Anirudh Salgundi

PhD student at University of North Carolina at Chapel Hill

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Education

Ph.D. in Physics — *Aug 2025 – Present*
University of North Carolina at Chapel Hill — *Chapel Hill, NC, USA*
Advisor: Prof. Igor Andreoni

Master of Science in Physics — *June 2020 – May 2022*
Christ University — *Bengaluru, India*

Bachelor of Science in Physics, Chemistry and Mathematics — *June 2017 – September 2020*
National College Basavanagudi, Bangalore University, — *Bengaluru, India*

Research Experience

Project Research Assistant – *Indian Institute of Technology Bombay* — *Jan 2023 – Present*
Supervisor: Prof. Varun Bhalerao — Mumbai, India

Visiting Student Researcher – *Indian Institute of Astrophysics* — *December 2022*
Supervisor: Dr. Santanu Mondal — Bengaluru, India

Awards & Fellowships

Shearin Fellowship – *University of North Carolina at Chapel Hill* — *August 2025*
Awarded for academic excellence and research potential in the field of astrophysics.

Visiting Student Fellowship – *Indian Institute of Astrophysics* — *December 2022*
Received to conduct research on Black Hole X-ray binaries.

Conferences and workshops attended

Workshop: Workshop on AstroStatistics — December 2024
Conference (Poster): Transients 2024 — April 2024
Conference (Poster): 42nd Meeting of the Astronomical Society of India — February 2024
Summer School (Remote): Zwicky Transient Facility Summer School — July 2023
Conference (Poster): 41st Meeting of the Astronomical Society of India — March 2023

Observing Experience and Accepted proposals

GROWTH – India Telescope: *Cumulative 14 nights of observing experience* — Dec 2023
Chandra DDT (Co-PI) *50 ks observations with ACIS instrument* — Sep 2023
AstroSat ToO (Co-PI) *40 ks observations with LAXPC and SXT instruments* — Aug 2022
AstroSat ToO (Co-PI) *40 ks observations with LAXPC and SXT instruments* — Sep 2022

Technical Skills

Astronomy Software: XSPEC, XSELECT, FTOOLS, DS9, IRAF
Programming Languages: Python, Bash, LaTeX, html, css
Python Packages: Astropy, Stingray, NumPy, SciPy, Pandas, Matplotlib, Seaborn

Outreach and positions of responsibility

Student Member, *Astronomical Society of India* 2024 – present
Student Point of Contact, *TechConnect, IIT Bombay* Dec 2024
Local Organising Committee Member, *Transients 2024 Conference* Apr 2024
Booth Co-ordinator, *TechConnect, IIT Bombay* Dec 2023
Program Head, *Asteroid Search Campaign at SSERD* March 2020 – January 2025
Astronomy Education Content Developer, *ISRO's YUVIKA Program* June 2022
Associate Editor, *Shasthra Snehi* 2020 – 2023

Research Project Mentoring/Co-mentoring

K. Bhuvanesh – *"Thermonuclear Bursts in Neutron Star X-ray Binaries"* May – July 2025
Currently Undergraduate, Indian Institute of Technology Bombay

Bharat Arora – *"Thermonuclear Bursts in Neutron Star X-ray Binaries"* May – July 2025
Currently Undergraduate, Indian Institute of Technology Bombay

Vihaang – *"Thermonuclear Bursts in Neutron Star X-ray Binaries"* May – July 2025
Currently Undergraduate, Indian Institute of Technology Bombay

Mayank Jain – *"Thermonuclear Bursts in Neutron Star X-ray Binaries"* May – July 2025
Currently Undergraduate, Indian Institute of Technology Bombay

Japman Kaur Aneja – *"Thermonuclear Bursts in Neutron Star X-ray Binaries"* May – July 2025
Currently Undergraduate, Indian Institute of Technology Bombay

Nishanth Karthik Nayak – *"Determining Distances and Ages of Open Clusters"* Nov 2022
Currently Undergraduate (Physics), Pennsylvania University

Shibam Sundar Mahakud – *"Determining Distances and Ages of Open Clusters"* Nov 2022
Currently Undergraduate (Mechanical Engineering), Indian Institute of Technology Bombay

Manan V Jain *"Building Citizen Science Program Back-End Infrastructure"* Sep 2022
Currently Undergraduate (Aerospace Engineering), Amrita Vishwa Vidyapeetham

Publications

Up–to–date list can be found at: NASA ADS Library & Google Scholar,

Below is the list of refereed publications I am a part of:

1. Srinivasaragavan, G. P., Perley, D. A., Ho, A. Y. Q., O'Connor, B., de Ugarte Postigo, A., (includes **Salgundi, A.**) ., et al. (2025), MNRAS, "Multiwavelength analysis of AT 2023sva: a luminous orphan afterglow with evidence for a structured jet", 538, 351.

