

Anirudh Salgundi

PhD student at University of North Carolina at Chapel Hill

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Education

Ph.D. in Physics <i>University of North Carolina at Chapel Hill</i> Advisor: Prof. Igor Andreoni	<i>Aug 2025 – Present</i> <i>Chapel Hill, NC, USA</i>
Master of Science in Physics <i>Christ University</i>	<i>June 2020 – May 2022</i> <i>Bengaluru, India</i>
Bachelor of Science in Physics, Chemistry & Mathematics <i>National College Basavanagudi, Bangalore University,</i>	<i>June 2017 – Sep 2020</i> <i>Bengaluru, India</i>

Research Experience

Project Research Assistant – <i>Indian Institute of Technology Bombay</i> Supervisor: Prof. Varun Bhalerao	<i>Jan 2023 – Present</i> <i>Mumbai, India</i>
Visiting Student Researcher – <i>Indian Institute of Astrophysics</i> Supervisor: Dr. Santanu Mondal	<i>Dec 2022</i> <i>Bengaluru, India</i>

Awards & Fellowships

Shearin Fellowship – <i>University of North Carolina at Chapel Hill</i> <i>Awarded for academic excellence and research potential in the field of astrophysics.</i>	<i>Aug 2025</i>
Visiting Student Fellowship – <i>Indian Institute of Astrophysics</i> <i>Received to conduct research on Black Hole X-ray binaries.</i>	<i>Dec 2022</i>

Conferences and workshops attended

Workshop: Workshop on AstroStatistics	<i>Dec 2024</i>
Conference (Poster): Transients 2024	<i>Apr 2024</i>
Conference (Poster): 42 nd Meeting of the Astronomical Society of India	<i>Feb 2024</i>
Summer School (Remote): Zwicky Transient Facility Summer School	<i>July 2023</i>
Conference (Poster): 41 st Meeting of the Astronomical Society of India	<i>March 2023</i>

Observing Experience and Accepted proposals

Chandra DDT, Cycle–26 (Co-PI) 20 ks observations with ACIS instrument “GRB 250704B / EP250704a – Decoding the mysterious central engine of a short burst”	<i>July 2025</i>
GROWTH – India Telescope: Cumulative 14 nights of observing experience	<i>Dec 2023</i>
Chandra DDT, Cycle–24 (Co-PI) 50 ks observations with ACIS instrument “Observing GRB 230812B – To understand Jet Physics for an Extremely Bright GRB”	<i>Sep 2023</i>
AstroSat ToO Cycle–A11 (Co-PI) 40 ks observations with LAXPC and SXT instruments “Spectro-temporal studies of XTE J1701–462 during its outburst, using AstroSat”	<i>Sep 2022</i>

AstroSat ToO Cycle–A11 (Co-PI) 40 ks observations with LAXPC and SXT instruments Aug 2022
“Spectro-temporal studies of GX 339–4 during its outburst, using AstroSat”

Technical Skills

Astronomy Software: XSPEC, XSELECT, FTOOLS, DS9, IRAF

Programming Languages: Python, Bash, L^AT_EX, html, css

Python Packages: Astropy, Stingray, NumPy, SciPy, Pandas, Matplotlib, Seaborn

Outreach and positions of responsibility

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

Research Project Mentoring/Co-mentoring

K. Bhuvanesh – “ <i>Thermonuclear Bursts in Neutron Star X-ray Binaries</i> ” Currently Undergraduate, Indian Institute of Technology Bombay	May – July 2025
Bharat Arora – “ <i>Thermonuclear Bursts in Neutron Star X-ray Binaries</i> ” Currently Undergraduate, Indian Institute of Technology Bombay	May – July 2025
Vihaang – “ <i>Thermonuclear Bursts in Neutron Star X-ray Binaries</i> ” Currently Undergraduate, Indian Institute of Technology Bombay	May – July 2025
Mayank Jain – “ <i>Thermonuclear Bursts in Neutron Star X-ray Binaries</i> ” Currently Undergraduate, Indian Institute of Technology Bombay	May – July 2025
Japman Kaur Aneja – “ <i>Thermonuclear Bursts in Neutron Star X-ray Binaries</i> ” Currently Undergraduate, Indian Institute of Technology Bombay	May – July 2025
Nishanth Karthik Nayak – “ <i>Determining Distances and Ages of Open Clusters</i> ” Currently Undergraduate (Physics), Pennsylvania University	Nov 2022
Shibam Sundar Mahakud – “ <i>Determining Distances and Ages of Open Clusters</i> ” Currently Undergraduate (Mechanical Engineering), Indian Institute of Technology Bombay	Nov 2022
Manan V Jain “ <i>Building Citizen Science Program Back-End Infrastructure</i> ” Currently Undergraduate (Aerospace Engineering), Amrita Vishwa Vidyapeetham	Sep 2022

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 continued 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 ZTF23abaaanz/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, "ZTF23aaooohpy/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., Anumarpudi, 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. Anumarpudi, 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, "ZTF23aaooohpy/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, "ZTF23aaooohpy/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., Anumarpudi, 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., Anumarpudi, 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. Anumarpudi, 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.**, Anumarpudi, 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.