

Proposing your observations for ALMA Cycle 10

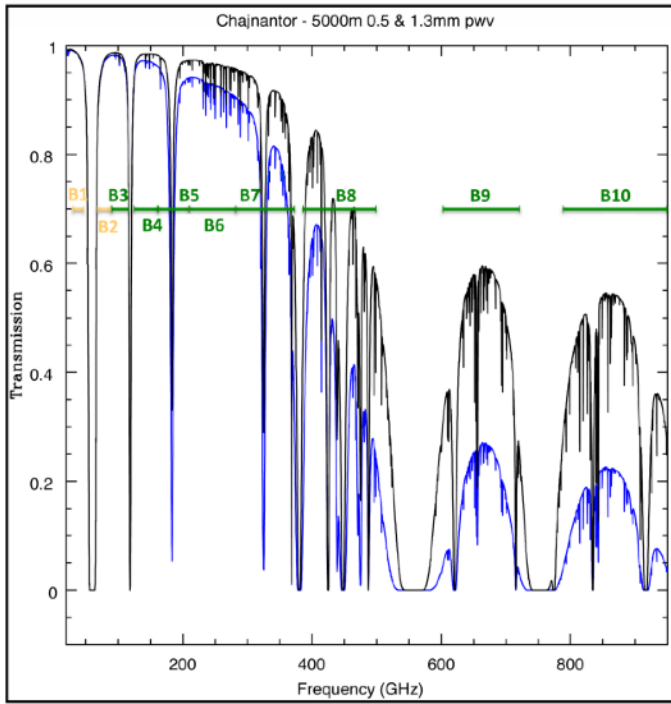
Takuma Izumi
East Asia ALMA Regional Center

18st April 2023



ALMA

- Interferometer consisting of 66 antennas in total
- Fifty 12-m antennas → 12-m Array
- Atacama Compact Array (ACA; Morita Array)
 - Twelve 7-m (7-m Array), Four 12-m (Total Power, TP)
- From 0.32 mm to 8.5 mm (Band 1 to 10, except for Band 2) for Cycle 10



©Credit: ALMA (ESO/NAOJ/NRAO), A. Marinkovic/X-Cam



ALMA Regional Center (ARC): Interface for users



Joint ALMA Observatory (JAO)

Effective array operations: Execution of programs under suitable conditions
High availability of the array for science : Repairs, Preventive maintenance

Science operations in regional centers with **functions agreed in EA, EU, and NA, in close coordination with JAO**

EA ARC

EA ALMA users

EU ARC

EU ALMA users

NA ARC

NA ALMA users



- ARC provides support for users in the respective regions so that users can concentrate on proposing observations, data analysis, and science discussion.
- Support can be optimized to the regional situation (e.g., native language, specific demands from users).





Proposing observations in ALMA

- “Cycle” in ALMA: One year period, starting from October every year
 - Cycle 10: From October 2023 to September 2024
- Calls every year
 - **Main Call**
 - 12-m Array, 7-m Array, TP
 - Call for Proposals in April this time (usually in March)
 - Observations from October to next September
 - 4300 hours for each of the 12-m, 7-m, and TP Arrays in Cycle 10
 - Supplemental Call ... **No Supplemental Call for Cycle 10**
- DDT
 - Users can propose anytime in the on-going cycle
 - DDT projects will stay in the queue for 12 months





Proposing observations in ALMA

- Science observations will be scheduled and executed by taking into account multiple factors including, for example, weather, proposal grade, and executive balance
- Priorities
 - Grade A
 - Highest grade, carried over to the next Cycle
(Long baseline SBs are not carried over to the next Cycle SBs without LB)
 - Grade B
 - No carry over
 - Grade C
 - Filler
- After observations...
 - Quality assurance (meet the PI's request?) per MOUS → if fine, deliver to the PI
 - Data become public after 12 months (6 months for DDT), no waive from ALMA-side

“Users Policies”
<https://almascience.nao.ac.jp/documents-and-tools/cycle10/alma-user-policies>





Information is in the Science Portal

<https://almascience.nao.ac.jp/>

Atacama Large Millimeter/submillimeter Array
In search of four Cosmic Origins

ALMA

About Science **Proposing** Observing Data Processing Tools Documentation Help

Science Highlight
Birth of a very distant cluster of galaxies in the early Universe

Observatory News

ALMA Cycle 10 Call for Proposals Now OPEN!
Apr 12, 2023

New Targets for Science Verification: Band 1
Mar 16, 2023

ALMA Cycle 10 Pre-Announcement
Jan 18, 2023

ALMA Cycle 9 Proposal Review: Detailed Report
Jan 12, 2023

ALMA announces Joint Proposal agreements for JWST, VLA, and the VLT
Dec 20, 2022

More...

NAOJ News

ALMA BEARS
Dec 01, 2022

ALMA at 10 years: Past, Present, and Future
Dec 13, 2022

ALMA/45m/ASTE Users Meeting 2022
Nov 17, 2022

ALMA Grant Fellow Symposium 2022
Nov 17, 2022

ALMA Cycle9 2022 Proposal Preparation Meeting
Mar 22, 2022

More...

ALMA Status

Configuration

Refereed publications

Last observation

Current configuration

More...

