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European VLBI Network
Call for Proposals
Deadline: 1 June 2025 16:00 UTC

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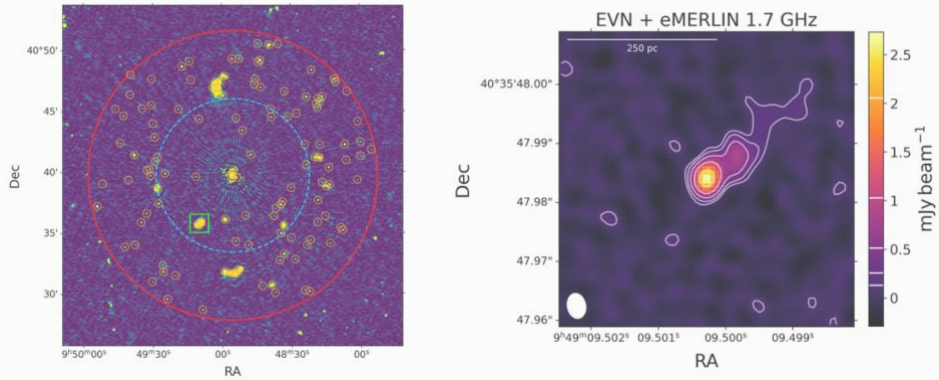
Observing proposals are invited for the European VLBI Network (EVN). The EVN facility is open to all astronomers, but currently restrictions apply to PIs and co-Is with affiliation to institutes in the Russian Federation or Belarus. Astronomers with limited or no VLBI experience are particularly encouraged to apply for observing time. Student proposals are judged favourably.

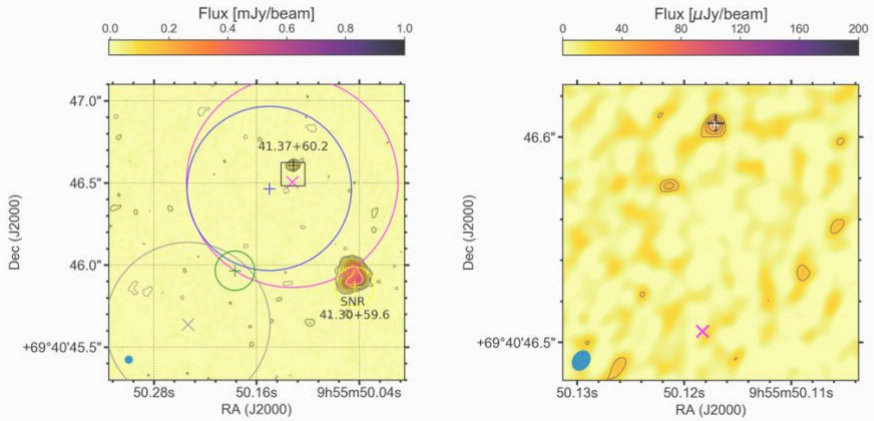
Support with proposal preparation, scheduling, correlation, data reduction and analysis can be requested from the Joint Institute for VLBI ERIC (JIVE).

Synoptic Wide-field EVN–e-MERLIN Public Survey (SWEEPS)



High angular resolution and sensitivity VLBI offers a unique tool to identify and study active galactic nuclei and star-formation activity over cosmic time. SWEEPS is a proposed commensal observing mode for the EVN and e-MERLIN, where single-target principle investigator-led observations are re-correlated at the position of known radio sources within 12 arcmin of the pointing centre. Left: 144 MHz LOFAR LOTS DR2 field around a calibrator in the EVN-e-MERLIN project EM160. The green box shows the re-processed area. Right: Proof-of-concept EVN-e-MERLIN image of SWEEPS J094909+403548, a 5.6 mJy core-jet source at 1.7 GHz. Herbé-George et al. (2025), MNRAS, 537, L49

e-MERLIN & EVN detection of the ultraluminous X-ray source M82 X-1



Ultra-luminous X-ray sources (ULXs) are X-ray bright extra-galactic objects that are powered by either neutron stars, or stellar or intermediate-mass black holes (IMBHs) but few have been detected in the radio waveband. Deep e-MERLIN (left) and zoomed-in EVN (right) images show 41.37+60.2, a variable radio counterpart to M82 X-1, which is a strong IMBH candidate. The best X-ray position is indicated with a magenta 'x'. Williams-Baldwin et al. (2025), arXiv:2504.18217

