

Arvind Balasubramanian

Postdoctoral Fellow

Indian Institute of Astrophysics, Bengaluru

⌚ June 2024 - present

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Employment History

Jun 2024 - present : Postdoctoral fellow at Indian Institute of Astrophysics, Bengaluru

Sept 2022 - May 2024 : Postdoctoral Fellow, Department of Astronomy and Astrophysics, Tata Institute of Fundamental Research, Mumbai

Education

► **2018 - 2022 :** PhD in Physics at Texas Tech University (TTU)

Title : *Radio exploration of the transient sky: Binary mergers and peculiar core-collapse supernovae*

Advisor : Dr. Alessandra Corsi

► **2013 - 2018 :** BS-MS Dual Degree in Science at Indian Institute of Science Education and Research, Pune

Masters thesis : *Mass Modeling and search for transients with AstroSat CZTI*

Advisor : Dr. Varun Bhalerao

Scholarships/Grants

► **Fall 2021 - Spring 2022 :** Bucy Scholarship in Applied Physics, Dept. of Physics and Astronomy, TTU

► **Fall 2020 - Spring 2021 :** Peter Seibt Memorial Scholarship, Dept. of Physics and Astronomy, TTU

► **2013 - 2018 :** DST Inspire Scholarship, Government of India

Positions Held

► **July 2025 - August 2025 :** Mentor for VSP student Krishna Aasrith, IISER Bhopal

► **July 2024 - present :** Proposal reviewer for FAST proposals

► **Semester 24B - present :** Science Reviewer for the National Radio Astronomy/Green Bank Observatory (NRAO/GBO) proposals

► **September 2022 - present :** Proposal reviewer for uGMRT proposals

- ▶ **September 2022 - present** : Postdoctoral Fellow, TIFR, Mumbai
- ▶ **Fall 2019 - Summer 2022** : Research Assistant at Texas Tech University
- ▶ **Fall 2018 - Summer 2022** : Tutor at Texas Tech University, Department of Physics and Astronomy
- ▶ **Fall 2018 - Spring 2019** : Teaching Assistant at Texas Tech University
- ▶ **2014 - 2016** : Student Coordinator of the Astronomy Club, Aakashganga , Indian Institute of Science Education and Research, Pune. ([Website](#))

Publications and Contributions

Below are my publications in approximate order of the amount of my contribution to the work.

Refereed Articles

- ▶ ***Constraining the Nature and Long-term Stability of FRB 20121102A's Persistent Radio Source***
Bhardwaj, M., **Balasubramanian, A.**, Kaushal, Y., & Tendulkar, S. P.; 2025, Publications of the Astronomical Society of the Pacific, 137, 084202, [ADS link](#).
- ▶ ***GW170817 4.5 Yr After Merger: Dynamical Ejecta Afterglow Constraints***
Balasubramanian, A., Corsi, A., Mooley, K. P., Hotokezaka, K., Kaplan, D. L., Frail, D. A., Hallinan, G., Lazzati, D., & Murphy, E. J.; 2022, The Astrophysical Journal, 938, 12, [ADS link](#)
- ▶ ***Continued Radio Observations of GW170817 3.5 yr Post-merger***
Balasubramanian, A., Corsi, A., Mooley, K. P., Brightman, M., Hallinan, G., Hotokezaka, K., Kaplan, D. L., Lazzati, D., & Murphy, E. J.; 2021, The Astrophysical Journal, 914, L20, [ADS link](#)
- ▶ ***Radio Observations of SN2004dk with VLITE Confirm Late-time Rebrightening***
Balasubramanian, A., Corsi, A., Polisensky, E., Clarke, T. E., & Kassim, N. E.; 2021, The Astrophysical Journal, 923, 32, [ADS link](#)
- ▶ ***SN2019wxt: An Ultrastripped Supernova Candidate Discovered in the Electromagnetic Follow-up of a Gravitational Wave Trigger***
Shivkumar, H., Jaodand, A. D., **Balasubramanian, A.**, et al.; 2023, The Astrophysical Journal, 952, 86, [ADS link](#)
- ▶ ***CHIME/FRB Outriggers: KKO Station System and Commissioning Results***
Lanman, A. E., et al. 2024, The Astronomical Journal, 168, 87, [ADS link](#).
- ▶ ***Localization of gamma-ray bursts using AstroSat Mass Model***
Saraogi, D., et al. 2024, Monthly Notices of the Royal Astronomical Society, 530, 1386, [ADS link](#)
- ▶ ***The JAGWAR Prowls LIGO/Virgo O3 Paper I: Radio Search of a Possible Multimessenger Counterpart of the Binary Black Hole Merger Candidate S191216ap***
Bhakta, D., Mooley, K. P., Corsi, A., **Balasubramanian, A.**, Dobie, D., Frail, D. A., Hallinan, G., Kaplan, D. L., Myers, S. T., & Singer, L. P.; 2021, The Astrophysical Journal, 911, 77, [ADS link](#)
- ▶ ***The Panchromatic Afterglow of GW170817: The Full Uniform Data Set, Modeling, Comparison with Previous Results, and Implications***

