

MWA Call for Proposals – 2023A Semester

30 January 2023

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

From: MWA Director

Overview

This Call for Proposals is for the allocation of observing time in the Guaranteed Time and Open Access categories, nominally during the period **April 1, 2023 to August 15, 2023**.

This observing period is designated 2023A and is subject to the availability of the array as per the MWA Time Allocation Policy. www.mwatelescope.org/policies

The array will be in the **compact** configuration for the duration of 2023A. The following 2023B semester is expected to run from August 16, 2023 to December 15, 2023, also in compact mode. wiki.mwatelescope.org/display/MP/Telescope+Configurations

Fringe Stopping and Correlator Modes

Beginning 2023A, PIs are encouraged to make use of fringe stopping, a new process of keeping the correlation pointing centre at a fixed RA/Dec, allowing the use of longer correlator integration times and lower frequency resolutions (depending on the science case), significantly reducing the volume of visibilities produced. Fringe stopping will be an opt-in process for 2023A and become the default mode of correlator operation in subsequent semesters. Details of fringe stopping, the MWAX correlator modes, and other technical information relevant to this Call are posted here:

wiki.mwatelescope.org/display/MP/MWAX+Fringe+Stopping
wiki.mwatelescope.org/display/MP/MWAX+Correlator+and+VCS
wiki.mwatelescope.org/display/MP/MWAX+Modes

Data Retention Policy

Following all proposal submissions for this Call, the MWA Operations Team will calculate the expected amount of data that will be ingested to the MWA data archive in 2023A. If there is inadequate storage space in the archive to support the requested observations, the MWA Operations Team will work with the MWA Principal Scientist to identify observations for deletion and begin a consultation process with the Collaboration, per the MWA Data Retention Policy and Procedure. www.mwatelescope.org/policies

Semester Hours and Scheduling

The MWA's capacity to observe in Phase III is more greatly limited by the volume of data products, than available time on sky. As a result, there are no particular restrictions on the number of available semester hours for 2023A, and scheduling priority will be given to the proposals ranked highest by the TAC.

The implementation of fringe stopping and the MWA Data Retention Policy will mitigate the archival impact of large projects to an extent, but PIs that propose to generate significant data volumes (visibility and/or VCS data in any combination) may be asked to provide additional justification and data management planning, in the same manner described by the Large Project Policy for proposals >500 hrs. www.mwatelescope.org/policies

We encourage PIs to calculate the size of their proposed dataset using this tool:

ws.mwatelescope.org/data/volcalc/

Rapid Trigger Mode

As of 2019B, the MWA has a rapid trigger response to allow transient science. Details of prioritisation for multiple triggers is laid out in the MWA Time Allocation Policy.

www.mwatelescope.org/policies

Observation Interruptions

Please note that because of the Rapid Trigger Mode, all observing proposals must indicate whether they are interruptible (for transient science cases) and what impact, if any, this would have on their science. For more details refer to the MWA Time Allocation Policy.

www.mwatelescope.org/policies

Guidelines

Proposers should review the results of the allocation of observing time for previous MWA observing semesters at: wiki.mwatelescope.org/display/MP/Observations

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. www.mwatelescope.org/policies

Before writing a proposal, please refer to the wiki guide on how to complete the technical parts of the form: wiki.mwatelescope.org/display/MP/Writing+a+good+MWA+observing+proposal

If you are unable to access the wiki, please contact the MWA System Admin team: registry_admin@mwatelescope.org

Submission

Please complete the following proposal template, adhering to the page limit (with minimum font size of 12pt).

Proposals should be emailed as a PDF document to the MWA Principal Scientist: scientist@mwatelescope.org

The deadline for proposal submission is **Monday 27 February 2023, 5PM AWST** (Australian Western Standard Time).

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, PFT; 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 Fringe Stopping, Voltage Capture System, Rapid Trigger Mode etc):

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):

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, Fringe Stopping, Voltage Capture System observations), observing frequencies, time of day, time of year, hour angle limits, coordinates or any other relevant parameters.

Note: MWAX allows time averaging from 0.25 seconds to 8.0 seconds, and frequency averaging from 200 Hz to 640 kHz, but in compact configuration, frequency averaging to more than 40 kHz, or time averaging to more than 2.0 seconds will need to use the new fringe-stopping mode to avoid decorrelation.

- 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.