

CRC Cycle 2 Report for the CHANCO

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Executive Summary

- The CRC and its chair carried out all duties required of them, but were limited by the fact that the document “Proposal for Chilean Participation in ALMA” is an informal document and was not circulated to the community during the Cycle 2 call for proposals.
- In the view of the CRC, Chile (CL) participates in the international process at equal footing with other executives, and the Chilean requests to ALMA are being followed.
- The committee recommends that
 1. The titles, abstracts, and full co-investigator list for all CL proposals granted time on ALMA be widely circulated in Chile, starting with this cycle.
 2. The document “Proposal for Chilean Participation in ALMA” be formalized, and referenced and/or circulated with all future ALMA call for proposals.
 3. CL principal investigators should be required to submit to the CRC a “work plan” detailing the role of each member of the team, with emphasis on the Chilean members.
 4. ALMA should avoid collecting all CL proposals in a single review panel for all science categories that have more than one panel.

Full Report

§ 1. Introduction. — The Chilean share of time on the Atacama Large Millimeter Array (ALMA) is administered by CONICYT and the Universidad de Chile. The time allocation has been entrusted for the first three cycles to an international proposal review process run by the Joint ALMA Observatory (JAO) and in which Chile (CL) participates along with the other three executives: North America (NA), Europe (EU) and East Asia (EA). In what follows we briefly summarize the proposal review process. We have borrowed text in what follows from the “Guidelines for Science Assessors” document distributed by ALMA to the participants of the review process for Cycle 2.

For Cycle 2 the 1381 (!) proposals received were reviewed by eleven ALMA review panels (ARPs). Each panel is composed of seven members (Science Assessors), including a Chair and a Deputy Chair. The Science Assessors evaluate proposals solely on their scientific merit. The proposal for cycle 2 are classified into five science categories:

1. Cosmology and the high redshift universe
2. Galaxies and galactic nuclei
3. ISM, star formation and astrochemistry
4. Circumstellar disks, exoplanets and the solar system
5. Stellar evolution and the Sun

The combined expertise of the science assessors for each panel should cover the range of topics relevant to one of the five scientific categories. There were two ARPs for each of categories 1 and 4, three for each of categories 2 and 3, and one for category 5.

In order to keep the workload of the panels to a manageable level, science assessments were made in two stages. At Stage 1, each proposal was assessed by four members of the ARP to which it is assigned. Based on the resulting ranking, only 70% of the proposals will proceed to Stage 2, where they were reviewed and discussed by all members of the relevant ARP. Those discarded are the “Triaged” proposals.

In the Stage 1, each proposal is assigned a score from 1 (best) to 10 (worst) by four Science Assessors. Triaged proposals can be resurrected (i.e., marked to be discussed in Stage 2) by any panel member that does not have a conflict of interest. In addition, for Chilean proposals the guidelines state that “In the triage process, provision will be made to ensure that there are enough Chilean proposals above the triage line. Namely, if the cumulative 12m Array time of the Chilean proposals above the triage line is less than

20% of the total number of available hours of the cycle, Chilean proposals further down the ranking will be automatically resurrected until the cumulative 12-m Array time of Chilean proposals proceeding to Stage 2 becomes greater than 20% of the available time.”

For the stage 2, all Science Assessors met in London, Ontario, Canada in the week of March 10-14 2014 to discuss the proposals in person. In this process there were eight panelist invited from Chile, who by virtue of participating in an ARP become members of the Chilean Review Committee (CRC). The Chanco nominated Andrés Jordán to act as chair of the CRC and the nomination was accepted by the Universidad de Chile. Due to an unfortunate accident, one of the Chilean panelists (Matthias Schreiber) could not attend the ARP meeting and thus seven panelists from Chile participated in the process, which involved 78 panelists. One of the Chilean panelists, Guido Garay, acted as Chair of an ARP in Science Category 3.

The rankings made by the ARPs are collated by the ALMA Proposal Review Committee (APRC), which deals with duplications and reviews all recommendations made by the ARPs in order to produce a single ranked list of all proposals. The chair of each ARP serves on the APRC, along with a Chilean representative (the chair of the CRC) and the APRC chair who does not belong to any ARP. The APRC makes the final set of recommendations to the Joint ALMA Observatory which have to be concurred by the Director’s Council and a Chilean representative (the chair of the CRC). The proposals that may be observed are assigned priority grades A, B or C. Grade A was reserved for outstanding proposals (approximately 10% of the total) and that grade makes them eligible to be carried over to Cycle 3 if they cannot be successfully completed in Cycle 2. Priority grade B proposals are high priority proposals and it is estimated ~ 90% of them should be successfully observed by the end of Cycle 2. Grade C proposals correspond to the so-called “fillers”, to be observed if conditions are such that no A or B proposals can be observed.

