***e*-MERLIN/VLBI National Facility**

**CALL FOR *e*-MERLIN PROPOSALS - Cycle-8**

*e*-MERLIN requests proposals from the international astronomical community for observations to be made during Cycle-8. 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 ≥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 (12-150mas) and high sensitivity (~[7]-14 microJy [including Lovell Telescope] in Cycle-8) imaging at cm wavelengths as well as polarimetry, spectroscopy and astrometry. Cycle-8 observations will commence in Quarter 1 2019.

**Developments during Cycle-8:** All proposals should be justified assuming the current available bandwidth of 512MHz. K-Band observations are also offered on a best-efforts basis.

**Cycle-8 *e*-MERLIN Observations: Quarters 1 and 2 2019  
Deadline for Receipt of Proposals - 23:59:59 UT on Thursday 15th Nov 2018**

Observing frequencies available:-  
L-Band: 1.23GHz to 1.74GHz  
C-Band: 4.5GHz to 7.5GHz  
K-Band: 21GHz to24GHz

* 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-8 there are two VLBI disc-recording sessions (Feb 21 - Mar 14, & May 23 – June 13, 2019). Simultaneous joint VLBI + *e-*MERLIN observations are offered on a best efforts basis, and every effort will be made to provide simultaneous or contemporaneous matching *e-*MERLIN observations for joint programmes. EVN proposals should be submitted to the EVN Programme Committee - details for proposing for EVN time can be found via the [EVN web pages](http://www.evlbi.org/) (http://www.evlbi.org).
* ***e*-MERLIN User support:**  Support is available throughout the full life-cycle (proposal to publication) of projects, for all users via 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@jb.man.ac.uk](mailto:emerlin@jb.man.ac.uk).

The system parameters for observation of a continuum source in optimum conditions are:-

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1.23-1.74 GHz (L-band) | 4.3-7.5 GHz  (C-band) | 21-24 GHz  (K-band) |  |
| Maximum angular resolution | ~150 | ~40 | ~12 | (milliarcsec) |
| RMS level for 12 hr on source | ~14/7\*\* | ~13/7\*\* | ~55 | (µJy/bm) |
| Maximum bandwidth/polarization | 512 | 512\* | 512\* | (MHz) |

More extensive technical details are available at *e-*MERLIN Cycle-8 capabilities (www.e-merlin.ac.uk).

Proposals should be submitted via the *e*-MERLIN Web-based NorthStar Proposal Tool. <http://www.e-merlin.ac.uk/observe/northstar.html>

The tool will be opened for proposal submission from 17th October 2018

**See notes below:**

* \*During Cycle-8 *e-*MERLIN C and K-Band operations utilising bandwidths wider than 512MHz will be on a best-efforts basis and no programmes are guaranteed. PIs of allocated proposals which may benefit from these enhanced capabilities will be informed and given the option to use these capabilities as they become available.
* The sensitivities quoted are under ideal conditions and assume no contribution from confusion or dynamic range limitations. So far, from observations of 12-24 hrs duration have reached sensitivities within few percent of these nominal values at L-band, with and without the Lovell Telescope in optimal observing conditions.
* \*\* 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.
* Frequency switching: Rapid cycling between bands is not yet permitted. Within C and K-band, frequency changes on time-scales of >2 hour will be possible. However, proposers should note that such programmes (e.g. cycling between observing bands 4.5-5.0GHz and 6.5-7.0GHz within a single observing run) will result in significant additional calibration overheads. Proposals with frequency changes faster than once every 2hrs will not be permitted.
* Nominal sensitivities are based upon a 12-hr on target observation (~18-hr equivalent with calibration). All quoted sensitivities are for ideal conditions. During Cycle-8 projected sensitivities are subject to changes due to on-going commissioning activities and cannot be guaranteed.
* Details of available spectral line configurations are available at

<http://www.e-merlin.ac.uk/observe/cycle8.html.>

* Proposers should take careful note of the observations allocated to the *e*-MERLIN legacy groups (see <http://www.e-merlin.ac.uk/legacy/>). 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. All *e*-MERLIN legacy proposal are available at

<http://www.e-merlin.ac.uk/legacy/>. Proposers requiring further information should contact emerlin@jb.man.ac.uk for clarification well in advance of proposal submission.

* **Access to *e*-MERLIN for Scientists:** *e*-MERLIN is one of the participating institutes 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 which includes travel reimbursement for data reduction visits to the *e-*MERLIN support facility in JBCA Manchester for TNA-enabled programmes.
* **It is e**-MERLIN policy to rollover any incomplete A-graded programmes for ONE Cycle only. PIs with incomplete allocated programmes from Cycle 6 or earlier, or unobserved B-graded programmes are invited to re-propose.

For assistance or questions please contact: [emerlin@jb.man.ac.uk](mailto:emerlin@jb.man.ac.uk)

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