

**MURCHISON WIDFIELD ARRAY**  
**EoR COLLABORATION CHARTER**  
*December 9 2019*

**1. Background, Context, and Scope**

This document revises and updates the document “MWA EoR Charter,” from December 2017.

This document replaces the EoR Collaboration Charters of 2004, 2013 and 2017 and was accepted by 2/3 vote of the EoR Executive Committee on July 30, 2019. A further amendment was made on December 9, 2019 to define the membership status of National Consortia members. Amendments to the EoR Collaboration Charter require a 2/3 vote of the Senior Collaborators.

**2. MWA EoR Executive Committee**

The EoR Executive Committee is drawn from the EoR Senior Collaborators and is approved by the MWA Board. Terms are for two years, and the appointments are staggered so that that half the Committee is renewed/re-appointed each year. Appointments may be extended for more than one term. Executive Committee members are intended to represent the interests of the MWA Parties, and the membership therefore reflects the composition of the Board. Each institution or region active in EoR science may appoint corresponding members of the Executive Committee reflecting their representation on the MWA Board. Members of the EoR Executive Committee must be active Senior Collaborators in good standing. If an institution or region nominally to be represented on the EoR Executive Committee has no active Senior Collaborators, then it forfeits its representation on the EoR Executive Committee. Each member has one vote.

The Executive Committee approves nominations for new EoR Senior Collaborators, and reviews the activity of Senior Collaborators. All decisions require a 2/3 vote of the Executive Committee. The Executive Committee advises the MWA Project on the operation and possible future expansion of the MWA as these activities pertain to EoR science.

EoR Senior Collaborators may attend Executive Committee meetings as non-voting participants. Executive Committee members make a best effort to attend semi-annual Executive Committee meetings in person, and they commit to attend by telecon or videocon when they are unable to attend in person. Special meetings may be called to address urgent issues. The List is provided in Appendix A.

**3. MWA EoR Collaboration Spokesperson**

The MWA EoR Collaboration Spokesperson is elected by the Senior Collaborators for a one-year term. The appointment requires endorsement from the MWA Board. The

election takes place at the December meeting of the MWA Project. Nominations may be made by any active Senior Collaborator. In the event of more than one nomination, a run-off between the candidates determines the Spokesperson-elect by a majority vote. The Executive Committee oversees the election process.

#### **4. MWA EoR Senior Collaborators**

An individual employed by an MWA Participating Party and who leads a team working on one or more scientific activities endorsed by the Collaboration relating to an MWA EoR experiment, including software development, relevant analysis and/or theory, may apply or be nominated to be an EoR Senior Collaborator, subject to the approval of the EoR Executive Committee. Individual members of National Consortia count as Participating Parties, and receive the same benefits and are subject to the same activity requirements as those from Participating Parties.

An MWA EoR Senior Collaborator may lead an EoR group by supervising Junior Collaborators.

The list of Senior Collaborators is maintained by EoR Collaboration Spokesperson and transmitted to the MWA Principal Scientist for posting on the MWA project web site. The list is provided in Appendix B.

#### **5. MWA EoR Associate Collaborators**

An MWA Associate member who has an interest in carrying out EoR science investigations may apply or be nominated to be an EoR Associate Collaborator, subject to the approval of the EoR Executive Committee.

Associate Collaborator status may be granted for access to, and rights toward, the full EoR dataset, if they contribute the same degree of scientific activity and input as Senior Collaborators. An Associate Collaborator may also be granted access to data and scientific intellectual property for a specific EoR project, if they are contributing activity to that project alone.

#### **6. MWA EoR Junior Collaborators**

A Junior Collaborator is (1) a postdoctoral associate or fellow who is employed by the institution of a Senior Collaborator, and is supervised by the Senior Collaborator; or, (2) a graduate student or an undergraduate student who is a candidate for a degree at the institution of a Senior Collaborator, has an approved MWA student project, and who is supervised by the Senior Collaborator.

