Proposer's Guide for Cycle 8

EA ARC

ALMA

Atacama Large Millimeter/submillimeter Array

In search of our Cosmic Origins

NAOJ

Search Site

Due to the COVID-19 outbreak, science operations with ALMA have been suspended, and the Cycle 8 Call for Proposals deadline has been delayed. ALMA continues to carefully monitor the evolving global situation regarding the COVID-19 pandemic and will post ALMA-related updates as News Items to the Science Portal.

Mar 24, 2020 10:30 AM

Log in

About Science Proposing Observing Data Processing Tools Documentation Help

Observatory News

ALMA Cycle 7 Observations Suspended Due to COVID-19
Mar 20, 2020

Delay of the Cycle 8 Proposal Submission Deadline
Mar 20, 2020

ALMA Cycle 8 Call for Proposals is Now OPEN!

More…

NAOJ News

Submillimeter-Wave Receiver Technology Workshop
Feb 04, 2020

ALMA deep surveys of legacy fields: lensing clusters, GOODS-S/HUDF, and beyond
Feb 04, 2020

The blind search for a hidden galaxy in an abundant line of sight; 1st workshop

More…

Status

Cycle 8 Call for Proposals
Cycle 8 Proposer's Guide
The Observing Tool

Refereed publications: 1814
Last observed source: ex_lup
Current configuration: C43-4

More...

Science Highlights - Measuring the Mass of the Supermassive Black Hole in NGC 3258 with ALMA

High-resolution ALMA observations hold the promise of measuring accurate dynamical masse
objects. In a 2019 paper, Dr. Boizelle and his collaborators make use of 0.1" resolution observ

Atacama Large Millimeter/submillimeter Array

ALMA Science Portal

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

Cycle 7 operations suspended

ALMA Cycle 7 Observations Suspended due to COVID-19

Mar 20, 2020

Due to the COVID-19 outbreak that has spread to Chile, the ALMA Director has made the decision to suspend science operations with ALMA, effective immediately. This decision has been taken to protect the safety of ALMA staff, many of whom travel long distances by bus and by plane to reach the remote ALMA site in the Atacama Desert in northern Chile.

A reduced staff will be retained at the Operation Support Facility (OSF) to maintain the safety of the ALMA equipment and infrastructure. All other staff will be working remotely for the immediate future. The plan is to continue providing data processing, data archive services, and ARC support, including the Cycle 8 Call for Proposals while external conditions allow it.

An announcement will be posted on the science portal when observations are resumed.

Please wait for the further notice about resuming the observations

Delay of the Cycle 8 Proposal Submission Deadline

The novel coronavirus COVID-19 continues to impact the global community. As such, the ALMA Director, along with the regional partners, have decided **to delay the proposal deadline for the ALMA Cycle 8 Call for Proposals to NO EARLIER than 1500 UT on 19 May, 2020**.

The Regional ARCs have adjusted working conditions to support the Cycle 8 Call and, as of now, can provide support to their communities.

As we continue to monitor the conditions worldwide, we will assess the feasibility of this deadline and provide additional updates to the community as needed. **The next update to the community will be provided NO LATER than 21 April, 2020** on the status of the call and the support for the scientific community at the ARCs.

