

Curriculum Vitae

Ore Gottlieb

CONTACT INFORMATION

Department of Physics
Massachusetts Institute of Technology

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RESEARCH INTERESTS

Multi-messenger Astrophysics, Black Holes, Core Collapse, Neutron Stars, Compact Binary Mergers, Supernovae, Gamma-ray Bursts, Fast Transients, Accretion Disks, Active Galactic Nuclei, Gravitational Waves, and Particle Emission.

Areas of expertise: relativity, magnetohydrodynamics, radiation processes, and numerical simulations.

ACADEMIC POSITIONS

2026-2025 Assistant Professor of Physics, Massachusetts Institute of Technology
2023-2025 Visiting Scientist, Massachusetts Institute of Technology
2023-2025 Flatiron Research/THEA fellow, CCA & Columbia University
2021-2023 Rothschild/CIERA fellow, Northwestern University

EDUCATION

2016-2021 Ph.D. in Physics and Astronomy, advised by Ehud Nakar, Tel Aviv University, Israel
2014-2016 M.Sc. in Physics, cum Laude, advised by Amiel Sternberg, Tel Aviv University, Israel
2011-2014 Additional B.Sc. in Physics, Tel Aviv University, Israel
2009-2011 B.Sc. in Computer Science, Technion, Haifa, Israel

SCHOLARSHIPS, HONORS AND AWARDS

- Blavatnik Regional Awards for Young Scientists Finalist in Physical Sciences & Engineering (2025)
- Flatiron Research Fellowship (2023)
- THEA Postdoctoral Fellowship (2023)
- CIERA Postdoctoral Fellowship (2021)
- Rothschild Postdoctoral Fellowship (2021)
- Israel Physical Society - Yoel Rakah Prize for Outstanding Theoretical Physics Student (2021)
- Award for outstanding achievements in research, Tel Aviv University (2021)
- Award for outstanding achievements in research, Tel Aviv University (2019)
- The Yuval Ne'eman award for Outstanding academic achievement, Tel Aviv University (2019)
- Award for outstanding achievements in research, Tel Aviv University (2018)

FUNDING & COMPUTATIONAL AWARDS

- 2026: PI of ASCR ALCC time award, 4M GPU-hours (eq. \sim \$16M)
- 2025: PI of ASCR ALCC time award, 2.4M GPU-hours (eq. \sim \$9.6M)
- 2025: PI of Energy Research Computing Allocations Process award, 96K GPU-hours (eq. \sim \$200K)
- 2024-2025: Science-PI of NASA Fermi Cycle 17 Guest Investigator program NNH23ZDA001N – \$80K
- 2024: PI of Energy Research Computing Allocations Process award, 120K GPU-hours (eq. \sim \$260K)
- 2022-2023: Co-PI of ASCR LCC time award, 2.6M GPU-hours (eq. \sim \$6.5M)
- 2021-2022: Science-PI of NASA Fermi Cycle 14 Guest Investigator program 80NSSC22K0031 – \$80K

PROFESSIONAL ACTIVITIES

- Panel Reviewer for NSF, BSF, ISF, NASA Postdoctoral Program, Fermi Guest Investigator Program, Argonne Leadership Computing Facility Awards
- **Main organizer of a 2024 Summer Workshop in The Aspen Center for Physics:**
"Multi-Messenger Binary Mergers & Stellar Explosions"
- **Special session organizer in AAS summer meeting 2025**
"Beyond Mergers: Cataclysmic Events Powering r-Process Nucleosynthesis"
- **Special session organizer in AAS High Energy Astrophysics Division (HEAD) meeting 2023**
"Multi-messenger stripped-envelope supernovae"
- Journal Reviewer for MNRAS, The Astrophysical Journal, Astronomy & Astrophysics, Physical Review

List of Publications

50 total papers, > 7500 citations, h-index 28.
27 lead author papers, > 1800 citations, h-index 20.
5 mentored student papers.
1 science letter.
1 research note.

