Gokul P. Srinivasaragavan

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Summary and Research interests

Time-domain astronomy; gamma-ray burst afterglows; core-collapse supernovae; stellar engine-driven transients; physics of relativistic explosions.

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Current/upcoming work:
Studying stellar engine-driven transients discovered without gamma-ray triggers (orphan afterglows, X-ray flashes, etc.) and their multi-wavelength counterparts.

Unified Astronomy Thesaurus Keywords: Gamma-ray bursts, Core-collapse supernovae, Relativistic jets

Education

Ph.D. in Astronomy – *University of Maryland, College Park* (2026)

M.S. in Astronomy – *University of Maryland, College Park* (2024)

B.S. in Astrophysics – *California Institute of Technology* (2021)

Research Experience

- CIERA Postdoctoral Fellow,
  Northwestern University (September 2026 To August 2029)
- Postdoctoral Associate, University of
  Maryland/GSFC and Caltech (April 2026 to September 2026)
- Visiting Student Researcher Caltech Astronomy
  (Host: Prof. Mansi Kasliwal) (October 2025 to April 2026)

  California Institute of Technology, Pasadena, CA
- Ph.D. Student/Candidate in Astronomy
  (Advisor: Dr. S. Bradley Cenko) (August 2021 to April 2026)

  University of Maryland, College Park, College Park, MD

  NASA Goddard Space Flight Center, Greenbelt, MD
- Undergraduate Research Assistant
  (Advisor: Prof. Mansi Kasliwal) (January 2020 to June 2021)

  California Institute of Technology, Pasadena, CA
- Student Undergrad Laboratory Intern
  (Advisor: Dr. Maria Dainotti) (June 2020 to August 2020)

SLAC, Menlo Park, CA (June 2019 to August 2019)

- SURF summer intern
  (Advisor: Dr. Raghvendra Sahai) (June 2018 to Aug 2018)

  NASA Jet Propulsion Laboratory, Pasadena, CA, USA

Awards and Fellowships

- CIERA Postdoctoral Fellowship (2026 -2029)
- Ohio State Center for Cosmology and Astroparticle Physics
  Price Prize Recipient (May 2025)

  – The Price Prize recognizes research excellence and exceptional promise in areas related to CCAPP initiatives. Two recipients are selected annually by the CCAPP Science Board. CCAPP hosts Prize recipients for a week during which they give a Price Prize seminar on their research, establish long-term collaborative relationships. (Text taken from Price Prize posting)
- UMD College of CMNS Dean's Fellow (June 2022)

  – Dean's Fellowships are awarded to outstanding students to support their research and progress toward degree, to cover one semester of full stipend support in order to allow students the freedom to focus fully on their research.
- Completion of GROWTH Summer School (August 2020)

  – A certificate of completion after finishing the GROWTH Summer School, a workshop that teaches skills and techniques for multiwavelength follow up of transient astronomical sources.
- Caltech Housner Fund Recipient (December 2019)

  – Successful proposal accepted by the Undergraduate Deans to receive funding for travel to an international conference (30th Texas Symposium For Relativistic Astrophysics in Porstmouth, United Kingdom) to present research.

Mentoring Experience

- Creator of Mentoring Program between Senior Undergraduate and Graduate Students (*UMD College Park Department of Astronomy*) – I began the Astronomy Department's first mentoring program between senior undergraduate and graduate students, for the purpose of guiding seniors through either the graduate school admissions process or giving career advice if they choose not to apply to graduate school. I served as the program lead from 2022-2025. The program is offered yearly now. (September 2022 to May 2025)
- Senior undergrad student Muhammad Mousa (*NASA Goddard*) – I was the primary research mentor for Muhammad through the CRESST NASA Goddard Summer Internship Program during Summer 2024 and Summer 2025. I also was Muhammad's senior thesis mentor during the 2024-2025 academic year, co-advising with Prof.