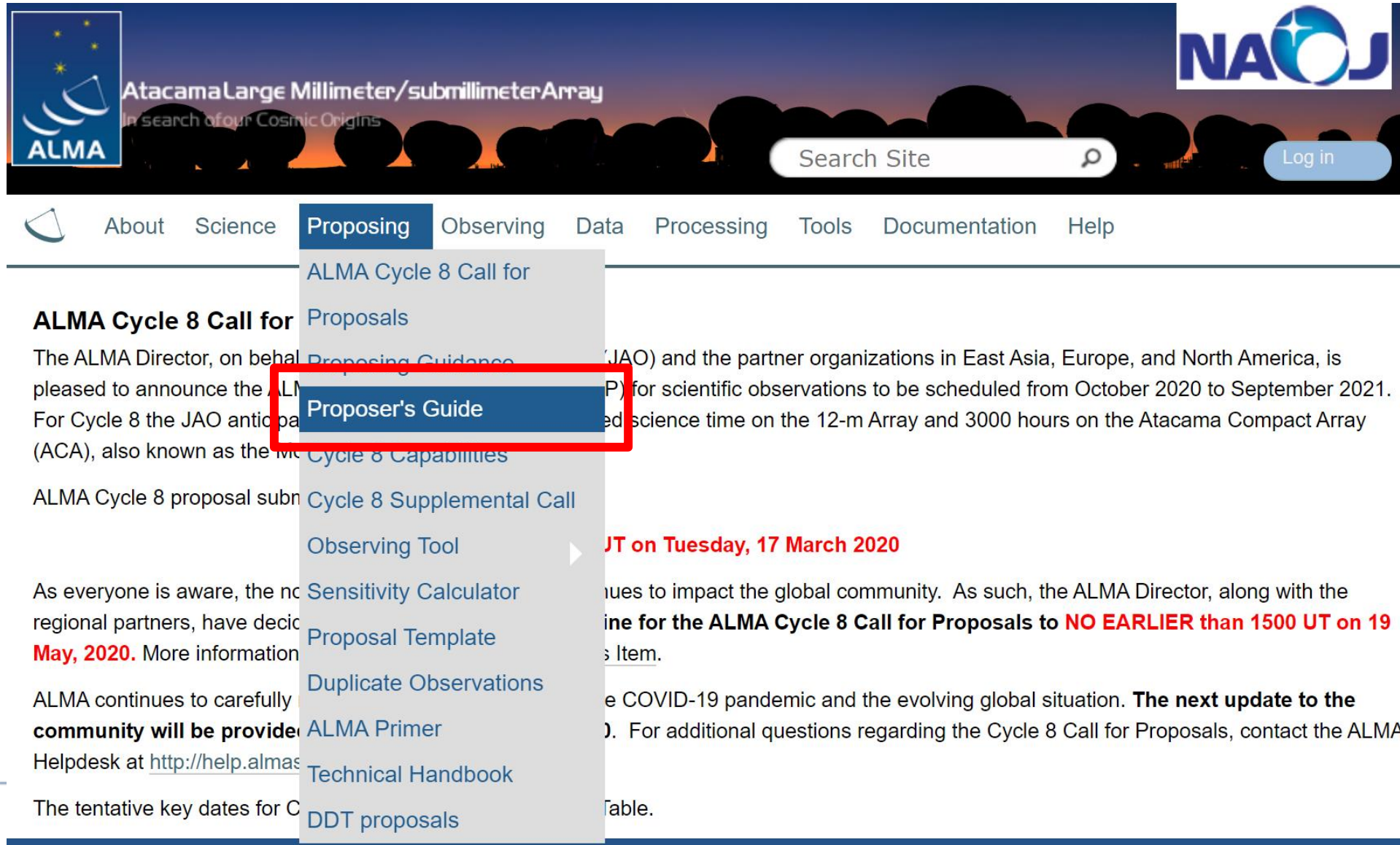
… We want to continue to hear your concerns (**please submit Helpdesk tickets**) and will take the appropriate action to address them. It's important now to consider the health and well-being of yourself and those around you – that should be the primary focus as we navigate through these stressful times.