Highlights from the EVN PC Chair:

☛ *Regular (non-triggered) e-VLBI projects, requiring observations in the e-EVN sessions are particularly welcome - all science cases are eligible for e-VLBI observations! The e-EVN offers a reduced turnaround time, particularly useful for transient or student projects, or for topical science themes. Considering the pressure on the three main disc-recording EVN sessions, note that any project may be scheduled in an e-EVN run, regardless of whether real-time-correlation was requested by the proposers or not.*

☛ *When proposals are submitted as a continuation of a previously approved project, results from earlier EVN runs must be concisely described. The usual page limits apply (2 pages for the science and technical justification with minimum 11pt font size, and up to 2 pages for figures and tables)!*

☛ *The lifetime of a trigger proposal is one year. If different teams trigger their proposals on the same source, the project with the highest grade will be observed. If they have the same grade, the teams share the data as long as the strategies match. When strategies diverge each proposal gets triggered independently, if possible. Triggers may be considered for EVN-lite subarray observations on a best-effort basis for projects requiring a small number of stations, preferably in the 18-21cm band. Note that the EVN-lite triggers must be received by 8:00 UT 3 days before the observations. Teams interested in proposing an EVN-lite background project should consult the EVN PC Chair <evnpc@jive.eu>.*

The EVN is a Very Long Baseline Interferometry (VLBI) network of radio telescopes operated by an international consortium of institutes. The antennas forming the EVN are located primarily in Europe, Asia, and South Africa. The EVN provides very high sensitivity images at angular scales of (sub-)milliarcseconds in the radio domain. EVN proposals may also request **joint e-MERLIN and EVN observations** for an improved uv-coverage at short spacings, significantly increasing the largest detectable angular size to arcsecond scales. Further improvement of the uv-coverage may be achieved in **global VLBI observations**, in which the EVN observes jointly with NRAO/GBO telescopes (VLBA/GBT/VLA). Joint observations with the Australian Long Baseline Array are possible as well, but these require separate proposals to both arrays.

EVN observations may be conducted in disk recording mode (standard) or in **real-time correlation (e-VLBI), which guarantees a rapid turnaround**. Standard EVN observations are available at wavelengths 92, 21/18, 13, 6, 5, 3.6, 1.3 and 0.7 cm. e-VLBI observations can be performed at 21/18, 6, 5, and 1.3 cm. e-MERLIN can be combined with the EVN in both standard and e-VLBI observations. Global observations can only be performed in standard observations (*not* e-VLBI). Every year standard EVN observations occur during three sessions of approximately 21 days each. Further ten separate days are available for e-VLBI observations. Proposals can be submitted for the following main classes of observations:

- **Regular proposals:** standard EVN (disk recording), e-VLBI and Out-of-Session observations, which may include large proposals, trigger proposals, global proposals, and proposals involving additional EVN/non-EVN antennas (including integrated e-MERLIN observations), and correlator-only proposals.

- **Target of Opportunity (ToO) proposals:** for time-critical projects targeting, e.g. transient phenomena.

- **Short Observation requests:** these are primarily intended for checking calibrators or testing a calibration strategy, and are not intended for science.

The deadlines for proposal submission are on 1 February, 1 June and 1 October each year, except for ToO and Short Observation requests, which may be submitted any time. More information regarding the EVN capabilities, observing sessions, proposal guidelines, and user support can be found on the EVN website.