Maryam Modjaz at the University of Virginia. Muhammad is working on a single-object paper on a nearby broad-lined Type Ic SN, and is currently finishing up this work and applying for post-bac positions. (June 2024 to Present)

- Senior undergrad student Rohan Kane (*UMD College Park*) – I mentored Rohan through the graduate school application process. (September 2022 to May 2023)
- Junior undergrad Student Rodney Speights (*San Diego State University*) – I began mentoring Rodney when he was a HS Junior, guiding him through the undergraduate admissions process, independently teaching him astronomy concepts, and guiding him through REU applications. (June 2020 to June 2023)

Teaching Experience

- TA Intro to Astronomy (ASTR 101)
  – Prof. Eliza Kempton (August 2021 to December 2021)
- Taught independent astronomy and
  Python course to 2 HS students (August 2021 to December 2021)

Professional Development

- Referee for Astrophysical Journal and Astronomy & Astrophysics (May 2025 to Present)
- Creator of High Energy and Transients (HEAT) meeting in University of Maryland Astronomy and Physics Departments (February 2025)

  – HEAT is a weekly meeting series in the Astronomy and Physics department for topics pertaining to high energy and transient astrophysics. This meeting is also being used as a forum for guests to the department to give talks. I was the chair of the meeting during Spring 2025, and the meeting series is continuing during the 2025-2026 academic year.
- Student Leader (1 of 4) for the Cosmic
  Explorers Science Interest Group (April 2022 to September 2025)

  – The program addresses the needs of students in astrophysics and space science, based on analyses of the Astro2020 decadal survey, NASA's strategic plans, the AIP Team-Up report, and the White House OSTP Interagency Roadmap to Support Space-Related STEM Education and Workforce. The student-focused science interest group is a conduit between undergraduate and graduate students and the activities of NASA Astrophysics and the Cosmic Origins/Physics of the Cosmos program offices.
- Co-creator of Cosmos Crusaders Podcast (April 2022 to March 2023)

  – The podcast highlights the stories of astronomers from varying backgrounds and perspectives, and features guests ranging from graduate students to tenured Professors.
- Member of EDI Committee for

University of Maryland Astronomy Department (August 2021 to Present)

Technical Skills

Observing experience

- Lowell Discovery Telescope: Large Monolithic Imager, DeVeny Spectograph
- Palomar 200": Wide Field Infrared Camera (WIRC), Double Spectrograph (DBSP)
- NASA Infrared Telescope Facility (IRTF): SpeX

Coding Experience: Python, HTML, GitHub, MATLAB, C, LaTeX

Data reduction experience: *Swift* UVOT and XRT, near-infrared and optical images and spectroscopy, Fermi-LAT

Telescope Proposals

PI

- Studying X-ray Flashes Discovered by the Einstein Probe (Gemini GMOS-N/S, 12.9 hours, 2026A)
- Searching for an Off-Axis Jet in EP250108A/SN 2025kg (Very Large Array, 2 Hours, 2026A)
- ToO Observations of Relativistic Transients From the Zwicky Transient Facility (Lowell Discovery Telescope, 6 hours, 2025B)
- Studying X-ray Flashes Discovered by the Einstein Probe (Gemini GMOS-N/S, 15 hours, 2025B)
- ToO Observations of Relativistic Transients From the Zwicky Transient Facility (Lowell Discovery Telescope, 6 hours, 2025A)
- EP 241021A: An X-ray Transient Bridging the Gap Between GRBs and SNe (Very Large Array DDT, 6 hours, 2024B)
- ToO Observations of Relativistic Transients From the Zwicky Transient Facility (Lowell Discovery Telescope, 10 hours, 2024B)
- ToO Observations of Relativistic Transients From the Zwicky Transient Facility (Lowell Discovery Telescope, 7 hours, 2024A)
- *Swift* ToOs (> 20 accepted)

Selected Co-I

- X-ray Flashes: Dirty Fireballs or Off-axis GRBs? (Very Large Array, Hubble Space Telescope, XMM-Newton joint proposal, 17.3 hours, 2025B)
- Tracking the Emergence of an Accretion Disk in an LFBOT (Hubble Space Telescope DD, 6 orbits, Cycle 32)

- A Search for SNe Ic-BL with X-Ray Afterglows Using ZTF+*Swift* (*Swift*, 60 ks, Cycle 19 GI)
- Finding Relativistic Stellar Explosions as Fast Optical Transients (Gemini GMOS-N/S, 6 hours, 2025A)
- uGMRT Observations of AT2023sva - Orphan Afterglow of a Relativistic Cosmic Explosion (uGMRT, 12 hours, Cycle 47)
- Orphan Afterglows, X-Ray Flashes, and Dirty Fireballs (Very Large Array, 13.9 Hours, 2025A)
- Illuminating the r-process yield of neutron star mergers with Keck spectroscopy (Keck, 2 Partnership ToOs, 2025A)
- The X-ray Flash 250419A: A Candidate Dirty Fireball (Chandra DDT, 46 ks, Cycle 26)