Tentative schedule

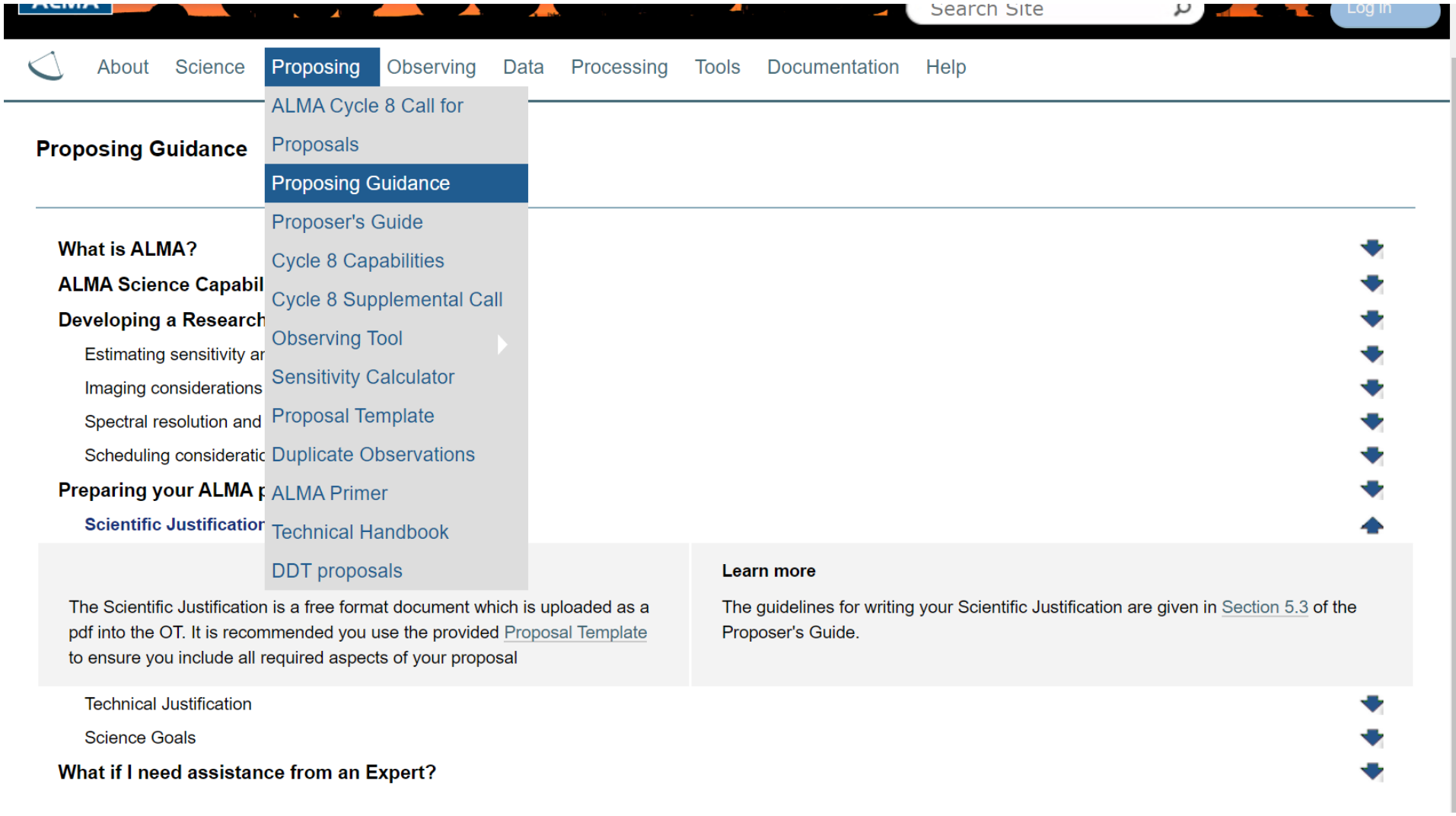
Still very uncertain

Date	Milestone
17 March 2020 (15:00 UT)	Release of Cycle 8 Call for Proposals, Observing Tool, and supporting documents and opening of the Archive for proposal submission
NO EARLIER than 1500 UT on 19 May, 2020	Proposal submission deadline for Cycle 8 proposals
End of July 2020	Announcement of the outcome of the proposal review process process
9 September 2020	Deadline for submission of Phase 2 material for Cycle 8 accepted proposals
October 2020	Start of ALMA Cycle 8 science observations
September 2021	End of ALMA Cycle 8

The page you need to check



If you are not familiar with proposing to ALMA…



Another information source

Any changes, clarifications, or bugs that are discovered after the publication of Proposer's Guide will be documented here:

Knowledgebase:

What Cycle 8 proposal issues and clarifications should I be aware of before submitting my proposal?

