



e-MERLIN/VLBI National Radio Astronomy Facility  
[www.e-merlin.ac.uk](http://www.e-merlin.ac.uk)

## Invitation for proposals: Cycle-22

**Deadline for Receipt of Proposals: 13:59:59 UT on 21<sup>st</sup> May 2026**

e-MERLIN requests proposals from the international astronomical community for observations to be made during *Cycle-22*. Proposals are competitively peer-reviewed under standard STFC rules by the e-MERLIN Time Allocation Committee (TAC). Awards will be made on the basis of scientific merit and technical feasibility alone. The *enhanced Multi Element Remotely Linked Interferometer Network* provides high resolution (12-150 mas), high sensitivity (microJy) imaging at cm wavelengths as well as spectroscopy, astrometry and polarimetry. e-MERLIN is an ‘SKA-pathfinder’ instrument providing observations with angular resolutions and frequencies comparable to those that will be provided by SKA-mid.

### Cycle-22 e-MERLIN Observations:

[August 1<sup>st</sup> 2026 to January 31<sup>st</sup>, 2027]

Continuum observing frequencies available: -

- L-Band: Continuous 512 MHz Band: 1.25 GHz to 1.75 GHz (RFI notch filtering fitted)
- C-Band: Continuous 512 MHz Band distributed between: 4.3 GHz to 7.5 GHz
- K-Band: Continuous 512 MHz Band distributed between: 19 GHz to 25 GHz

System parameters for observations of a continuum source in optimum conditions: -

Observing Bands	1.25 - 1.75 GHz (L-band)	4.3 - 7.5 GHz (C-band)	19 - 25 GHz (K-band)	
Maximum angular resolution	~150	~40	~12	(milliarcsec)
<sup>§</sup> RMS level for 8 hours on-source (Briggs robust=0.5 CASA weighting)	~24/12*	~17/10*	~130**	(μJy/beam)
<b>Elapsed time includes phase-calibration overheads—typically 12-hr elapsed results in ~8-hr on-source</b>				
Maximum bandwidth/polarisation	512	512†	512†	(MHz)

<sup>§</sup> L-Band operations have been affected by additional legal transmissions within the e-MERLIN observing band. Additional flag-masks and in-line filters have been deployed to address these issues. The quoted sensitivities at L-Band in this call and in the e-MERLIN Sensitivity Calculator, reflect changes resulting from the filter/flag-mask installation.

*Briggs robust=0 CASA weighting* has an optimal mix of resolution and sensitivity. *Natural* has greater sensitivity, but with lower resolution

\* The use of the Lovell telescope at L-Band, and at C-Band with updated receiver systems reduces the r.m.s. noise levels in the central part of the field of view by ~50% compared with the array not including the Lovell Telescope.

\*\* The sensitivity of e-MERLIN K-band observations are weather and elevation dependent. K-band observations will be dynamically scheduled to optimise for the most ideal weather conditions.

† Frequency flexibility allows the positioning of a number of 512MHz sub-bands within the frequency ranges shown for C- and K-Band. This may be used to observe with increased fractional bandwidth and/or spectral coverage at the expense of the required observing time since only a single 512 MHz sub-band may be observed at any one time.

**During Cycle-22, planned upgrades to the Lovell telescope control system and e-MERLIN digital upgrade work will result in reduced Lovell inclusion in e-MERLIN and overall *array availability*.**

**See notes on page 3 of this Call for Proposals for details**

**For Detailed Observation Planning - See The e-MERLIN Sensitivity Calculator & Observing Pages:**

<https://www.e-merlin.ac.uk/calc.html>

<https://www.e-merlin.ac.uk/observe.html>

**Proposal Submission:** Proposals should be submitted via the updated e-MERLIN web-based *Polaris* proposal tool from **21<sup>st</sup> April 2026**. Guidance and tex-based template files on using *Polaris* will be made available in the coming weeks prior to this date. **A Zoom webinar on *Polaris* proposal submission** will be presented on **29<sup>th</sup> April 2026**. For webinar details please see: <https://www.e-merlin.ac.uk/observe.html> or <https://www.acme-astro.eu/hands-on-sessions/>