Selected Talks

22. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Talk at Northwestern Observational Meeting
– *Northwestern University, Evanston, IL* (November 2025)

21. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited Seminar at Stanford KIPAC
– *Stanford University, Palo Alto, CA* (October 2025)

20. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited Price Prize Seminar
– *Ohio State University, Columbus, Ohio* (October 2025)

19. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited Talk at Carnegie Lunch Seminar
– *Carnegie Observatories, Pasadena, CA* (April 2025)

18. *Orphan Afterglows - AT 2023sva and the State of the Field*
Contributed Talk at Celebrating 20 years of Swift Discoveries
– *Florence, Italy* (March 2025)

17. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Explosive Astro Talk
– *UC Berkeley, Berkeley, CA* (March 2025)

16. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited Talk at THEA Seminar
– *Columbia University, New York City, NY* (March 2025)

15. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited Talk at Harvard TDA Meeting
– *Harvard University, Cambridge, MA* (February 2025)

14. *Orphan Afterglows - AT 2023sva and the State of the Field*
Invited Talk at ITC Luncheon
– *Harvard University, Cambridge, MA* (February 2025)

13. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
NOIRLAB Flash Seminar
– *NOIRLAB, Tucson, AZ* (January 2025)

12. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Big Boom Journal Club
– *University of Arizona, Tucson, AZ* (January 2025)

11. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited Talk at IPAC Seminar
– *California Institute of Technology, Pasadena, CA* (November 2024)

10. *Unraveling the GRB-SN Connection*
Talk at UCSD Journal Club
– *Unviersity of San Diego, California , San Diego, CA* (November 2024)

9. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited talk at UWM Center for Gravitation, Cosmology & Astrophysics Seminar
– *University of Wisconsin Milwaukee, Milwaukee, WI* (October 2024)

8. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Invited talk at UVA Time Domain Astronomy Meeting
– *University of Virginia, Charlottesville, VA* (October 2024)

7. *The Diversity of Massive Stellar Deaths and Relativistic Jets: Unraveling a Cosmic Tandem*
Talk at Cornell Astrophysics Lunch
– *Cornell Unviersity, Ithaca, NY* (September 2024)

6. *GRB 221009A/SN 2022xiw and GRB 230812B/SN 2023pel*
– Two Ordinary SNe associated with Energetic GRBs
Contributed Talk at Rise_Time Conference – *Purdue University, West Lafayette, IL* (August 2024)

5. *GRB 221009A/SN 2022xiw and GRB 230812B/SN 2023pel*
– Two Ordinary SNe associated with Energetic GRBs
Talk at Northwestern Observational Meeting – *Northwestern Unviersity, Evanston, IL* (February 2024)

4. *GRB 221009A/SN 2022xiw and GRB 230812B/SN 2023pel – Two Ordinary SNe associated with Energetic GRBs*
   Invited Talk for Monday Afternoon Talk at MIT
   – *Massachusetts Institute of Technology, Cambridge, MA* (November 2023)

3. *GRB 221009A/SN 2022xiw and GRB 230812B/SN 2023pel – Two Ordinary SNe associated with Energetic GRBs*
   Invited Talk at LDT Partners Meeting
   – *Virtual* (November 2023)

2. *GRB 221009A/SN 2022xiw and GRB 230812B/SN 2023pel – Two Ordinary SNe associated with Energetic GRBs*
   Invited Talk at ZTF meeting
   – *California Institute of Technology, Pasadena CA* (October 2023)

1. *A Sensitive Search for Supernova Emission Associated with the Extremely Energetic and Nearby GRB 221009A*
   Contributed Talk at GRB 50 Conference
   – *Warrenton, VA* (August 2023)

Publications (24* Total, 8* First Author)

> 550 citations, > 180 first-author citations as of May 2026.

* 8th first-author paper is submitted to ApJ and is on arXiv.