The ALMA Science Portal

Quick Links

ALMA Basics

ALMA Science

ALMA Primer

Proposer's Guide

Proposing Guidance

Site Map Accessibility Contact Privacy Statement

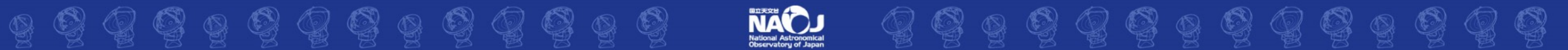
Region: EA EU NA

You can find documents related to proposal planning/submission. Please check "Proposer's Guide" in particular.

You can login here.

Please register your science expertise in your Profile (click "Preferences" menu). The information will be used in the assignment of proposals that you will review (distributed peer review)

You can check any news here.





... and ask us via the Helpdesk

<https://help.almascience.org>

- We can also accept Japanese questions although **you may need to wait until the Japanese staff are available** (be careful, in particular just before the deadline)

ALMA Science

Submit Helpdesk Ticket | Log in

How can we help you

Help Center | TOO

Knowledgebase
View all articles >

News
View all news posts >

Submit Helpdesk Ticket
Get in touch for help >

My Tickets
View your submitted tickets >

You will be asked to login when you try to submit a ticket. Please register in the Science Portal first if you do not have an account. Please use your registered email address for the login name in the Helpdesk (same password as the Science Portal when you login for the first time)





... and ask us via the Helpdesk

<https://help.almascience.org>

- Any changes, clarifications, or bugs **that are discovered after the publication of the Proposer's Guide** will be documented in the Knowledgebase article.
- Helpdesk → Knowledgebase
- Recommend to monitor this page regularly

<https://help.almascience.org/kb/articles/what-cycle-10-proposal-issues-and-clarifications-should-i-be-aware-of-before-submitting-my-pro>

Help C... > Knowledg... > Gen... > What Cycle 10 proposal issues and clarifications should I be aware of before submitting

What Cycle 10 proposal issues and clarifications should I be aware of before submitting my proposal?

SW

Last updated: Apr 14, 2023 by Sarah Wood



This Knowledgebase article is a repository for information relevant to submission of Cycle 10 proposals. These items may affect how users write their proposals or set up their observations in the OT. The content may evolve rapidly as the 10 May 2023 proposal deadline approaches. Items added to this list after its initial deployment will include the date they were added. We encourage all PIs to check back here regularly prior to proposal submission.

[ALMA Cycle 10 Pre-Announcement](#)

[Cycle 10 Announcement](#)

Date	Milestone
12 Apr 2023	Release of the ALMA Cycle 10 CfP and Observing Tool, and opening of the archive for proposal submission
10 May 2023 (15:00 UT)	Proposal submission deadline
August 2023	Announcement of the outcome of the proposal review process process
October 2023	Start of Cycle 10 observations

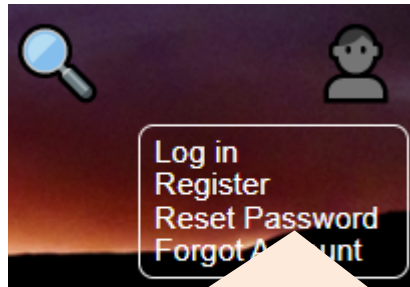
[Cycle 10 Documentation](#)



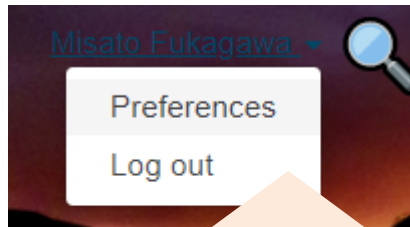


Register/update your “Expertise” in your profile

- Please register/update your “Expertise” in your user profile. This is **extremely important for the proposal assignments in the distributed peer review system**.



Login or newly register



Updating the profile in “Preferences”

Please select **one to as many keywords as your expertise requires**.

You can also specify “conflicts of interest” here.

Account info Project delegation Demographics **Expertise** Conflicts of interest Confirm

Expertise ← Previous → Next

Please select the category/keyword pair/s that best match your scientific expertise. You may select keywords in more than one category. If you are a reviewer for Distributed Peer Review (DPR) you will preferentially be assigned proposals that match your selected keywords.

- > Cosmology and the High Redshift Universe
- > Galaxies and Galactic Nuclei
- > ISM, star formation and astrochemistry
- ▼ Circumstellar disks, exoplanets and the solar system
 - Debris disks
 - Disks around low-mass stars
 - Disks around high-mass stars

Click “Next” button to move to the “Expertise” tab.
After updating the keywords, go to the final “Confirm” tab, then submit.



Schedule

Date	Milestone
12 April 2023 (15:00 UT)	Release of Cycle 10 CfP, Observing Tool, and supporting documents, and opening of the Archive for proposal submission
10 May 2023 (15:00 UT)	Proposal submission deadline for Cycle 10 proposals
28 June 2023 (15:00 UT)	Deadline to submit reviews for the distributed peer review system
August 2023	Announcement of the outcome of the proposal review process
October 2023	Start of ALMA Cycle 10 science observations
September 2024	End of ALMA Cycle 10

Emergency Department in the Helpdesk: will start 72 hours before the deadline (15:00 May 7).
→ Only to be used to address problems that “block” your proposal. Need to be written in English.

