



## ALMA BOARD

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Distribution	<b>Ordinary Session</b>

**Subject:** Science Committee response to the ASAC Report and Charges for its Second Face-to-Face meeting in October, 2017

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**Purpose of Document:** To provide the ASAC with the Board's Response to its 2017Q1 face-to-face meeting and to provide the Charges for its 2017Q3 face-to-face meeting.

**Status:** To be approved by the Board by Written Procedure according to Article 11 of the Board's Rules of Procedure.

## 1. Science Committee response to the 2017Q1 ASAC Report

This section addresses the ALMA Board's Science Committee proposed responses to the ASAC 2017Q1 Report. The responses are outlined following the charges as outlined by the ASAC in its Report.

### Permanent Charge 1: Performance of Scientific Capabilities

1. Cycle 3 B and C projects without QA checks, made accessible to PIs (stale data) - -- raw data release. This is tied to follow-up proposal in subsequent calls.

The Board considers that stale data can be accessed, but the answer to raw data release, for the moment, is no otherwise; Currently, raw data for Targets of Opportunity is being released, and an evaluation will be done as this is accomplished. Releasing raw data in general is presently under discussion at AMT and DC level.

2. Data delivery rates, or processing rate is not high enough.

Indeed, less data is coming in.

The better use of existing personnel at the JAO and the ARCs has doubled the rate, noting that the ARCs are responsible for about 50% of that improvement. This focused use of the ARCs personnel will not be a long-term solution, though. The Data Management Tiger Team Report will provide longer-term avenues to be analyzed and endorsed by the AMT.

Internally the JAO are taking steps to improve their data processing rate by ~ 30%.

3. Completion rate of Grade A Cycle 3 is only 55.4%; carry-forward works or not?

That number reflects the completion of projects,; the completion rate of MOUS is approximately 80%.

- More data is needed on whether carry-over projects are completed in the subsequent quarter.
- For the ASAC, this is about managing users' expectations on how well Grade A will be executed. How about differences in array configurations between cycles?

The Board is aware that ALMA needs to communicate probability of success of carry-over to the community by "all regions".

4. Should new capabilities be implemented if observing efficiency is low?

Staff needed for new capabilities are not the same as the ones working on efficiency. So, no interference and no impact.

- What is the efficiency of on-sky integration time?

The JAO will provide the statistics on this.

5. High frequency operations for ACA to increase proposal pressure.

The Board considers that high frequencies, although very important, will put too much pressure on the data processing (ACA High frequency is non-standard mode, so it needs to be manually reduced). This will be, however, a standard mode (hence, pipelined) by cycle 7, or maybe cycle 6.

6. Are antenna efficiencies improving? Status of astigmatism for DV antennas?

The answer is yes. Numbers are coming.

### **Permanent Charge 2: Technical Aspects of ALMA System Performance**

1. Concerns on ensuring success of Large Programs; allow access to uncalibrated data?

The Board recalls that raw data release, in general, is under further assessment.

Large programs are being checked to make sure no need to change strategy.

2. Continued concerns on on-source efficiency and over-calibration.

This very much depends on the program. ALMA is continuously working on improving the efficiency.

3. Can goal of 90% completion rate for Cycle 4 A and B projects be achieved?

The response to this is that expectations should be managed. ALMA is working to provide more details on how much data are collected and also on how well are long range planning for configurations. More data will be available on how projects will be completed.

4. Asks for fringe test immediately before VLBI science runs.

Fringe test requirements were made by VLBI team.

5. Duplication checks to be fully integrated in the archive for Cycle 6?

Archive subsystem scientist is willing to do this. Nevertheless, the Observatory Scientist recommends not to do it with the same archive as it implies confronting with

observations not yet taken. Developing a different tool with the same features seems a better option.

**Permanent Charge 3: Science Outcomes from ALMA**

1. How to check why some projects are not publishing?

This issue is under continuous monitoring by the Archive Subsystem Scientist.

2. Need more metrics on how to tell whether press releases are effective?

The metrics are available and will send to next ASAC meeting.

Demographic studies of ALMA users shall be improved, as suggested by the ASAC.

**Permanent Charge 4: How to Maximize Scientific Impact of ALMA**

1. How to improve access to archival data products?

The Observatory Scientist is looking at this, considering that resources are limited.

2. APR process was improved for Cycle 5, and improvements should continue further to reduce workload in review process.

ALMA will always pay attention to such feedbacks on the review process and will continually try to improve.

3. Demographic surveys should continue: gender balance, role of seniority and previous proposal success, sharpen understanding of survey participants.

These are taken as suggestions and advice.

**Permanent Charge 5: Issues raised through regional SACs**

1. Concerns on how long it takes for Helpdesk tickets to be processed.

ALMA will show the statistics on the distribution of response time.

2. Concerns on satisfying fully the program requirements such as fixed time intervals between SBs.

Better communications with PIs is being fostered.

3. Concerns on improving support for time-critical observations.

The Board is pleased to note that the ASAC is satisfied with progress on this.

## **Permanent Charge 6: Scientific Impact of ALMA Development Programs**

1. Various development projects are endorsed (release of band 5 SV, progress on band 1, next generation of OT and data viewer, artificial calibration source, SIS junctions, wider bandwidth developments)
2. Wants a definitive timeline to choose between band 2+ and band 2+3.

These two items are being worked on. The AMT will evaluate the PDR for Band 2+/2+3 during 2017, pursuing approval in the April 2018 Board meeting, at the latest.

There will be a list of questions to be answered, including technical performance and science impacts. Then will come back to ASAC.

### **2. Other Issues**

- a. Other recommendations contained in the 2017 Q1 ASAC Report

The Science Committee thanked the ASAC for numerous recommendations made via the Ad-Hoc Charges:

1. Endorsed total power spectrometer.
2. Pushed joint ALMA proposals with other projects (eg JWST) to beyond Cycle 6.
3. Interval for ALMA Science Conferences to be 3 years.
4. Recommends receiver upgrades with priority of band 7/6, band 3, band 9.
5. Provided high level science goals for ALMA2030 development paths (eg longer baselines). Calculated time requirements for these science goals.

- b. ALMA Delta Call

The Director's Council noted the low proposal pressure of ACA. A delta call was made on April 12, with no closing deadline. 800 hours for rest of cycle 4 time.

A small committee similar to that used for DDT will go through these proposals.

### **3. ALMA Development Vision**

The ALMA Board decided the following actions regarding the ALMA Development Vision:

- The document, as submitted to the Board in its April 2017 meeting, was noted as laying down what should come in the future for ALMA, not necessarily within the Budget Plan. The document identifies the top priority items in line with the science drivers.
- The Board, as proposed by the JAO, will regularly update/revise this vision based on the latest scientific/technical situations.
- The documents will be divided into two parts:

- Implementation Plan: Those issues that can be implemented within the normal Development Program (funding)
- Board's Vision: Additional interesting ideas for the future that would require extra funding. The Partnership takes action to foster funding from other agencies, so some of these ideas can be developed as a complement to ALMA, on the Chajnantor Plateau.
- The implementation plan for the vision will be completed assuming there will be either Band 2+ or 2+3.
- Neal Evans will continue to act as the ASAC liaison.

When applicable, the ASAC will be charged to comment quantitatively on the new version of the Development Vision document to be produced. Zero level science drivers/goals should be included in both new documents.

The vision will be presented at the ALMA conferences every three years.

#### **4. Charges for next ASAC Meeting.**

The ALMA Board requests the ASAC to address the permanent charges as outlined in its Terms of Reference, as well as the following ad-hoc charge:

*ASAC to study and define the relative priority for the Communities to have access to raw data.*