Community Day Events), the number of graduate students involved, and the geographic distribution of the proposers. We thank the NAASC for following the ANASAC recommendation of requesting funding information from the successful Cycle 0 PIs. These statistics will be extremely useful when time comes again to propose for NSF funding.

The ANASAC believes that the best advertisement for ALMA will be great science results from Cycle 0. Accordingly, we urge the NAASC to prioritize the activities related to data reduction and PI support. We think the existing NAASC plans for outreach with shorter versions of the community days (community days “boosters”) featuring technical updates, and the NRAO-wide community days already planned, seem reasonable. Given the limited resources available we do not advise further Cycle 1 outreach beyond the current plans.

We are pleased to see the continuing development of the public outreach effort through the Education and Public Outreach office, improving the public NRAO website to increase the number of hits, and developing public-friendly videos and

graphics. Given the resources at ESO, the best course of action seems to be to coordinate with and whenever possible leverage from the European efforts.

### ALMA Band 1 frequency range

Doug Johnstone presented an analysis of the pros and cons of changing the frequency of band 1 in the base specifications, to better complement Q band in the EVLA. The general result is that the gain in capabilities is similar to or slightly greater than the loss, so it seems for the most part a neutral change. In email discussions after the f2f meeting it has been suggested that the frequency range decision be left to the proposers of a band 1 receiver in the development proposal phase. The ANASAC does not disagree with that approach.

### Cuts in NAASC funding

The ANASAC will be happy to provide comments on specific budget plans. One area where there was general agreement is that the idea of hiring two postdocs to be “released into the community” with the goal of increasing community expertise is not attractive. The opinion of the ANASAC is that the incremental increase in expertise will be small, and likely it will be preferentially delivered to institutions where there are already radio or interferometry groups, that is, those who least need it.