



## ALMA BOARD MEETING November 15-17, 2017

### PUBLIC SUMMARY

The ALMA Board convened at the Santiago Central Office between the 15<sup>th</sup> and the 17<sup>th</sup> of November, in the following composition:

Chair	Toshikazu Onishi (EA)
Vice-Chair	Linda Tacconi (EU) <i>*Attend by Videoconference.</i>
Board Members	Phil Puxley (NA) Xavier Barcons (EU) Junichi Watanabe (EA) <i>*Alternate for Masa Hayashi</i> Patrick Roche (EU) Tony Beasley (NA) James Di Francesco (NA) Rafael Bachiller (EU) Neal Evans (NA) Paul Ho (EA) Leonardo Bronfman (CL) <i>*Alternate for Luis Chavarría</i>
Board Assessors	Ethan Schreier (NA) Daniel Weselka (EU) Hideyuki Kobayashi (EA)
Observers	Sean Dougherty (ALMA Director elect) Willy Benz (ESO Council) Adam Cohen (AUI President) Luther Lau (AUI Chief Financial Officer) Eva Schinnerer (ASAC Chair)
JAO	Stuartt Corder (ALMA Acting Director) John Carpenter (Observatory Scientist) Frank Ruseler (Head of Administration) Norikazu Mizuno (Interim Head of Engineering) Jorge Ibsen (Head of Computing) Lars-Åke Nyman (Head of Science Operations) Ivan Lopez (Safety Manager) Rafael Mena (Human Resources Manager)
Executives	Paulina Bocaz (AUI Legal representative in Chile) Seiichi Sakamoto (NAOJ Legal Representative in Chile) Leonardo Testi (ESO ALMA Interim Programme Manager) Phil Jewell (NRAO ALMA Operations Manager) Satoru Iguchi (NAOJ ALMA Operations Manager) Andreas Kaufer (ESO Director of Operations) Nikolaj Gube (ESO Legal Service)

Board's Secretary     Alejandra Voigt (JAO Executive Officer)  
Assistant Secretary     Patrick Donahoe (AUI Senior advisor)

## **PUBLIC SUMMARY**

The ALMA Board held its November 2017 meeting, at the Santiago Central Office (SCO) in Chile. The Board's Chair welcomed Dr. Xavier Barcons, the new ESO Director General and Board Member appointed by ESO, Dr. James Di Francesco, from NRC, Canada, the new Board Member appointed by NSF and Dr. Tony Beasley, from NRAO who has been the NA Assessor and now has been appointed as a Board Member by NSF. He also welcomed Dr. Junichi Watanabe, who attended the meeting as the alternate for NAOJ Director General, Masa Hayashi, and Leonardo Bronfman, who attended the meeting as the alternate for Luis Chavarría, from CONICYT. Finally, the following persons were welcomed as observers for this meeting: Adam Cohen, AUI President, Willy Benz, from the ESO Council, Andreas Kaufer, ESO Director of Operations, Luther Lau, AUI Chief Financial Officer, Paulina Bocaz, AUI Representative in Chile, Seiichi Sakamoto, NAOJ Representative in Chile, Eva Schinnerer, ASAC Chair, Sean Dougherty, ALMA Director elect and members of the Executives and the CMT.

The Board farewelled the following persons, who are attending their last meeting as Board members: Ethan Schreier, former AUI President, Masa Hayashi, NAOJ Director General until March 31<sup>st</sup> 2018, Patrick Roche, ESO Council President until December 31<sup>st</sup> 2017, Paul Ho, from Academia Sinica Institute of Astronomy and Astrophysics; and Neal Evans, Emeritus Professor at the University of Texas at Austin.

## **ALMA Overview**

The Board noted the presentations given by the ALMA Acting Director and Observatory Scientist, regarding the latest activities, achievements and challenges for ALMA since April, 2017, and next steps, including:

- The conclusion of the Cycle 4 observing period and the smooth start of Cycle 5
- The extremely unfavorable weather conditions that occurred during May and June 2017, and the impact on observing time
- The increase in the number of Antennas available for science, which is now at the steady state level
- A steady increase in the number of observing hours offered for Cycle 5
- The partial completion of the two first large programs in Cycle 4 (deep field survey and circumstellar disks survey)
- The preliminary results demonstrating a successful first VLBI campaign and the power of ALMA to aid in VLBI observations
- The successful supplemental call for ACA time
- The successful Cycle 5 Proposal Review Process, with 1.661 proposals reviewed and over 16.000 observing hours requested, and a substantive increase of Median size proposals. Four large programs were selected, while the Observatory will continue encouraging the communities to submit more high frequencies proposals
- The move in of the staff to the Residencia in July

- Efforts to improve efficiency targeted at increasing exposure time-on-sky
- A review of the timeline of events for Cycle 6, extending from the pre-announcement on December 14, 2017, the APRC meeting to be held in Japan from June 18-23, 2018, to PI notifications by the end of July.
- array configuration discussions and potential new capabilities.