27. **O. Gottlieb**, B. D. Metzger, D. Issa, S. E. Li, M. Renzo, M. Isi
“Spinning into the Gap: Direct-Horizon Collapse as the Origin of GW231123 from End-to-End GRMHD Simulations,” *ApJL*, **993**, 54 (2025).
26. **O. Gottlieb**
“The Landscape of Collapsar Outflows: Structure, Signatures and Origins of Einstein Probe Relativistic Supernova Transients,” *ApJL*, **992**, 3 (2025).
25. **O. Gottlieb**, B. D. Metzger, F. Foucart, E. Ramirez-Ruiz
“A Unified Model of Kilonovae and GRBs in Binary Mergers Establishes Neutron Stars as the Central Engines of Short GRBs,” *ApJ*, **984**, 77 (2025).
24. **O. Gottlieb**, M. Renzo, B. D. Metzger, J. A. Goldberg, M. Cantiello
“She’s Got Her Mother’s Hair: End-to-End Collapsar Simulations Unveil the Origin of Black Holes’ Magnetic Field,” *ApJL*, **976**, 13 (2024).
23. **O. Gottlieb**, B. D. Metzger
“Late Jets, Early Sparks: Illuminating the Premaximum Bumps in Superluminous Supernovae,” *ApJL*, **974**, 1 (2024).
22. **O. Gottlieb**, A. Levinson, Y. Levin
“In LIGO’s Sight? Vigorous Coherent Gravitational Waves from Cooled Collapsar Disks,” *ApJL*, **972**, 4 (2024).
21. **O. Gottlieb**, B. D. Metzger, E. Quataert, D. Issa, T. Martineau, F. Foucart, M. Duez, L. Kidder, H. Pfeiffer, M. Scheel
“A Unified Picture of Short and Long Gamma-ray Bursts from Compact Binary Mergers,” *ApJL*, **958**, 33 (2023).
20. **O. Gottlieb**[†], D. Issa[†], J. Jacquemin-Ide, M. Liska, F. Foucart, A. Tchekhovskoy, B. D. Metzger, E. Quataert, R. Perna, D. Kasen, M. D. Duez, L. E. Kidder, H. P. Pfeiffer, M. A. Scheel
[†]**Contributed equally**
“Large-scale Evolution of Seconds-long Relativistic Jets from Black Hole-Neutron Star Mergers,” *ApJL*, **954**, 21 (2023).
19. **O. Gottlieb**, D. Issa, J. Jacquemin-Ide, M. Liska, A. Tchekhovskoy, F. Foucart, D. Kasen, R. Perna, E. Quataert, B. D. Metzger
“Hourlong Near-UV/Optical Emission from Mildly Relativistic Outflows in Black Hole-Neutron Star Mergers,” *ApJL*, **953**, 11 (2023).
18. **O. Gottlieb**, J. Jacquemin-Ide, B. Lowell, A. Tchekhovskoy, E. Ramirez-Ruiz
“Collapsar Black Holes are Born Slowly Spinning,” *ApJL*, **952**, 32 (2023).
17. **O. Gottlieb**, H. Nagakura, A. Tchekhovskoy, P. Natarajan, E. Ramirez-Ruiz, S. Banagiri, J. Jacquemin-Ide, N. Kaaz, V. Kalogera
“Jet-Inflated Cocoons in Dying Stars: New LIGO-Detectable Gravitational Wave Sources,” *ApJL*, **951**, 30 (2023).
16. **O. Gottlieb**, S. Moseley, T. Ramirez-Aguilar, A. Murguia-Berthier, M. Liska, A. Tchekhovskoy
“On the jet-ejecta interaction in 3D GRMHD simulations of binary neutron star merger aftermath,” *ApJL*, **933**, 2 (2022).
15. **O. Gottlieb**, M. Liska, A. Tchekhovskoy, O. Bromberg, A. Lalakos, D. Giannios, P. Mösta
“Black hole to photosphere: 3D GRMHD simulations of collapsars reveal wobbling and hybrid composition jets,” *ApJL*, **933**, 9 (2022).
14. **O. Gottlieb**, A. Tchekhovskoy, R. Margutti
“Shocked jets in CCSNe can power the zoo of fast blue optical transients,” *MNRAS*, **513**, 3810 (2022).
13. **O. Gottlieb**, A. Lalakos, O. Bromberg, M. Liska, A. Tchekhovskoy
“Black hole to breakout: 3D GRMHD simulations of collapsar jets reveal a wide range of transients,” *MNRAS*, **150**, 4962 (2022).
12. **O. Gottlieb**, E. Nakar
“The propagation of relativistic jets in expanding media,” *MNRAS*, **517**, 1640 (2022).

