Reshma Anna-Thomas

Curriculum vitae

ASTRON
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ReshmaAnnaThomas

Research interests: Fast radio transients; time and imaging domain searches; polarimetry; Fourier and time domain periodicity searches; radio interferometry

Employment

2024 – **Scientist A**, *ASTRON*, The Netherlands

Education

2019 – 2024 **Ph.D. in Physics**, *West Virginia University, United States of America*
Supervisor: Prof. Sarah Burke-Spolaor
Thesis: *The search, the localization and the characterization: Fast radio transients*

2019 – 2021 **Master of Science in Physics**, *West Virginia University, United States of America*, *CGPA: 3.83/4*

2014 – 2019 **Integrated Masters in Physics**, *Pondicherry University, India*, *CGPA: 9.4/10*
Supervisor: Dr. K.V.P. Latha
Thesis: *Polarimetry using Carbon Nanotube based radiation detector*

Awards/Scholarships

2024 **Dr. Mohinder S. Seehra research award**, *Department of Physics and Astronomy*, West Virginia University
2019 **Dr. V. Devarajan Memorial Gold medal**, *Pondicherry University*
2017 – 2019 **Postgraduate Merit Scholarship**, *Pondicherry University*
2014 – 2017 **Merit Scholarship**, *Pondicherry University*

Workshops & Training

2023 ALMA Data Reduction Workshop, *West Virginia University*
2023 NRAO Synthesis imaging workshop, *Charlottesville*

2021 Summer School in Statistics for Astronomers, *Pennsylvania State University*

2020 Arecibo Single Dish Workshop, *Arecibo Observatory*

2020 The Green Bank Telescope observer's training, *Green Bank Observatory*

2018 Summer school on astronomy and astrophysics, *Kodaikanal Solar Observatory*

Professional Experience

Member, *Scientific Organizing Committee*, FRB2025

Reviewer, *The Monthly Notices of Royal Astronomical Society*

2022 - 2024 **Organizer**, *Weekly FRB journal club*, West Virginia University

2023 - 2024 **Mentor**, *Summer Undergraduate Research Experience program*, Project Title: "Searching for Fast Radio Transients Using The Petabyte Project".

2023 - 2024 **Mentor**, *Summer Undergraduate Research Experience program*, Project Title: "Imaging and Localization of FRBs Using the Realfast Database."

Selected Talks & Posters

Only in-person talks are listed

2024 **Contributed Talk**, *Fast Radio bursts 2024*, Probing the halo of M31 using FRBs, Khao Lak
Thailand

2024 **Invited Talk**, *Magnetic field reversals in a turbulent environment around a repeating fast radio burst*, University of Melbourne

2024 **Invited Talk**, *Searching, localizing and characterizing fast radio transients*, CRAFT meeting, Swinburne University of Technology

2023 **Invited Talk**, *Fast Radio Bursts: Since 2007*, Physics of Neutron stars meeting, Joint Space-Science Institute, University of Maryland, College Park

2022 **Invited Talk**, *Magnetic field switching in a turbulent fast radio burst environment*, NASA Goddard Space Flight Center

2022 **Invited Talk**, *Magnetic field switching in a turbulent fast radio burst environment*, George Washington University

2022 **Invited Talk**, *Magnetic field switching in a turbulent fast radio burst environment*, US Naval Research Laboratory

2022 **Invited Talk**, *A highly variable magnetized environment in an FRB Source*, Caltech, DSA lunch talk

2022 **Contributed Talk**, *A highly variable magnetized environment in an FRB Source*, American Astronomical Society 240 meeting

Academic Visits

2024 **Swinburne Institute of Technology**, *Host: Prof. Ryan M. Shannon*

2022 **Cahill Institute of Astronomy and Astrophysics, California Institute of Technology**, *Host: Dr. Casey J. Law*

Teaching

2024 **Guest Lecture**, *ASTR 700: Radio Astronomy*, West Virginia University

2022 **Guest Lecture**, *ASTR 700: Radio Astronomy*, West Virginia University

2020 **Teaching Assistant**, *PHYS111*, General Physics Lab, West Virginia University

2019 **Teaching Assistant**, *PHYS101*, General Physics Lab, West Virginia University

Outreach activities

Keynote Speaker at Young Innovators Program, *Government of Kerala* , India

Volunteer for hands-on science demonstration on Science Day at Spark Science Center, *Morgantown*, WV

Volunteer for hands-on science demonstration on SciTech Day at Carnegie Science Center, *Pittsburgh*, PA

Technical Strengths

	Level	Skill	Comment
Language:	■■■■■	Python	*Extensive data analysis and visualisation experience*
	■■□□□	C++, Fortran	*Basic understanding*
	■■■■■	LaTeX	*Expert*
OS:	■■■■□	Unix	*Extensive experience*
Methods	■■■■□	SLURM, Git, Bash	*Extensive*

Publications

Lead author publications

2. **Reshma Anna-Thomas** et al. [7 additional co-authors], *An unidentified Fermi source emitting radio bursts in the Galactic bulge*, in The Astrophysical Journal, 974,72 (2024)

1. **Reshma Anna-Thomas** et al. [29 additional co-authors], *Magnetic field reversal in the turbulent environment around a repeating fast radio burst*, in Science, 380.6645 (2023), *90+ citations*

Co-author publications

9. Z. Yan et al. (incl. **Reshma Anna-Thomas**), *Simultaneous multi-wavelength observations of the repeating fast radio burst FRB 20190520B with Swift and FAST*, in arXiv:2402.12084 (2024)

8. X. Zhang et al. (incl. **Reshma Anna-Thomas**), *Temporal and Spectral Properties of the Persistent Radio Source Associated with FRB 20190520B with the VLA*, in The Astrophysical Journal 959.2 (2023)

7. S. K. Ocker et al. (incl. **Reshma Anna-Thomas**), *Scattering variability detected from the circumsource medium of FRB 20190520B*, in Monthly Notices of the Royal Astronomical Society 519.1 (2023)

6. C. -H. Niu et al. (incl. **Reshma Anna-Thomas**), *A repeating fast radio burst associated with a persistent radio source*, in Nature 606.7916 (2022), *200+ citations*

5. S. K. Ocker et al. (incl. **Reshma Anna-Thomas**), *The Large Dispersion and Scattering of FRB 20190520B Are Dominated by the Host Galaxy*, in The Astrophysical Journal 931.2 (2022)

4. F. Kirsten et al. (incl. **Reshma Anna-Thomas**), *A repeating fast radio burst source in a globular cluster*, in Nature 602.7898 (2022), *200+ citations*

3. K. Aggarwal et al. (incl. **Reshma Anna-Thomas**), *Comprehensive Analysis of a Dense Sample of FRB 121102 Bursts*, in The Astrophysical Journal 922.2 (2021)

2. K. Aggarwal et al. (incl. **Reshma Anna-Thomas**), *Robust Assessment of Clustering Methods for Fast Radio Transient Candidates*, in The Astrophysical Journal 914.1 (2021)

1. K. Aggarwal et al. (incl. **Reshma Anna-Thomas**), *Your: Your Unified Reader*, in The Journal of Open Source Software 5.55 (2020)