Trigger proposals are for a type of rapid response science observations in which a (class of) source(s) is expected to become active in the radio in the foreseeable future, and require immediate attention in case it happens. The triggering conditions (e.g., radio flux density level, entering to a specific X-ray spectral state etc.) must be clearly stated in the proposal. Trigger observations are primarily intended for e-VLBI days which guarantee rapid correlation, but activating proposals in EVN Sessions is possible if the proposing team requests it and it is judged favorably by the PC. Triggers will be possible for an EVN-lite subarray observing outside of the regular sessions during 2025. Therefore, trigger proposals must very carefully describe the minimum array requirements so that the EVN PC Chair and the EVN Scheduler can judge whether these can be met with an EVN-lite subarray. For details, see the **'Trigger observations**' section in the description of Regular proposals.

Large EVN observation proposals (>48 hrs) are encouraged by the EVN Programme Committee (PC). These will be subject to more detailed scrutiny on the feasibility of the proposal: the EVN PC may, in some cases, grant the observing time in tranches or attach conditions to the release of data. There is no upper limit to the amount of time that may be requested by an EVN large proposal (projects of more than one hundred hours have been granted in the past). Large proposals can also be proposed as global programmes (although proposers are advised to consider the different availability levels of VLBA, versus VLA and GBT, see 'Global VLBI proposals' below) and with the integration of e-MERLIN. Large projects involving several observing epochs will be asked for progress reports by the PC.

Proposal guidelines

All regular proposals should be submitted through the Northstar submission tool. For more information, please consult the Using the EVN page.

☛ *Note that by proposing to the EVN, the PI and their teams agree that basic information about their proposals (PI/contact author name, proposal title and abstract, proposed array and observing frequencies) may be listed at the EVN web pages to inform other users. This may help build new collaborations and avoiding unnecessary conflicts between projects.*

Proposals must include a Science & Technical justification (2 pages in total), and optionally, figures, tables and references (2 additional pages, which may be interleaved with the text). These sections shall be submitted as a single PDF document. The total length of this document is limited to 4 pages (A4 or US Letter format), with a font size no smaller than 11 pt. The EVN PC may decide to reject a proposal if these criteria are not met.

See specific guidelines for Regular proposals, ToO proposals and Short requests.

Questions regarding the proposal preparation can be sent to JIVE user support at usersupport@jive.eu. If you need assistance, please indicate that well in advance of the deadline.

Recording capabilities for the next standard EVN and e-VLBI Sessions

Disk recording at 2 Gbps is available at 6, 3.6, 1.3 and 0.7 cm; telescopes that cannot reach these rates will use the highest possible bit-rate (mixed-mode observation). See the EVN 2 Gbps recording status page for up-to-date information.

Disk recording at 4 Gbps is now available at 6, 3.6, 1.3 and 0.7 cm for a subset of antennas for a limited amount of time and on a best-effort basis for projects that may need it. Proposers are required to provide a strong technical justification for this mode of observing. Telescopes that cannot reach this data rate will use the highest possible bit-rate (mixed-mode observation). See the EVN 4 Gbps recording status page for the latest updates.

e-VLBI at 2 Gbps is available at 6 cm and 1.3 cm; telescopes that cannot reach this will use the highest possible bit-rate (mixed-mode observation). Please note that network traffic or outages might also impose total bit-rate limitations on a particular e-VLBI day. The current status is given in the 'Operational modes' section in the EVN capabilities page.

Observations at 18/21 cm in either disk-recording or e-VLBI are limited to a data rate of 1 Gbps due to bandwidth limitations. The choice of data rate should be clearly justified in the proposal.

Proposing for standard EVN observing sessions (disk recording)

Proposals received by 1 June 2025 will be considered for scheduling in Session 3, 2025 or later. Finalisation of the planned observing wavelengths will depend on proposal pressure and grade.

Upcoming standard EVN Sessions:

Year	Session	Dates
2025	Session 3	16 October – 6 November
2026	Session 1	26 February – 19 March
2026	Session 2	28 May – 18 June
2026	Session 3	15 Oct – 5 November

Proposing for e-VLBI observing days (real-time correlation)

e-VLBI experiments are carried out in 10 days spread over the year, outside of the regular EVN sessions. The correlation is done real-time, and the data are delivered to the proposers rapidly, which may be an advantage for rapid response science or science with temporal constraints (e.g., transients, astrometry, student projects, topical science themes). All science cases are eligible for scheduling in an e-EVN session; this even applies to projects for which real-time-correlation has not been requested.

e-VLBI projects are centrally scheduled at JIVE (using inputs from the PI) because several projects may be observed in a single session. Such an advanced user support makes e-VLBI ideal for less experienced users. Note that some observing modes, such as fast transient search, multi-phase centre observing and multi-pass correlation may require recording the raw voltage data at JIVE. Please contact the JIVE support scientists at usersupport@jive.eu in advance if you plan to request a non-standard observing mode for e-VLBI.