§ 2. Analysis of Review Process for Chilean Proposals. — In what follows we present the statistics pertaining to Chilean proposals. It should be noted that ALMA was very forthcoming in providing all the information we needed in order to assess the fate of Chilean proposals at every stage of the process.

§ 2.1. Overall Statistics of Chilean proposals. — The number of proposals listing Chile (CL) as their executive was 95. The full list of proposals, including titles, proposals identifiers, list of co- investigators, and abstracts, is included as an accompanying file to this report. The institutional breakup of the proposal PIs was: Universidad de Chile (35 proposals, including 6 from the UMI and 4 from the CCJCA), Pontificia Universidad Católica de Chile (22 proposals), Universidad de Concepción (15 proposals), Universidad

Diego Portales (8 proposals), Universidad de Valparaiso (7 proposals), Universidad Nacional Andres Bello (4 proposals), Universidad de Antofagasta (1 proposal), Universidad del Bío-Bío (1 proposal) and Universidad Católica del Norte (1 proposal)

§ 2.2. Stage 1 (Triage). — In Stage 1, 39 of the 95 CL proposals were initially triaged (41%). Of those, 12 proposals were afterwards resurrected, resulting in that finally 27 proposals were triaged (28%). The cumulative 12m array time above the final triage line was 380.4 hrs, which is a factor of 2.23 above the number of hours available for Chilean time which was 170 hrs for Cycle 2, resulting in a pressure factor post-triage >2 for CL proposals (another way of phrasing is that the requested time above the triage line was 22.4% of the total available 12m time). The list of all submitted CL proposals, indicating their triage status, is included as Appendix A. The triage status is encoded with the letters A (not triaged), R (resurrected) and T (triaged).

§ 2.3. Stage 2. — A total of 353 proposals were given priority grades A or B, adding up to a total observing time of 1700 hrs of 12m time. Of those, 34 are CL proposals. It is noteworthy that 2 CL proposals received grade A, as there was no regional quota for them: each panel selected the ones that it considered outstanding regardless of regional considerations. The total 12m array time of the CL A+B proposals is 169.6 hrs (plus 16.7 hrs of 7m array time and 33.4 hrs of TP array time). A total of 159 proposals were assigned grade C, for 829.1 hrs of 12m array time. Of those, 14 proposals were from CL, for a total of 84.8 hrs of 12m array time.

§ 2.4. APRC meeting report. — The APRC meeting was held on Friday March 14 2014. In attendance from CL were Andrés Jordán in his capacity as chair of the CRC and Guido Garay by virtue of being a panel Chair. During the APRC meeting duplications were dealt with, which were most severe for Science category 1 due to several proposals targeting deep fields. The general policy adopted was that proposals lower in the overall ranking would be descoped in case they observed the same targets with the same configuration as a higher ranked proposal. Cases with small difference in ranking involving CL proposals would have to be looked up in detail as it indeed happened with one proposal. The inverse situation also occurred, i.e. that of CL proposals superseding other proposals.

There was one special case that was ranked formally lower than an essentially identical proposal from EU. The two Science category 1 ARPs looked jointly at the proposals and could not decide between them, leaving the outcome to be decided by the final ranking. As the EU proposal ended up somewhat higher, the initial opinion in the APRC was to supersede the CL proposal. After some discussions that involved the CL community

members present at the APRC meeting, the APRC resolved to grant time to the CL proposal, superseding the EU one. Given that the overall rankings were very similar, that the ARPs could not decide between the proposals, and that the CL proposal was significantly higher than the EU one in its regional ranking this decision is consistent with the condition requested by CL for participation in the international ALMA TAC that “In case of duplicated proposals including a Chilean proposal, priority is given to the proposal with the highest likelihood of being observed.”

Finally, we note that one CL proposal was descoped by 30% in response to the a recommendation by the ARP that evaluated it.

