

# Curriculum Vitae

## Katrine Alice Glasscock

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### Education

- 09/2021 – current **PhD; Cosmology**, University of Manchester (Orig. at Queen Mary University of London)  
Prelim. title: Mapping diffuse emission for the 21 cm sky using the Hydrogen Epoch of Reionization Array. Supervised by Phil Bull.
- 08/2018 – 10/2020 **MSc; Astronomy**, Aarhus University.  
ECTS GPA for Master's: 4.6. Thesis received highest mark.  
Master's thesis: *21-cm Emission in the Early Universe in Non-Standard Cosmological Models*. Supervised by Steen Hannestad and Thomas Tram.
- 08/2015 – 06/2018 **BSc; Physics with Astronomy**, Aarhus University.  
ECTS GPA: 3.73. Thesis received second highest mark.  
Bachelor's project: *Investigating the Dark Web – Cosmological N-body Simulations of Dark Matter & Dark Energy*. Supervised by Steen Hannestad.

### Publications

- First author *Statistical estimation of full-sky radio maps from 21cm array visibility data using Gaussian Constrained Realisations*. RASTI accepted, 2024, [arXiv:2403.13766](#)  
**K. A. Glasscock**, P. Bull, J. Burba, H. Garsden, M. J. Wilensky.
- Co-author *Disentangling the anisotropic radio sky: Fisher forecasts for 21cm array*. MNRAS, 2024, [arXiv:2403.13768](#)  
Z. Zhang, P. Bull, **K. A. Glasscock**.
- Collab. author *RHINO: A large horn antenna for detecting the 21cm global signal*. Submitted to RASTI, 2024, [arXiv:2410.00076](#)  
P. Bull, A. El-Makadema, H. Garsden, J. Edgley, N. Roddis, J. Chluba, C. J. Conselice, S. Dutta, **K. A. Glasscock**, et al.
- Collab. author *Sensitivity of Bayesian 21 cm power spectrum estimation to foreground model errors*. MNRAS accepted, 2024, [arXiv:2403.13767](#)  
J. Burba, P. Bull, M. J. Wilensky, F. Kennedy, H. Garsden, **K. A. Glasscock**.
- Collab. author *High-dimensional inference of radio interferometer beam patterns I: Parametric model of the HERA beams*. RASTI, 2024, [arXiv:2403.13769](#)  
M. J. Wilensky, J. Burba, P. Bull, H. Garsden, **K. A. Glasscock**, et al.

### Conferences and workshops

- 21/10 – 25/10 2024 (*Upcoming*) **Cosmo'24**, Kyoto University, Kyoto, Japan. Presenting a poster.
- 02/09 – 13/09 2024 **Bayesian cosmological data analysis workshop**, University of Oslo, Norway.
- 19/05 – 24/05 2024 **URSI RASC 2024**, Gran Canaria, Spain. Presented 20 min talk.
- 06/02 – 07/02 2024 **"Science with the 21-cm line" Kavli Focus meeting**, Kavli institute, Cambridge, UK. Presented 20 min talk.

19/8 – 26/08 2023 **URSI GASS 2023**, Sapporo Conference Center, Japan. Presented 20 min talk.

29/01 – 03/02 2024 **Aarhus University Cosmology Group**, Denmark. Invited to present a 45 min talk.

03/07 – 07/07 2023 **National Astronomy Meeting (NAM 2023)**, Cardiff University, UK. Presented 15 min talk.

22/05 2023 **Pint of Science**, Manchester, UK. Invited to give a 1 hr public engagement/outreach talk to the local community on 21-cm cosmology. Sold out event.

17/01 – 19/01 2023 **SKA Cosmology SWG annual meeting**, University of Manchester, UK. Participated in the annual meeting.

16/12 – 22/12 2022 **Aarhus University Cosmology Group**, Denmark. Invited to present a 30 min talk.

17/10 – 21/10 2022 **Global 21-cm meeting**, UC Berkeley, US. Presented a poster and a 10 min talk.

10/10 – 14/10 2022 **HERA annual meeting (HAM 2022)**, UC Berkeley, US. Presented a short 5 min poster talk for the collaboration.

13/09 – 16/09 2022 **ICIC Bayesian inference workshop**, Imperial College London, UK.

