

ALMA/45m/ASTE Users Meeting 2021  
December 14, 16, & 21, 2021 (on-line)  
DAY3, 9:40 - 9:49 (JST) + 3 min for Q&A



# Science Advisory Committee (SAC) Report

On behalf of ASAC/JSAC/EASAC

KOHNO Kotaro

Univ. of Tokyo 

# Roles of ALMA Science Advisory Committee (ASAC)

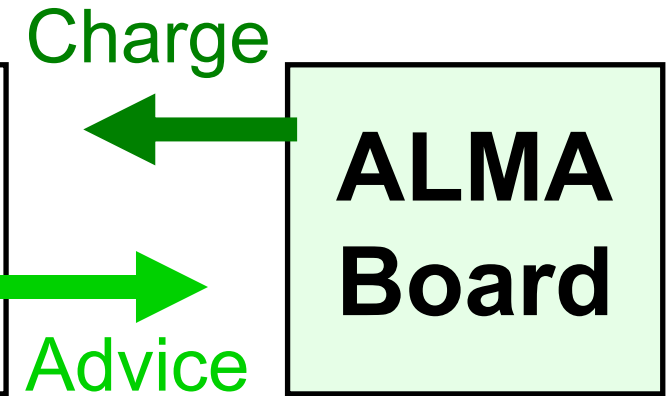
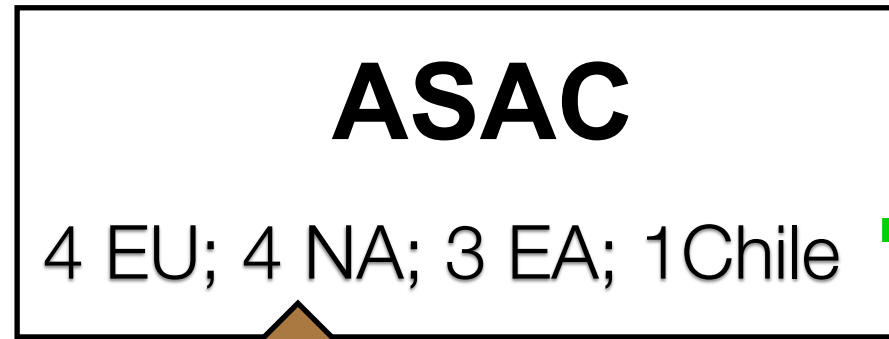
- Make appropriate recommendation and advice to the ALMA board on ALMA issues from **scientific viewpoints**
- in order to maximize the science productivity of ALMA
- based on intimate communications with user community (and JAO, ARCs).
  - → regional SACs (**JSAC** in Japan, **EA-SAC** for EA countries, etc.)

Your voice to these committees are highly appreciated

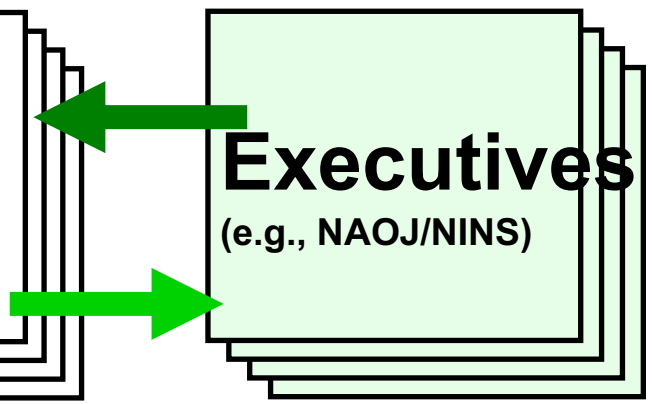
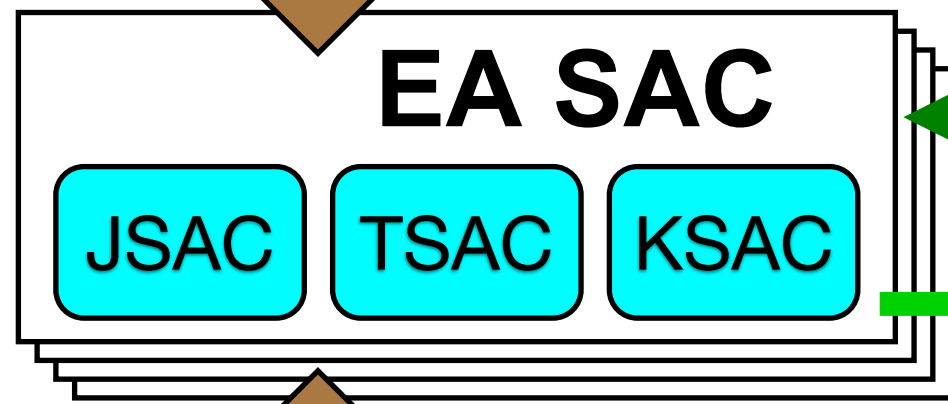
Although the observatory also appreciates direct inputs from the community via user surveys, etc.