Posted by Sarah Wood, Last modified by Sarah Wood on 20 March 2020 01:07 PM

This Knowledgebase article is a repository for information relevant to submission of Cycle 8 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 19 May, 2020 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 8 Call for Proposals

Items for planning Cycle 8 proposals

Delay of the Cycle 8 Proposal Submission Deadline

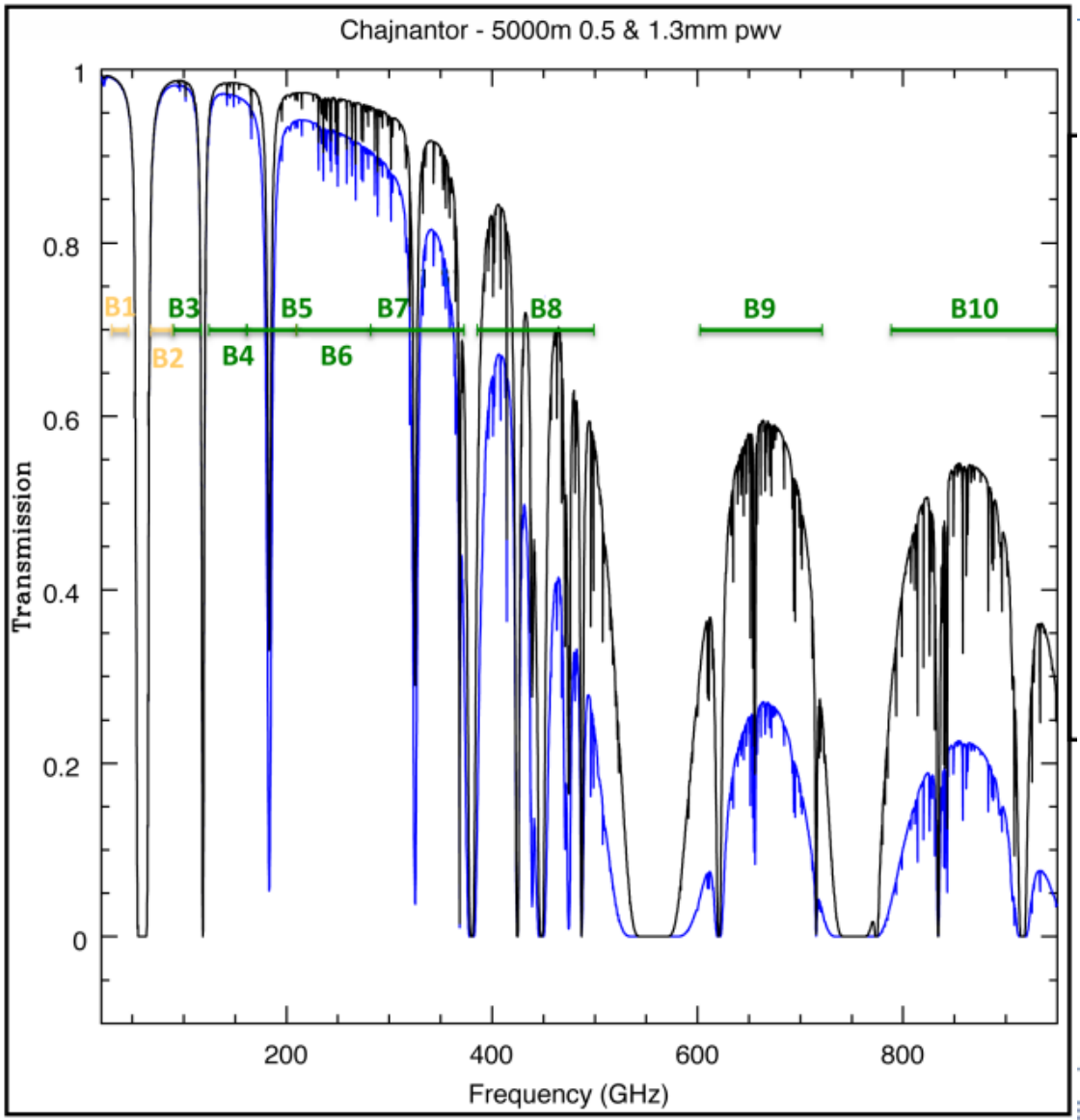
- The ALMA Proposal Review Process at Cycle 8 will use a dual-anonymous procedure. The guidelines for how to anonymize your proposal are online.

https://help.almascience.org/index.php?/Knowledgebase/Article/View/414
(link can be found in the Proposers Guide)

ALMA

- Interferometer consisting of 66 antennas
- Fifty 12m antennas → 12m Array
- Atacama Compact Array (ACA; Morita Array)
  - Twelve 7m (7m Arary)
  - Four 12m (Total Power, TP)