- Makhathini, S., et al; 2021, The Astrophysical Journal, 922, 154, [ADS link](#)
- ***Search for Radio Remnants of Nearby Off-axis Gamma-Ray Bursts in a Sample of Swift/BAT Events***
 Grandorf, C., McCarty, J., Rajkumar, P., Harbin, H., Lee, K. H., Corsi, A., Bartos, I., Márka, Z., **Balasubramanian, A.**, & Márka, S.; 2021, The Astrophysical Journal, 908, 63, [ADS link](#)
- ***A Search for Relativistic Ejecta in a Sample of ZTF Broad-lined Type Ic Supernovae***
 Corsi, A., et al.; 2023, The Astrophysical Journal, 953, 179, [ADS link](#)
- ***The AstroSat mass model: Imaging and flux studies of off-axis sources with CZTI***
 Mate, S., Chatopadhyay, T., Bhalerao, V., Aarthy, E., **Balasubramanian, A.**, Bhattacharya, D., Gupta, S., Kutty, K., Mithun, N. P. S., Palit, S., Rao, A. R., Saraogi, D., Vadawale, S., & Vibhute, A.; 2021, Journal of Astrophysics and Astronomy, 42, 93, [ADS link](#)
- ***Prompt X-Ray Emission from Fast Radio Bursts—Upper Limits with AstroSat***
 Anumarlapudi, A., Bhalerao, V., Tendulkar, S. P., & **Balasubramanian, A.**; 2020, The Astrophysical Journal, 888, 40, [ADS link](#)
- ***Illuminating gravitational waves: A concordant picture of photons from a neutron star merger***
 Kasliwal, M. M., et al.; 2017, Science, 358, 1559, [ADS link](#)
- ***Multi-messenger Observations of a Binary Neutron Star Merger***
 Abbott B., et al; 2017, The Astrophysical Journal, 848, L12, [ADS link](#)
- ***Collapsars as Sites of r-process Nucleosynthesis: Systematic Near-Infrared Follow-up of Type Ic-BL Supernovae***
 Anand, S., et al.; 2023, arXiv e-prints, arXiv:2302.09226, [ADS link](#)

Non-refereed/In-prep Articles

- ***GRB 250704B: An Off-axis Short GRB with a Long-Lived Afterglow Plateau***
 Swain, V., Ahumada, T., Patil, S. K., Wagh, Y., Bhalerao, V., Nakar, E., Kasliwal, M., Hall, X. J., Busmann, M., Anand, S., Karambelkar, V., Andreoni, I., Anupama, G. C., Arya, A., Balasubramanian, A., Barway, S., Carney, J., Coughlin, M., Eappachen, D., Freeburn, J., Gruen, D., Mohan, T., O'Connor, B., Palmese, A., Pathak, U., Sahu, D. K., Pawan Saikia, A., Sarin, N., Srinivasaragavan, G., & Tanenia, H.; 2025, arXiv e-prints, arXiv:2509.02769, [ADS link](#)
- ***Continued radio observations of the persistent radio source associated with FRB20190520B provides insights into its origin***
 Balasubramanian, A., Bhardwaj, M., & Tendulkar, S. P.; 2025, arXiv e-prints, arXiv:2507.03113, [ADS link](#).
- ***X-ray and Radio Campaign of the Z-source GX 340+0 II: the X-ray polarization in the normal branch***
 Bhargava, Y., Russell, T. D., Ng, M., Balasubramanian, A., Zhang, L., Ravi, S., Jadoliya, V., Bhattacharyya, S., Pahari, M., Homan, J., Marshall, H. L., Chakrabarty, D., Carotenuto, F., & Kaushik, A.; 2024, arXiv e-prints, arXiv:2411.00350, [ADS link](#).
- ***X-ray and Radio campaign of the Z-source GX 340+0: discovery of X-ray polarization and its implications***