## Employment

01/2022 – current **Graduate Teaching Assistant** at Queen Mary University of London and University of Manchester.  
Teaching in the undergrad courses *Our Universe*, *General Physics lab* and *Introduction to Programming (Python)*  
Completed training and gained teaching experience with regular classroom teaching, small group lab demonstration, and large group shared teaching.  
Gained experience in conducting student interviews, exam/assignment marking, and completed multiple teaching courses.

03/2018 – 09/2020 **Student educator** at the Steno Museum and the Ole Rømer Observatory, Aarhus  
Gave talks and tours of the observatory and shows at the planetarium.  
Completed training on teaching to a broad audience and designing tours.  
Took part in the design-process of the electromagnetism exhibition and in designing the guided tour/class related to it.

05/2017 – 03/2019 **Student educator** at The Mobile University, Aarhus University.  
Planned, taught and managed classes (90 minutes) and workshops (5 hours) on cosmology at upper secondary schools.  
Completed training on outreach-teaching and on planning, structuring and conducting workshops.

## Extracurricular activities

01/2024 – current **Student lead of EquiTea** at JBCA, University of Manchester  
Student representative and responsible for organising and planning the department's forum for discussions on topics related to equality, diversity and inclusion in STEM often with invited speakers.  
Concrete result of my work: Actual signposting on monitors and bathrooms for the university's *Report&Support* channel. Regular monthly sessions, with very engaged discussions that always run out of time.

01/2023 – current **Committee member of EquiTea** at JBCA, University of Manchester

08/06 2024 **Universally Manchester Community Fair**, University of Manchester, UK  
Manned the department's stand for the Bicentenary Festival engaging over 150 visitors in Radio Astronomy related activities throughout the day.

11/2021 – 07/2022 **Organising and hosting** the departments bimonthly Large Scale Structure meeting

- 09/2016 – 09/2020 **Committee member and co-founder** of the Nabla committee.  
A sub-committee of TÅGEKAMMERET at Aarhus University, that maintains and exchanges traditions and visits the sister organisation Nabla at NTNU, Trondheim, Norway.
- 01/2019 – 12/2019 **Director and head** of the biannual student revue (satirical sketches/theatre).  
In charge of organising the writing process, rehearsals and performances as well as setting the manuscript, role list, directing, overseeing set- and costume design.
- 02/2018 – 12/2018 **Guide/tutor for undergrad students**, Mat/Fys-Tutorgruppen, Aarhus University.  
Providing academic and social guidance for new students and organising induction days at the faculty of Science & Technology (*now; Faculty of Natural Science*).
- 02/2018 – 08/2018 **Board member** of the graduation committee (Den Ultrahemmelige Huejunta)  
Planning the biannual graduation ceremony and party for bachelor and master students at Department of Physics and Astronomy, Aarhus University.
- 09/2016 – 08/2017 **Head of Public Relations and board member** of TÅGEKAMMERET.  
Primary responsibility for communication, advertisement, creativity and outreach for the student organisation covering the Faculty of Science and Technology at Aarhus University.
- 09/2015 – 09/2016 **Event committee member (FU)** for TÅGEKAMMERET, Aarhus University.  
Assisting the board of the organisation at events such as talks, pub quiz, students cafes and parties.
- 09/2014 – 12/2014 **Volunteer in Kenya** for the Danish organisation Save a Heart.  
Co-founder of now locally-run children's home for HIV-infected children: Loving Hands Safe House, Gilgil.  
Teacher at Bondeni School in the slum of Gilgil and at AIC School, Gilgil.
- 08/2012 – 08/2014 **Volunteer in Kulturhuset**, Silkeborg, Denmark.  
An open house for young people with social, creative and communal events. The house was recognised by a visit from the then Prime Minister of Denmark, Helle Thorning-Schmidt.
- 09/2012 – 04/2013 **ESA Cansat 2013 finals participant**, Delft, the Netherlands for SGCanScience, Silkeborg Gymnasium (High School).  
Personal responsibility for design, programming (Arduino) and outreach.

## Technical skills and interests

- Computing skills* High-performance computing (DiRAC), Linear solvers, Bayesian methods, Constrained realisations, Gibbs sampling
- Prog. languages* Python, L<sup>A</sup>T<sub>E</sub>X, MatLab, C
- Libraries* NumPy, SciPy, Matplotlib, HEALpy, Astropy
- Dev. tools* Git, GitHub
- Research software* Hydra, CLASS, MontePython, CONCEPT
- Languages* Danish, English
- Hobbies* Bouldering, baking, art, singing, theatre