Bands (frequency, wavelength)



Cycle 8 Calls (current plan)

- Cycle 8: October 2020 to September 2021
- Supplemental call for ACA stand-alone: January 2021 – September 2021
- Main Call: 4300 hours for 12-m Array, at least 3000 for ACA each for 7-m and TP arrays
  - Grade C for ACA in the Main Call this time
- What you need to prepare
  - Observation planning (science goals, technical justifications…), proposal submission tool: Observing Tool (OT) → hands-on session by Nick
  - Scientific Justification: PDF attached to OT

Supplemental Call for ACA

useful to know for the proposal planning

Please be aware that the Call and the schedule are still uncertain.

1. Maximize the scientific output of the ACA by allowing more timely science to be proposed.
2. Distributed Peer Review System will be used.

   PI or a designated reviewer selected from among the co-Is of the proposal, will be responsible for reviewing 10 proposals

- The amount of observing time to be allocated during the ACA Supplemental Call will be determined later.
- Proposals that are scheduled for observation from the Cycle 8 supplemental CfP will be given a grade C observing priority.

15 September 2020	Release of CfP
8 October 2020	Proposal deadline

What's New

- Observing capabilities → Nagai-san's talk
- Dual Anonymous Review will start from Cycle 8
  - Please follow the writing guideline → Shimajiri-san's talk
  - Large Program needs to submit one-page management plan via email
- Web start is no longer available for OT → Nick's presentation
- Grade C as well as A and B will be assigned for projects including ACA in the Main Call (different from the previous cycle)
- Grade C as well as A and B can be assigned to time critical projects (not for ToO)
- TP-alone can be proposed with the combination of the 7-m array → see section A.1 in the Proposer's Guide
- DDT project will stay in the observing queue for 12 months from the approval

Proposal types and available time

The same proposal types as in the previous cycle will be accepted.

- Regular Proposals may request up to 50 hours of 12-m Array time or up to 150 hours of ACA stand-alone time.
- Regular Proposals may include all the available observing modes and may involve time-critical, multiple-epoch observations, and the monitoring of a target over a fixed time interval.
- Large Programs are proposals with an estimated execution time of >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.
- LPs should not involve time-critical or ToO observations, and may not involve full polarization measurements, Solar observations, VLBI, pulsar mode, or Astrometric observations.

Proposal types and available time

- Target of Opportunity (ToO) Proposals should be submitted for observations that can be anticipated but whose targets and/or time of observation are not known in advance. Like Regular Proposals, these proposals must be submitted by the Cycle 8 proposal deadline.
- ALMA mm-VLBI Proposals are made in concert with the Global Millimetre VLBI Array (GMVA) at 3 mm and the Event Horizon Telescope Consortium (EHTC) network at 1.3 mm. Up to 5% of available time.
- Up to 5% of the available time may be allocated to proposals submitted for Director's Discretionary Time.