- Bhargava, Y., et al. 2024, arXiv e-prints, arXiv:2405.19324, [ADS link](#)
- ***EP250702a/GRB250702 B,D,E: uGMRT Radio detection in 1.26 GHz***
- Balasubramanian, A., Resmi, L., Eappachen, D., Jagan, S. K., Bhalerao, V., Zhang, B., Anupama, G. C., Sun, H., Sahu, D. K., & Yuan, W.; 2025, GRB Coordinates Network, 41145, 1, [ADS link](#).
- ***EP250704a/GRB250704B : HCT optical and NIR upper limits***
- Swain, V., Eappachen, D., Mohan, T., Saikia, A. P., Sahu, D. K., Balasubramanian, A., Anupama, G. C., Bhalerao, V., Barway, S., Nayana, M., & Bandari, S.; 2025, GRB Coordinates Network, 41030, 1, [ADS link](#).
- ***EP250427a/GRB250427A: HCT optical follow-up***
- Eappachen, D., Swain, V., Salgundi, A., Sahu, D. K., Saikia, A. P., Anupama, G. C., Bhalerao, V., Balasubramanian, A., Barway, S., & Bandari, S.; 2025, GRB Coordinates Network, 40289, 1, [ADS link](#).
- ***GRB250101A: Radio upper limits from VLA observations***
- Balasubramanian, A., Saikia, A. P., Swain, V., Anupama, G. C., Barway, S., & Bhalerao, V.; 2025, GRB Coordinates Network, 39604, 1, [ADS link](#).
- ***GRB250101A: Radio upper limits from GMRT observations***
- Balasubramanian, A., Saikia, A. P., Swain, V., Anupama, G. C., Barway, S., & Bhalerao, V.; 2025, GRB Coordinates Network, 39307, 1, [ADS link](#).
- ***EP241217a: GROWTH-India Telescope optical observations***
- Mohan, T., Swain, V., Kumar, R., Saikia, A. P., Bhalerao, V., Eappachen, D., Balasubramanian, A., Anupama, G. C., Barway, S., Angail, K., & GIT Team; 2024, GRB Coordinates Network, 38612, 1, [ADS link](#).
- ***EP241107a: VLA Radio Observation***
- Balasubramanian, A., Eappachen, D., Anupama, G. C., Bhalerao, V., & Sahu, D. K.; 2024, GRB Coordinates Network, 38584, 1, [ADS link](#).
- ***Fast X-ray Transient EP240801a: GMRT radio observations***
- Balasubramanian, A., Eappachen, D., Quirola-Vasquez, J., Sahu, D. K., & Anupama, G. C.; 2024, GRB Coordinates Network, 37468, 1, [ADS link](#).
- ***LIGO/Virgo S191216ap: VLA/JAGWAR radio monitoring of the 1-sigma HAWC region***
- Mooley, K., Myers, S., Frail, D., Corsi, A., **Balasubramanian, A.**, Bhakta, D., Hallinan, G., Kulkarni, S., & Jagwar Team; 2019, GRB Coordinates Network, 26531, 1, [ADS link](#)
- ***LIGO/Virgo S190814bv: VLA/JAGWAR monitoring of the 50% containment region***
- Mooley, K., Myers, S., Frail, D., Hallinan, G., Kulkarni, S., Corsi, A., **Balasubramanian, A.**, Bhakta, D., & Jagwar Team; 2019, GRB Coordinates Network, 25690, 1, [ADS link](#)
- ***LIGO/Virgo G298936: Astrosat CZTI upper limits***
- Balasubramanian, A.**, Bhalerao, V., Bhattacharya, D., Bose, S., Dewangan, G. C., Misra, R., Mitra, S., Rao, A. R., Souradeep, T., Vadawale, S., & Astrosat CZTI Team; 2017, GRB Coordinates Network, 21714, 1, [ADS link](#)
- ***LIGO/Virgo G299232: Astrosat CZTI upper limits***

Balasubramanian, A., Bhalerao, V., Bhattacharya, D., Bose, S., Dewangan, G. C., Misra, R., Mitra, S., Rao, A. R., Souradeep, T., Vadawale, S., & Astrosat CZTI Team; 2017, GRB Coordinates Network, 21712, 1, [ADS link](#)

► *LIGO/Virgo G298048: Astrosat CZTI upper limits*

Balasubramanian, A., Mate, S., Bhalerao, V., Bhattacharya, D., Vibhute, A., Bose, S., Dewangan, G. C., Misra, R., Mitra, S., Rao, A. R., Souradeep, T., Vadawale, S., & Astrosat CZTI Team; 2017, GRB Coordinates Network, 21514, 1, [ADS link](#)

