

## CALL FOR e-MERLIN PROPOSALS: Cycle-9

e-MERLIN requests proposals from the international astronomical community for observations to be made during Cycle-9 (Q3 & Q4 2019). Proposals are competitively peer-reviewed under standard STFC rules by the PATT e-MERLIN Time Allocation Committee. Allocation will be made on the basis of scientific merit and technical feasibility alone. During e-MERLIN operations  $\geq 50\%$  of observing time has been allocated to large legacy projects and the remaining formal time will be allocated via PATT to standard proposals solicited prior to each observing semester along with additional technical development programmes.

e-MERLIN provides high resolution (12 - 150 mas) and high sensitivity (microJy) imaging at cm wavelengths, as well as polarimetry, spectroscopy and astrometry. Cycle-9 observations will commence in Quarter 3 of 2019.

**Cycle-9 e-MERLIN Observations: Quarters 3 and 4 of 2019**

**Deadline for Receipt of Proposals: 23:59:59 UT on Wednesday 26<sup>th</sup> June 2019**

Observing frequencies available:-

L-Band:	1.23 GHz to 1.74 GHz
C-Band:	4.5 GHz to 7.5 GHz
K-Band:	19 GHz to 25 GHz

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

	1.23 - 1.74 GHz (L-band)	4.3 - 7.5 GHz (C-band)	19 - 25 GHz (K-band)	
<b>Maximum angular resolution</b>	~150	~40	~12	(milli-arcsec)
<b>RMS level for 12 hr observation including calibration (based on Cycle-8 results)</b>	~24/12*	~16/10*	~120**	( $\mu$ Jy/beam)
<b>Maximum bandwidth/polarisation</b>	512 <sup>†</sup>	512 <sup>†</sup>	512 <sup>†</sup>	(MHz)

\* The use of the Lovell telescope at L-Band, and at C-Band with the new receiver systems, reduces the 12 hr rms noise level 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 is weather and elevation dependent. K-band observations will be dynamically scheduled to optimise for the most ideal weather conditions.

† Frequency flexibility allows the positioning 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 required observing times since only a single 512 MHz sub-band may be observed at any one time.

More extensive technical details are available at [www.e-merlin.ac.uk/observe.html](http://www.e-merlin.ac.uk/observe.html)

Proposals should be submitted via the e-MERLIN web-based NorthStar Proposal Tool <http://proposal.merlin.ac.uk>

The proposal tool will be opened for proposal submission from 21<sup>st</sup> May 2019.

- Proposers must make a detailed case for the inclusion of the Lovell telescope in their proposed observations.
- Proposers should consult the allocated e-MERLIN legacy programme to avoid conflicts (see notes below). In cases where PATT proposals directly replicate portions of allocated legacy projects, legacy projects will normally be given priority.
- During Cycle-9 the VLBI disk-recording sessions are 17<sup>th</sup> October – 07<sup>th</sup> November 2019. Simultaneous joint VLBI + e-MERLIN observations are offered. These e-MERLIN+EVN proposals

should be submitted to the EVN Programme Committee - details for proposing for e-MERLIN+EVN time can be found via the [EVN web pages \(http://www.evlbi.org\)](http://www.evlbi.org).

- The current EVN Call for Proposals (including combined e-MERLIN + EVN Observations) is detailed at <https://www.evlbi.org/>.

**The current DEADLINE for EVN proposals is 1<sup>st</sup> June 2019.**

- **e-MERLIN user support:** Support is available throughout the full life-cycle (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 are happy to tailor levels of assistance dependent on the requirements of individual users or projects. **Please contact:** [emerlin.support@jb.man.ac.uk](mailto:emerlin.support@jb.man.ac.uk)

#### **Additional notes:**

- The sensitivities quoted are under ideal conditions and assume no contribution from confusion or dynamic range limitations.
- Frequency switching: Rapid cycling between the three bands is not yet permitted, however within C and K-bands, frequency changes are possible. However, proposers should note that such programmes (e.g. cycling between observing bands 4.5 - 5.0 GHz and 6.5 - 7.0 GHz within a single observing run) will result in some additional calibration overheads.
- Sensitivities are based upon those typically achieved during Cycle-8 observations. These are for a 12-hr observation (including typical phase-referenced calibration cycle). Quoted sensitivities are for ideal conditions.
- Details of available spectral line configurations are available at <http://www.e-merlin.ac.uk/observe.html>
- Proposers should take careful note of the observations allocated to the e-MERLIN legacy groups (see <http://www.e-merlin.ac.uk/science.html>). The e-MERLIN Legacy programmes will run concurrently with PATT observations. In cases where PATT proposals directly replicate portions of allocated legacy projects, legacy projects will normally be given priority. Proposers requiring further information should contact [emerlin@jb.man.ac.uk](mailto:emerlin@jb.man.ac.uk) for clarification well in advance of proposal submission.
- **Access and financial support for e-MERLIN Scientists and Users:** e-MERLIN is one of the participating infrastructures in the RadioNet project from which transnational access (TA) within the EU to existing observing facilities is financially supported. RadioNet has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730562. This includes travel reimbursement for data reduction visits to the e-MERLIN support facility in JBCA Manchester for TA-eligible programmes.
- It is e-MERLIN policy to rollover any incomplete A-graded programmes for ONE Cycle only. PIs with incomplete allocated programmes from Cycle 7 or earlier, or unobserved B-graded programmes, are invited to re-propose.

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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