The science category distribution of proposals graded A or B is shown in the Appendix. It is apparent that for cycle 2 science categories 1 and 4 accounted for most of the CL time.

§ 2.5. Director’s Council Meeting Report. — The Director’s Council and the Chilean representative discussed via email during April 8-9 2014. The recommendations of the APRC were concurred by all members of the Council without modifications.

§ 3. Report on the Chilean Review Committee Tasks. — A document specifying the tasks of the CRC exists, although we note that this document is an informal record of an agreement between CONICYT and Universidad de Chile that has not been signed by any authority of those institutions and is not publicly available anywhere as far as the CRC members could tell. This fact will be relevant in the discussion that follows, the document, which is called “Proposal for Chilean participation in ALMA”, is attached to this report for reference. The CRC discussed some of the issues described below by email and it met in person on Tuesday March 11 at the Ivey Spencer Convention Center in London, Ontario, Canada.

A task specified for the CRC is to screen the Chilean proposals to assess if they qualify for Chilean time. The criteria are (taken from the document just referred to):

1. Faculty in Chilean institutions can be PIs of Chilean ALMA proposals and PI or Co-PIs in large proposals;
2. Non-permanent astronomy researchers including graduate students, postdoctoral researchers, and visitors to Chilean institutions staying for at least a full ALMA observing cycle, can be PIs of Chilean ALMA proposals provided at least one Chilean faculty is Co-I. They can not be PI or Co-PI in large programs. The advisors of graduate students should send letters of support to the CRC chair.

3. The CRC will consider the expertise of the PI based on his/her previous publication and ALMA record, on the number and expertise of the Chilean Co-Is, on the involvement of graduate students, and availability of local resources to judge the impact in Chile of proposals qualifying for Chilean time. In justified cases the CRC could recommend limiting his/her Chilean time allocation.

The document also specified that “CONICYT and the UCh [Universidad de Chile] should make these guidelines public with each ALMA call for proposals”. Unfortunately, the guidelines were not made public with this call by either CONICYT or UCh.

The CRC inspected all proposals and found that four of them did not qualify due to point (2) above as they were PI-ed by postdoctoral researchers without permanent faculty in the list of co-Is. After discussions within the CRC we decided not to disqualify this proposals for Chilean time because we felt we could not apply the rules due to the following reasons: (a) the document was not circulated with the ALMA call for proposals, and thus we could not expect people to be aware of the rules; (b) the document empowering the CRC is not an official one. As the ALMA time is administered by two public institutions, the CRC felt that there could be legal issues arising from singling out proposals as “non-Chilean” without having an official document to back that action. Therefore, the CRC decided to let those four proposals go through the process as Chilean proposals. We note that three of these proposals were triaged, and none of them were assigned priority grades A, B or C (i.e., none of them will be observed).

Regarding the requirement that the advisors should send letters of support in the case of PhD students acting as PIs, the CRC checked during the March 11 meeting that PhD students that applied as PIs were indeed bona-fide PhD students in Chilean institutions and that their advisors were listed as co-Is. Not a single PhD advisor sent a letter of support. Even if they were aware of the rules, which were not circulated, they would not have known where to send such email.

A large part of the discussion in March 11 was devoted to discussing which proposals could in principle be declared as non-Chilean based on point (3) above. For the same reasons mentioned above, the CRC decided it could not take action. The CRC went through the exercise of going through all the Chilean proposals to try assess the order of magnitude of the problem, estimating that of order 5%-10% of proposals were cases where the PI fronted up for a foreign group and where it was very doubtful there was going to be any significant Chilean involvement.¹ This exercise revealed the complexity of deciding which proposals would fall foul of point (3), as there was often disagreement over particular proposals, a fact reflected in that our estimate of the level of the problem

¹ These proposals are usually referred to as “palo blanco” in the community, a terminology we will use in what follows

has a factor of 2 difference between the lower and upper bounds. In light of the difficulty we experienced on deciding on such sensitive issue we include in our recommendations procedures that could be adopted to limit the “palo blanco” issue. The CRC felt that even though “palo blanco” proposals are not a very large problem in terms of numbers, they constitute unloyal competition to colleagues that are making a sincere effort to make science with ALMA and every effort should be made to eliminate the phenomenon.

