

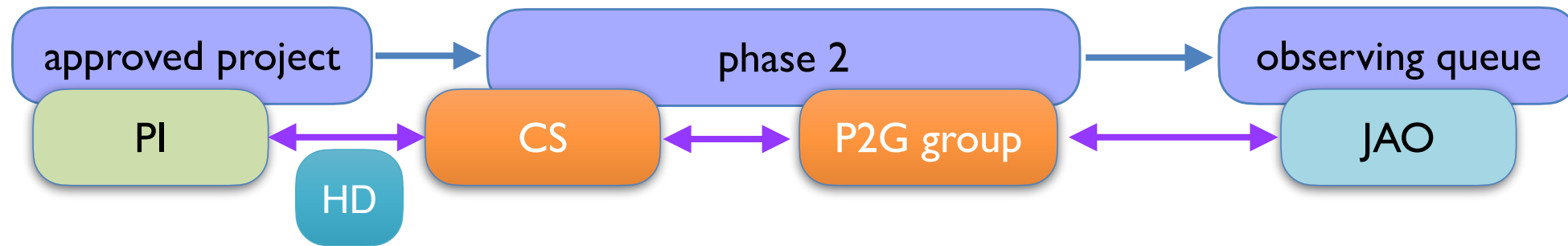
From scheduling and Phase 2 generation viewpoints

Yu-Ting Wu (EA ARC)
and Phase 2 Generation Group in EA



What is Phase 2?

- Once a project has been approved for scheduling, the project passes into Phase 2.



- Each approved project will be assigned an ALMA Contact Scientist (CS).
- A project Helpdesk (HD) ticket will be opened on behalf of the PI for communication with the CS and others.
- ALMA staff will generate the Scheduling Blocks and, in case of problems, will contact the CS and the PI. If no problems are found, the project will be submitted to the ALMA observing queue to await execution at the telescope.





Why we care about scheduling and Phase 2 generation?

- Various aspects of a proposed observation such as weather conditions or requested angular resolution and Largest Angular Structure (LAS) may affect when an observation is scheduled.
- Maximize the completion of our projects!





Considerations

- Section 4.3 and 4.4 of the ALMA Cycle 9 Proposer's Guide
- Weather
 - Band 9 and 10 observations will be scheduled during the LST ranges given in the fourth column.
 - Bands 7 and 8 observations outside of those LST ranges is limited

Table 2: Planned 12-m Array Configuration Schedule for Cycle 9

Start date	Configuration	Longest baseline	LST for best observing conditions
2022 October 1	C-3	0.50 km	~ 22—10 h
2022 October 20	C-2	0.31 km	~ 23—11 h
2022 November 10	C-1	0.16 km	~ 1—13 h
2022 November 30	C-2	0.31 km	~ 2—14 h
2022 December 20	C-3	0.50 km	~ 4—15 h
2023 January 10	C-4	0.78 km	~ 5—17 h
2023 February 1	<i>No observations due to maintenance</i>		
2023 March 1	C-4	0.78 km	~ 8—21 h
2023 March 20	C-5	1.4 km	~ 9—23 h
2023 April 20	C-6	2.5 km	~ 11—1 h
2023 May 20	C-7	3.6 km	~ 13—3 h
2023 June 20	C-8	8.5 km	~ 15—5 h
2023 July 11	C-9	13.9 km	~ 16—6 h
2023 July 30	C-10	16.2 km	~ 17—7 h
2023 August 20	C-9	13.9 km	~ 19—8 h
2023 September 10	C-8	8.5 km	~ 20—9 h

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

During the cycle...

Configuration Schedule
Cycle 8 2021 - by Block

Block	Start date	End date	min - max baseline (m)	beam ¹ (")	maximum recoverable scale ¹ (")
1	2021-10-01	2021-10-10	110-8500	0.096"	1.4"
2	2021-10-11	2021-10-20	110-8500	0.096"	1.4"
3	2021-10-18	2021-10-25	110-8500	0.096"	1.4"



Considerations

- Angular resolution
 - Whenever feasible, PIs are encouraged to enter a range spanning more than one configuration.