Lead

[1] **Srinivasaragavan, G. P.** et al. "EP250108a/SN 2025kg: A Jet-driven Stellar Explosion Interacting with Circumstellar Material". In: 988.2, L60 (Aug. 2025), p. L60. DOI: 10.3847/2041-8213/ade870. arXiv: 2504.17516 [astro-ph.HE].

[2] **Srinivasaragavan, G. P.** et al. "Multiwavelength analysis of AT 2023sva: a luminous orphan afterglow with evidence for a structured jet". In: 538.1 (Mar. 2025), pp. 351–372. DOI: 10.1093/mnras/staf290. arXiv: 2501.03337 [astro-ph.HE].

[3] **Srinivasaragavan, G.P.** et al. "EP250827b/SN 2025wkm: An X-ray Flash-Supernova Powered by a Central Engine and Circumstellar Interaction". In: (2025). arXiv: 2512.10239 [astro-ph.HE]. URL: https://arxiv.org/abs/2512.10239.

[4] **Srinivasaragavan**, G. P. et al. "Characterizing the Ordinary Broad-line Type Ic SN 2023pel from the Energetic GRB 230812B". In: 960.2, L18 (Jan. 2024), p. L18. DOI: 10.3847/2041-8213/ad16e7. arXiv: 2310.14397 [astro-ph.HE].

[5] **Srinivasaragavan, G. P**. et al. "Optical and Radio Analysis of Systematically Classified Broad-lined Type Ic Supernovae from the Zwicky Transient Facility". In: 976.1, 71 (Nov. 2024), p. 71. DOI: 10.3847/1538-4357/ad7fde. arXiv: 2408.14586 [astro-ph.HE].

[6] **Srinivasaragavan, G.P.** et al. "A Sensitive Search for Supernova Emission Associated with the Extremely Energetic and Nearby GRB 221009A". In: 949.2, L39 (June 2023), p. L39. DOI: 10.3847/2041-8213/accf97. arXiv: 2303.12849 [astro-ph.HE].

[7] **Srinivasaragavan, G.P.** et al. "PGIR 20eid (SN 2020qmp): A Type IIP Supernova at 15.6 Mpc discovered by the Palomar Gattini-IR survey". In: 660, A138 (Apr. 2022), A138. DOI: 10.1051/0004-6361/202142158. arXiv: 2109.02159 [astro-ph.HE].

[8] **Srinivasaragavan, G.P.**, M. G. Dainotti, N. Fraija, X. Hernandez, S. Nagataki, A. Lenart, L. Bowden, and R. Wagner. "On the Investigation of the Closure Relations for Gamma-Ray Bursts Observed by Swift in the Post-plateau Phase and the GRB Fundamental Plane". In: 903.1, 18 (Nov. 2020), p. 18. DOI: 10.3847/1538-4357/abb702. arXiv: 2009.06740 [astro-ph.HE].

Significant Contribution

[9] A. Corsi, A. Y. Q. Ho, S. B. Cenko, S. R. Kulkarni, S. Anand, S. Yang, J. Sollerman, **Srinivasaragavan, G.P.**, et al. "A Search for Relativistic Ejecta in a Sample of ZTF Broad-lined Type Ic Supernovae". In: 953.2, 179 (Aug. 2023), p. 179. DOI: 10.3847/1538-4357/acd3f2. arXiv: 2210.09536 [astro-ph.HE].

[10] M. G. Dainotti, N. Omodei, **Srinivasaragavan, G. P.**, et al. "On the Existence of the Plateau Emission in High-energy Gamma-Ray Burst Light Curves Observed by Fermi-LAT". In: 255.1, 13 (July 2021), p. 13. DOI: 10.3847/1538-4365/abfe17. arXiv: 2105.07357 [astro-ph.HE].

[11] K. De, M. C. B. Ashley, I. Andreoni, M. M. Kasliwal, R. Soria, **Srinivasaragavan, Gokul P.**, et al. "Constraining the X-Ray-Infrared Spectral Index of Second-timescale Flares from SGR 1935+2154 with Palomar Gattini-IR". In: 901.1, L7 (Sept. 2020), p. L7. DOI: 10.3847/2041-8213/abb3c5. arXiv: 2007.02978 [astro-ph.HE].