You can submit tickets to the usual department if the topic is not related to the proposal submission. Those will be handled as usual.





What should proposers know? What's new?

Observing capabilities → Nagai-san's talk

Observing Tool → Jorge's talk

Scheduling and Phase 2 generation viewpoints → Yu-Ting's talk

- Band 1 on the 12-m array: Stokes-I only. Start from March 2024. No C-7 and C-8 configurations.
- Spectral scans that include Total Power observations (TP spectral scan).
- 4x4-bit spectral mode on the 12-m array: improves the sensitivity, but limited to some spectral setups.
- Solar observations in full polarization in Band 3 using 12-m array only.
- Phased array mode in Bands 1, 3, 6, and 7: total allocated time < 50 hrs
- Continuum and spectral line VLBI in Bands 1, 3, 6, and 7: with flexible tuning.



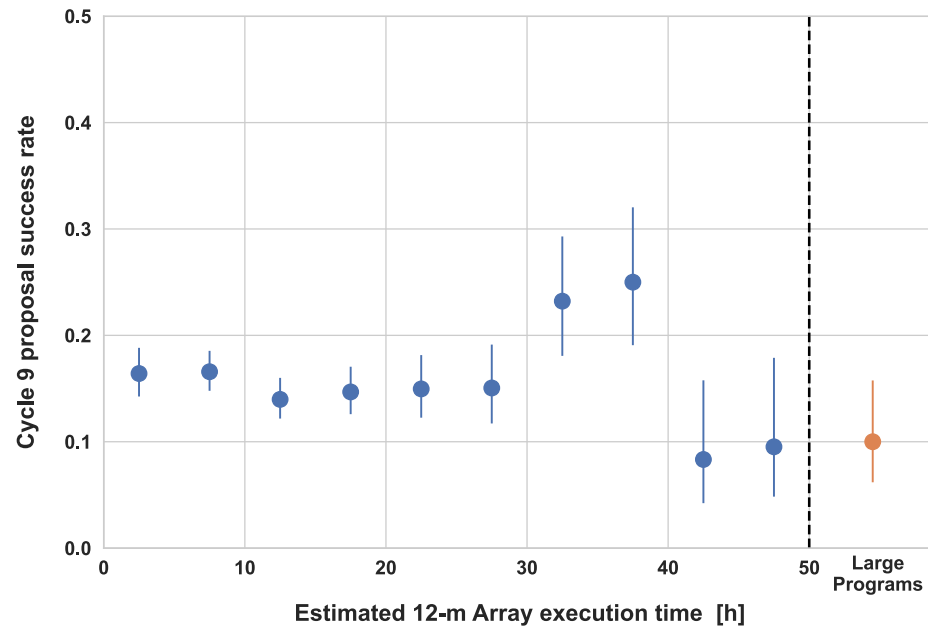
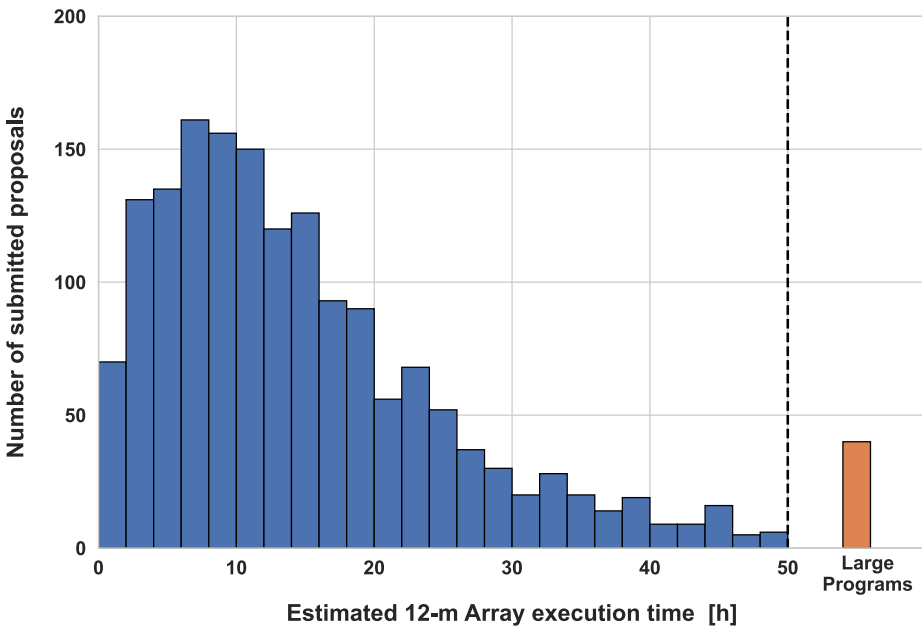


Proposal types

- Regular, Large Program, Target of Opportunity, VLBI and phased-array, Joint proposal, (and DDT)

- **Regular**

- Execution time does not exceed 50 hours on the 12-m Array or 150 hours on the 7-m Array in stand-alone mode.
- Incl. time-critical, multi-epoch observations, and monitoring for a fixed time-interval.