ALMA Observing Tool (Cycle 9 (Phase1)) - example

Project Structure: Unsubmitted Proposal, example, Planned Observing, ScienceGoal (example), General, Field Setup, Spectral Setup, Calibration Setup, Control and Performance, Technical Justification

Editors: Spectral, Spatial, Control and Performance

Configuration information

Antenna Beamsize ($1.13 \cdot \lambda / D$) 12m 50.656 arcsec 7m 86.840 arcsec

Number of Antennas 12m 43 7m 10 TP 3

ACA 7m configuration Most compact 12m configuration Most extended 12m configuration

Longest baseline 0.049 km 0.161 km 16.197 km

Synthesized beamsize 10.987 arcsec 3.013 arcsec 0.037 arcsec

Shortest baseline 0.009 km 0.015 km 0.256 km

Maximum recoverable scale 58.686 arcsec 25.616 arcsec 0.441 arcsec

Desired Performance

Desired Angular Resolution (Synthesized Beam) Single Range Any Standalone ACA

1.00000 arcsec to 5.00000 arcsec

Largest Angular Structure in source 75.00000 arcsec

Desired sensitivity per pointing 0.50000 mJy equivalent to 1.8507 mK @ 5.00 " and 0.046267 K @ 1.00 "

Bandwidth used for Sensitivity User Frequency Width 10.00000 km/s

Override OT's sensitivity-based time estimate (must be justified) Yes No

Science Goal Breakdown: time estimate, clustering, beam and configurations Yes No

Simultaneous 12-m and ACA observations Yes No

Are the observations time-constrained? Yes No

Planning and Time Estimate

Note: The time in brackets is that required to reach the sensitivity. Operational requirements often mean that the actual observed time is longer, especially for mosaics. Please see the User Manual for more details.

Input Parameters

Requested sensitivity 0.5000 mJy

Bandwidth used for sensitivity 10.000 km/s

Representative frequency (sky, first source) 114.950 GHz

Estimated Total time for Science Goal 1.30 d

Cluster 1

Source Name	RA	Dec	Velocity
NGC1291	03:17:18.6000	-41:06:29.048	837.100 km/s

Possible Configuration Combinations

	12-m (1)	12-m (2)	7-m	TP	Nominal Beam(")	Max expected axial ratio
C-1	None	Yes	Yes	Yes	2.867 x 3.166	1.5
C-2	None	Yes	Yes	Yes	1.948 x 2.152	1.5
C-3	None	Yes	Yes	Yes	1.17 x 1.357	1.5

Input Parameters

Precipitable water vapour (all sources) 5.186mm (7th Octile)

Time required for 12m (1) [C-3]

Time on source per pointing (first source) 2.82 h [2.79 h]

Total number of pointings (all sources) 1

Number of tunings 1

Total time on source 2.82 h [2.79 h]

Total calibration time 1.24 h

Other overheads 15.07 min

Total time for 1 SB execution 1.08 h

Number of SB executions 4

Close



Considerations

- Duplications
 - Duplicate observations of the similar location on the sky with similar observing parameters (frequency, angular resolution, coverage, and sensitivity) are not permitted unless scientifically justified.

The screenshot shows the ALMA website interface. At the top, the ALMA logo and the text "Atacama Large Millimeter/submillimeter Array" are visible. Below the logo is a navigation bar with the following items: About, Science, Proposing, Observing, Data, Processing, Tools, Documentation, and Help. The "Proposing" item is highlighted with a red box. A dropdown menu is open under "Proposing", listing several options: ALMA Cycle 9 Call for Proposals, ALMA Proposal Review, Proposing Guidance, Cycle 9 Proposer's Guide, Cycle 9 Capabilities, Observing Tool, Sensitivity Calculator, ALMA Primer, Technical Handbook, Proposal Template, and Duplicate Observations. The "Duplicate Observations" option is also highlighted with a red box. The main content area shows the "Duplicate Observations" page, which includes text explaining that duplicate observations are not permitted unless scientifically justified. A red box highlights the "Projects in the Queue (CSV text file)" link in the bottom right corner of the page.