Additional Co-author

[12] A. Y. Q. Ho et al. "A Luminous Red Optical Flare and Hard X-Ray Emission in the Tidal Disruption Event AT 2024kmq". In: 989.1, 54 (Aug. 2025), p. 54. DOI: 10.3847/1538-4357/ade8f2.

[13] M. L. Li et al. "The Nature of Optical Afterglows without Gamma-Ray Bursts: Identification of AT2023lcr and Multiwavelength Modeling". In: 985.1, 124 (May 2025), p. 124. DOI: 10.3847/1538-4357/adc800. arXiv: 2411.07973 [astro-ph.HE].

[14] B. O'Connor et al. "Characterization of a Peculiar Einstein Probe Transient EP240408a: An Exotic Gamma-Ray Burst or an Abnormal Jetted Tidal Disruption Event?" In: 979.2, L30 (Feb. 2025), p. L30. DOI: 10.3847/2041-8213/ada7f5. arXiv: 2410.21622 [astro-ph.HE].

[15] S. Schulze et al. "Extremely stripped supernova reveals a silicon and sulfur formation site". In: 644.8077 (Aug. 2025), pp. 634–639. DOI: 10.1038/s41586-025-09375-3. arXiv: 2409.02054 [astro-ph.HE].

[16] T. Ahumada et al. "Searching for Gravitational Wave Optical Counterparts with the Zwicky Transient Facility: Summary of O4a". In: 136.11, 114201 (Nov. 2024), p. 114201. DOI: 10.1088/1538-3873/ad8265. arXiv: 2405.12403 [astro-ph.HE].

[17] S. Anand et al. "Collapsars as Sites of r-process Nucleosynthesis: Systematic Photometric Near-infrared Follow-up of Type Ic-BL Supernovae". In: 962.1, 68 (Feb. 2024), p. 68. DOI: 10.3847/1538-4357/ad11df. arXiv: 2302.09226 [astro-ph.HE].

[18] K. K. Das et al. "Probing Presupernova Mass Loss in Double-peaked Type Ibc Supernovae from the Zwicky Transient Facility". In: 972.1, 91 (Sept. 2024), p. 91. DOI: 10.3847/1538-4357/ad595f. arXiv: 2306.04698 [astro-ph.HE].

[19] R. Gamble Jr., J. Forman, A. Barnes, G. Srinivasaragavan, I. Holt, and M. Jones Jr. "Multi-messenger emission characteristics of blazars". In: *Frontiers in Astronomy and Space Sciences* 11, 1401891 (Sept. 2024), p. 1401891. DOI: 10.3389/fspas.2024.1401891. arXiv: 2405.14764 [astro-ph.HE].

[20] T. Hussenot-Desenonges et al. "Multiband analyses of the bright GRB 230812B and the associated SN2023pel". In: 530.1 (May 2024), pp. 1–19. DOI: 10.1093/mnras/stae503. arXiv: 2310.14310 [astro-ph.HE].

[21] B. O'Connor et al. "A structured jet explains the extreme GRB 221009A". In: *Science Advances* 9.23, eadi1405 (June 2023), eadi1405. DOI: 10.1126/sciadv.adi1405. arXiv: 2302.07906 [astro-ph.HE].

[22] K. De et al. "SRGA J181414.6-225604: A New Galactic Symbiotic X-Ray Binary Outburst Triggered by an Intense Mass-loss Episode of a Heavily Obscured Mira Variable". In: 935.1, 36 (Aug. 2022), p. 36. DOI: 10.3847/1538-4357/ac7c6e. arXiv: 2205.09139 [astro-ph.HE].

[23] M. G. Dainotti, A. Ł. Lenart, N. Fraija, S. Nagataki, D. C. Warren, B. De Simone, G. Srinivasaragavan, and A. Mata. "Closure relations during the plateau emission of Swift GRBs and the fundamental plane". In: 73.4 (Aug. 2021), pp. 970–1000. DOI: 10.1093/pasj/psab057. arXiv: 2105.10717 [astro-ph.HE].

[24] K. De et al. "A Population of Heavily Reddened, Optically Missed Novae from Palomar Gattini-IR: Constraints on the Galactic Nova Rate". In: 912.1, 19 (May 2021), p. 19. DOI: 10.3847/1538-4357/abeb75. arXiv: 2101.04045 [astro-ph.HE].

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