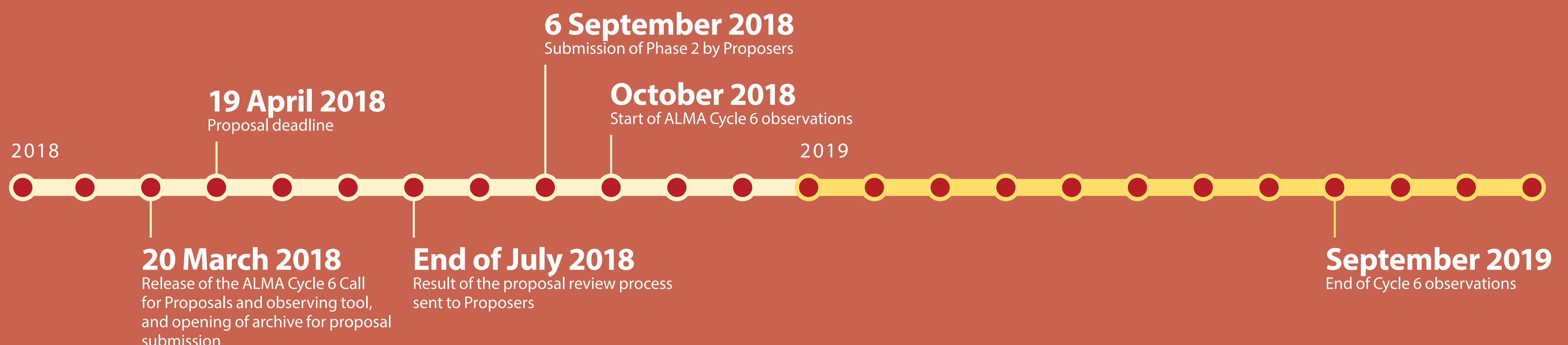


ALMA Cycle 6

The Joint ALMA Observatory (JAO) will start the next cycle of observing (Cycle 6) in 2018. A Call for Proposals with detailed information on Cycle 6 will be issued in March 2018, with a deadline for proposal submission in April 2018. This pre-announcement highlights aspects of the Cycle 6 proposal call that are needed to plan proposals.

ALMA Cycle 6 will start in early October 2018 and span 12 months. It is anticipated that 4000 hours of 12-m Array time will be available for successful observations of approved projects, and 3000 hours will be available on the Atacama Compact Array (ACA), also known as the Morita Array.

KEY DATES



PROPOSAL TYPES

Cycle 6 will offer the same proposal types as in Cycle 5.

Regular Proposals may request up to 50 hours of 12-m Array time or up to 150 hours of ACA stand-alone time.

In the previous cycle, the requested time of the majority of proposals was between 2 and 10 hours of 12-m Array time. However, the success rate of proposals was roughly constant up to at least 30 hours of requested 12-m Array time. ALMA continues to encourage the community to submit more Regular Proposals that request over 10 hours of 12-m Array time.

The Cycle 6 configuration schedule is ideal for long baseline observations in the Chilean winter. A number of performance enhancements have been made to improve high-frequency observations.

Large Programs may request more than 50 hours of 12-m Array time or more than 150 hours of ACA stand-alone time. Up to 600 hours of 12-m Array time and 450 hours of ACA stand-alone time will be allocated to Large Programs. Only standard observing modes are permitted for Large Programs.

Proposals will be accepted for Very Long Baseline Interferometry (VLBI) observations with ALMA in Bands 3 and 6 (wavelengths 3 mm and 1.3 mm) in the continuum only. ALMA VLBI observations will be made in concert with an existing VLBI network: the Global mm-VLBI Array (GMVA) at 3 mm and the Event Horizon Telescope Consortium (EHTC) network at 1.3 mm. In addition to submitting an ALMA proposal, proposers of 3-mm VLBI observations must have also submitted a proposal to the GMVA by its 1 February 2018 deadline.