2. **Salgundi, A.**, Bala, S., Raman, G., Pathak, U., & Bhalerao, V. (2024), arXiv e-prints, ""Bursts, Beats, and Beyond": Uncovering the landscape from accretion to ignition of 4U 1728-34 using AstroSat", arXiv:2412.06644.

3. Ahumada, T., Anand, S., Coughlin, M. W., Gupta, V., Kasliwal, M. M., (includes **Salgundi, A.**)., et al. (2024), PASP, "Searching for Gravitational Wave Optical Counterparts with the Zwicky Transient Facility: Summary of O4a", 136, 114201.

4. Mondal, S., **Salgundi, A.**, Chatterjee, D., Jana, A., Chang, H.-K., et al. (2023), MNRAS, "Evolution of low-frequency quasi-periodic oscillations in GX 339-4 during its 2021 outburst using AstroSat data", 526, 4718.

Below is the list of Non-refereed publications (GCNs, ATels, TNS) that I am a part of:

1. Eappachen, D., Swain, V., **Salgundi, A.**, Sahu, D. K., Saikia, A. P., et al. (2025), GRB Coordinates Network, "EP250427a/GRB250427A: HCT optical follow-up", 40289, 1.

2. **Salgundi, A.**, Swain, V., Eappachen, D., Saikia, A. P., Bhalerao, V., et al. (2025), GRB Coordinates Network, "EP250428b: GROWTH-India telescope optical upper limit", 40284, 1.

3. Swain, V., **Salgundi, A.**, Wagh, Y., Saikia, A. P., Eappachen, D., et al. (2025), GRB Coordinates Network, "GRB250427A/EP250427a GIT optical afterglow detection:", 40270, 1.

4. Mohan, T., Swain, V., **Salgundi, A.**, Kumar, R., Bhalerao, V., et al. (2024), GRB Coordinates Network, "GRB 240529A: GROWTH-India optical follow-up", 36576, 1.

5. Ahumada, T., Stein, R., Swain, V., **Salgundi, A.**, Suresh, A., et al. (2024), GRB Coordinates Network, "LIGO/Virgo/KAGRA S240422ed: Zwicky Transient Facility contuinued observations of S240422ed and candidate analysis", 36310, 1.

6. Swain, V., Waratkar, G., **Salgundi, A.**, Kumar, R., Suresh, A., et al. (2024), GRB Coordinates Network, "LIGO/Virgo/KAGRA S240422ed: 2.5m PRL Telescope follow-up of the Swift/XRT source S240422ed_X190", 36305, 1.

7. Swain, V., Waratkar, G., Pathak, U., **Salgundi, A.**, Suresh, A., et al. (2024), GRB Coordinates Network, "LIGO/Virgo/KAGRA S240422ed: Himalayan Chandra Telescope follow-up of the Swift/XRT source S240422ed_X101", 36287, 1.

8. Ahumada, T., Anand, S., Karambelkar, V., Bellm, E., Stein, R., et al. (includes **Salgundi, A.**) (2024), GRB Coordinates Network, "LIGO/Virgo/KAGRA S240422ed: Zwicky Transient Facility observations and candidates", 36246, 1.

9. Swain, V., Pathak, U., Karambelkar, V., Jegou Du Laz, T., Ahumada, T., (includes **Salgundi, A.**) et al. (2024), GRB Coordinates Network, "LIGO/Virgo/KAGRA S240413p: Zwicky Transient Facility observations", 36080, 1.

10. Wagh, Y., Kumar, R., Swain, V., **Salgundi, A.**, Bhalerao, V., et al. (2023), GRB Coordinates Network, "GRB 231215A: GROWTH-India optical follow-up", 35354, 1.

11. Kumar, R., **Salgundi, A.**, Swain, V., Wagh, Y., Bhalerao, V., et al. (2023), Transient Name Server Discovery Report, "GIT Transient Discovery Report for 2023-11-15", 2023-2965, 1.

12. Kumar, R., **Salgundi, A.**, Swain, V., Bhalerao, V., Anupama, G. C., et al. (2023), GRB Coordinates Network, "GRB 231117A: GIT optical follow-up", 35089, 1.