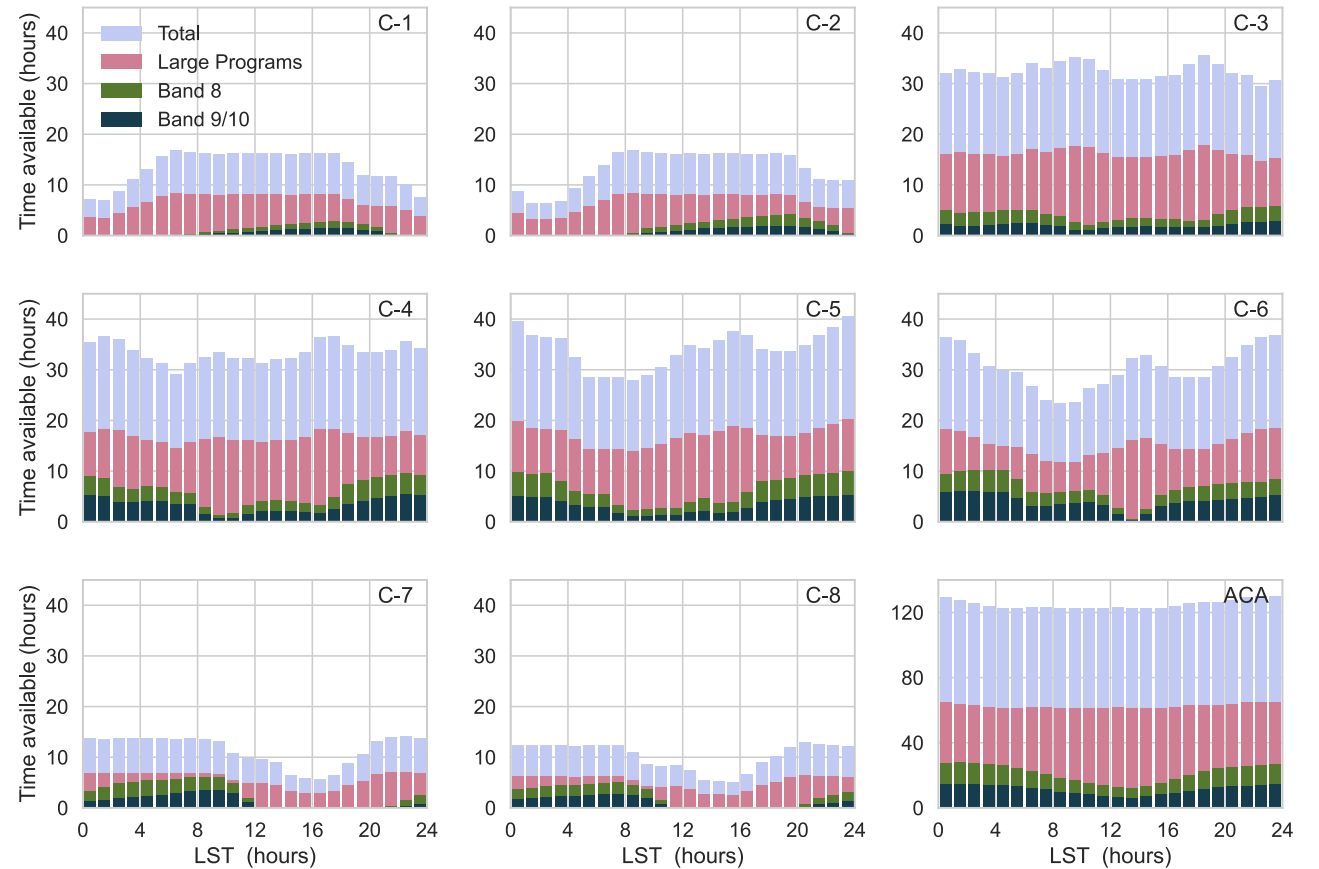


- High success rate in the 30-40 hrs range.
- Proposals with >40 hrs seem to be highly competitive.



High frequency observations

- Projects with observations in the highest frequency Bands 8, 9, and 10 are strongly encouraged.
- **Prioritized** to execute if the weather condition is good.
- But please check carefully the availability of “high frequency time” for a given configuration and Band (shown in PG).
- B2B transfer to obtain a good and bright phase calibrator → Jorge’s talk (OT)



“I hesitated to propose when I saw how little time ALMA has spent for HF bands.” ...but this also comes from few proposals.





Large Program

- Estimated execution time **>50 hours on the 12-m Array (with or without accompanying ACA time)** or **150 hours on the 7-m Array in stand-alone mode**.
- Large Programs should not involve time-critical or ToO observations, and may not include Band 1, full polarization measurements, solar observations, VLBI, Phased Array mode, Astrometric observations or observations requiring band-to-band calibration or bandwidth switching calibration.
- Large Programs may fill up to 50% of the available time for a given LST range in the available Cycle 10 configurations (i.e., the ACA and 12-m C-1 through C-8).