ANTICIPATED CAPABILITIES

Detailed information on the capabilities in Cycle 6 will be published in the Call for Proposals. The anticipated capabilities include:

Number of antennas

- At least forty-three (43) antennas in the 12-m Array
- At least ten (10) 7-m antennas (for short baselines) and three (3) 12-m antennas (for making single-dish maps) in the ACA

Receiver bands

- Receiver bands 3, 4, 5, 6, 7, 8, 9 and 10 (wavelengths of about 3.1, 2.1, 1.6, 1.3, 0.87, 0.74, 0.44 and 0.35 mm, respectively)

12-m Array Configurations

- Maximum baselines for the antenna configurations will vary from 0.16 km to 16 km; the planned configuration schedule was released on 1 February 2018 and will be published in the Proposer's Guide
- Maximum baselines of 3.6 km for Bands 8, 9 and 10
- Maximum baselines of 8.5 km for Band 7
- Maximum baselines of 16 km for Bands 3, 4, 5 and 6

- Files containing representative antenna configurations for both the 12-m and 7-m Arrays suitable for CASA simulations were made available on the ALMA Science Portal on 1 February 2018.

Spectral line, continuum, and mosaic observations

- Spectral line and continuum observations with the 12-m Array and the 7-m Array in all bands
- Single field interferometry (all bands) and mosaics (Bands 3 to 9) with the 12-m Array and the 7-m Array
- Single dish spectral line observations in Bands 3 to 8

Polarization

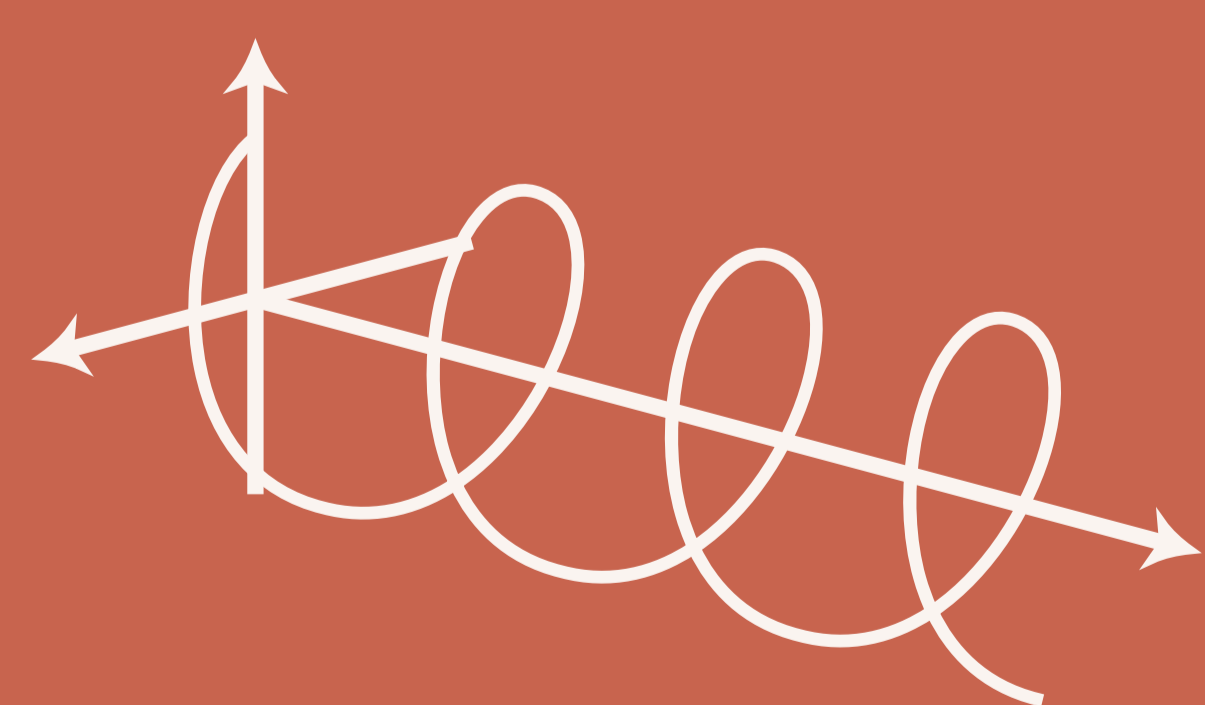
- Single pointing, on-axis, full linear and circular polarization for continuum and full spectral resolution observations in Band 3, 4, 5, 6 & 7 on the 12-m Array.
- The field of view of linear and circular polarization observations is limited to the inner 30% (for linear) and 10% (for circular) of the primary beam
- The expected minimum detectable degree of linear polarization, defined as three times the systematic calibration uncertainty, is 0.1% (1%) for compact sources and 0.3% (3%) for extended sources respectively, where

the values in brackets refer to spectral line modes. The minimum detectable degree of circular polarization is 1.8%.