Considerations

- Duplications
- Criteria

ALMA Users' Policies

A. Appendix: Definition of a Duplicate Observation

A proposed observation is considered a duplicate of another observation if *all* of the following conditions are met:

Target field location

- For single-field interferometry, the proposed position coincides within the half-power beam width of the other observation. Moving objects (e.g., Solar System objects) will be identified by name.
- For mosaic observations, more than 50% of the proposed pointings are within the half power beam width area covered by the other observation.

Angular Resolution

- The proposed angular resolution differs by a factor of ≤ 2 from the other observation.

Spectral windows

- Continuum: The requested sensitivity (rms) for the aggregate bandwidth is better by a factor of ≤ 2 from the other observation and the requested frequency is within a factor of 1.3.
- or –
- Spectral line: If the central frequency in any requested correlator window observed in Frequency Division Mode (FDM) mode is encompassed by the other observation observed in FDM mode and the sensitivity per spectral channel, after smoothing to the same spectral resolution, is better by a factor of ≤ 2 .

To be considered a “continuum” observation, the proposed correlator setup must contain 2 or more windows with a bandwidth > 1.8 GHz.

Solar observations will not be checked for duplications.

Project Structure

- Proposal
- Program
- Unsubmitted Proposal
 - example
 - Proposal
 - Planned Observing
 - ScienceGoal (example)
 - General
 - Field Setup
 - Spectral Setup
 - Calibration Setup
 - Control and Performance
 - Technical Justification

Editors

Spectral | Spatial | Proposal

Select PI | Add CoPI | Add Col | Remove Collaborator

Reviewer Information

Please designate a reviewer who will participate in the distributed review process. The reviewer may be the PI of the proposal or one of the other investigators. A student (without a PhD) may serve as the reviewer only if they are the PI of the proposal and a mentor (with a PhD) is identified. The mentor does not need to be an investigator on the proposal.

Reviewers are requested to update their user profiles with combinations of scientific categories and keywords which describe their area(s) of expertise using the new 'Expertise' tab in <https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>. Available expertise information will be used in the distribution of proposal assignments.

Reviewer has a PhD? No Yes

Science Case

Please ensure that your science case is properly anonymized following instructions on the Science Portal

Science Case (Mandatory, PDF, 4 pages max.)

Duplicate observations

Briefly justify any new observations that duplicate archival data or accepted programs. Information regarding the ALMA Duplication Policy and how to search archival data and accepted programs can be found at: <http://almascience.org/proposing/duplications>.





Considerations

- Resubmission
 - Proposal teams that submit a Cycle 9 proposal to observe some or all the SGs of an unfinished project will have the relevant SGs identified as a “resubmission”.
 - Criteria: Appendix A of the Users’ Policies
 - Policies (Section 4.4.2 of the ALMA Cycle 9 Proposer’s Guide):
For resubmissions, the relevant portion of the Cycle 9 proposal will be cancelled if the observations are successfully completed in the previous cycle(s).
Observations started in the previous cycle(s) and accepted as a resubmission in Cycle 9 will continue to be observed **with the setup of the previous cycle(s)**.