This title will be established after the submission of a request, in writing, to the Spokesperson of the EoR Collaboration by the supervising Senior Collaborator, and is subject to the approval of the Spokesperson. The Junior Collaborator status will end

upon the award of the degree, at the time of withdrawal from the degree program, or when the postdoctoral appointment associated with the appointment as Junior Collaborator ends.

An EoR group consists of one or more MWA EoR Senior Collaborators and the Junior Collaborators she/he supervises.

Junior Collaborators have all the rights and privileges of Senior Collaborators, except voting. It is expected that Junior Collaborators who make a significant contribution to MWA EoR research and who move to a long-term position at another institution will be approved by the EoR Executive Committee as Senior Collaborators if they apply or are nominated for such status. Short-term extensions of Junior Collaborator appointments may be made by the EoR Executive Committee to enable the completion of ongoing projects.

A full list of all EoR Collaborators will be maintained by the EoR Spokeperson.

## **7. Rights and Privileges of MWA EoR Collaborators**

Active Phase II MWA EoR Collaborators have full access to the data acquired by the MWA as a part of EoR observing programs awarded by the MWA time allocation process during Phase II observing to the EoR Collaboration.

This access is subject to the terms of the MWA Data Access Policy, including the identification of the privileged status, identified in Section 12 of the Data Access Policy, of MWA data taken for Epoch of Reionization experiments. Active MWA EoR Collaborators also have rights of authorship of papers that report MWA EoR results, as defined below.

MWA EoR data from a given observational semester becomes public 18 months after the conclusion of that semester.

An inactive MWA EoR Collaborator has all the rights and privileges of an active MWA EoR Collaborator except data access.

## **8. MWA EoR Collaboration Task Proposals**

EoR Science Tasks are described by the science group in a written description of approximately one page made available to the EoR Collaboration members. The Science Tasks may consist of science projects or supporting activities. The task descriptions will include the names of all senior and junior personnel involved in the activity. New EoR Science Tasks may be defined and taken on by EoR collaborators with a 2/3 vote of the EoR Executive Committee.

It is expected that the content of papers submitted by members of the Collaboration will be consistent with the task descriptions. An evaluation of consistency may be taken up during Collaboration review of papers prior to submission.

Proposals by Collaborators to funding agencies seeking support for their MWA EoR activities must be in compliance with the MWA Funding Proposals Policy.

### **9. MWA EoR Collaboration Publication Policy: Detection of 21cm EoR Signatures**

Any paper reporting the detection of a 21cm EoR signature, or reporting a significant improvement in upper limits, will have the authorship of the full EoR Collaboration, in alphabetical order, but excluding those Senior and Junior Collaborators who choose not to be on the author list (*opt-out*). Associate Collaborators may *opt-in* to publications. A significant improvement will be defined as an improvement of >20% on published limits at that redshift. A corresponding author will be indicated as appropriate, and must be someone who is sufficiently familiar with the paper content to represent the Collaboration in external communications regarding that paper. The paper acknowledgment section is an appropriate mechanism for identifying individual contributions of authors. The review process will begin with internal EoR Collaboration review, which comprises a one week review to identify issues. After the internal review, the review process will then be that laid out in the MWA Publications Policy, with the additional requirements that the EoR Collaboration Spokesperson must approve all papers, and any issues raised must be resolved to the satisfaction of the EoR Collaboration Spokesperson as well as the MWA Principal Scientist. The author list will be preceded by the words "The MWA EoR Collaboration:"

All co-authors of a paper, and the full EoR Collaboration membership, will be advised of the proposal of the paper, and its progress through each stage of the publication process, to meet journal guidelines, and ensure opt-in/opt-out collaborators have the opportunity to do so.

An MWA EoR builders' lists exists for Phase II. Data that are public, upon proposal of the publication, do not require the EoR Builders' List.

Authors will be encouraged to use a collaborative platform to draft papers, such as Overleaf. A full list of all eligible authors, and the details required for publication will be maintained on the EoR Collaboration website. The current EoR Collaboration workspace is Trello, to which all members have access.