§ 4. Conclusions and Recommendations. — The review process was a very intense one due to the very large number of proposals. It involved 78 researchers, some of which are key figures in their fields. It is a massive operation, involving a significant amount of resources and coordination, that is able to commit during one week a large amount of expert manpower. There is also a large amount of preparatory work, in particular each of the proposals that are reviewed by the ARPs gets technically assessed by a JAO staff member before the proposal is discussed.

CL participates in this international endeavor in essentially equal footing with the other executives, with presence at the key instances such as the APRC and the Director’s Council meeting. The Science Assessments are carried out without regional considerations, and the CRC did not see evidence in cycle 2 for any sort of bias against CL proposals. In the one difficult case in the APRC discussion that involved a CL proposal, the APRC favored the CL proposal over a slightly higher ranked proposal from EU. All in all, it is the impression of the CRC that the evaluation process was fair.

One issue that may have been detrimental for CL proposals in Science Category (SC) 3 is that due to the fact that in two of the SC 3 panels had CL panelists in them, essentially all CL proposal in that SC ended up in the single third panel without CL panelists (panel 3A) so as to avoid conflicts of interest. Even though we understand the motivation of avoiding conflicts of interests for the smooth running of the panel, we consider highly undesirable to subject essentially all proposals in a given SC to the judgements of a single panel.

Other issues pertained the internal CL organization and the issue of proposals being fronted up (“palos blancos”).

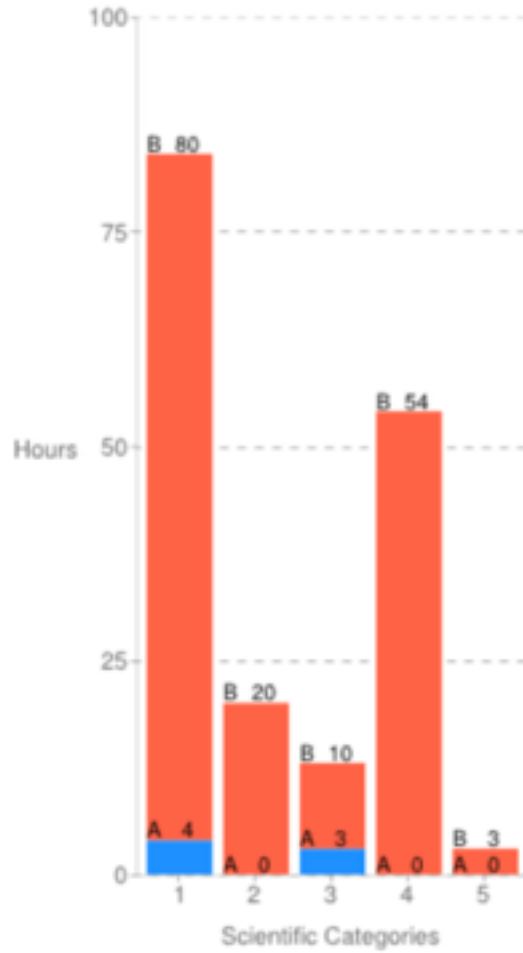
Our recommendations are

- A file listing the proposals assigned priority grades A, B and C for each cycle (including cycle 2) which includes title, abstract and full list of co-investigators should be widely circulated in Chile by CONICYT and/or Universidad de Chile. This would allow the whole community to assess for themselves who is likely fronting-up proposals and would expose those researchers to public scrutiny of their actions.

- For future cycle, PIs could be required to submit at most one week after the proposal deadline a “work plan” to the CRC in which they clearly detail what their role or that of their students/postdocs would be should the data be granted. This information would allow the CRC to decide on the value of a proposal in terms of their contribution to the fostering of Chilean science in an objective way. It would also force people that are willing to act as “palo blanco” to misrepresent their expected role in written form in order to act in such a role.
- Collecting all CL proposals in a single ARP should be avoided for all science categories that have more than one ARP. There are established ways to deal with conflicts of interest in the cases where the ARPs contain CL members.
- All documents regulating the action of the CRC and the internal CL structure of ALMA time administration should be official documents. All such documents should be publicly available and circulated accompanying each call, either by asking the JAO to refer to the information in the official ALMA call or by CONICYT and/or Universidad de Chile distributing the documents directly.

§ **Appendix.** Science category distribution of A+B CL proposals.—

 **2013.1 Scientific Category Distribution**



CL executive: Hours per Scientific Category for AB priority flag proposals.