Considerations

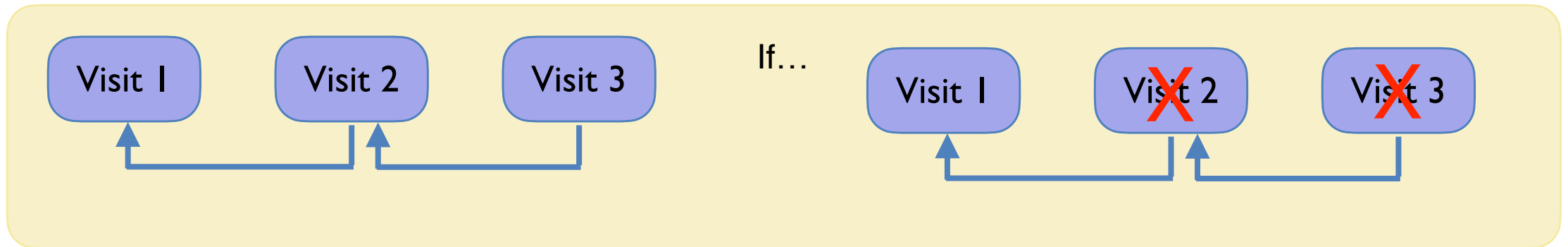
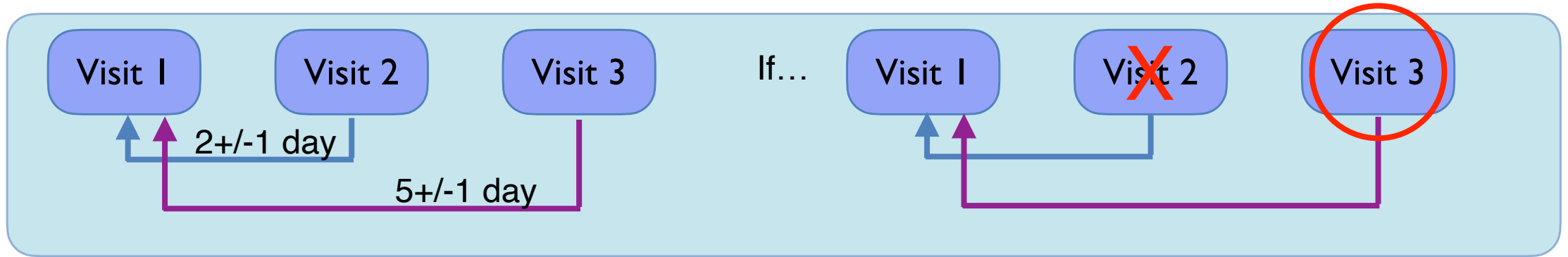
- Special cases
 - TP only observations?
 - Section A.3 of the ALMA Cycle 9 Proposer's Guide
 - The TP Array cannot be requested in a standalone mode using the OT. **However**, if a user has **existing 7-m Array data** through their own program or through archival data, but now realizes that TP Array data are needed to obtain short spacings, **they can submit a proposal requesting both the 7-m Array and TP Array.**
 - The proposal **should indicate that only the TP Array is needed** and that the 7-m Array should be descoped if the proposal is accepted. This option is available only if the 7-m Array data have already been obtained.





Considerations

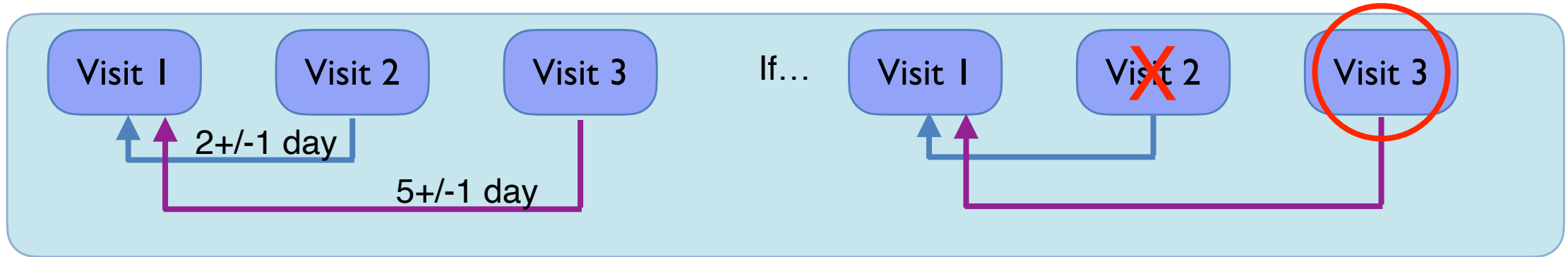
- Time constrained and multiple visits observation





Considerations

- Time constrained and multiple visits observation



Please specify the arrangement of visits for your observation.

Visits can either be for a specific date or relative to a previous visit.

The first visit can be defined as having an arbitrary start date/time

Visits specified : 3

Visit Constraints (UTC)

Visit 1 : Arbitrary start

Visit 2 : To be scheduled 2.0 d after visit 1 with a margin of ± 1.0 d

Visit 3 : To be scheduled 5.0 d after visit 1 with a margin of ± 1.0 d

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ALMA Science

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Face to Face Visit

Arrange a visit