Large Program

- Please do not hesitate to propose large scale proposals!
- Planning of Large Programs
 - A LP proposal should address strategic scientific issues that will lead to a major advance or breakthrough in the field, be a coherent science project and not reproducible by a combination of Regular proposals, **lead to value-added data products (need to submit to ALMA within one year of the final calibrated products)**, and contain **a solid management plan (one page separate document)** ensuring an efficient utilization of the data.
 - ARCs can provide kinds of assistance to the LP teams for making observation strategy, and preparation of the management plans. PIs are encouraged to contact the ARC early in the proposal process.
 - Computing and storage, estimates of available observing hours in each LST, observation settings etc.





Joint Proposal

- Joint Proposals will be multi-wavelength and/or multi-observatory in nature. Synergies between ALMA and major facilities are expected.
- JWST, VLA, and VLT are the “partner observatories”. You can request time for any or all of these facilities.
- By agreement, each partner facility will allow ALMA to allocate time as follows. You will submit the proposal to the “Main observatory” that takes the longest observing time.
- If ALMA is the Main observatory, there are no restrictions for the ALMA’s observing modes. But there are some restrictions in the other observatories (especially for ToO). Please check the Proposer’s Guide carefully.

Partner	Maximum time ALMA can allocate on partner observatory	Maximum time partner observatory can allocate on each ALMA array
JWST	115 hours	115 hours
VLA	5% of available time	50 hours
VLT	50 hours	50 hours





Proposal format

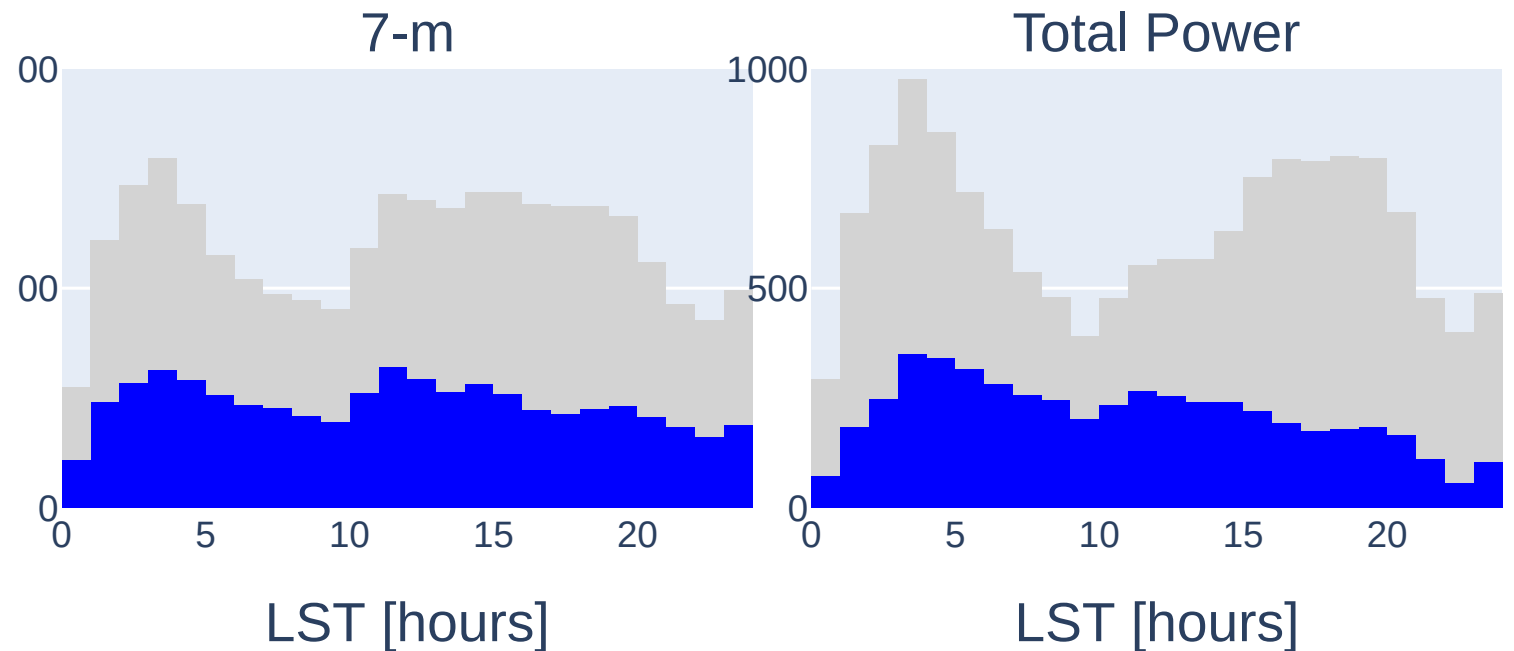
- Page limits
 - Total length: **4 pages** for Regular, ToO, mm-VLBI, Joint, and DDT proposals, **6 pages** for Large Programs (A4 or US Letter)
- Font size: **no smaller than 12 points including figure captions, tables and references**
 - FAQ: <https://help.almascience.org/kb/articles/why-is-the-ot-is-complaining-that-the-text-in-my-pdf-is-too-small>
- Latex template is in the Science Portal and users are recommended to use it.





No Supplemental Call

- Cycle 10 will **NOT** include a Supplemental CfP for stand-alone ACA observations.
- The community is encouraged to submit ACA stand alone projects, **especially in the LST range of 20h to 10h**, for this May 2023 deadline.



Estimated execution time in Cycle 9 for submitted (gray) and Grade A/B/C (blue) projects.