☛ *If multi-epoch e-VLBI observations are requested, proposals should indicate the range of temporal cadence the proposal could sustain. Note some of the epochs may be scheduled in reguar EVN sessions! Further details (e.g., on the available array) are given in the 'Operational modes' section in the EVN capabilities page.*

Successful proposals with an e-VLBI component submitted by the June 1 deadline will be considered for scheduling on the e-VLBI days starting from September 2025. Note that e-VLBI days are limited to a single observing frequency, which will be based on the *highest graded proposal*. The schedule (including observing frequency and the participating antennas) can be modified up to 08:00 UT on the day before the e-VLBI run starts.

Upcoming e-VLBI days (with optional extensions in case of a trigger/ToO proposal):

Year	**Begin Science Time 13:00 UTC**	**End Science Time 13:00 UTC**
2025	16 September	19 September
2025	7 October	10 October
2025	11 November	14 November
2025	9 December	12 December

Out-of-Session Observing

Out-of-Session observing time on user-specified dates (up to a maximum of 144 hours/year), is available for both disk recording and e-VLBI modes. Proposals requesting Out-of-Session observing time must provide full scientific (and technical, if appropriate) justification as to why observations must be made outside standard sessions.

Out-of-session observing will be scheduled in blocks of no less than 12 hours in duration (although proposals may request shorter observations), and occur no more than 10 times per year. Proposals should specify which dates/GST ranges are being requested and indicate the minimum requirement in terms of numbers of telescopes (and any particular telescopes).

Proposals will only be considered for dates occurring after the regular EVN session that follows the EVN proposal review.

Urgent observations requiring much shorter lead times should be submitted as Target-of-Opportunity proposals.

Availability of EVN antennas

The latest status of the EVN antennas can be found at https://www.evlbi.org/capabilities .

Until further notice, data from the **Quasar VLBI Network** antennas, operated by the Institute of Applied Astronomy in Russia, will not be used in joint observations. See the statement of the EVN Directors here: https://www.jive.eu/statement-evn-ukraine .

The **Medicina** dish is at present not available, due to the installation of the active surface on its primary mirror. Due to major maintenance, the **Noto** dish will only be partially available. Some devices are offered in shared-risk mode. The **Sardinia Radio Telescope** is in a high frequency upgrade phase. It is offered in "shared-risk" mode and with a limited number of receivers. For the current status of the telescopes in Italy, see https://www.radiotelescopes.inaf.it/info.html.

The **Tianma 65m telescope** (Tm65) is located about 6 km away from the 25 m Seshan Itelescope (Sh). The 2-letter abbreviation for Tm65 telescope is T6. Both of these telescopes can observe at 18, 13, 6, 5 and 3.6 cm. Tm65 can also observe at 21, 1.3 and 0.7 cm. Tm65 is the default telescope; Sh will be used if Tm65 is not available for some reason. If proposers select both, they should also discuss the motivation for the very short baseline in the proposal.

The **Korean VLBI Network** (KVN) is an Associate Member of the EVN. KVN telescopes may be requested for EVN observations at 1.3 cm and 7 mm wavelengths. For more details regarding the KVN, see: http://radio.kasi.re.kr/kvn/main_kvn.php .

