



ALMA BOARD

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ASAC March 2026 Report

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General Considerations:

ASAC held an online meeting on 16–18 March 2026. The Committee thanks all contributors for preparing and circulating the meeting materials in advance and acknowledges the participation of Tom Ray, Science Committee Chair, in the meeting.

ASAC commends the smooth start of ALMA Cycle 12 and expresses its appreciation to all those involved for their dedicated efforts in making this successful launch possible. In addition, the release of both the DPR survey and the publication statistics analysis as detailed reports to the community is considered highly significant for the objective assessment of ALMA's scientific impact and overall robustness. To further enhance ALMA's scientific value, ASAC continues to underscore the importance of Stage 2 within the DPR process.

Looking ahead to the WSU, ASAC recognizes that preparations for this next major development phase are entering a critical stage, including the Cost Review, and expresses its full support for the substantial efforts of all involved. ASAC also notes that the manufacturing proposals for the Wideband IF Processor and the Data Transmission System were presented at this meeting and expresses its strong support for both initiatives.

With regard to the deployment approach for the WSU, ASAC intends to engage in careful and substantive discussion, particularly from the perspective of scientific impact, prior to reaching any conclusions. To facilitate informed deliberations, ASAC requests that JAO prepare appropriate materials to support future discussions.

Permanent charges:

- 1. Assessment of the performance of ALMA scientific and technical capabilities: The Joint ALMA Observatory (JAO) shall provide the appropriate information needed to perform this assessment.**

Recommendations/issues:

- ASAC commends the Observatory on the smooth start of Cycle 12 and the high on-time delivery rate of data. ASAC also congratulates ALMA on the successful deployment and science verification of Band 2, and welcomes its inclusion in the Cycle 13 Call for Proposals.
- ASAC welcomes the initiation of the analysis of completion rates for A-ranked and polarization projects and looks forward to a full report at the Fall meeting. While noting that only ~6% of A-ranked projects remain incomplete after two cycles, ASAC reiterates that achieving a 100% completion rate for A-ranked projects should remain a primary goal of the Observatory.

- ASAC welcomes integration of proactive risk management into a five-year forward-looking budget plan.

ASAC commends the smooth start of ALMA Cycle 12 and notes that it is proceeding with an observing efficiency comparable to that of Cycle 11. ASAC appreciates the continued efforts by all parties to improve operational efficiency across multiple areas. ASAC supports the newly introduced Fast Feedback system and invites JAO to report on its impact at the next ASAC meeting. ASAC also welcomes ALMA's initiative to enhance guidance for PIs of time-critical projects, in particular through the establishment of a dedicated helpdesk function.

ASAC further expresses its appreciation to JAO for already initiating investigations into several items raised in the previous ASAC report, and looks forward to receiving more detailed information on the direction of these efforts at the next meeting.

2. Recommendation of ways to maximize ALMA's scientific impact: This includes review of the scientific effectiveness of the ALMA Archive, proposal tools, and the Proposal Review Process as well as the current scientific impact of ALMA.

Recommendations/issues:

- ASAC congratulates ALMA for the submission of a very thorough paper on Distributed Peer Review. Based on the findings of this survey, ASAC considers it even more crucial that DPR Stage-2 functions efficiently. ASAC recommends that JAO further promote awareness of the role of Stage 2 as a substitute for reviewer interaction and consider mandatory participation in order to broaden perspectives.
- ASAC commends ALMA for its comprehensive publication statistics study by Stoehr et al., noting that its performance matches or exceeds other major observatories and continues to yield high-impact results. ASAC recommends that such statistical analyses be continued on a regular basis in the future.
- ASAC welcomes the active use of the archive, as reflected in the high fraction of publications based on archival data, either exclusively or in combination with PI data. ASAC commends the continued improvements to the archive and highlights the particular value of quick-look preview images in facilitating and promoting its use for non-PI projects.
- ASAC welcomes the readiness of the web-based ALMA Observing Tool for Cycle 13 and looks forward to evaluating its performance following its release to the community.

Stage-2 in Distributed Peer Review: ASAC recognizes that the effective use of Stage 2 is primarily the responsibility of the user community; however, it is equally important that JAO establish appropriate mechanisms to ensure that users fully understand its significance. This will become even more critical in the WSU era, when oversubscription is expected to increase further.

ASAC notes that the current optional nature of Stage 2 within the DPR process may discourage participation by busy PIs and may contribute to a perception that the system is less robust than the previous two-stage panel review process. While acknowledging that an optional Stage 2

reduces the overall workload on the community, ASAC recommends that JAO consider making Stage 2 mandatory and clearly communicate its role in validating users' review assessments and rankings, thereby contributing to improved scientific outcomes across the ALMA community as a whole.

ASAC's recommendation to make Stage 2 mandatory is based on the following considerations:

- In its current format, Stage 2 provides limited peer accountability.
- Stage 2 offers reviewers an opportunity to identify and correct oversights or misunderstandings from Stage 1. A frequently raised concern regarding DPR is the presence of apparently contradictory reviewer comments. When such inconsistencies arise from oversights or misunderstandings in Stage 1, Stage 2 provides a mechanism to resolve them. If participation in Stage 2 were mandatory and properly utilized, remaining differences in reviewer comments would more likely reflect genuine divergences of opinion among informed reviewers who are aware of opposing perspectives.
- The presence of non-participating reviewers ("free riders") creates a perception of unfairness among those who invest time in Stage 2, thereby reducing overall engagement.

ASAC further notes that making Stage 2 mandatory would represent an initial step and that additional adjustments may be required based on continued monitoring of community response. One possible adjustment would be to introduce a mechanism within Stage 2 that allows users to add anonymous responses to others' review comments, thereby enabling interaction among reviewers.

