



National Centre for Radio Astrophysics
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Announcement of Opportunity: Cycle 33

(October 2017 – March 2018)

Observations with the Giant Metrewave Radio Telescope (GMRT)

Khodad, India

Proposal Deadline : Saturday, July 15, 2017, 17:00 IST

The National Centre for Radio Astrophysics (NCRA) invites proposals for observations with the GMRT for Observation Cycle 33 (October 2017 to March 2018). The deadline for receiving these proposals is 17:00 IST (UTC+5.5 hrs), Saturday, July 15, 2017. The proposals will be reviewed and evaluated by the GMRT Time Allocation Committee (GTAC), which will make recommendations for allocation of observing time for each proposal.

Current technical details about the GMRT, such as modes of operation, available frequency bands and usable bandwidths, system parameters and expected performance, as well as facilities for absentee observing for users, can be found in the GMRT Specifications and Status document at <http://www.ncra.tifr.res.in/ncra/gmrt/gtac>.

Over the last few years, the GMRT has been going through a major upgrade, which is now nearing completion, that required additional day time slots. In order to meet these requirements, while maintaining smooth running of approved science observations, the observatory has been operating in a new model since Cycle 23, wherein upgrade activities are scheduled during day times of week days and science observations are scheduled during night times and through the week-ends. With the tapering down of the upgrade activities, it is planned to have a modified scheme in Cycle 33, with day times on Mondays and Fridays made available for science observations. Thus in Cycle 33, which will run for five and a half months, daytime hours from Tuesday to Thursday of each week will not be available for science observations.

This model of operations will result in certain LST ranges having less observing slots available for scheduling during Cycle 33, which can be seen in the dummy schedule at <http://www.ncra.tifr.res.in/ncra/gmrt/gtac>. As can be noted, there are fewer time slots available for scheduling in the LST range of 16 to 24 hrs, and we request users to bear this in mind when preparing their observing proposals. The observatory will strive to maintain the target of 26 working antennas for every GTAC approved observation. Some of the existing observation modes of the legacy system and flexibilities of observing settings may be partially affected by the changes due to the upgrade. Further details on such matters can be found in the GMRT Specifications and Status document at <http://www.ncra.tifr.res.in/ncra/gmrt/gtac>.

Cycle 33 will see the release of the next phase of the upgraded GMRT (uGMRT) to users, with some modes on a "shared risk basis". In addition to wideband observations in 2 uGMRT bands – 250-500 MHz (Band-3) and 1060-1460 MHz (Band-5) – with the full array of 30 antennas that were already possible from cycle 32, observations in 2 other bands – 550-850 MHz (Band-4) and 120-240 MHz (Band-2) – will be possible from Cycle 33, albeit with less than 30 antennas, on a shared risk basis. All the uGMRT observations will be with a 30-antenna back-end with choices of 100, 200 and 400 MHz processing bandwidth for the correlator, with the default choice of 2048 channels, as well as the corresponding IA/PA beamformer outputs for pulsar observations. However, some advanced modes will only be available on a shared risk basis, meaning that (a) these advanced features and modes may not be fully tested and guaranteed for performing as per the specs, and the user shares the risk of failure and/or underperformance of these modes of the system, and should be ready to use these on an "as is, where is" basis for their observations; (b) as a corollary of the above, no make-up time will be allotted for under-performance of the system in these modes. Full

*details of the various observing bands and modes being released for Cycle 33, alongwith their status (full release or shared risk) can be found in the updated GMRT Specifications and Status document at <http://www.ncra.tifr.res.in/ncra/gmrt/gtac>. Proposals for both, the legacy systems and the upgraded systems, will be evaluated by the GTAC, following the regular procedure. Users should note that uGMRT proposals can use the appropriate combination of the upgraded and legacy systems for meeting the science and testing goals. On the contrary, for proposals submitted for the legacy GMRT systems, users will **not** have access to the uGMRT signals and data products, and should plan their proposals accordingly.*

All proposals, whether for the existing, legacy GMRT system or for the new, uGMRT, are to be submitted online via the NCRA Archive and Proposal Management System (NAPS), available at <https://naps.ncra.tifr.res.in>, which provides password authenticated, web browser based interface for proposal submission. Note that the proposal may be submitted only by the PI. All co-Is also need to be registered users of the system. All users since Cycle 15 are registered users. For any unresolvable problems with the NAPS interface, please contact the help desk at proposal@ncra.tifr.res.in.

Proposals will be processed by GTAC with external refereeing as needed and the proposers intimated of the time allocation. GTAC may seek inputs from the GMRT Observatory on technical issues, for both the legacy systems and the uGMRT systems. Proposals requiring more than 100 hours of observing time will be treated as “large proposals”. They will be reviewed in a manner appropriate for each one of them and, if necessary, the time allocation will be split over several cycles. After a proposal has been allotted time and scheduled, queries regarding travel logistics can be addressed to Secretary for Operations (secr-ops@ncra.tifr.res.in). Queries related to the observing schedule should be sent to gmrtschedule@ncra.tifr.res.in, and to gmrtoptions@ncra.tifr.res.in for other aspects of the observations.

In addition to regular GTAC proposals, users can also avail of Director’s Discretionary Time (DDT) facility, as relevant. DDT time is meant for (i) pilot observations/feasibility studies which might lead to future GTAC proposals and confirmatory observations, as well as for (ii) Target of Opportunity (ToO) observations, primarily intended for short-lived or time-dependent astronomical phenomena. Both types of time allocation are subject to availability of time and convincing scientific goals and are cleared by the Centre Director, NCRA. Requests for these should also be submitted via NAPS, using the option for DDT proposals. DDT and ToO observations will be scheduled in the empty “white” slots in the GMRT schedule, without affecting the scheduled GTAC observations, as far as possible. **Starting with Cycle 33, ToO proposals can also be submitted for the regular cycle, which will be reviewed by GTAC in the usual manner, but any time allotted will be scheduled dynamically, as and when the specified trigger conditions are met. The exact procedure for initiating observation of a ToO will be informed to the PIs of successful ToO proposals. Upto 5% of the total available time in a given cycle can be allotted to such GTAC ToO proposals**

From Cycle 27 onwards, the GMRT supports absentee observing for the standard interferometric mode with the existing legacy system. This facility will also be available from Cycle 33 for the regular, full release modes of the uGMRT system. Users who would like to avail of this facility should mention this in their proposal cover sheet and send email to gmrtoptions@ncra.tifr.res.in with a copy to secr-ops@ncra.tifr.res.in. A set of tools available to users for help with their observations can be found at <http://www.gmrt.ncra.tifr.res.in/~astrosupp>. Users are responsible for preparing and sending their set up, command files and source list at least 10 days before their observations. Post observations, the data will be made available for download from NAPS, after an interval of one day. NCRA continues to encourage first time users to be present for observations and spend a few days of extra time to become familiar with the recommended observing/editing/calibration procedures. There is a possibility of downtime due to power outages, wind (particularly during May-August), ionospheric activity, RFI etc. There is some limited scope for making up for time lost due to the above. In case of such requirements, users should send an email requesting compensatory telescope time and giving details of the problems to gmrtoptions@ncra.tifr.res.in.

Data Release: Data from all standard observations with the GMRT will be made public 18 months after the date of observation. For all ToO / DDT observations, the corresponding period is 3 months. The status and details of all the observations since 2002 can be obtained from <https://naps.ncra.tifr.res.in/goa>.

**Centre Director
NCRA-TIFR**