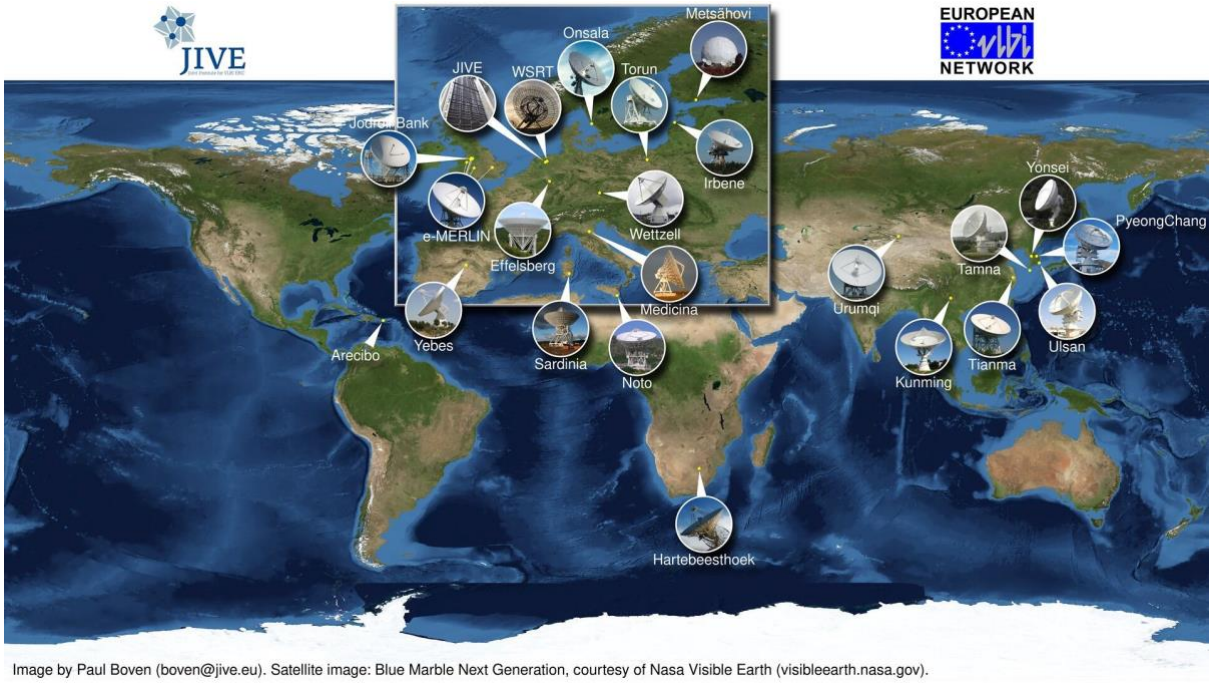


Image by Paul Boven (boven@jive.eu). Satellite image: Blue Marble Next Generation, courtesy of Nasa Visible Earth (visibleearth.nasa.gov).

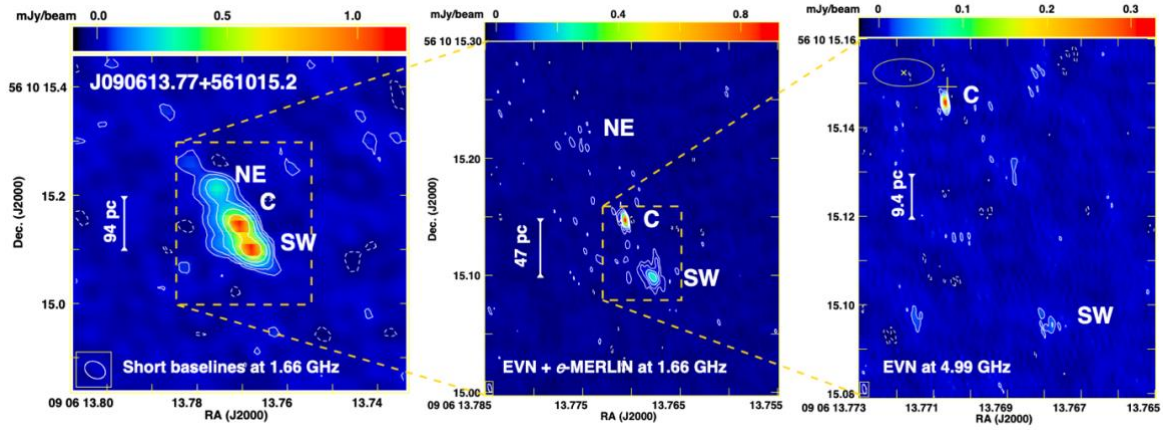
Integration of e-MERLIN Telescopes into the EVN