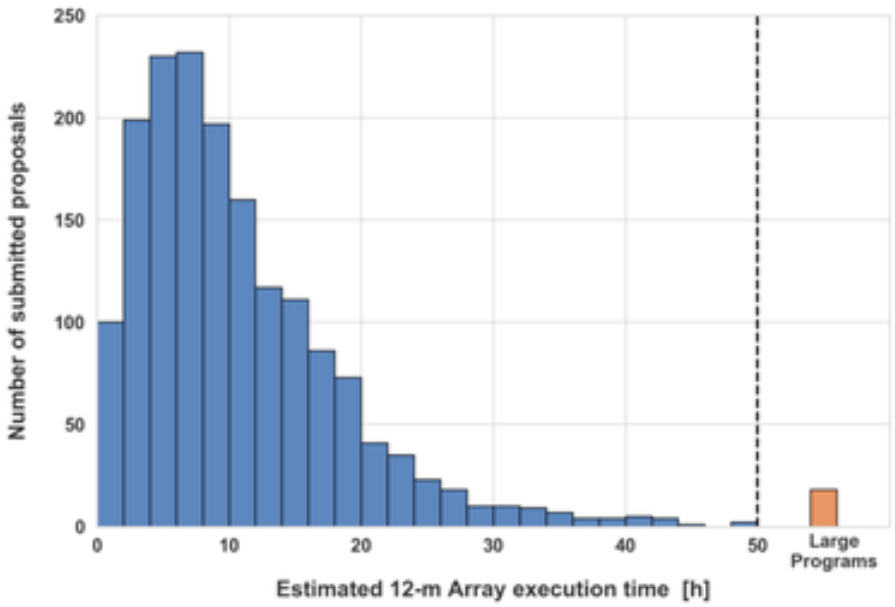
Proposal types and available time

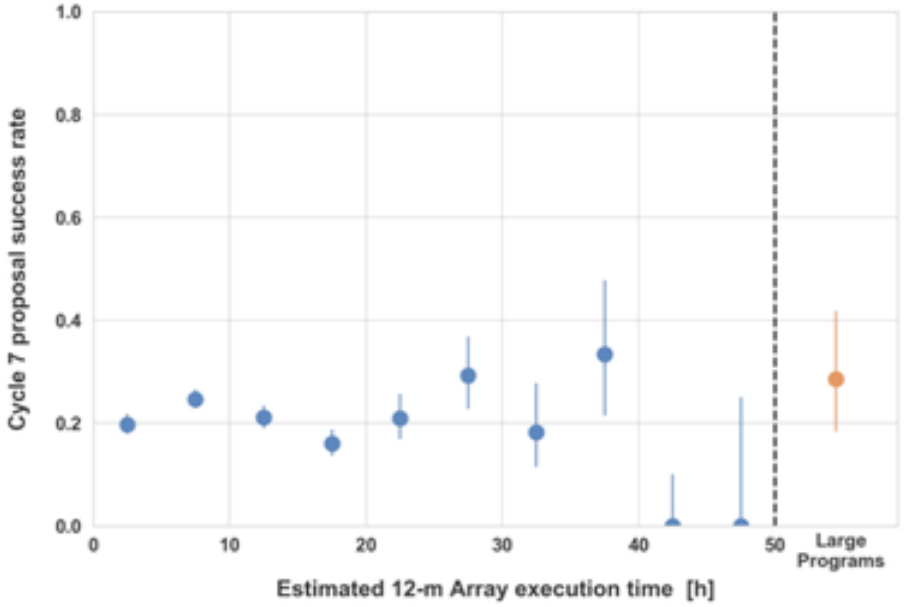
- There is no “non-standard” mode with the 20% cap of the available time. Good science can get time, regardless of standard or non-standard based on the past statistics.
- Please carefully check which observing mode is available for Large Program, ACA stand-alone etc.

→ Nagai-san will explain the observing capabilities for Cycle 8

Proposal types and available time

- Success rate is not so different at execution time of less than about 20 hours.





(Left) Number of proposals submitted as a function of the 12-m Array execution time in Cycle 7. (Right) The fraction of proposals (with 1σ confidence intervals) that are assigned priority Grade A or B as a function of the estimated 12-m Array time.

Scheduling consideration

Table A-1: Angular Resolutions (AR) and Ma

Config	Lmax		Band 3	Band 4
	Lmin		100 GHz	150 GHz
7-m	45 m	AR	12.5”	8.4”
	9 m	MRS	66.7”	44.5”
C-1	161 m	AR	3.4”	2.3”
	15 m	MRS	28.5”	19.0”
C-2	314 m	AR	2.3”	1.5”
	15 m	MRS	22.6”	15.0”
C-3	500 m	AR	1.4”	0.94”
	15 m	MRS	16.2”	10.8”
C-4	784 m	AR	0.92”	0.61”
	15 m	MRS	11.2”	7.5”
C-5	1.4 km	AR	0.54”	0.36”
	15 m	MRS	6.7”	4.5”

- Weather → Proposer’s Guide
- Angular resolution
  - PIs can request a range of resolutions. An extended range, spanning more than one configuration, will lead to an increased chance of observations.
  - If the PI selects a single value for the angular resolution or a range narrower than 20% around its centre value, a range of 20% around the single or centre value specified will be enforced.

PIs are strongly encouraged to think about the **range** of acceptable angular resolutions, considering the declination of their targets.