Computing Skills

Scientific computing and data analysis in decreasing order of experience : Python, Fortran/C++, IDL

Conferences/Meetings

► **Title :** FTSky: A program in the field of Fast Radio Transients

Duration : October 13 – October 17, 2025

Summary : Presented a short talk (15 min) on follow-up of persistent radio sources associated to FRBs

► **Title :** Seminar at Indian Institute of Astrophysics

Duration : August 22, 2024

Summary : "Radio observations of astrophysical transients and what we can learn from them"

► **Title :** Daksha Science Workshop - 2025

Duration : March 30 – 31 2025 (online)

► **Title :** 42nd meeting of the Astronomical Society of India

Duration : January 31 to February 04 2024

Summary : Talk on uGMRT follow-up of persistent radio sources associated to FRBs

► **Title :** Seminar, Indian Institute of Astrophysics

Duration : January 11, 2024

► **Title :** Fast Radio Burst 2023 Annual Meeting

Duration : November 06 – November 10 2023

Summary : presented poster on follow-up of persistent radio sources associated to FRBs

► **Title :** Astrophysics Relativity Seminar, International Centre for Theoretical Sciences

Duration : November 02 2024

► **Title :** LIGO Science workshop at ICTS

Duration : October 27 2023 – October 28 2023

► **Title :** Astro Seminar at Raman Research Institute

Duration : October 17, 2023

- ▶ **Title :** Multi-wavelength follow-up of fast radio bursts in the era of routine (sub)arcsecond localizations, University of Toronto
Duration : April 25 - 26, 2023
- ▶ **Title :** Radio exploration of the transient sky: Binary mergers and peculiar core-collapse supernovae, Trottier Space Institute at McGill University
Date : May 16 2023
Summary : Presented special talk on PhD research
- ▶ Mentored Krittika Summer Project students in radio astronomy project.
Duration : Summer 2023
- ▶ **Title :** 41st Meeting of the Astronomical Society of India, 2023, IIT Indore
Duration : March 1 - 5, 2023
Summary : Presented a poster
- ▶ **Title :** Computational Astrophysics in the ngVLA Era: Synergistic Simulations, Theory, and Observations
Duration : June 7 - 9, 2022
Summary : Presented a short talk (15 min)
- ▶ **Title :** AI Super-Resolution Simulations : From Climate Science to Cosmology
Duration : February 23 - 25, 2022
- ▶ **Title :** The Past, Present and Future of VLA: Celebrating 40 years (virtual)
Duration : August 4 - 7, 2021
Summary : Presented a short talk (15 min)
- ▶ **Title :** Quarks to Cosmos with AI (virtual)
Duration : July 12 - 16, 2021
- ▶ **Title :** APS April 2021 Meeting
Duration : April 17 - 20, 2021
Summary : Presented a short talk (10 min) and a poster
- ▶ **Title :** 237th meeting of the American Astronomical Society (virtual)
Duration : January 10 - 15, 2021
- ▶ **Title :** The 36th Annual New Mexico Symposium
Duration : 13 November 2020
Summary : Presented a poster talk (5 min)
- ▶ **Title :** 2020 Joint Fall Meeting of the Texas Sections of APS, AAPT and Zone 13 of the SPS (virtual)
Duration : November 12 - 14, 2020
Summary : Presented a short talk (10 min)

- ▶ **Title :** GROWTH Astronomy School 2020, (virtual)
Duration : August 17 - 21, 2020
Summary : Participated both as attendee and teaching assistant
- ▶ **Title :** GROWTH Astronomy School 2019, San Diego State University
Duration : August 05 - 07, 2019
- ▶ **Title :** 2019 Joint Fall Meeting of the Texas Sections of APS, AAPT and Zone 13 of the SPS, Texas Tech University
Duration : October 25 - 26, 2019
- ▶ **Title :** SciPy India Conference
Duration : November 29 - 30, 2017
Venue : Indian Institute of Technology, Bombay, India
- ▶ **Title :** Workshop on Gamma-ray Bursts : Prompt to Afterglow
Duration : July 04 - 07, 2017
Venue : National Centre for Radio Astrophysics (NCRA-TIFR), Pune, India

Science Camps

2013 : Selected and attended Vijyoshi National Science Camp at the Indian Institute of Science, Bangalore, organized by KVPY (Kishore Vaigyanik Protsahan Yojana) under the Department of Science and Technology of the Government of India.