Integrated **e-MERLIN + EVN** observations are now available using up to 5 e-MERLIN outstations at 512 Mbps; in addition to the Jodrell Bank Observatory (JBO) home station, which is already part of the standard array. This additional capability provides short-spacing coverage between 11 and 220 km within e-MERLIN, together with intermediate and long baselines between e-MERLIN and EVN antennas in both disk-recording and e-VLBI mode. Principal Investigators (PIs) can request multiple e-MERLIN outstation antennas (all, or a subset of Pi, Da, Kn, De, Cm) in addition to an EVN homestation antenna at JBO (Jb1 or Jb2).

☛ *It is essential that e-MERLIN+EVN proposals highlight in the scientific/technical justification why* ***the short spacings provided by e-MERLIN outstation antennas are required to reach the scientific goals.*** *This is because in addition to EVN PC approval, the e-MERLIN outstation contribution has to be approved by the e-MERLIN Time Allocation Group (TAG). For e-MERLIN TAG approved projects e-MERLIN outstation data will then be available for full correlation with other EVN antennas at JIVE. Note that EVN proposals requesting only Jb1 or Jb2 are still considered as standard EVN proposals and will only require approval by the EVN PC.*

For e-MERLIN outstations correlated within the EVN, the maximum bitrate available for each outstation correlation at JIVE (both disk and e-VLBI) is 512 Mbps – equivalent to 2 polarizations at 64 MHz bandwidth at 2-bit Nyquist sampling. Proposals including e-MERLIN should take this reduced data rate into account when estimating the sensitivity.

For further enquiries regarding e-MERLIN + EVN observations please see the [e-MERLIN Contact Webpage], or alternatively email: vlbi@jb.man.ac.uk.



A close look at the radio nucleus of the dwarf galaxy SDSS J090613.77+561015.2. The synthesised beam is also plotted in the bottom-left corner. Left: The low-resolution total intensity map observed with the EVN plus e-MERLIN at 1.66 GHz and made from the visibility data of ≤ 5Mλ. Middle: The 1.66-GHz intensity map made from all the data. Right: The high-resolution map observed with the EVN at 4.99 GHz. An accreting IMBH is inferred to be located at the optical centroid. The yellow plus sign marks the Gaia DR3 position and the total 1σ error. The yellow cross and ellipse give the Pan-STARRS1 position and the 1σ error (Yang et al. 2023, 520, 5964)

Availability of uGMRT in EVN observations

The Upgraded Giant Metrewave Radio Telescope (uGMRT) is an interferometric array consisting of 30 dishes of 45 m diameter each, located in the western part of India, providing nearly seamless coverage from 120 MHz to 1460 MHz. The uGMRT is available for L-band VLBI observations on a best-effort basis. Proposals requiring the uGMRT as part of their observations should include separate scientific and technical justifications (the latter would be required by NCRA to assess the technical feasibility of the uGMRT observations). Approved EVN proposals involving uGMRT would then be scheduled on a best-effort basis subject to availability of suitable empty slots in the uGMRT schedule.

The uGMRT works simultaneously as an interferometer as well as a beamformer. The VLBI data is derived from the beamformer output. To ensure the best performance, only the central 15 antennas will be phased-up. The visibilities from the uGMRT as an interferometer will be available from the uGMRT archive per request, provided there are no conflicting GMRT programs running for the same target. For detailed specifications and additional features please contact Viswesh Marthi (vrmarthi@ncra.tifr.res.in), preferably well before the proposal deadline.

Global VLBI Proposals

Global VLBI proposals can be proposed for a data rate of up to 2 Gbps including VLBA, JVLA and the GBT. Global proposals will be forwarded to the NRAO and GBO Time Allocation Committees automatically, and should not be submitted as separate proposals.

