RESHMA ANNA-THOMAS

Department of Physics and Astronomy, West Virginia University, Morgantown, WV, United States of America
+1 681-622-1050 ⋄ rat0022@mix.wvu.edu

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

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. **A Highly Variable Magnetized Environment in a Fast Radio Burst Source**.
Reshma Anna-Thomas, Liam Connor, Sarah Burke-Spolaor, Paz Beniamini, Kshitij Aggarwal, Casey J. Law, Ryan S. Lynch, Di Li, Yi Feng, Stella Koch Ocker, Marilyn Cruces, Shami Chatterjee, Wenfei Yu, Chenhui Niu, Mengyao Xue.
arXiv:2202.11112

2. **Magnetic Field Reversal around an Active Fast Radio Burst**.
S. Dai, Y. Feng, Y. P. Yang, Y. K. Zhang, D. Li, C. H. Niu, P. Wang, M. Y. Xue, B. Zhang, S. Burke-Spolaor, C. J. Law, R. S. Lynch , L. Connor, **R. Anna-Thomas**, L. Zhang, R. Duan, J. M. Yao, C. W. Tsai, W. W. Zhu, M. Cruces , G. Hobbs, C. C. Miao, J. R. Niu, M. D. Filipovic, S. Q. Zhu
arXiv:2203.08151

3. **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

4. **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

5. **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)

6. **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

7. **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

8. **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)

9. **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**
arXiv:2210.01975 (2022)

OBSERVING PROPOSALS

1. **GBT/21B-347** Polarimetry of Bursts from A Bright, Repeating FRB. *PI*
2. **GBT/20B-407** Realfast RRAT or MSP? — 4FGL J1818.6-1533. *PI*
3. **VLA/22A-313** Characterizing and Quantifying Persistent Radio Sources Around FRBs. *Co-PI*
4. **GBT/22B-261** High frequency polarimetry of a repeating FRB in a magneto-active environment. *Co-PI*
5. **GBT/21A-417** Polarimetry of Bursts from A Bright, Repeating FRB. *Co-PI*
6. **GBT/20A-420** Realfast RRAT or MSP? — 4FGL J1818.6-1533. *Co-PI*

CONTRIBUTED TALKS

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.*

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