11. **O. Gottlieb**, N. Globus
“The role of jet-cocoon mixing, magnetization and shock breakout in neutrino and cosmic-ray emission from short GRBs,” *ApJL*, **915**, 4 (2021).
 10. **O. Gottlieb**, O. Bromberg, A. Levinson, E. Nakar
“Intermittent mildly magnetized jet as the source of GRBs,” *MNRAS*, **504**, 3947 (2021).
 9. **O. Gottlieb**, E. Nakar, O. Bromberg
“The structure of hydrodynamic γ -ray burst jets,” *MNRAS*, **500**, 3511 (2021).
 8. **O. Gottlieb**, O. Bromberg, C.B. Singh, E. Nakar
“The structure of weakly-magnetized γ -ray burst jets,” *MNRAS*, **498**, 3320 (2020).
 7. **O. Gottlieb**, A. Levinson, E. Nakar
“Intermittent hydrodynamic jets in collapsars do not produce GRBs,” *MNRAS*, **495**, 570 (2020).
 6. **O. Gottlieb**, A. Loeb
“Electromagnetic signals from the decay of free neutrons in the first hours of neutron star mergers,” *MNRAS*, **493**, 1753 (2020).
 5. **O. Gottlieb**, A. Levinson, E. Nakar
“High efficiency photospheric emission entailed by formation of a collimation shock in gamma-ray bursts,” *MNRAS*, **488**, 1416 (2019).
 4. **O. Gottlieb**, E. Nakar, T. Piran
“Detectability of neutron star merger afterglows,” *MNRAS*, **488**, 2405 (2019).
 3. K. P. Mooley[†], A. T. Deller[†], **O. Gottlieb**[†], E. Nakar, G. Hallinan, S. Bourke, D. A. Frail, A. Horesh, A. Corsi, K. Hotokezaka
[†]**Contributed equally**
“Superluminal motion of a relativistic jet in the neutron star merger GW170817,” *Nature*, **561**, 355 (2018).
 2. **O. Gottlieb**, E. Nakar, T. Piran, K. Hotokezaka
“A cocoon shock breakout as the origin of the γ -ray emission in GW170817,” *MNRAS*, **479**, 588 (2018).
 1. **O. Gottlieb**, E. Nakar, T. Piran
“The cocoon emission - an electromagnetic counterpart to gravitational waves from neutron star mergers,” *MNRAS*, **473**, 576 (2018).
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5. J. Bopp, **O. Gottlieb**
“Fast Transients Fueled by Magnetic Fury from Slow-Spinning Collapsar Black Hole Accretion Disks,” *ApJL*, **982** 56 (2025).
 4. D. Issa, **O. Gottlieb**, B. D. Metzger, J. Jacquemin-Ide, M. Liska, F. Foucart, G. Halevi, A. Tchekhovskoy
“Magnetically Driven Neutron-rich Ejecta Unleashed: Global 3D Neutrino–General Relativistic Magnetohydrodynamic Simulations of Collapsars Probe the Conditions for r-process Nucleosynthesis,” *ApJL*, **985** 26 (2025).
 3. E. Guarini, I. Tamborra, **O. Gottlieb**
“State-of-the-Art Collapsar Jet Simulations Imply Undetectable Subphotospheric Neutrinos,” *PhRvD*, **107**, 023001 (2023).
 2. A. Lalakos, **O. Gottlieb**, N. Kaaz, K. Chatterjee, M. Liska, I. Christie, A. Tchekhovskoy, I. Zhuravleva, E. Nokhrina
“Bridging Bondi and Event Horizon Scales: 3D GRMHD Simulations Reveal X-Shaped Radio Galaxy Morphology,” *ApJL*, **936**, 5 (2022).
 1. M. Eisenberg, **O. Gottlieb**, E. Nakar
“Observational signatures of stellar explosions driven by relativistic jets,” *MNRAS*, **517**, 582 (2022).