13. Kumar, R., Karambelkar, V., Swain, V., Bhalerao, V., **Salgundi, A.**, et al. (2023), GRB Coordinates Network, "GRB 231115A / AT2023xvj: Updated GIT analysis", 35055, 1.

14. Kumar, R., **Salgundi, A.**, Swain, V., Wagh, Y., Bhalerao, V., et al. (2023), GRB Coordinates Network, "GRB 231115A: GROWTH-India discovery of a potential optical counterpart", 35041, 1.

15. Ahumada, T., **Salgundi, A.**, Stein, R., Karambelkar, V., Waratkar, G., et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S231113bw: Zwicky Transient Facility observations", 35032, 1.

16. Kumar, R., **Salgundi, A.**, Sharma, R., Waratkar, G., Suresh, A., et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S231113bw: GROWTH-India coverage and upper limits", 35027, 1.

17. Kumar, R., **Salgundi, A.**, Swain, V., Bhalerao, V., Barway, S., et al. (2023), GRB Coordinates Network, "GRB231111A: GIT confirmation of the optical afterglow", 34984, 1.

18. Ahumada, T., Swain, V., **Salgundi, A.**, Karambelkar, V., Waratkar, G., et al. (2023), GRB Coordinates Network, "GRB 231012A: Zwicky Transient Facility Follow-Up of a Fermi Short GRB (Trigger 705709044)", 34855, 1.

19. Kumar, R., Wagh, Y., Sharma, R., **Salgundi, A.**, Swain, V., et al. (2023), GRB Coordinates Network, "GRB 231018A: GROWTH-India Follow-Up of a Fermi Long GRB", 34839, 1.

20. Kumar, R., **Salgundi, A.**, Sharma, R., Wagh, Y., Swain, V., et al. (2023), GRB Coordinates Network, "GRB231017A: GROWTH-India upper limits on the optical afterglow", 34833, 1.

21. **Salgundi, A.**, Swain, V., Kumar, R., Waratkar, G., Sharma, R., et al. (2023), GRB Coordinates Network, "AT2023sva / GRB230916B: GIT observations of the afterglow", 34780, 1.

22. Ahumada, T., Swain, V., Anand, S., Stein, R., Karambelkar, V., (includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230917af: Zwicky Transient Facility observations", 34755, 1.

23. Pathak, U., **Salgundi, A.**, Waratkar, G., Swain, V., Bhalerao, V., et al. (2023), GRB Coordinates Network, "GRB 230812B: Chandra late-time detection of the X-ray afterglow", 34632, 1.

24. Li, M. L., Vail, J. L., Ho, A. Y. Q., Coughlin, M., Perley, D., (includes **Salgundi, A.**) et al. (2023), Transient Name Server AstroNote, "ZTF Observations of the Candidate Optical Afterglow AT 2023qxj", 238, 1.

25. Swain, V., **Salgundi, A.**, Kumar, R., Sharma, R., Kumar, H., et al. (2023), GRB Coordinates Network, "GRB 230827.256 : GIT optical follow-up of ZTF23abaanxz/AT2023qxj", 34576, 1.

26. Li, M. L., Vail, J. L., Ho, A. Y. Q., Coughlin, M., Perley, D., (includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "AT 2023qxj: ZTF discovery of the likely afterglow of Fermi GRB 230827256", 34574, 1.

27. Kumar, R., **Salgundi, A.**, Swain, V., Kumar, H., Bhalerao, V., et al. (2023), GRB Coordinates Network, "GRB 20230818A: GIT optical upper limit", 34514, 1.

28. Kumar, H., Swain, V., Teja, R., Kumar, R., **Salgundi, A.**, et al. (2023), GRB Coordinates Network, "GRB 230812B: GIT Confirmation of SN rise", 34500, 1.

29. Kumar, R., Sharma, R., Swain, V., **Salgundi, A.**, Kumar, H., et al. (2023), GRB Coordinates Network, "GRB230816A: Possible host and GIT detection of optical counterpart", 34460, 1.

30. Kumar, R., **Salgundi, A.**, Swain, V., Kumar, H., Bhalerao, V., et al. (2023), GRB Coordinates Network, "GRB 230812B: GIT optical follow-up", 34420, 1.