☛ *Proposers are asked to **clearly justify the need for and illustrate the plan of use of the NRAO/GBO antennas**, in particular for the GBT and JVLA due to their limited availability.*

The **Green Bank Telescope** (GBT) is operated by the Green Bank Observatory (GBO). Time available for global VLBI on the GBT is small (VLBI typically accounts for 10% of Open Skies observing), and only the most highly rated proposals across all GBT observation types will be awarded time. Additionally, proposers should be aware that long scheduling blocks (>6 hours) will be very difficult to schedule owing to constraints coming from non-NSF GBO partners. In the Technical Justification proposers are required to clarify any constraints about how observing time could be broken into smaller pieces without adversely affecting the proposed science, and include relevant information regarding maximum elapsed time of a split schedule and minimum scheduling block lengths. Observations using the GBT 6 cm receiver must be taken, correlated, and calibrated in full Stokes mode. Due to the large cross talk between polarisations, only total intensity (Stokes I) data will be usable.

The NRAO's **Very Long Baseline Array** (VLBA) has no limit to hours spent performing global VLBI. Use of VLBA for Open Skies observing is guided by the scientific merit of the proposal.

The NRAO's **Karl G. Jansky Very Large Array** (JVLA) follows the same observing model as the VLBA, in that there are no restrictions on total hours of joint observing time, although telescope time access is quite competitive, and a strong justification for its use is thus required. Note that phasing of the array at high frequencies (≤1.3 cm) is done only in the compact antenna configurations (C and D) of the JVLA.

Some modes may require different bandwidth channels at different telescopes, which can be handled by the software correlator (SFXC). The support staff at JIVE and NRAO will assist you during the scheduling process of such observations. Global observations will be correlated either using the SFXC correlator at JIVE (default), or the DiFX correlator in Bonn upon request.

For further inquiries regarding the GBT, VLBA and JVLA in global observations please contact the JIVE User Support at usersupport@jive.eu.

Use of Australian VLBI Network Antennas

Some Australian **Long Baseline Array** (LBA) time will be made available for simultaneous scheduling with the EVN, thus enabling the possibility of joint LBA/EVN observations. The easternmost stations of the EVN are in a similar longitude range to the LBA telescopes, and for sources in equatorial regions baselines to western European stations are achievable for a brief period of time. Joint EVN-LBA time is likely to be heavily oversubscribed, and authors are requested to note whether they are prepared to accept scheduling without the LBA antennas. EVN+LBA observations should be possible at all principal EVN wavebands from 21 cm to 1.3 cm. When specifying requested antennas from the LBA in the Northstar Proposal tool, please specify 'LBA' under the "other" row in the telescope-selection box - this selects all antennas that are available for joint observations.

Any proposals for joint EVN+LBA observations submitted to the EVN by its 1 June 2025 deadline should also be submitted to the LBA by their (provisional) 15 June 2025 deadline and will first be eligible for scheduling in EVN Session 3/2025. For more details regarding proposing time on the LBA, see: https://www.atnf.csiro.au/observers/index.html.

Joint observations with other facilities

For joint observations with other (non-radio) facilities, e.g., EVN+XMM, separate proposals should be submitted to the EVN and to the other facility. Such proposals will be considered by the EVN PC on a case-by-case basis.

EVN Travel support through the Transnational Access Programme

Travel support is available through the ACME project Trans-National Access Programme, funded by the European Union's Horizon Europe Research and Innovation Programme under grant agreement No. 101131928. For eligible projects, this trans-national access support would include travel reimbursement for visiting JIVE to analyse and process your EVN, EVN+e-MERLIN, or global VLBI data.

See the EVN Travel support pages or contact campbell@jive.eu for further information.

JIVE Support Scientists at work

Additional information

The EVN Archive, containing correlation products, pipeline-calibrated uvfits data and fits files, as well as calibration metadata, can be queried at http://archive.jive.nl/scripts/avo/fitsfinder.php .

A selection of recent highlights related to the Network and the science it produces can be found in the EVN web pages, and in the EVN newsletter. See also the list of recent EVN publications.

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