

Ainulnabilah (Bella) Nasirudin

Education

- Doctor of Philosophy (PhD) - Physics** Expected: August 2020
Curtin University, Australia
- Master of Science (MSc) - Astronomy** September 2016
University of Sussex, United Kingdom
Final Result: Distinction
- Bachelor of Science (BSc) - Mathematics** August 2013
Minor - Actuarial Science
University of Wisconsin-Madison, United States

Publications

- Modelling the Stochasticity of High-Redshift Halo Bias**
A.Nasirudin, I.T. Iliev, K. Ahn
Monthly Notices of the Royal Astronomical Society
DOI: [10.1093/mnras/staa853](https://doi.org/10.1093/mnras/staa853)
- The Impact of Realistic Foreground and Instrument Models on 21cm Epoch of Reionisation Experiments**
A. Nasirudin, S.G. Murray, C.M. Trott, B. Greig
The Astrophysical Journal
DOI: [10.3847/1538-4357/ab8003](https://doi.org/10.3847/1538-4357/ab8003)
- Calibration and 21 cm Power Spectrum Estimation in the Presence of Antenna Beam Variations**
R.C. Joseph, C.M. Trott, R.B. Wayth, A. Nasirudin
Monthly Notices of the Royal Astronomical Society
DOI: [10.1093/mnras/stz3375](https://doi.org/10.1093/mnras/stz3375)

Awards/Career Achievements

- William McCrea Award for Astronomy/Cosmology** October 2016
University of Sussex, United Kingdom
- Awarded to the most outstanding MSc student
- First Light School: Stars, galaxies and blackholes in the epoch of Reionization** July 2019
University of São Paulo, Brazil
- 1 of 50 international applicants to receive full sponsorship to attend school

Research Projects

- Towards More Realistic Reionisation Studies and Experiments — PhD Project**
Curtin University, Australia August 2020
- Implemented the stochasticity and temporal bias of unresolved low-mass haloes

- Explored the effects of including realistic foregrounds and instrumentals in parameter estimation experiments
- Studied the correlation between self-consistent foregrounds and reionization

Implementing the Mean Biased Scatter of Cosmological Minihaloes — MSc Project

University of Sussex, United Kingdom

September 2016

- Investigated the underlying distribution of the number of minihaloes with respect to cell overdensity
- Implemented scatter of minihaloes

High Altitude Balloon and DECO Project — Garage Physics

University of Wisconsin-Madison, United States

Spring 2015

- Tested a cosmic ray detection app, Distributed Electronic Cosmic-ray Observatory (DECO) for citizen science projects
- Analyzed data gathered from the app and made appropriate paperwork

Work Experience

University of Wisconsin-Madison PEOPLE Program — United States

- *Instructor: Aviation, Rocketry and Space Exploration Workshop*

June – July 2015

- Prepared lesson plans, field trips, and hands-on activities for workshop
- Helped students explore and strengthen academic and career interests in science field

- *Tutor*

September 2014 – May 2015

- Tutored high school students of low-income background in Math and Science subjects
- Helped students build study skills, and explore and strengthen academic and career interest

ExxonMobil Exploration and Production Malaysia Inc. — Malaysia

- *Intern*

March-July 2014

- Worked in Controllers Department under Process and Controls Division with special projects
- Interacted with ExxonMobil personnel around the globe to obtain data for project preparation
- Presented proposals and tutorials to personnel in other departments

Outreach/Organizational Experience

ARC Centre of Excellence for All Sky Astrophysics in 3D (ASTRO 3D) — Australia

- *Core member of the Equity, Diversity and Inclusion Committee*

2019 - 2020

- *Member of the Student Committee*

July 2019 - ongoing

- *Astronomer in Residence at Ayers Rock Resort*

October 2019

Astrofest 2017, 2018 & 2019 — Perth, Australia

Perth Science Festival 2018 & 2019 — Perth, Australia