

# MWA Call for Shared Risk Proposals – 2021-A Semester

17 December 2020

To: Prospective experienced users of the Murchison Widefield Array (MWA)

From: MWA Director (Professor Melanie Johnston-Hollitt)

This Call for Proposals is for the allocation of up to 500 hours of shared risk observing time in the Guaranteed Time and Open Access categories, during the period May 3, 2020 to June 30, 2021. This observing period is designated 2021-A and is subject to the availability of the array as per the MWA Time Allocation Policy and the installation progress for the new MWAX correlator. Observations are only open to experienced observers with the MWA and will be the first to access the new MWAX correlator. As such teams wishing to access MWAX just post technical commissioning will need to be willing and able to assist with the scientific testing and commissioning of the new MWAX correlator. The MWAX system is currently in the final stages of the Critical Design Review. Details of the new correlator modes will be available to the MWA collaboration as soon as CDR has been passed and will be posted here:

<http://mwatelescope.org/telescope>

Note that the array will be in the compact configuration for the duration of this call. Please see <http://www.mwatelescope.org/telescope/configurations/phase-ii> for details.

Up to 20 hours of observing with the MWA's Voltage Capture System (VCS) will also be available, again in shared risk mode. Note that VCS modes for MWAX differ from the legacy correlator. Please consult the MWAX details when they are posted.

Prospective users should review the results of the allocation of observing time for previous MWA observing semesters at: <http://www.mwatelescope.org/data/observing>

Telescope characteristics and modes (including those for MWAX) are or will be available at: <http://mwatelescope.org/telescope>

## Changes to previous semesters

### MWAX

The beginning of 2021 will see the completion, installation, and commissioning of the new MWAX correlator. The correlator is due to go into full operation in semester 2021-B but this call represents an early opportunity for experienced users of the MWA to access the new system and support the scientific commissioning of the correlator. While the MWA Operations Team will make every effort to assist science teams wishing to make use of MWAX, all observations are shared risk and subject to the MWAX installation schedule and array availability.

### Large Proposals

As of 2018B projects requesting over 500 hours total observing time will be classified as 'Large Proposals', where total time is the total time for the project to be completed, over all semesters. Large Proposals will only be available in Guaranteed Time, for teams which meet the criteria to access this time. As 500 hours is a considerable investment of Phase II time, Large Proposals will need to include an additional section to explain how data will be managed and disseminated across the MWA Collaboration. Proposers are reminded that as per the MWA Data Access Policy, raw data from observations collected under Guaranteed Time is accessible to all Individual

Members of the MWA Collaboration immediately. This section can be included in addition to the normal proposal page limit.

### Rapid Trigger Mode

As of 2019-B the MWA will have a rapid trigger response to allow transient science. Details of prioritization for multiple triggers will be laid out in the MWA Triggering Policy. Note that in 2021-A we cannot guarantee time for triggered proposals

### Interruptibility:

Please note that as a result of the Rapid Trigger Mode all observations have the potential to be interrupted for transient science. Please comment on the interruptibility of any proposed observations.

### **Submission**

Please complete the following proposal template, adhering to the page limits indicated (minimum font size of 12 pt). There are a number of mandatory questions which must be included on the cover page of all proposals. These questions are listed below. Science and technical justifications should now be emailed as a PDF to the MWA Principal Scientist: [scientist@mwaterlescope.org](mailto:scientist@mwaterlescope.org), as indicated on the form by the deadline: Monday 29th March 2021, 5pm Australian Western Standard Time (AWST).

Before completing the proposal please see the guide on how to complete the technical parts of the proposal form provided on the MWA wiki:

<https://wiki.mwaterlescope.org/display/MP/Writing+a+good+MWA+observing+proposal>

Also, as MWAX modes can potentially generate a large amount of data very quickly, potentially disrupting the ingest process for the Long Term Archive at Pawsey, prospective observers are encouraged to discuss proposals in advance with the MWA Operations Team members responsible for data flow, in particular Greg Sleaf (Greg.Sleaf@curtin.edu.au).

If you are unable to access the wiki, please contact the MWA Principal Scientist.

## Part A – Team/summary information

Title of proposal:

Members of Proposal team (list names, titles and institutions, the PI should be listed first):

Contact Email:

Please list all student investigators:

Area(s) of MWA science (EoR; GEG; Transients; SHI):

Category of time requested (GT or OA):

Total time requested (hrs):

Is this a Large Proposal (>500 hours total time):

Time requested that is commensal with other proposals, if known (hrs). List any known commensal proposals:

Array configuration required: compact, extended or any

List of frequencies requested in this proposal:

List of observing modes requested in this proposal (including the spectral and temporal resolution of the correlator output required, use of Voltage Capture System, Rapid Trigger Mode etc):  
(note, MWAX correlation modes will be posted here in due course:

<http://mwatelescope.org/telescope>)

Is this a continuation of a previous proposal (if so, list project #)?:

Please specify how interruptible this program is in the event of an override for transient science (max 100 words):

Abstract (maximum 300 words):

**Team Experience (2021A only)**, please list the experience of your team with the MWA and confirm your willingness to accept shared risk observations and work with the Operations Team on commissioning MWAX:

## Part B – Project Description

Provide a description of the project (maximum of 3 pages, including figures and references).

Please include:

- A scientific justification for the project;
- Information demonstrating feasibility against the MWA capabilities, in particular describing why the MWA capabilities are essential for the science proposed;

- If this is a continuation of a previous proposal, include progress report (maximum 300 words).

### **Part C – Technical requirements and data management**

Provide a description of the technical requirements for this project (maximum of 2 pages, including figures and references). Please include:

- A statement of the observing time required, broken down against observing mode (drift scan or pointed and tracked, spectral and temporal resolution of correlator output, VoltageCapture System observations), observing frequencies, time of day, time of year, hour angle limits, coordinates or any other relevant parameters;
- A description of any plans your team have to release data or data products into the public domain (particularly for projects requesting in excess of 100 hours of observation time);
- A description of your plans for processing data resulting from this proposal (particularly for projects requesting in excess of 100 hours of observation time).
- If you are submitting a continuation of a previous proposal, provide a detailed description of the results and status of prior efforts.
- If you wish to access the rapid trigger mode for transient sources please comment on the trigger details in the proposal.

### **Part D – Large Proposals Dissemination and Data Management Plan**

For Large Proposals (>500 hours), please provide a description of the way data will be managed and disseminated across the MWA Collaboration (maximum of 1 page, including figures and references). If you are not requesting more than 500 hours of time in total, please disregard this section.