MENTORED
STUDENT
PUBLICATIONS

1. **O. Gottlieb**
“Detecting Gravitational-waves from Collapsar Cocoon with the Cosmic Explorer,” *Cosmic Explorer Science Letter* (2023)
18. G. P. Srinivasaragavan, D. Li, X. J. Hall, **O. Gottlieb**, and 90 coauthors
“EP250827b/SN 2025wkm: An X-ray Flash-Supernova Powered by a Central Engine and Circumstellar Interaction,” *arXiv*, 2512.10239 (2025).
17. H. Chen, **O. Gottlieb**
“Inferring Neutron Star Nuclear Properties from Gravitational-Wave and Gamma-Ray Burst Observations,” *arXiv*, 2506.18151 (2025).
16. M. R. Izquierdo, C. Palenzuela, S. Liebling, **O. Gottlieb**, M. Bezares
“Implications of Magnetic Flux-Disk Mass Correlation in Black Hole-Neutron Star Mergers for GRB sub-populations,” *PhRvD*, 112, 063027 (2025).
15. A. Perna, **O. Gottlieb**, E. Shukla, D. Radice
“Connecting GRBs from Binary Neutron Star Mergers to Nuclear Properties of Neutron Stars,” *PhRvD*, 111, 063015 (2025).
14. A. Rudolph, I. Tamborra, **O. Gottlieb**
“Subphotospheric Emission from Short Gamma-Ray Bursts. II. Signatures of Non-Thermal Dissipation in the Multi-Messenger Signals,” *ApJ*, 983, 34 (2025).
13. A. Lalakos, A. Tchekhovskoy, O. Bromberg, **O. Gottlieb**, J. Jacquemin-Ide, M. Liska, H. Zhang
“Jets with a Twist: Emergence of FR0 Jets in 3D GRMHD Simulation of Zero Angular Momentum Black Hole Accretion,” *ApJ*, 964, 79 (2024).
12. V. Rohoza, A. Lalakos, M. Paik, K. Chatterjee, M. Liska, A. Tchekhovskoy, **O. Gottlieb**
“How to Turn Jets into Cylinders near Supermassive Black Holes in 3D GRMHD Simulations,” *ApJ*, 963, 29 (2024).
11. A. Rudolph, I. Tamborra, **O. Gottlieb**
“Subphotospheric emission from short gamma-ray bursts: Protons mold the multi-messenger signals,” *ApJ*, 961, 7 (2024).
10. J. Jacquemin-Ide, **O. Gottlieb**, B. Lowell, A. Tchekhovskoy
“Collapsar GRBs Grind their BHs to a Halt,” *ApJ*, 961, 212 (2024).
9. G. Halevi, B. Wu, P. Mösta, **O. Gottlieb**, A. Tchekhovskoy, D. R. Aguilera-Dena
“Density Profiles of Collapsed Rotating Massive Stars Favor Long Gamma-Ray Bursts,” *ApJL*, 944, 38 (2023).
8. A. Hajela, R. Margutti, J. S. Bright, K. D. Alexander, B. D. Metzger, V. Nedora, A. Kathirgamaraju, B. Margalit, D. Radice, E. Berger, A. MacFadyen, D. Giannios, R. Chornock, I. Heywood, L. Sironi, **O. Gottlieb**, and 20 coauthors
“Evidence for X-Ray Emission in Excess to the Jet-afterglow Decay 3.5 yr after the Binary Neutron Star Merger GW 170817: A New Emission Component,” *ApJL*, 927, 17 (2022).
7. K. Hotokezaka, E. Nakar, **O. Gottlieb**, S. Nissanke, K. Masuda, G. Hallinan, K. P. Mooley, A. T. Deller
“A Hubble constant measurement from superluminal motion of the jet in GW170817,” *Nature Astronomy*, 3, 940 (2019).
6. E. Nakar, **O. Gottlieb**, T. Piran, M. Kasliwal, G. Hallinan
“From γ to radio - The electromagnetic counterpart of GW170817,” *ApJ*, 867, 18 (2018).
5. K. P. Mooley, E. Nakar, K. Hotokezaka, G. Hallinan, A. Corsi, D. A. Frail, A. Horesh, T. Murphy, E. Lenc, D. L. Kaplan, K. De, D. Dobie, P. Chandra, A. T. Deller, **O. Gottlieb**, and 10 coauthors
“A mildly relativistic wide-angle outflow in the neutron star merger GW170817,” *Nature*, 554, 207 (2018).
4. O. Bromberg, A. Tchekhovskoy, **O. Gottlieb**, E. Nakar, T. Piran
“The gamma-rays that accompanied GW170817 and the observational signature of a magnetic jet breaking out of NS merger ejecta,” *MNRAS*, 475, 2971 (2018).

3. R. Harrison, **O. Gottlieb**, E. Nakar
 “Numerically calibrated model for propagation of a relativistic unmagnetized jet in dense media,”
[MNRAS, 477, 2128 \(2018\)](#).
2. M. M. Kasliwal, E. Nakar, L. P. Singer, D. L. Kaplan, D. O. Cook, A. Van Sistine, R. M. Lau, C. Fremling, **O. Gottlieb**, and 72 coauthors
 “Illuminating Gravitational Waves: A Concordant Picture of Photons from a Neutron Star Merger,” [Science, 358, 1559 \(2017\)](#).
1. B. P. Abbott et al.
 “Multi-messenger Observations of a Binary Neutron Star Merger,” [ApJL, 848, 12 \(2017\)](#).