Starting in Cycle 7, the time-estimate dialogue in the OT will show the expected 2-D beam shape and maximum axial ratio based on observations near transit.

Scheduling consideration

- No C-9/10 in Cycle 8 is planned. The overall schedule may be modified depending on such as the proposal pressure in the different configurations. Pressure for LST → Proposer's Guide

Cycle 7

Start date	Configuration	Longest baseline	LST: Best conditions
1-Oct-19	C-4	0.78 km	22-10
20-Oct-19	C-3	0.50 km	23-11
10-Nov-19	C-2	0.31 km	1-13
30-Nov-19	C-1	0.16 km	2-14
20-Dec-19	C-2	0.31 km	4-15
10-Jan-20	C-3	0.50 km	5-17
1-Feb-20	No observations due to maintenance		
1-Mar-20	C-4	0.78 km	8-21
20-Mar-20	C-5	1.4 km	9-23
20-Apr-20	C-6	2.5 km	11-1
20-May-20	C-7	3.6 km	13-3
20-Jun-20	C-8	8.5 km	15-5
11-Jul-20	C-9	13.9 km	16-6
30-Jul-20	C-10	16.2 km	17-7
20-Aug-20	C-9	13.9 km	19-8
10-Sep-20	C-8	8.5 km	20-9

Cycle 8

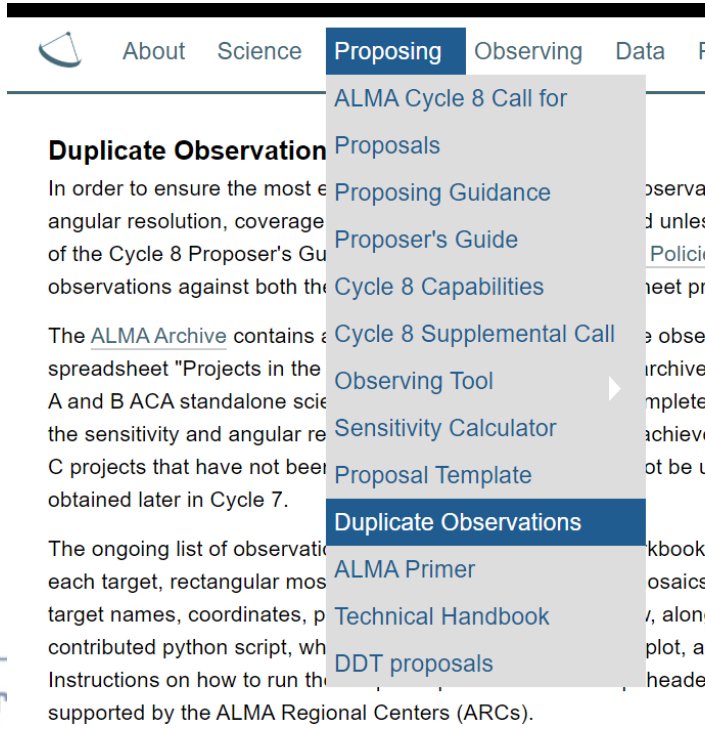
Start date	Configuration
1-Oct-20	C-8
20-Oct-20	C-7
10-Nov-20	C-6
1-Dec-20	C-5
20-Dec-20	C-4
10-Jan-21	C-3
1-Feb-21	No observation
1-Mar-21	C-1
26-Mar-21	C-2
20-Apr-21	C-3
10-May-21	C-4
31-May-21	C-5
23-Jun-21	C-6
28-Jul-21	C-5
18-Aug-21	C-4
10-Sep-21	C-3

Cycle 9

Start date	Configuration
1-Oct-21	C-3
20-Oct-21	C-2
10-Nov-21	C-1
30-Nov-21	C-2
20-Dec-21	C-3
10-Jan-22	C-4
1-Feb-22	No observations
1-Mar-22	C-4
20-Mar-22	C-5
20-Apr-22	C-6
20-May-22	C-7
20-Jun-22	C-8
11-Jul-22	C-9
30-Jul-22	C-10
20-Aug-22	C-9
10-Sep-22	C-8

Duplications

- Duplicate observations of the same location on the sky with similar observing parameters (frequency, angular resolution, coverage, and sensitivity) are not permitted unless scientifically justified. Detailed criteria of what constitutes a duplicated observation are specified in Appendix A of the Users' Policies.
- PIs are responsible for checking their proposed observations against both the ALMA Archive and the spreadsheet provided below to avoid duplicate observations.
- The proposal cover sheet contains a section where PIs can justify proposed duplicate observations.