Review process

- Panel review for Large programs, distributed peer review for the others
- Distributed Peer Review: For each proposal submitted, the PI or a designee from the list of investigators will review and rank 10 submitted proposals.
- DPR: reviewers can be assigned a maximum of five proposal sets (i.e., 50 proposals) → Thus PIs who are planning to submit more proposals are encouraged to designate one of their co-Is as reviewer.
- All proposals will be reviewed in dual-anonymous
 - Exception: one-page management plan for Large Programs
- Joint Proposals will also be reviewed with the DPR system. Joint Proposals should follow the users' policies and call for proposal guidelines of each of the requested partner observatories, as well as extra limitations and rules imposed on Joint Proposals.
- All Joint Proposals will be technically assessed by each of the requested observatories. Each observatory will follow their technical criteria. If any of the involved observatories declares the proposal infeasible, ALMA will reject the entirety of this proposal.





Other notes

- Please ensure your correct affiliation and executive
- No Phase 2 deadline for PIs:
 - Please carefully check that your observing setting at Phase 1 (proposal submission) is correct. Major changes can't be done so easily (Yu-Ting's talk)
- Upper cap for a few observing modes:
 - As Nagai-san will present, there will be a time cap in the total hours for a few modes, but please do not hesitate to propose. Users seemed to have over-reacted to this type of cap.
- Source coordinates (stated in the Users Policies):
 - Please do not intentionally hide the true coordinates.
- Proprietary periods (stated in the User Policies):
 - PIs can't voluntarily waive the proprietary period in their proposal.





Archive features

ALMA Science Archive in the Request Handler page

③ Click
“Request
download”

① Search the data as usual

② After choosing the data,
click this for data request.

Source name: hd 142527

Observations (26) | Projects (15) | Publications (26)

Observation ID	Source Name	RA (h:m:s)	Dec (d:m:s)	Bandwidth (MHz)	Frequency (GHz)	Release Date
2011.0.00465.S	HD 142527	15:56:41.887	-42:19:23.341	7	0.1602	2013-07-06
2011.0.00465.S	HD 142527	15:56:41.887	-42:19:23.341	6	0.1041	2013-08-06
2011.0.00318.S	HD 142527	15:56:41.881	-42:19:23.581	7	0.1594	2013-10-30
2011.0.00465.S	HD 142527	15:56:41.887	-42:19:23.341	9	1.0674	2014-02-26
2012.1.00725.S	HD_142527	15:56:41.874	-42:19:23.652	7	0.0489	2016-07-31

Automatic search for similar proposals with a mouse over of “...”

Observations

Explore and download





Archive features

ALMA Science Archive in the Request Handler page

④ Open the file tree by clicking ►

File Name	Size	Icon
member.uid__A001_X13d_X72.README.txt	11 KiB	
2013_1_00305_S_uid__A001_X13d_X72_001_of_001.tar	1 GiB	
member.uid__A001_X13d_X72.HD142527_13CO21_image_flux.fits.gz	52 MiB	✓
member.uid__A001_X13d_X72.HD142527_13CO21_image_image.fits	180 MiB	✓
member.uid__A001_X13d_X72.HD142527_13CO21_image_pbcor.fits	180 MiB	✓
member.uid__A001_X13d_X72.HD142527_C18O21_image_flux.fits.gz	52 MiB	✓
member.uid__A001_X13d_X72.HD142527_C18O21_image_image.fits	180 MiB	✓
member.uid__A001_X13d_X72.HD142527_C18O21_image_pbcor.fits	180 MiB	✓
member.uid__A001_X13d_X72.HD142527_CO21_image_flux.fits.gz	55 MiB	✓
member.uid__A001_X13d_X72.HD142527_CO21_image_image.fits	180 MiB	✓

⑤ Click the link icon to CARTA as a viewer

A new webpage automatically opens in your browser! (You do not have to install CARTA desktop version).

You can check and analyze the images/cubes **without downloading the data to your local disk.** (e.g., you can generate and immediately check moment maps in CARTA)

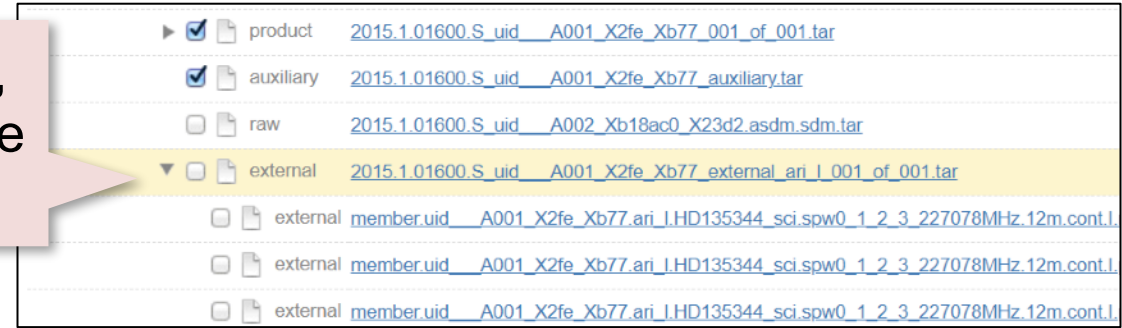




Archive features: ARI-L

Additional Representative Images for Legacy (ARI-L):
A uniform set of **full data cubes and continuum images** of the data from Cycles 2-4.