## **Safety**

The Board appreciated the emphasis on safety and noted that the number of incidents at the observatory has steadily decreased, as well as the changes in regulations affecting some aspects of site operations and the introduction of a virtual link to a medical facility. The Board expressed its appreciation to the JAO efforts, especially the response of the staff in the face of very extreme weather in May and June of 2017.

## **Scientific Matters & ASAC Report**

The Board noted the Observatory Scientist report on the:

- Continuing increases in the number of refereed papers published
- Science highlights including results on the Sun, Polarization Continuum in HL Tau, Time-variable line emission in a disk, Outflow from young stars, spinning jet, outburst in Orion, time-variable continuum emission in star forming regions, structures around evolved stars, Vela pulsar, Molecular outflow in active galaxies, Molecular Gas in high redshift Galaxy Clusters, and quasars.

The Board also noted the Science Advisory Committee (ASAC) and the Board's Science Committee's report, who covered, among other scientific issues:

- Continued improvement of the imaging Pipeline, leading to automated workflow increases as well as increased scope and improvements in the Quality Assessment outcomes
- The trade-offs between two-year versus three-year configuration schedules .
- Plans to implement dynamical scheduling of observations to improve the on-source efficiency for certain types of projects
- The observation queue-building process and the primary use of scientific rank to produce it and the priority given to High frequency programs in the observing queue when Band 8/9/10 is available
- The new helpdesk category that has been set up to for proprietary period extension requests
- The high levels of satisfaction reported for the Helpdesk in the users survey.

The Board reappointed Eva Schinnerer (ESO) to the ASAC and also appointed Dan Marrone (North America) and Nami Sakai (East Asia) for 3-year terms each, starting on January 1, 2018.

## **Financial Matters**

The ALMA Board noted the reports of the ALMA Budget Committee and the Joint ALMA Observatory (JAO) Head of Administration regarding the financial results of 2017 and budget execution and projections and the long-term planning

The Board approved the 2018 ALMA Operations Budget, subject to the FY2018 budget appropriation process in the USA and the approval by ESO Council and NINS.

The Board noted the five-year plan as a draft plan with the expectation that it will be further refined during CY2018 and adopted, for planning purposes, in November 2018.

### **ALMA Development Program & Roadmap**

The ALMA Board noted the presentations by the ALMA Acting Director, on behalf of the AMT, regarding the status of the ALMA Development Program, which covered the on-going projects and studies, the projects that are submitted for approval in this meeting and the near future and a summary of the scope of upcoming calls for proposals within the three regions. Projects underway include Band 5 and Band 1 receiver production, an integrated alarm system for the observatory and calibration source installation on the Chajnantor site.

The Board approved the Total Power Spectrometer development project.

The Board also approved the ALMA Phasing System “Phase 2”, under the condition that this project will be subject to the participation of the APP Project team in the Observing Mode Process and presentation of the APP Phase 2 project commissioning results to technical review by AMT-appointed regional technical experts prior to the annual 1 December decision point for the offering of capabilities.

The Board approved the long-term ALMA Development Roadmap, endorsing the identification of the highest priority directions for the development program. The Roadmap will be published in early 2018, after endorsement of new observatory science goals by the ASAC.

### **Governance Issues**

The Board agreed that a Board working group be established to collaborate with the JAO and the AMT in further developing the International Visiting Committee Terms of References, as foreseen in the ALMA Agreement. The Working Group will propose charges to the committee and a schedule covering ALMA-wide activities, with the first cycle of assessment occurring in mid-2019.

The Board also approved the revision of the standard and short ALMA description, that shall read as follows:

#### **STANDARD DESCRIPTION (Long):**

*The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of the European Organisation for Astronomical Research in the Southern Hemisphere (ESO), the U.S. National Science Foundation (NSF) and the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Republic of Chile. ALMA is funded by ESO on behalf of its Member States, by NSF in cooperation with the National Research Council of Canada (NRC) and the Ministry of Science and Technology (MOST) in Taiwan and by NINS in cooperation with the Academia Sinica (AS) in Taiwan and the Korea Astronomy and Space Science Institute (KASI).*

*ALMA construction and operations are led by ESO on behalf of its Member States; by the National Radio Astronomy Observatory (NRAO), managed by Associated Universities, Inc. (AUI), on behalf of North America; and by the National Astronomical Observatory of Japan (NAOJ) on behalf of East Asia. The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction, commissioning and operation of ALMA.*

**SHORT DESCRIPTION:**

*ALMA is a partnership of ESO (representing its member states), NSF (USA) and NINS (Japan), together with NRC (Canada), MOST and ASIAA (Taiwan), and KASI (Republic of Korea), in cooperation with the Republic of Chile. The Joint ALMA Observatory is operated by ESO, AUI/NRAO and NAOJ.*

Finally, the Board's meetings schedule for 2018 and 2019 is the following:

- April 11-13, 2018: OSF, Chile.
- November 14-16, 2018, Santiago, Chile.
- April 10-12, 2019, OSF, Chile.
- November 13-15, 2019, Santiago, Chile.