# SAC structure

- f2f meeting  
→ twice per year
- telecon  
→ ~when necessary



- Regional SACs
- JSAC f2f every ~2 months
  - EA SAC telecon > twice per year



User communities

Momose-san's slide + some updates

ESAC

Maryvonne Gerin (LERMA)  
 Paul van der Werf (Leiden U.)  
 Anne Dutrey (U. Bordeaux)  
 Mario Tafalla (Observatorio Astronómico Nacional)

Serena Viti  
 (Leiden U.)



Aran Lyo (KASI)  
 Jongsoo Kim (KASI)  
 Sascha Trippe (SNU)  
 Aeree Chung (Yonsei U.)

KSAC

Stephen White (Air Force R. Lab)  
 Alexandra Pope (UMASS)  
 Erik Rosolowsky (U. Alberta)  
 Meredith Hughes (Wesleyan U.)

Stefanie Milam  
 (NASA)



Li-Hwai Lin (ASIAA)  
 Patrick Koch (ASIAA)  
 Cheng-Yu Kuo (NSYSU)  
 Wei-Hao Wang (ASIAA)

TSAC

ANASAC

# ASAC

Manuel Aravena  
 (U. Diego Portales)

Chile

Kotaro Kohno  
 (U. Tokyo) **Chair**  
 May 2020 – Dec 2021  
 Nami Sakai (RIKEN)  
 Kengo Tachihara  
 (Nagoya U.)



Akio Inoue (Waseda U.)  
 John Silverman (U. Tokyo)  
 Tomoharu Oka (Keio U.)

JSAC

Munetake Momose (Ibaraki U.)  
 Kazuhito Motogi (Yamaguchi U.)  
 Toshikazu Ohnishi (Osaka Pref. U.)

Hideo Sagawa (Kyoto Sangyo U.)  
 Hiroko Shinnaga (Kagoshima U.)

As of December 2021

ALMA Board meeting  
November 11<sup>th</sup>, 2021, 11:00 UT (20:00 JST)



# ASAC report 2021B

Kotaro Kohno (Univ. of Tokyo)

On behalf of ASAC

Manuel Aravena, Anne Dutrey, Maryvonne Gerin, Meredith Hughes, Kotaro Kohno (chair),  
Alexandra Pope, Erik Rosolowsky, Nami Sakai, Kengo Tachihara, Mario Tafalla,  
Stephen White (NA vice-chair), & Paul van der Werf (EU vice-chair)

# Permanent Charge #1. Assessment of the performance of ALMA scientific capabilities

- ASAC agree with the plans for the ObsMode2021/2022 processes.
- ASAC appreciates the comprehensive presentation of activities aimed at improving ALMA flux calibration. A number of incremental improvements in the higher bands can be anticipated as a result of current efforts.
- The committee emphasizes **the importance of making sure that the community is well aware of the new capabilities being offered**. The observatory is encouraged to make advertisement to the community and **expanding the community in parallel to new modes after the release of science verification data** associated to new observing modes.
  - ASAC noted the low demand and little success in obtaining time for projects that require some of the newly developed capabilities (e.g., pulsar mode).

# Permanent Charge #2. Assessment of the technical aspects of ALMA system performance

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- ASAC commends for [the very successful return to operations handled smoothly and the relocations to the hybrid longest baseline configuration completed under the very difficult conditions imposed by the pandemic.](#)
- The observatory is encouraged to prioritize efforts for resolving renormalization issues and make appropriate communication to potential observers.
  - The issues severely impact the data processing. The root cause traces back to the way observations are currently carried out. A dedicated team has been proposed.
  - The committee endorses these activities led by the world's leading experts.
- ASAC is concerned by [the low completion fraction of high-frequency observations \(Bands 9/10\).](#) We encourage the observatory to figure out the causes of such a low completion fraction, and to adjust the priority of high-frequency programs to improve the completion fraction of high-frequency observations if it is necessary.
  - Note: We received a detailed analysis on this issue by the observatory during the Board Science Committee on Monday, which was really appreciated.