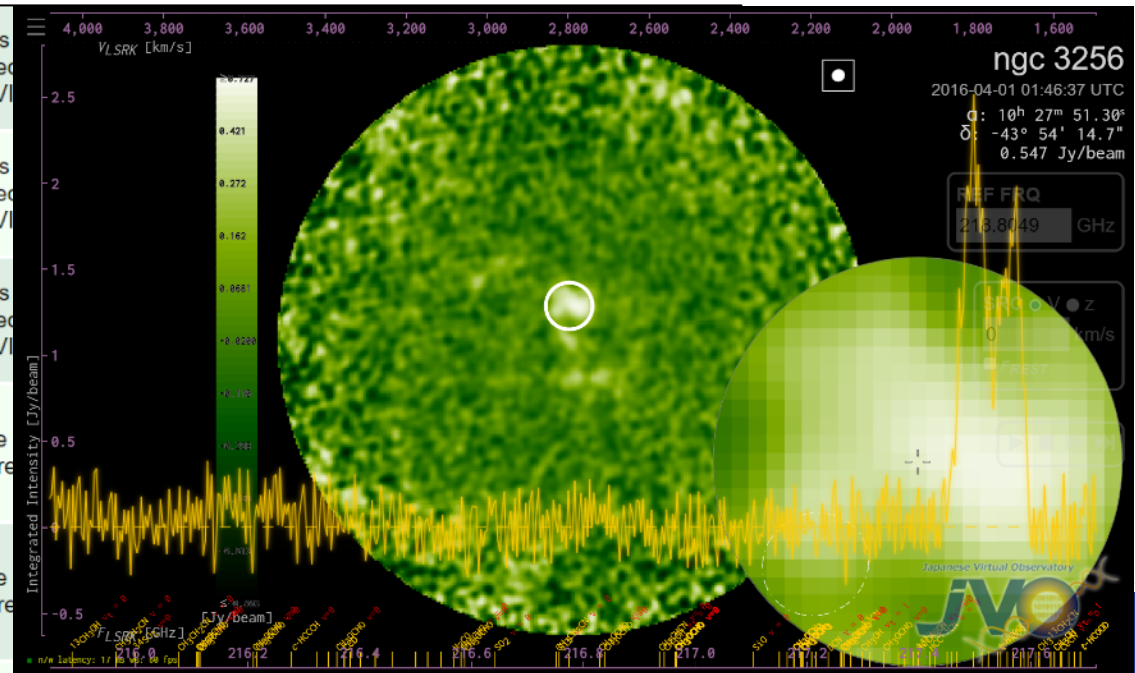
In the Request Handler page, you will see “external” with the package name “ari_l”.



ARI-L images are also in the JVO archive in NAOJ

In the search results page, it says “ARI-L”

T	<input type="checkbox"/>	Download WebQLv4 VO Search	ALMA official	The properties mergers detected
T	<input type="checkbox"/>	Download WebQLv4 VO Search	ALMA official	The properties mergers detected
S	<input type="checkbox"/>	Download WebQLv4 VO Search	ARI-L	Chemistry in the Infrared
S	<input type="checkbox"/>	Download WebQLv4 VO Search	ARI-L	Chemistry in the Infrared





ALMA-J support

- Support for the English editing service in April
 - Deadline of application to us: May 1, 17:00 JST
- ALMA-J Users Email List

https://www2.nao.ac.jp/~eaarc/DATARED/alma_users_email_list.html





Keeping the anonymity in your proposal writing

- Goal: To have reviewers **focus on the scientific merit of the proposal rather than the proposal team**
- It is **the responsibility of the proposers to ensure anonymity is preserved** in the information provided in the cover sheet, and when preparing the Scientific Justification and Technical Justification.
- You do not have to be too worried about possible rejections as long as you are trying to follow the guideline. But, please do not ignore the guideline, and please do not clearly specify who is the PI in the proposal text, e.g., please do not say “**We** showed in **Smith et al. (2019)** that ...”.

The screenshot shows the ALMA Science Portal navigation bar with tabs for About, Science, Proposing, Observing, Data, Processing, Tools, and Documentation. The 'Proposing' tab is active. Below the navigation bar, the page title is 'Dual-Anonymous Guidelines'. The main content area contains text explaining the ALMA proposal review process and the goal of dual-anonymous review. A sidebar on the right lists several links: General Guidelines pertaining to all Programs, Example text, Guidelines pertaining only to Large Programs, Compliance, Guidelines for Reviewers, and Frequently Asked Questions.

FAQ in EA: Resubmission, Project code/ID of previous/ongoing observations

→ Examples in the Science Portal

<https://almascience.nao.ac.jp/proposing/alma-proposal-review/dual-anonymous>





Dual-anonymous

FAQ: Resubmission

While proposers may note if they are resubmitting an ongoing proposal, they cannot indicate the proposal code, investigator's name, priority grade, and/or ranking of the previous proposal. For example, instead of

“This is a resubmission of our ongoing program 2021.1.02045.S (PI: Smith). Half of our targets have been observed and we are resubmitting the proposal to obtain the remaining half.”

proposers can write

“This is a resubmission of our ongoing program. Half of the targets have been observed and we are resubmitting the proposal to observe the remaining half.”

