RESHMA ANNA-THOMAS

Department of Physics and Astronomy, West Virginia University, Morgantown, WV, United States of America
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EDUCATION

West Virginia University *August 2019 - Present*
PhD in Astrophysics
Supervisor: Dr. Sarah Burke-Spolaor
Committe Members: Dr. Maura McLaughlin, Dr. Duncan Lorimer, Dr. Ryan M. Shannon
Expected Completion: May 2024

Pondicherry University, India *June 2014 - May 2019*
Integrated MSc Physics CGPA:9.44
Thesis: Polarimetry using Carbon Nanotube based radiation detector
Supervisor: Dr. K.V.P Latha

TECHNICAL STRENGTHS

Software	GNU/Linux, Git, LaTeX
Programming	Python, Bash scripting

AWARDS & SCHOLARSHIPS

- **Gold Medal**, Integrated M.Sc, Pondicherry University, 2019
- **Postgraduate Merit Scholarship**, Pondicherry University, 2017 - 2019.
- **Merit Scholarship**, Pondicherry University, 2014 - 2017.

WORKSHOPS & TRAINING

2023 19th NRAO synthesis imaging workshop, Charlottesville, VA

2021 Summer School in Statistics for Astronomers

2020 Arecibo Observatory Observer Training Workshop

2020 Green Bank Observatory Single Dish Observing School

2018 **Summer intern** at Indian Institute of Astrophysics(IIA), Bangalore, India (June, 2018) with Dr. S.P Rajaguru
Project Title: Spectral line synthesis for 3D Magneto-Hydro Dynamic simulation and effect of magnetic field on line width and asymmetries.

2018 **Participant** of Indian Institute of Astrophysics(IIA)'s Summer School on Astronomy and Astrophysics at Kodaikanal Solar Observatory (15-30 May, 2018).

2016 **Indian Academy of Sciences (IASc) Summer Research Fellow 2016** at Indian Institute of Science, Bangalore with Dr. V. Murugeshan
Project Title: Introduction to Numerical Solutions of Partial Differential Equations.

PUBLICATIONS

1. **Magnetic field reversal in the turbulent environment around a repeating fast radio burst**.
Reshma Anna-Thomas, Liam Connor, Shi Dai, Yi Feng, Sarah Burke-Spolaor, Paz Beniamini, Yuan-Pei Yang, Yongkun Zhang, Kshitij Aggarwal, Casey J. Law, Di Li, Chenhui Niu, Shami

Chatterjee, Marilyn Cruces, Ran Duan, Miroslav D. Filipovi, George Hobbs, Ryan S. Lynch, Chenchen Miao, Jiarui Niu, Stella K. Ocker, Chao-Wei Tsai, Pei Wang, Mengyao Xue, Jumei Yao, Wenfei Yu, Bing Zhang, Lei Zhang, Shiqiang Zhu, Weiwei Zhu.
Science 380, 599–603 (2023)

2. **Comprehensive analysis of a dense sample of FRB 121102 bursts**
Kshitij Aggarwal, Devansh Agarwal, Evan F. Lewis, **Reshma Anna-Thomas**, Jacob Cardinal Tremblay, Sarah Burke-Spolaor, Maura A. McLaughlin, Duncan R. Lorimer
The Astrophysical Journal, 922:115.

3. **Your: Your Unified Reader**
Kshitij Aggarwal, Devansh Agarwal, Joseph W Kania, William Fiore, **Reshma Anna Thomas**, Scott M. Ransom, Paul B. Demorest, Robert S. Wharton, Sarah Burke-Spolaor, Duncan R. Lorimer, Maura A. Mclaughlin, Nathaniel Garver-Daniels
The Journal of Open Source Software, 10.21105/joss.02750.

4. **A repeating fast radio burst in a dense environment with a compact persistent radio source**
C.-H. Niu, K. Aggarwal, D. Li, X. Zhang, S. Chatterjee, C.-W. Tsai, W. Yu, C. J. Law, S. Burke-Spolaor, J. M. Cordes, Y.-K. Zhang, S. Ocker, J.-M. Yao, P. Wang, Y. Feng, Y. Niino, C. Bochenek, M. Cruces, L. Connor, J.-A. Jiang, S. Dai, R. Luo, G.-D. Li, C.-C. Miao, J.-R. Niu, **R. Anna-Thomas**, J. Sydnor, D. Stern, W.-Y. Wang, M. Yuan, Y.-L. Yue, D.-J. Zhou, Z. Yan, W.-W. Zhu, B. Zhang
Nature 606, 873–877 (2022).

5. **The Large Dispersion and Scattering of FRB 20190520B are Dominated by the Host Galaxy**
S.K. Ocker, J.M. Cordes, S. Chatterjee, C.-H. Niu, D. Li, J.W. McKee, C.J. Law, C.-W. Tsai, **R. Anna-Thomas**, J.-M. Yao, M. Cruces
The Astrophysical Journal, 931 878.

