

### 第 3 回 ALMA 科学諮問委員会 議事概要

Date and time : May, 17 2021 9:00-12:00

This meeting was held online.

Attendees:

**JSAC:** Akio Inoue, Kotaro Kohno, Munetake Momose, Kazuhito Motogi, Toshikazu Onishi, Tomoharu Oka, Hideo Sagawa, Nami Sakai, Hiroko Shinnaga, John Silverman, Kengo Tachihara

**Ex officio:** Saku Tsuneta, Misato Fukagawa, Alvaro Gonzalez, Daisuke Iono, Takeshi Kamazaki, Ken Tatematsu

Agenda:

1. JSAC charges (Tsuneta)
2. JSAC report (2018-2020) and ASAC report (March, 2021) (Kohno)
3. ALMA/EA-ARC report (Gonzalez, Fukagawa, Iono)
4. NRO report (Tatematsu)
5. ASTE report (Kamazaki)
6. AOB

1. S. Tsuneta presented and explained the JSAC charges for this term.

#### Long-term Charges

- Evaluate quantitatively whether the Japanese users produce sufficient scientific outcome in terms of both quantity and quality using ALMA, Nobeyama 45-m and ASTE.
- Gather the opinions of the Japanese users and provide input to the ASAC in order to maximize the scientific output from the Japanese community. Evaluate whether the Japanese opinions are properly incorporated into the ASAC discussion outcome which is summarized in the ASAC report.
- Assess, by comparing with the other regional ARCs, whether the activities of the EA ARC are appropriate to maximize the scientific output from the Japanese community.
- Provide advice on the future development plans for the concrete realization of ALMA2 and pave the way to produce world-class scientific results in the upcoming decade.

#### Ad hoc charges for this term

- Provide advice on how to perform science promotion of ALMA, Nobeyama, and ASTE in the Covid-19 or post-Covid-19 situation.
- Analyze the statistics of the Japanese ALMA proposals evaluated in the new proposal review process and recommend improvements if any. Revise the Japanese candidate list of ALMA proposal review committee if necessary.
- Assess the new science operation implementations of the Nobeyama 45-m telescope and ASTE with respect to the science goals and community opinions. Oversee the Time Allocation Committee of these telescopes.
- Provide advice to the ngVLA Study Group with respect to their activities from a scientific point of view.
- Discuss, in coordination with the VLBI science advisory committee, VLBI observations with ALMA, Nobeyama 45-m telescope, and ASTE for better scientific outcome.
- Discuss and recommend, as necessary, any other topics and matters which are not covered in this charge.

2. K. Kohno presented the JSAC report from the previous term and the ASAC report from the virtual f2f meeting which was held in March 2021.
3. A. Gonzalez gave an update on ALMA operations. PI science resumed on March 17, 2021, and this was 364 days after the last science observation. Cycle 7 is currently being executed as best effort given the difficulties in the pandemic. Despite the difficulties, we now have routinely above 41 antennas for PI science. The plan is to move to the longest baselines in the next few months. Call for proposal for cycle 8 was announced on March 17, 2021, with a deadline on April 21, 2021. We anticipate a supplemental call for ACA with deadline in October 2021. The cycle 8 call has received more proposals for more than 25 hours than what was expected, and JAO has asked the ARCs to provide staff to fill the shortage of panel reviewers. The observatory, and particularly NAOJ ALMA, is striving to provide timely updates to the community through the science portal, the (updated) email distribution list, workshops, East Asia community gatherings and users meeting. A few members of the JSAC commented that the extra one-week shift of the proposal deadline was very helpful for staff working at Japanese universities and the similar or later timeline would be preferable.
4. A. Gonzalez gave an update on the ALMA Future Development Program. A total of 50 Band 1 cartridges were assembled/tested, and two receivers are currently at the site for AIV. For Band 2, eight pre-production sets of horns and OMTs were fabricated/tested. For the ACA spectrometer, the CDMR successfully closed out in Oct 2020. However,

the installation is delayed until Feb 2022 due to COVID19. Development studies such as long baselines, wide IF, Band 10 updates, multi-beam, and vacuum windows are seeing nice progress.

5. D. Iono provided publication statistics, reported progress on the radio/interferometer summer school, and raised a new discussion item related to a PASJ special issue. ALMA saw a 10% decline in the number of publications in 2020, possibly due to the pandemic. Despite the global decline, publications from Japan have been increasing steadily over the past 9 years. The use of archive for EA publication is about 28%, and this is consistent across all three executives. The radio interferometry summer school will be held on Sep 16, 17, 21, 22, 24. This will be an introductory course targeting undergraduate/graduate students and novice radio observers.

The JSAC discussed the prospects of a PASJ special issue, commemorating the 10<sup>th</sup> anniversary of ALMA operations. The advantage of assembling such a special issue is to showcase EA science in a coordinated manner, and to facilitate publication of unpublished data. However, there are concerns such as how to convince researchers to publish in the special issue over journals with higher impact factors such as ApJ/MNRAS. The JSAC is generally in favor of this idea, however, a clear incentive may be necessary for the community. The ALMA project will investigate this further, including the situation at other regions, and rediscuss this in the next JSAC meeting.

6. D. Iono presented the ngVLA report. The ngVLA study group will work with the community members to write and publish the ngVLA-J project book this Summer/Fall. Technical studies are underway at the NAOJ/ATC, and initial results are very promising. There are several ngVLA related workshops/conferences planned in this FY, one of which is the “ngVLA-J Development Days 2021” which is a technical workshop to be held on July 15-16.
7. K. Tatematsu presented the open use stats of the 45m telescope in 2020-2021. NRO offered 1700 hours for open use. There were 25 proposals submitted, and 13 were accepted for 1224 hours total. Five proposals were submitted from the international community and 2 were accepted. The over-subscription rate is ~2. Total number of proposals increased slightly from last year.
8. K. Tatematsu presented the status and discussion on the Nobeyama telescope time charge and free-of-charge opportunity for Master students. For the new system where the PI is required to provide financial commitment to the NRO for telescope time, the NRO proposes to keep the intellectual property of the data to NAOJ, and allow the exclusive right of the data use for the PI for three years. JSAC endorses this proposal.

JSAC discussed what would be the time share between programs reviewed at JSAC and the programs reviewed through EAVN. JSAC proposes a scheme where the relative demand of each opportunities to determine the share. K. Tatematsu will propose this idea to the VLBI science advisory committee.

9. T. Kamazaki presented the ASTE report. ASTE site opened for three weeks in March, 2021. The Deshima installation in 2021 was cancelled. Open use (7 proposals) will run between June 21-August 3<sup>rd</sup>. The new XFFTS+IF down converter, and new band8 receiver with IF=4-18GHz will be installed in Nov-Dec timeframe.