Resubmissions

- Proposal teams that submit a Cycle 8 proposal to observe some or all the SGs of a currently active but unfinished project will have the relevant SGs identified as a "resubmission" by ALMA. A SG is deemed a resubmission if it constitutes a duplication of an active SG following the rules specified in Appendix A of the Users' Policies and the PI of the relevant Cycle 7 project is listed as a PI, co-I or co-PI of the corresponding Cycle 8 proposal or the Cycle 8 PI is listed as an investigator on the Cycle 7 proposal.
- The relevant portion of the Cycle 8 proposal will be cancelled if the observations are successfully completed in Cycle 7. Observations started in a previous cycle and accepted as a resubmission in Cycle 8 will continue to be observed with the setup of the previous cycle.
- A scientific justification must be provided if the proposers request one or more additional epochs of observations in Cycle 8 even if the Cycle 7 observations are completed. The APRC will decide if such resubmissions are accepted.

Proposal format

- Dual-anonymous proposal review will start from Cycle 8. This is to ensure that the proposal review process is as fair and unbiased as much as possible. PIs are responsible to anonymize their proposals. If PIs do not follow the guideline on how to write, their proposals will be rejected.

  Please do not be worried too much. Please do not completely or intentionally ignore the guideline.

→ Shimajiri-san will explain later.

Proposal format

- Large Programs management plan
  - A one-page PDF document to describe the management plan. This plan should include a schedule of work, a description of the roles of the proposal team, and a plan to disseminate the results, as well as available computing resources and an assessment of scheduling feasibility. This statement must be sent to the ALMA Proposal Handling Team (pht@alma.cl) by email and received before the proposal deadline. Proposers can include names and affiliations of investigators in this one-page document.
  - PIs of Large Programmes are encouraged to contact their corresponding ARC/ARC node to get help for estimating the needed resources.

Proposal format

- Page limits
  - Total length: 4 pages for Regular, ToO, Solar, mm-VLBI and DDT proposals, 6 pages for Large Programmes (A4 or US Letter format)
- Font size: no smaller than 12 points including figure captions, tables and references
  - The OT will check the font size of the PDF and issue an error during proposal validation if more than 15% of the text is smaller than 12 points. To submit the proposal, any problems with small fonts must first be fixed.
- Latex template is in the Science Portal and users can use it.

Proposal format

- Each proposal must describe the scientific importance of the proposed project and include a clear statement of its immediate observing goals. It is also recommended to provide a brief justification of the requested sensitivity and angular resolution, with full details provided in the Technical Justification.
- Proposers can simulate ALMA observations using different array components and configurations. Simulations are not required.
- Since proposal reviewers are selected with expertise that covers the various topics within a proposal category, the scientific justification should be written for a knowledgeable, but broad-based, audience.

Proposal evaluation and selection

- The JAO will take the recommendations of the APRC and form an observing queue based primarily on the scientific ranking from the APRC, also taking into account the scheduling constraints dictated by the configuration schedule and weather, the share of observing time for each region, and the time constraints on the proposal type.
- Up to 33% of the nominal time will be assigned to Grade A proposals and 67% to Grade B proposals.
- Grade C will be assigned to proposals for filler time to ensure that an adequate number of projects are available for all configurations and LST ranges in case the actual observing efficiency or weather conditions differ from expectations.

What's New

- Observing capabilities → Nagai-san's talk
- Dual Anonymous Review will start from Cycle 8
  - Please follow the writing guideline → Shimajiri-san's talk
  - Large Program needs to submit one-page management plan via email
- Web start is no longer available for OT → Nick's presentation
- Grade C as well as A and B will be assigned for projects including ACA in the Main Call (different from the previous cycle)
- Grade C as well as A and B can be assigned to time critical projects (not for ToO)
- TP-alone can be proposed with the combination of the 7-m array → see section A.1 in the Proposer's Guide
- DDT project will stay in the observing queue for 12 months from the approval