ASAC also suggests documenting that no proposal sets share more than three proposals during DPR.

Publication Statistics: Publication statistics clearly demonstrate that ALMA continues to produce outstanding scientific results. ASAC regards this as a significant achievement. ASAC considers it important to continue the systematic monitoring of publication statistics. Beyond the surveys conducted to date, ASAC notes that further analyses would be valuable. These may include comparisons of highly-cited papers with those from other observatories, as well as field-by-field assessments of whether, and to what extent, the emergence of new facilities (e.g., the James Webb Space Telescope and the Vera C. Rubin Observatory) is influencing ALMA's scientific output.

ASAC also recommends continued monitoring of the scientific impact of Large Programs in order to assess their long-term legacy value. Furthermore, ASAC encourages systematic tracking of projects that remain unpublished or are significantly delayed, particularly since Cycle 8, in order to help identify possible underlying causes, such as issues related to completion or imaging challenges.

While ASAC acknowledges that publications in high-impact journals, such as *Science* and *Nature*, are often regarded as indicators of scientific visibility and influence, it cautions against relying too much on such measures when assessing scientific outcomes. In this context, ASAC

notes that the substantial publication costs associated with these journals warrant careful consideration of whether the cost–benefit balance, in terms of scientific impact, is fully justified. ASAC also recalls the principles outlined in the San Francisco Declaration on Research Assessment (DORA), which emphasize that journal-based metrics, such as impact factors, do not necessarily reflect the intrinsic impact of individual papers or research outputs and caution against evaluating research solely on the basis of journal venue. Given ALMA’s status as a world-leading observatory, ASAC suggests that the Observatories consider exploring the development of alternative evaluation criteria informed by DORA and similar frameworks.

In addition, ASAC considers the importance of carefully tracking how different communities use ALMA, whether through archive usage, proposal submissions, or ALMA-based publications. Identifying and supporting less active communities, whether by research field or by country, may help maximize ALMA’s scientific impact.

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

Recommendations/issues:

- Regional SAC reports are appended to the ASAC report.
- EASAC: it was suggested that the community be provided with a clearer explanation of the operational policy for the ESO-managed guaranteed time observation (GTO) allocation.
- Beyond the points already addressed in other sections on this ASAC report, ANASAC and ESAC note that there are no additional region-specific issues to report.

Within EASAC, the initial announcement of the ESO GTO call for proposals was met with considerable surprise. While relevant documentation (such as Proposer’s Guide and Users’ Policies) has since clarified certain aspects, EASAC considers that the overall GTO policy may not be entirely straightforward for the general user community to fully understand. In particular, clarification is sought regarding the treatment of GTO programs that are not executed in the originally planned year. Such observations are carried forward for up to five years; however, it is not fully clear how, during this period, the corresponding science goals or observing targets should be treated from the perspective of non-GTO general users, particularly with respect to potential duplication. As this issue is likely to be of primary concern to the general user community, EASAC believes that it would be beneficial to provide a clearer explanation of this aspect within the Users’ Policies.

4. Assessment of the scientific impact of the ALMA Development Program, with focus on the Wideband Sensitivity Upgrade (WSU) capabilities as well as its implementation.

Recommendations/issues:

- ASAC expresses strong support for all WSU development efforts and reiterates the importance of maintaining a four-fold bandwidth increase as a key priority for the WSU program.
- ASAC endorses the Phase C/D1 proposal for the Wideband IF Processor (WIFP) and the Phase 2 proposal for the Data Transmission System (DTS), both of which are key components of the WSU program.
- ASAC congratulates the WIFP team on their prompt and efficient response in adapting the hardware design to recent changes in ADC component availability, and notes with satisfaction that this change is not expected to have a significant impact on the project timeline or cost.
- ASAC looks forward to receiving further information on the various deployment scenarios for WSU. The shutdown scenario presented at this meeting was new to ASAC. ASAC notes that this scenario carries an apparent risk of negatively affecting parts of the user community, particularly from a scientific perspective, which will be taken into account in its future recommendations.

WSU Development: ASAC welcomes the progress of development activities across all components toward the implementation of WSU and looks forward to their successful passage through PDRs. ASAC commends JAO's proactive efforts to share development status information with the user community. In particular, ASAC considers it important that JAO has been able to confirm at this stage that there will be no impact on Cycle 14 operations, and expresses its appreciation for this clarification.

ASAC further notes that, during this meeting, it was informed that a shutdown-based deployment option has emerged in the course of reviewing the WSU implementation strategy. While this scenario may be regarded as a hypothetical extreme case, ASAC emphasizes the importance of a thorough, multi-perspective evaluation of the WSU implementation approach and intends to engage in careful and substantive deliberation on this matter, with particular emphasis on scientific impact.

ASAC requests that JAO prepare the necessary documentation to support such discussions, including clear information on FTE requirements, identified risks and mitigation measures, and realistic timelines. While detailed deliberations will take place at the next meeting, ASAC notes that, given the inherent uncertainty in the duration of a potential shutdown, the associated scientific impact of the shutdown scenario would be difficult to quantify and could be substantial, for example, in terms of potential loss of engagement of PhD students and early-career researchers in ALMA-related research activities.

5. Providing comments on community initiatives regarding ALMA capabilities beyond ALMA2030 once a year.

Recommendations/issues:

- ASAC considers that the inclusion of a dedicated "Beyond-ALMA2030 (or ALMA 2040)" session at the next pan-ALMA conference in Taiwan (February 2027) would provide an

essential opportunity for community-wide discussion. ASAC further notes that supportive endorsement from the Board would likely help enhance the visibility of the session and encourage broader and more active participation, thereby contributing to a more impactful and engaging discussion.

Regarding this charge item, ASAC will report on regional community activities related to Beyond-ALMA2030 in its fall report.