### **10. MWA EoR Collaboration Publications Policy: Other Papers**

Until EoR data are made public, all EoR Collaborators will have the option to be co-author of any paper submitted that makes use of MWA EoR data and/or software and reports results relevant to EoR science. The review process will be that laid out in the MWA Publications Policy, with the additional requirements that the EoR Collaboration Spokesperson must approve all papers, and any issues raised must be resolved to the

satisfaction of the EoR Collaboration Spokesperson as well as the MWA Principal Scientist.

### **11. Maintenance of Active Senior, Associate or Junior Collaborator Status**

All Collaborators must participate in MWA EoR science activities in order to maintain their status. Retention of active Collaborator status requires that the group in which the Collaborator participates, as either a Senior, Associate or Junior member, must:

- Participate in and maintain reasonable progress on one or more EoR Science Tasks, as defined in accepted EoR Task Proposals
- On the Trello EoR workspace, members are expected to maintain details of their projects, and progress within these, as well as keep updated their contact details and affiliations in the author list (if applicable)
- Be represented, in person or by video/telephone, in MWA project meetings
- Be represented in monthly telecons of the EoR Collaboration
- Be represented in service as duty scientist during MWA observations, if required
- Collaboratively share, through posts on the project website, of results and techniques developed as part of the MWA EoR Collaboration.
- Submit 6-monthly reports of progress for each EoR Science Task to the EoR Collaboration Spokesperson

*At each December meeting of the MWA project, the activities of the Senior Collaborators and their groups and Associate Collaborators for the past year will be reviewed. A determination of inactivity resulting in loss of active Collaborator status is made by the EoR Executive Committee.* A loss of active Collaborator status is communicated in writing to the Collaborator by the Collaboration Spokesperson. A Collaborator may become active again simply by carrying out the expected duties in a following year; reapplication to the Collaboration is not required to regain active status.

12. A Collaboration website will be maintained by the Collaboration Spokesperson. Access to the webpage will be limited to EoR Collaboration members

**APPENDIX A**  
**Membership of the EoR Executive Committee**  
**30 July 2019**

Cathryn Trott, Curtin University, EoR Collaboration Spokeperson  
Miguel Morales, University of Washington  
Keitaro Takahashi, Kumamoto University  
Rachel Webster, University of Melbourne

## APPENDIX B

### July 2019 – Phase II (alphabetical)

#### *Senior:*

Bryna Hazelton - University of Washington  
Daniel Mitchell - CSIRO  
Miguel Morales - University of Washington  
Bart Pindor - University of Melbourne  
Jonathan Pober - Brown University  
Keitaro Takahashi - Kumamoto University  
Steven Tingay – Curtin University  
Cathryn Trott - Curtin University (*Spokesperson*)  
Randall Wayth – Curtin University  
Rachel Webster - University of Melbourne

#### *Junior:*

Nichole Barry - University of Melbourne  
Chris Jordan - Curtin University  
Jack Line - University of Melbourne  
Christene Lynch – Curtin University  
Ben McKinley - Curtin University  
Shintaro Yoshiura – University of Melbourne

#### *Student:*

Ruby Byrne - University of Washington (Morales)  
Aman Chokshi – University of Melbourne (Webster)  
Ronniy Joseph - Curtin University (Trott)  
Kenji Kubota - Kumamoto University (Takahashi)  
Wenyang Li - Brown University (Pober)  
Adam Lanman - Brown University (Pober)  
Zheng Zhang - Brown University (Pober)  
Mahsa Rahimi - University of Melbourne (Webster)  
Jennifer Riding - University of Melbourne (Webster)  
Michael Wilensky - University of Washington (Morales)

#### *Associate:*

Adam Beardsley - ASU  
Judd Bowman - ASU  
Steven Murray - ASU  
Kiyotomo Ichiki - Nagoya University  
Danny Jacobs - ASU  
Masami Ouchi - University of Tokyo  
Naoshi Sugiyama - Nagoya University

Hiroyuki Tashiro - Nagoya University  
Hidenobu Yajima - Tohoku University  
Kenji Hasegawa - Nagoya University