

第 4 回 ALMA 科学諮問委員会 議事概要

Date and time: September 25, 2023, 13:00 - 16:00 (online)

Attendees:

JSAC: Yuri Aikawa, Fumi Egusa, Kotaro Kohno, Munetake Momose, Toshikazu Onishi, Hideo Sagawa, Yoshito Shimajiri, John Silverman, Shigehisa Takakuwa, Yoichi Tamura

EASAC: Aeree Chung, Jongsoo Kim, Patrick Koch, Li-Hwai Lin, Wei-Hao Wang,

Ex officio: Saku Tsuneta, Alvaro Gonzalez, Misato Fukagawa, Bunyo Hatsukade, Ken Tatematsu, Atsushi Nishimura, Tetsuhiro Minamidani, Takuma Izumi, Masao Saito

Agenda:

JSAC: 13:00 - 13:50

1. Report from the Director General of NAOJ
2. ALMA report
3. NRO report
4. ASTE report
5. ngVLA report

EASAC: 14:00-16:00

1. 14:00-14:20 ALMA report
2. 14:20-16:00 Discussion

JSAC meeting

1. Report from the Director General of NAOJ

Saku Tsuneta, the Director General of NAOJ, explained the handover report for FY2024.

2. ALMA report

Alvaro Gonzalez provided the updates from ALMA management at JAO.

- Norikazu Mizuno: new Deputy Director for Operations (effective on July 1, 2023)
- Alvaro Gonzalez: new Deputy Director for Development (Effective January 2nd, 2024)
 - The transition of the EA ALMA Program Manager is starting at NAOJ.

3. NRO report

Atsushi Nishimura and Ken Tatematsu provided the NRO report.

- Results of the student proposals 2023: 3 proposals accepted, and 1 rejected.
- Call for observation proposals 2023C
 - Call for proposals: November 1st, 2023
 - Deadline: JST 15:00 December 1st, 2023
- Call for development programs 2023 winter: Plan to open in mid-November.

There were questions and answers regarding the selection of student proposals, feedback to PIs, and the calls for proposals 2023C.

4. ASTE report

Tetsuhiro Minamidani provided the status of ASTE.

- Current Status of ASTE and infrastructure
 - Malfunction of Sub-Reflector Driving System: Reoccurred and Recovered.
 - Commissioning and Science Verification with DASH345/CAT8W and XFFTS done.
 - Science Observations of KAKENHI Projects conducted from July to September.
 - Open-Use Programs carried over from FY2020 are not allocated in this season.
 - Observing environment, software, tools, etc., have been prepared.
- Activities in FY2023 and FY2024

There were questions and answers regarding contacting PIs about the carryover of observations and the current status of instruments.

5. ngVLA report

Takuma Izumi provided the status of the ngVLA Study Group.

- Re-structuring of the Study Group leadership
 - Takuma Izumi joined the NAOJ ngVLA Study Group as the group lead.
 - Takuma Izumi became a new member of the Science Advisory Council.
 - Alvaro Gonzalez continues in the Technical Advisory Council as a member of the JAO. NAOJ can appoint a new member.
- Activities of the ngVLA Study Group
 - Working to make quantitative answers to the charges from NAOJ.
 - Frequency/Time Reference Distribution System Conceptual Design Review was postponed to CY2024 Q1.
 - Preparing for NAOJ Future Symposium 2023
- NSF formally entered ngVLA into the Major Research Equipment and Facilities Construction (MREFC) design process.

EASAC meeting

1. Alvaro Gonzalez provided the status of ALMA.

- Events in Cycle 9
 - Cyberattack of October 29th
 - ✧ Cycle 10 proposal call was delayed a few weeks due to recovery priorities.
 - Celebrated 10 years since the inauguration in March 2013
 - The state of “sanitary alert” ended on August 31st in Chile.
- Cycle 9 status as of mid September
 - 3153 hours of successful 12-m observations
 - 641hours lost due to cyberattack
 - We reached the configuration 10 (16.2 km baselines) for the first time.
- Cycle 10 Call for Proposal
 - The total number of submitted proposals decreases, but the total requested time and oversubscription rate continue to increase.
 - The time requested per proposal is increasing, and the number of accepted proposals is declining.
- Publication statistics
 - Total publication is 3431 (as of 2023 September 22)
 - 430-470 publications per year in the last 4 years
 - ~26% of ALMA papers use the ALMA archive.
- ALMA2030 WSU status
 - ALMA-wide efforts to plan the WSU in detail continue.
 - ✧ WSU Project Framework released.
 - ✧ Initial impact assessment on software and science operations completed.
 - ✧ New Working Groups were established to develop a Conceptual System Design.
- Development Projects Update
 - Band 1 (ASIAA/NAOJ)
 - ✧ Offered to the Community from March 2024
 - ✧ Science Verification data will be released in the coming weeks.
 - Band 2 (ESO/NAOJ)
 - ✧ Phase 1 completed, and MRR passed.
 - ✧ The first light was achieved in Summer of 2023.
 - ACA spectrometer has been used for Open-Use from the start of Cycle 10.
 - Data Transmission System (DTS)
 - ✧ Successful demonstration of the performance of COTS in an optical fiber link in Tokyo in collaboration with NICT

- ✧ PDR planned in May 2024
- Band 8v2 Project Proposal: To be proposed to the ALMA Board in November
 - ✧ Project plan (Phase 1)
 - Stage 1: conclude with a PDR.
 - Stage 2: production-level Band 8v2 CCA and WCA will be built and tested. CDR is planned to be held and completed in June 2026.
 - ✧ Advances in Technology
 - Cryogenic IF amplifiers with lower noise temperature
 - High critical current density SIS junctions
 - Simulation, fabrication, and measurement techniques
 - ✧ Wider IF and lower noise temperature will significantly improve science observations.

There were questions and discussions about the Observatory filler programs that were announced on 25 Sep 2023. EASAC members asked about the possibility of adopting regular or DDT proposals and the possibility of adjusting the array configurations.

2. Discussion

EASAC discussed the balance between Large Programs and regular proposals and exchanged views on a proposal to increase the time threshold for Large Programs. EASAC considered the current high oversubscription rate to be a problem and raised concerns that raising the time limit for Large Programs would make this situation even worse. EASAC members pointed out the difficulty in judging proposals requesting more than ~50 hours of observation time in the current distributed peer review (DPR) system. There were opinions that statistics on the number of papers, the number of papers per observing time, and the scientific impact of papers based on both Large Programs and regular proposals are needed for evaluation of their effective competitiveness.

EASAC also discussed the DPR system. EASAC pointed out problems in the current DPR system, such as the large dispersion in evaluations and the fact that Stage 2 is not working well. EASAC considers it important to provide comments to improve the DPR system.