- **Lovell 76m Telescope:** Proposers requesting inclusion of the Lovell telescope must provide a detailed supporting case (see page 3 for precise details of Cycle-22 Lovell availability). Proposers should consult the allocated e-MERLIN Legacy Programmes to avoid conflicts. In cases where PATT proposals directly replicate portions of allocated legacy projects, legacy projects will normally be given priority. For details, please consult the *Science Research with e-MERLIN* webpage (<https://www.e-merlin.ac.uk/science.html>) or contact [emerlin.support@jb.man.ac.uk](mailto:emerlin.support@jb.man.ac.uk).
- **Spectral Line Observations:** Spectral line configuration details are available at <https://www.e-merlin.ac.uk/observe.html>
- **e-MERLIN User Support:** Support is available throughout the full lifecycle (proposal to publication) of projects for all users via both face-to-face and remote assistance; and online tools. The e-MERLIN science support team is happy to tailor levels of assistance dependent on the requirements of individual users or projects. Additional support is also available through the ACME Trans-National Access Programme funded by the European Union's Horizon Europe Research and Innovation Programme under grant agreement No. 101131928, for visits to European institutes that provide direct training & expert guidance in multi-messenger astronomy. For *eligible* projects, (*multi-messenger/waveband [Radio+...]*), this support could include travel reimbursement for visiting JBCA to process and analyse your e-MERLIN data for a multi-messenger programme. For further information please contact [emerlin.support@jb.man.ac.uk](mailto:emerlin.support@jb.man.ac.uk).
- **Russian Affiliated Scientists:** STFC strongly condemn the Russian government's invasion of Ukraine. In line with the UK government's response, e-MERLIN is unable to accept proposals from projects including researchers affiliated with Russian Institutes at this time.

**e-MERLIN Science:** e-MERLIN observations address a broad range of scientific questions. Its unique combination of angular resolution and micro-Jansky sensitivity provide crucial insights in multiple science areas. See <https://www.e-merlin.ac.uk/science.html> for further details.

**e-MERLIN Transient Science:** Enhanced ToO availability has been introduced to provide additional ToO programmes which may not require all antennas or have more relaxed trigger cadences. An RRT (Rapid-Response Time) category is now available for urgent transient programmes not suitable for ToO submission. See [www.e-merlin.ac.uk](http://www.e-merlin.ac.uk). For any direct clashes between RRT & ToO programmes, ToO take precedence.

**e-MERLIN+EVN Observations:** The full integration of e-MERLIN within the European VLBI Network (EVN) is also available for proposals. This mode of observations provides a shorter spacing (10-200 km) component to the EVN which allows imaging of a wider range of spatial scales. Proposals for EVN+e-MERLIN observations should be submitted via the EVN-Programme Committee. <https://www.evlbi.org> During Cycle-22 the VLBI disk-recording sessions are from 15<sup>th</sup> October – 5<sup>th</sup> November 2026, during which time e-MERLIN is available for joint EVN/e-MERLIN observations. Details can be found via the EVN web pages (<https://www.evlbi.org>).

**EVN Deadlines:** The current EVN Call for Proposals (including combined EVN+e-MERLIN observations) can be found at <https://www.evlbi.org/>. The current deadlines for upcoming EVN+e-MERLIN proposals are: **1<sup>st</sup> June 2026, 1<sup>st</sup> October 2026, & 1<sup>st</sup> February 2027.**

For assistance or you have any queries please contact [emerlin.support@jb.man.ac.uk](mailto:emerlin.support@jb.man.ac.uk)

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## Additional Notes for Cycle-22

**e-MERLIN proposals must follow dual-anonymisation guidelines:** All e-MERLIN proposals are now required to follow the dual-anonymous guidelines, which can be found on the e-MERLIN Observing Page under **Cycle 22 Invitation Now Open**.

**e-MERLIN digital upgrade:** e-MERLIN is undertaking a digital upgrade to hardware and software systems starting in summer 2026, coinciding with the start of Cycle-22. The digital upgrade includes new digital backends, a software correlator and wider bandwidth datasets which will improve the sensitivity and efficiency of future e-MERLIN observations. As new hardware is installed over the coming months, more time will be needed for testing the system with likely reduced array availability. Extended periods of partial array availability are likely during this period.

**Cycle-22 Lovell availability:** During Cycle-22, planned upgrades to the Lovell telescope control system will be initiated. These upgrades are necessary to continue operating the Lovell telescope long into the future and will take several months to complete. During this time the Lovell telescope will be unavailable for e-MERLIN users. We expect some Lovell observing may be possible, but it will be limited and only allocated to the highest ranked proposals.

**Polaris observing tool:** Polaris is the new observation proposal tool used by e-MERLIN. A presentation outlining how to submit e-MERLIN proposals to the Polaris Proposal Server at Jodrell Bank will be made on 29-April 2026 at 10:00 UT together with a link to the presentation details. This presentation will be managed via the ACME online portal, with more information available on the e-MERLIN webpages in the coming weeks. Please go to the e-MERLIN website (<https://www.e-merlin.ac.uk/observe.html>) or the Polaris hands-on sessions pages (<https://www.acme-astro.eu/hands-on-sessions/>) for further details.