6. **Robust Assessment of Clustering Methods for Fast Radio Transient Candidates**
Kshitij Aggarwal, Sarah Burke-Spolaor, Casey J. Law, Geoffrey C. Bower, Bryan J. Butler, Paul B. Demorest , T. Joseph W. Lazio, Justin Linford , Jessica Sydnor , and **Reshma Anna-Thomas**
The Astrophysical Journal 914:53.

7. **A repeating fast radio burst source in a globular cluster**
F. Kirsten, B. Marcote, K. Nimmo, J. W. T. Hessels, M. Bhardwaj, S. P. Tendulkar, A. Keimpema, J. Yang, M. P. Snelders, P. Scholz, A. B. Pearlman, C. J. Law, W. M. Peters, M. Giroletti, Z. Paragi, C. Bassa, D. M. Hewitt, U. Bach, V. Bezrukovs, M. Burgay, S. T. Buttaccio, J. E. Conway, A. Corongiu, R. Feiler, O. Forssén, M. P. Gawroński, R. Karuppusamy, M. A. Kharinov, M. Lindqvist, G. Maccaferri, A. Melnikov, O. S. Ould-Boukattine, A. Possenti, G. Surcis, N. Wang, J. Yuan, K. Aggarwal, **R. Anna-Thomas**, G. C. Bower, R. Blaauw, S. Burke-Spolaor, T. Cassanelli, T. E. Clarke, E. Fonseca, B. M. Gaensler, A. Gopinath, V. M. Kaspi, N. Kassim, T. J. W. Lazio, C. Leung, D. Z. Li, H. H. Lin, K. W. Masui, R. Mckinven, D. Michilli, A. G. Mikhailov, C. Ng, A. Orbidans, U. L. Pen, E. Petroff, M. Rahman, S. M. Ransom, K. Shin, K. M. Smith, I. H. Stairs W. Vlemmings
Nature 602, 585–589 (2022)

8. **Scattering variability detected from the circumsource medium of FRB 20190520B**
Stella Koch Ocker, James M. Cordes, Shami Chatterjee, Di Li, Chen-Hui Niu, James W. McKee, Casey J. Law, and **Reshma Anna-Thomas**
MNRAS 519, 821-830 (2022).

OBSERVING PROPOSALS

1. **GBT/23A-365** Regular monitoring of FRB 20190520B RM variations. *PI*
2. **GBT/22B-309** Follow-up observation of a novel repeating FRB detected by CHIME. *PI*
3. **GBT/21B-347** Polarimetry of Bursts from A Bright, Repeating FRB. *PI*
4. **GBT/20B-407** Realfast RRAT or MSP? — 4FGL J1818.6-1533. *PI*
5. **VLA/22A-313** Characterizing and Quantifying Persistent Radio Sources Around FRBs. *Co-PI*
6. **GBT/22B-261** High frequency polarimetry of a repeating FRB in a magneto-active environment. *Co-PI*
7. **GBT/21A-417** Polarimetry of Bursts from A Bright, Repeating FRB. *Co-PI*
8. **GBT/20A-420** Realfast RRAT or MSP? — 4FGL J1818.6-1533. *Co-PI*

CONTRIBUTED TALKS

2023 *(Invited)* Magnetic field switching in a turbulent fast radio burst environment; *Carnegie Observatories.*

2022 *(Invited)* Magnetic field switching in a turbulent fast radio burst environment; *NASA Goddard Space Flight Center.*

2022 *(Invited)* Magnetic field switching in a turbulent fast radio burst environment; *George Mason University.*

2022 *(Invited)* Magnetic field switching in a turbulent fast radio burst environment; *George Washington University.*

2022 *(Invited)* Magnetic field switching in a turbulent fast radio burst environment; *US Naval Research Laboratory.*

2022 A highly variable magnetized environment in an FRB Source; *IAUGA-FRB2022.*

2022 *(Invited)* A highly variable magnetized environment in an FRB Source; *Caltech DSA meeting.*

2022 A highly variable magnetized environment in an FRB Source; *AAS240*

2022 *(Invited)* A highly variable magnetized environment in an FRB Source; *ASIAA weekly meeting, Taiwan.*

2021 Polarization studies of FRB 190520; *FRB2021 Conference.*

2020 On the nature of an unidentified Fermi source; *AAS237.*

2020 On the nature of an unidentified Fermi source; *NanoGrav Fall meeting.*

OUTREACH ACTIVITIES

1. Volunteer for hands-on science demonstration on Science Day at Spark Science Center, Morgantown.
2. Volunteer for hands-on science demonstration on SciTech Day at Carnegie Science Center, Pittsburgh.

TEACHING

2022 *Guest Lecture* ASTRO 700: Radio Astronomy

2020 *Teaching Assistant* PHYS 111 lab: General Physics lab

2020 *Teaching Assistant* PHYS 101 lab: Introductory Physics lab