



ALMA BOARD

ALMA EDM Document	AEDM 2020-037-O
Distribution	Ordinary

Subject: ASAC Report – October 2020

AUTHOR(S): K. Kohno & ASAC

Purpose of Document: To provide the ALMA Board with the second 2020 ASAC Report.

Status: To be noted by the ALMA Board in the November 2020 Meeting.

ALMA Science Advisory Committee (ASAC) Report to the ALMA Board

Manuel Aravena, Anne Dutrey, Maryvonne Gerin, Kirsten Knudsen (EU vice-chair), Kotaro Kohno (chair), Dan Marrone, Nami Sakai, Eva Schinnerer, Kengo Tachihara, Mario Tafalla, Stephen White (NA vice-chair), & Christine Wilson

General considerations

The ASAC face-to-face meeting was held virtually on October 13, 2020 using zoom. JAO director Sean Dougherty, Observatory Scientist John Carpenter, DSO head Liz Humphreys and the three regional Project Scientists Daisuke Iono, Crystal Brogan, and Martin Zwaan (on behalf of Franciska Kemper) also participated. The ASAC wishes Ciska Kemper a speedy recovery. James Di Francesco participated in the meeting as a liaison to the ALMA board science committee, which is also very appreciated.

Due to the status of the observatory, which has been shut down for almost 7 months, the ASAC virtual face-to-face meeting was mostly focusing on the recovery plans including the upcoming cycle-8 proposal review plan. No ad-hoc charges from the Board were assigned, and the meeting lasted only 2 hours. A short closed discussion among ASAC members took place before the end of the meeting.

The ASAC greatly appreciated the enormous efforts by the observatory to keep ALMA alive and to prepare for the recovery. The ALMA director reported that due to heroic efforts by the JAO staff the observatory is in the initial phase of the recovery processes after a successful restart of the turbine generator #1 on October 6th, which is 199 days after the March 22 shutdown. The committee is very positive about the efforts by the entire observatory to handle the present situation, unprecedented in the history of ALMA (and probably even of modern astronomy). The ASAC wishes the entire staff success and good luck on the path towards restarting science operations, and encourages continuation of the good communication that has taken place up to this point. ASAC would highly appreciate regular updates on progress in the recovery plan, e.g. when major milestones have been reached.

Permanent Charge #1. Assessment of the performance of ALMA scientific capabilities: ASAC shall indicate what information is required from the Joint ALMA Observatory (JAO) to perform this assessment.

Recommendations/issues:

- ASAC finds that the presented plan for ObsMode2021 is consistent with the priorities as discussed previously. The committee wishes the team success in implementing these.

Cycle 9 priorities: the ASAC appreciates having this opportunity to provide comments on the JAO recommendations for the capabilities to be offered for the upcoming cycles. The detailed presentation on

the plan, which was given at an ASAC meeting on October 2, was also appreciated. The committee is generally satisfied with the plan presented for ObsMode2021, which can be offered for cycle 9 (or later), and finds that it is in line with the priorities as discussed previously.

It may well be challenging to obtain the test data necessary for ObsMode commissioning, given the requirements on weather conditions and array configurations for many commissioning items. It will be a challenge to balance the commissioning with the whole recovery effort, but the committee understands that the project recognizes those issues and is realistic about the constraints that will result. ASAC wishes the team success in implementing the planned capabilities to be offered in Cycles 8 and 9 despite uncertainties in the array recovery process.

Permanent Charge #2. Assessment of the technical aspects of the ALMA system performance: ASAC shall indicate what information is required from the JAO to perform this assessment.

Since ALMA has been shut down for almost the entire period of time since the previous ASAC meeting in March 2020, the ASAC did not discuss this charge at our meeting.

Permanent Charge #3. Assessment of the science outcomes from ALMA: Statistics on publications, citations, press releases, web sites, etc. collected by the Executives shall be collated by the JAO, and analyzed by the ASAC.

This charge is considered once per year and so will be revisited at the March 2021 ASAC meeting.

ASAC notes that a significant fraction of Cycle 7 projects and Cycle 6 A-rated projects remain to be completed, as an inevitable consequence of the ALMA shutdown due to the pandemic. Its impact on the science outcome in the near future may need to be monitored carefully.

Permanent Charge #4. Recommendations of ways to maximize ALMA's scientific impact: This includes review of the scientific effectiveness of the Proposal Review Process after each Proposal cycle.

Recommendations/issues:

- It will be tricky to carry out a virtual review panel given the wide range of time zones and new items that will be implemented in the Cycle 8 proposal review. ASAC encourages JAO to invest time to consider best possible options for implementation of the panel review, also keeping in mind that travelling for such a meeting might be restricted for potential members.

Since the Cycle 8 call for proposals has been delayed until spring 2021, there was no recent proposal review process to be evaluated at this meeting.

ASAC has been informed about the preparations for the Cycle 8 proposal review. Use of the distributed peer review (DPR) for the main proposal call will be introduced, and a fixed threshold, 25 hours, will be used to select the proposals that will be reviewed by panels. Overall, the committee finds that the Cycle 8 review plan is consistent with the ASAC recommendations and well prepared. One of the obvious questions is whether the panel meetings will be face-to-face or virtual. The observatory has been in contact with other observatories to learn about their experience with virtual panel reviews. Nevertheless, ASAC feels that it will be tricky to carry out virtual review panel meetings given the wide range of time zones of the reviewers. It may be necessary to hold a series of several-hour sessions, rather than full-day sessions. Given the significant restructuring of the review process (distributed peer review for small proposals, panels for medium-sized and large proposals), it seems desirable to have face-to-face panel meetings in order to minimise the number of changes. However, it is still difficult to foresee if panel members will be allowed to travel in mid next year. ASAC, therefore, encourages the JAO to spend some time thinking about how best to do this tricky task.

Permanent Charge #5. Reporting on operational or scientific issues raised by the wider community as communicated by the three regional Science Advisory Committees (ANASAC, ESAC and EASAC).

There were no specific issues from the community to be addressed at this time.

Permanent Charge #6. Assessment of the scientific impacts of the ALMA Development Program, and particularly of new projects that are proposed.

No updates on the progress of ALMA development programs were presented to the committee at this meeting. The ASAC therefore looks forward to receiving presentations from the observatory on the progress and perspectives of the development programs, in particular on the status of the planning for a correlator upgrade, at the next ASAC meeting, which is expected to be around March 2021.