## Permanent Charge #4. Recommendations of ways to maximize ALMA's scientific impact

- ASAC recommends that JAO explores ways to **increase the quality of the comments that the DPR reviewers provide to proposers**, including the possibility of **creating a structured format similar to the one used in the panel consensus report**.
- ASAC recommends that JAO explores ways of **improving the effectiveness of the Stage 2 in DPR**, including the possibility that **reviewers can react to comments written by others both positively or negatively**.
- ASAC supports the JAO initiatives to minimize conflicts of interest for reviews of Large Programs. It is imperative that these programs receive broad review from a representative scientific panel.
- ASAC recommends that JAO investigate inter-regional differences in proposal scores in more detail, examining different hypotheses.
- ASAC is concerned by **high oversubscription rates**, which may result in a loss of a part of the community if the rates become too high. The committee recommends the JAO consider **what is the right balance between LP and smaller programs**.



ALMA Board meeting

Science committee: April 14<sup>th</sup>, 2021 21:00 UT (06:00 JST, April 15)

Ordinary session: April 16<sup>th</sup>, 2021 12:00 UT (21:00 JST, April 16)



# ASAC report 2021A

Kotaro Kohno (Univ. of Tokyo)

On behalf of ASAC

Manuel Aravena, Anne Dutrey, Maryvonne Gerin, Meredith Hughes, Kotaro Kohno (chair), Alexandra Pope, Erik Rosolowsky, Nami Sakai, Kengo Tachihara, Mario Tafalla, Stephen White (NA vice-chair), & Paul van der Werf (EU vice-chair)

# Permanent Charge #1. Assessment of the performance of ALMA scientific capabilities

- ASAC appreciates the presentation and notices that the timing for the ObsMode2020/2021 is fine despite the difficult situation.
- ASAC is aware of the importance of **improving flux calibration, particularly for higher frequencies**. This is very important for projects which require both JWST and ALMA observations.
- ASAC would like to know what the current plans are to investigate the error budget, and we recommend a detailed investigation of the flux error budgets, considering the recent study of atmospheric models at high frequencies.

# Permanent Charge #4. Recommendations of ways to maximize ALMA's scientific impact

- The [next ALMA Science Meeting](#): ASAC recommends that this and future in-person meetings should be planned to include fully-supported remote participation, given the rapidly changing circumstances and a growing awareness on the environmental costs.

comment: even with the time zone issue, remote participation is very helpful for some participants who have difficulties for long travel

- The ASAC would like to remind that the first call for proposals for the JWST has been issued and proposals are under review.
- ASAC is aware that implementing joint projects has become more difficult due to the pandemic. However, it appears timely to explore joint ALMA-JWST observations, following previous ASAC and JAO discussions.

# Permanent Charge #5. Proprietary period issue

- ASAC appreciates the detailed analysis performed by IST, which finds that the incidence of “scooping” is low and concludes that there is no need for further extension of the proprietary time at this stage.
- The committee notes that the analysis presented is limited to the published record and might need further investigation.
- There is overall support among the different regions for providing more protection for students needing ALMA data for their theses. ASAC recognizes that finding a way to better support student use of ALMA will not be straightforward, but it should be investigated.

After Board discussion, no change on this issue.

# JSAC

- Regional SAC for ALMA project
- also plays a role as SAC for NRO 45-m and ASTE 10-m telescopes
- Members from projects (NAOJ ALMA + NAOJ Chile and Nobeyama Radio Observatory):
  - A. Gonzalez, M. Fukagawa, D. Iono
  - T. Kamazaki (NAOJ Chile/ASTE)
  - K. Tatematsu (NRO)
- Meeting highlights are sheared with the community via the Japan Radio Astronomy Forum (udenkon) mailing list
- JSAC chair also makes a brief report at a JRAF meeting during an ASJ bi-annual meeting

# JSAC charges (for 2020-2022 period) from the DG of NAOJ

- Long-term charges
  - L1. quantitative and qualitative assessment of science outcomes from Japanese users using ALMA, 45m and ASTE
  - L2. Gather opinions from Japanese users and provide input to the ASAC; Evaluate whether JSAC opinions are properly incorporated into the ASAC
  - L3. Assess the activities of EA-ARC to maximize the science output
  - L4. provide advice on the future development plans (ALMA2) and pave the way to produce world-class scientific results in the upcoming decade
- Ad-hoc (short-term) charges
  - S1. provide advice on science promotion of ALMA, 45m, and ASTE in the (post-) Covid-19 situation
  - S2. analyze the statistics of the Japanese ALMA proposals in the new proposal review process
  - S3. assess the new science operation implementation of 45m and ASTE
  - S4. provide advice to the ngVLA study group with respect to their activities from a scientific point of view
  - S5. discuss VLBI observations with ALMA, 45m and ASTE for better scientific outcome in coordination with the VLBI science advisory committee
  - S6. discuss and recommend, as necessary, any other topics