

CALL FOR PROPOSALS

GLOBAL 3mm VLBI ARRAY

Deadline: 1 February 2022

VLBI proposals for observing at 3mm wavelength (86 GHz) using: the VLBA, GBT*, EFFELSBERG, PICO VELETA, NOEMA, ONSALA, METSAEHOVI, YEBES and KVN telescopes should be submitted by

1 FEBRUARY 2022 (UT 22:00)

Successful proposals will be considered for scheduling in GMVA Session II 2022 (6-11 October) or in a later session.

SEE ALSO THE SECTION BELOW REGARDING PROPOSALS FOR GMVA OBSERVATIONS TOGETHER WITH PHASED-ALMA IN ALMA CYCLE 9

**ALL PROPOSALS SHOULD BE SUBMITTED USING
THE NRAO PROPOSAL SUBMISSION TOOL (PST):
<https://my.nrao.edu>**

In order to maximize the sensitivity for continuum observations the GMVA will record at the highest bitrate which instrumentation and resources permit. Currently all telescopes will record at 4 Gbps. All data will be correlated at the Bonn DiFX software correlator.

* The Green Bank Telescope (GBT) may be included in GMVA observations if a sufficiently compelling justification is given in the proposal but the amount of time available will be reduced compared to earlier observing semesters, and observing blocks greater than 6 hours will be very difficult to schedule.

* The Atacama Large Millimeter/submillimeter Array (ALMA), the Korean VLBI Network (KVN), or the Greenland Telescope (GLT) must be specified by entering "ALMA", "KVN" or "GLT" as "Other" entries in the PST.

For further details on proposing, including the possibility of additional support observations at 7mm (43 GHz), please consult the administrative and technical information hosted at the MPIfR:

<http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm>

PARTICIPATION OF ALMA IN GMVA OBSERVATIONS IN ALMA CYCLE 9

It is expected that phased ALMA will participate in some GMVA observations during ALMA Cycle 9 (Oct. 2022 - Sept. 2023). Please look for the ALMA Cycle 9 pre-announcement:

<https://almascience.eso.org/news/alma-cycle-9-pre-announcement>

There are likely to be ~43 ALMA antennas available in Cycle 9 but the phased sum used for VLBI will be formed only from those that lie within a circle of radius 0.5 km (or less, depending on atmospheric conditions).

Observations together with ALMA in Cycle 9 will only be possible in one session. GMVA session dates for 2023 are not yet fixed but Session I 2023, which is traditionally in the period March-May, should provide an opportunity for GMVA+ALMA observing. Currently the dates for GMVA observations together with ALMA in Cycle 9 have not yet been fixed.

Spectral-line observations jointly with ALMA are now possible.

Any new GMVA proposal requesting phased ALMA during Cycle 9 must be submitted via the NRAO PST at the 1 February 2022 deadline.

Proposers should:

- specify "ALMA" in the Other Stations text field in the PST
- select the default GMVA 3mm observing mode of 4 Gbps, dual polarization.
- specify the amount of time and GST range(s) needed for ALMA separately, either in Session Constraints or Comments, or in the Technical Justification.

A separate proposal to ALMA must also be submitted at the deadline for ALMA Cycle 9 proposals in April 2022. The text of this proposal need not be identical to that for the GMVA but the overall scientific justification should be the same. Note that the ALMA proposal should be anonymized due to their dual-anonymous refereeing procedure.

Restrictions on GMVA+ALMA proposals in ALMA Cycle 9

GMVA observations with ALMA will be limited to a fixed recording mode, which currently provides 4 Gbps on all baselines.

Direct phasing up of the ALMA array is limited to sources with a correlated flux density of >500 mJy within an unresolved core on ALMA baselines of up to 1 km. Direct phasing-up on the target source ("active" phasing) thus limits the strength of the target.

For weaker sources (<500 mJy), ALMA offers the option of "passive" phasing. In this mode, the ALMA array is periodically phased up on a bright calibrator source close in angular distance to the science target. There will be no restrictions on the flux density of science targets using passive phasing (aside from SNR considerations on VLBI baselines). However, the phasing calibrator properties must meet the same criteria as for actively phased observations, and it is recommended that the calibrator lie within an angular separation of no more than 5 degrees from the science target.

Proposers must specify any such calibrator in their proposal; consult the ALMA calibrator catalogue: <https://almascience.eso.org/sc/>

In order to make a clean linear-to-circular polarisation transformation of ALMA recordings, any target source must be observed for a duration of at least 3h (breaks for calibrators permitted) to sample a range of parallactic angles.

Large Programs (>50 hours of observing time) are not permitted because phased ALMA is a non-standard mode.

No long-term programs may be proposed, and no proposals will be carried over into the next cycle.

There is a cap for VLBI of 5% of ALMA Cycle 9 observing time. As time for GMVA observations will thus be scarce, proposals should include a quantitative justification as to why ALMA is essential for the goals of the project.