Such text is normally included in the “duplication justification” on the proposal cover sheet or the first lines of the Scientific Justification. If data are shown from the ongoing program, it must be presented in a dual-anonymous fashion following the guidelines.





Dual-anonymous

FAQ: Project code/ID of previous/ongoing observations

- Example 1,

- Instead of:

- “Figure 1 shows the image from our Cycle 7 ALMA program (2019.1.02045.S, PI Smith).”
proposers can write

- “Figure 1 shows the image from the Cycle 7 ALMA program 2019.1.02045.S.”

- or

- “Figure 1 shows the data from an ALMA Cycle 7 program (private communication).”

- Example 2, instead of:

- “We will combine these ALMA observations with the HST program led by Chang et al.”

- or

- “The proposed ALMA observations will be combined with our HST data...”

- proposers can write

- “We will combine these ALMA observations with the HST observations (HST code XXX).”

- or

- “The proposed ALMA observations will be combined with available HST data (private communication)...”

- Example 3, instead of:

- “We use our group’s line identification package STAR...” or “We use the line identification package STAR by co-I Sandra Smith...”

- proposers can write

- “We use the line identification package STAR (obtained via private communication)...”





Resolution, array configuration

Config.	L _{max}	Band	1	3	4	5	6	7	8	9	10
		Freq. (GHz)	40	100	150	185	230	345	460	650	870
	L _{min}										
7-m	45 m	θ_{res} (arcsec)	31.5	12.5	8.35	6.77	5.45	3.63	2.72	1.93	1.44
	9 m	θ_{MRS} (arcsec)	167	66.7	44.5	36.1	29.0	19.3	14.5	10.3	7.67
C-1	161 m	θ_{res} (arcsec)	8.45	3.38	2.25	1.83	1.47	0.98	0.74	0.52	0.39
	15 m	θ_{MRS} (arcsec)	71.2	28.5	19.0	15.4	12.4	8.25	6.19	4.38	3.27
C-2	314 m	θ_{res} (arcsec)	5.75	2.30	1.53	1.24	1.00	0.67	0.50	0.35	0.26
	15 m	θ_{MRS} (arcsec)	56.5	22.6	15.0	12.2	9.81	6.54	4.90	3.47	2.59
C-3	500 m	θ_{res} (arcsec)	3.55	1.42	0.94	0.77	0.62	0.41	0.31	0.22	0.16
	15 m	θ_{MRS} (arcsec)	40.5	16.2	10.8	8.73	7.02	4.68	3.51	2.48	1.86
C-4	784 m	θ_{res} (arcsec)	2.30	0.92	0.61	0.50	0.40	0.27	0.20	0.14	0.11
	15 m	θ_{MRS} (arcsec)	28.0	11.2	7.50	6.08	4.89	3.26	2.44	1.73	1.29
C-5	1.4 km	θ_{res} (arcsec)	1.38	0.55	0.36	0.30	0.24	0.16	0.12	0.084	0.063
	15 m	θ_{MRS} (arcsec)	16.8	6.70	4.47	3.62	2.91	1.94	1.46	1.03	0.77
C-6	2.5 km	θ_{res} (arcsec)	0.78	0.31	0.20	0.17	0.13	0.089	0.067	0.047	0.035
	15 m	θ_{MRS} (arcsec)	10.3	4.11	2.74	2.22	1.78	1.19	0.89	0.63	0.47
C-7	3.6 km	θ_{res} (arcsec)		0.21	0.14	0.11	0.092	0.061	0.046	0.033	0.024
	64 m	θ_{MRS} (arcsec)		2.58	1.72	1.40	1.12	0.75	0.56	0.40	0.30
C-8	8.5 km	θ_{res} (arcsec)		0.096	0.064	0.052	0.042	0.028	0.021	0.015	0.011
	110 m	θ_{MRS} (arcsec)		1.42	0.95	0.77	0.62	0.41	0.31	0.22	0.16

Start date	Configuration	Longest baseline	LST for best observing conditions
2023 October 1	C-8	8.5 km	~ 22—10 h
2023 October 20	C-7	3.6 km	~ 23—11 h
2023 November 10	C-6	2.5 km	~ 1—13 h
2023 December 1	C-5	1.4 km	~ 2—14 h
2023 December 20	C-4	0.78 km	~ 4—15 h
2024 January 10	C-3	0.50 km	~ 5—17 h
2024 February 1	<i>No observations due to maintenance</i>		
2024 March 1	C-1	0.16 km	~ 8—21 h
2024 March 26	C-2	0.31 km	~ 9—23 h
2024 April 20	C-3	0.50 km	~ 11—0 h
2024 May 10	C-4	0.78 km	~ 12—2 h
2024 May 31	C-5	1.4 km	~ 13—4 h
2024 June 23	C-6	2.5 km	~ 15—6 h
2024 July 28	C-5	1.4 km	~ 17—7 h
2024 August 18	C-4	0.78 km	~ 19—8 h
2024 September 10	C-3	0.50 km	~ 20—9 h