- Cycle 6 observing modes will be classified as standard or nonstandard. Standard modes have been well characterized and the observations are calibrated with the ALMA data reduction pipeline. Non-standard modes are not as well characterized and require manual calibration by ALMA staff. Up to 20% of the observing time in Cycle 6 will be allocated to proposals requesting non-standard modes, which include:

- Band 9 and 10 observations
- Band 7 observations with maximum baselines > 5 km
- All polarization observations
- Spectral scans
- Bandwidth switching projects (less than 1GHz aggregate bandwidths over all spectral windows)
- Solar observations (Bands 3 and 6)
- VLBI observations
- User-specified calibrations
- Astrometric observations

NEW OPPORTUNITIES IN CYCLE 6



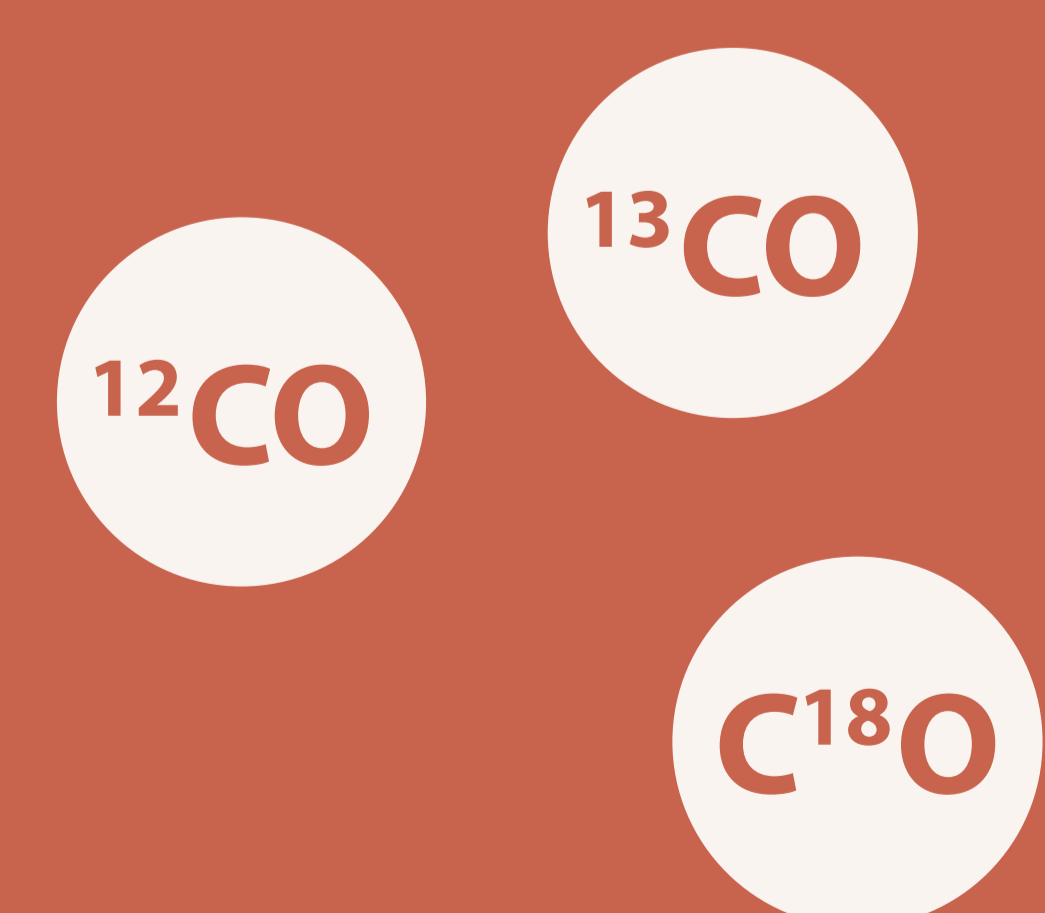
CIRCULAR POLARIZATION



SIMULTANEOUS 12M + ACA OBSERVATIONS



BAND 8 STANDALONE ACA



BAND 6 IF EXTENSION