31. **Salgundi, A.**, Swain, V., Kumar, H., Ahumada, T., Stein, R., et al. (2023), GRB Coordinates Network, "GRB 230812B: Zwicky Transient Facility Identifies Optical Afterglow Candidate of a Fermi GRB (Trigger 713559497)", 34397, 1.

32. Swain, V., Andreoni, I., Coughlin, M., Kumar, H., & **Salgundi, A.**(2023), Transient Name Server AstroNote, "ZTF23aaoohpy/AT2023lcr: Zwicky Transient Facility discovery of a fast fading red transient", 178, 1.

33. Reusch, S., Ahumada, T., **Salgundi, A.**, Srinivasaragavan, G., Coughlin, M., et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230516az: GOTO candidate counterpart GOTO23hu ruled out by Zwicky Transient Facility observations", 34103, 1.

34. Ahumada, T., Andreoni, I., Anumarlapudi, A., Karambelkar, V., Kumar, H., (includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230627c: Additional observations from the Zwicky Transient Facility", 34100, 1.

35. Anumarlapudi, A., Ahumada, T., Kasliwal, M., Karambelkar, . 34089iraj ., Kumar, H., (includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230627c: Zwicky Transient Facility observations and candidates", 34089, 1.

36. Kumar, H., Swain, V., **Salgundi, A.**, Bhalerao, V., Anupama, G. C., et al. (2023), GRB Coordinates Network, "ZTF23aaoohpy/AT2023lcr: GROWTH-India Telescope follow-up observations", 34025, 1.

37. Swain, V., Andreoni, I., Coughlin, M., Kumar, H., **Salgundi, A.**, et al. (2023), GRB Coordinates Network, "ZTF23aaoohpy/AT2023lcr: Zwicky Transient Facility discovery of a fast fading red transient", 34022, 1.

38. Kumar, H., Swain, V., **Salgundi, A.**, Angail, K., Bhalerao, V., et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230615az: GROWTH-India candidates", 33974, 1.

39. Ahumada, T., Waratkar, G., Karambelkar, V., Stein, R., **Salgundi, A.**, et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230602ap: Zwicky Transient Facility observations", 33929, 1.

40. Karambelkar, V., Ahumada, T., Stein, R., Anumarlapudi, A., Waratkar, G., (includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230529ay: Zwicky Transient Facility observations", 33900, 1.

41. Ahumada, T., Anumarlapudi, A., Karambelkar, V., Stein, R., Waratkar, G., (includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230528a: Zwicky Transient Facility observations", 33899, 1.

42. Anumarlapudi, A., Ahumada, T., Karambelkar, V., Stein, R., Waratkar, G., .(includes **Salgundi, A.**) et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230527ch: Zwicky Transient Facility observations", 33898, 1.

43. Swain, V., Kumar, H., Karambelkar, V., **Salgundi, A.**, Anumarlapudi, A., et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230521k: Additional candidates from Zwicky Transient Facility", 33858, 1.

44. Ahumada, T., Karambelkar, V., Stein, R., Waratkar, G., **Salgundi, A.**, et al. (2023), GRB Coordinates Network, "LIGO/Virgo/KAGRA S230521k: Zwicky Transient Facility observations", 33848, 1.

45. Ahumada, T., Karambelkar, V., Stein, R., Kumar, H., Swain, V., (includes **Salgundi, A.**)., et al. (2023), GRB Coordinates Network, "GRB 230513A: Zwicky Transient Facility continuous observations of a Fermi Short GRB (Trigger 705709044)", 33812, 1.

46. Kumar, H., Swain, V., **Salgundi, A.**, Suresh, A., Ahumada, T., et al. (2023), GRB Coordinates Network, "GRB 230513A: Zwicky Transient Facility Follow-Up of a Fermi Short GRB (Trigger 705709044)", 33801, 1.

47. Swain, V., Kumar, H., **Salgundi, A.**, Bhalerao, V., Anupama, G. C., et al. (2023), GRB Coordinates Network, "GRB 230512A: GIT non detection of afterglow candidate", 33797, 1.

48. Kumar, H., Swain, V., **Salgundi, A.**, Bhalerao, V., Anupama, G. C., et al. (2023), GRB Coordinates Network, "GRB 230512A: GIT optical follow-up ZTF candidates", 33786, 1.

49. Swain, V., **Salgundi, A.**, Kumar, H., Bhalerao, V., Anupama, G. C., et al. (2023), GRB Coordinates Network, "GRB 230510A: GIT optical upper limits", 33777, 1.