RESEARCH NOTE

1. M. Renzo, J. A. Goldberg, A. Grichener, **O. Gottlieb**, M. Cantiello
 “Progenitor with small reaction networks should not be used as initial conditions for core collapse,”
[RNAAS, AAS55519 \(2024\)](#)

INVITED
 CONFERENCE
 TALKS

- APS GPS 2026, Denver, CO, USA - March 2026
- AstroNuc 2026, Tucson, AZ, USA - March 2026
- The 4th TDAMM Workshop, Huntsville, AL, USA - October 2025
- Relativistic fluids around compact objects, Warsaw, Poland - May 2025
- Workshop on GRBs and Central Engine Powered Transients, Playa Del Carmen, Mexico - December 2024
- GRB Forum 2024, Athens, Greece - July 2024
- Thinkshop on Fast Evolving Transients, Bormio, Italy - February 2024
- RESCEU-NBIA workshop on gravitational-wave sources, Tokyo, Japan - December 2023
- AAS High Energy Astrophysics Division (HEAD) meeting 2023, Waikōloa, Hawaii, USA - March 2023
- Growing black holes: accretion and mergers, Kathmandu, Nepal - May 2022
- Seventh physics & astrophysics at the extreme (PAX-VII) workshop, *introductory talk*, PSU, PA, USA - August 2021
- 2021 Israel Physical Society Conference, Nuclear Research Center Negev, Israel - February 2021
- Sixteenth Marcel Grossmann Meeting, Rome, Italy - July 2021
- 43rd COSPAR Scientific Assembly, Sydney, Australia - January 2021
- High Energy Astrophysics Japan Israel Workshop, RIKEN, Tokyo & Kobe, Japan - July 2019
- TeV Particle Astrophysics 2018, Langenbeck-Virchow-Haus, Berlin, Germany - August 2018

INVITED
 SEMINARS/
 COLLOQUIA

- Columbia Physics Colloquium, Columbia University, New York, NY, USA - November 2025
- COLIBRI seminar, COLIBRI Consortium, Online - September 2025
- Warsaw Colloquium for Theoretical Physics, Center for Theoretical Physics, Warsaw, Poland - May 2025
- Princeton Gravity Initiative seminar, Princeton University, Princeton, NJ, USA - April 2025
- Astrophysics seminar, Hebrew University, Jerusalem, Israel - April 2025
- Astrophysics seminar, Technion, Haifa, Israel - April 2025
- Institute for Fundamental Science seminar, University of Oregon, Eugene, OR, USA - March 2025
- Astronomy seminar, Stony Brook, New York, NY, USA - February 2025
- MIT Physics Colloquium, MIT, Cambridge, MA, USA - February 2025
- ZTF MMA Call, Zoom meeting - December 2024
- Galaxy lunch talk, Yale University, New Haven, CT, USA - November 2024
- Easytalk seminar, Goddard Space Flight Center, Greenbelt, MD, USA - October 2024
- Strong Gravity seminar, Perimeter Institute, Waterloo, Canada - October 2024
- Astroparticle seminar, Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark - September 2024
- LIGO–Virgo–KAGRA burst group, Online - June 2024
- Pizza Lunch Talk, Columbia University, New York, NY, USA - April 2024
- Simons Collaboration on Extreme Electrodynamics of Compact Sources Seminar, Zoom meeting - March 2024
- Cosmic Explorer Science Letter call, Zoom meeting - February 2024
- Astrophysics seminar, CRA, Georgia Tech, Atlanta, Georgia, USA - February 2024
- Theoretical Astrophysics seminar, UC Berkeley, Berkeley, CA, USA - February 2024
- Stars & Plasma group, CCA, Flatiron Institute, New York, NY, USA - November 2023
- CITA seminar, CITA, University of Toronto, Toronto, Ontario, Canada - October 2023

- Thursday lunch seminar, CCA, Flatiron Institute, New York, NY, USA - September 2023
- UND physics colloquium, UND, Grand Forks, ND, USA - April 2023
- Theory seminar, Northwestern University, Evanston, IL, USA - March 2023
- UW physics colloquium, University of Washington, Seattle, WA, USA - February 2023
- Thunch seminar, Princeton University, Princeton, NJ, USA - December 2022
- Astrophysics seminar, Technion, Haifa, Israel - July 2022
- Computational Relativistic Astrophysics seminar, Max-Planck Institute for Gravitational Physics, Potsdam, Germany - February 2022
- Explosive Astro Talk, UC Berkeley, Berkeley, CA, USA - January 2022
- High Energy AstroPhysics, UNAM, Mexico City, Mexico - January 2022
- Explosive Astro Talk, UC Berkeley, Berkeley, CA, USA - November 2021
- High-energy seminar, Sorbonne Universite, Paris, France - May 2021
- Theoretical Astroparticle Physics seminar, DESY Zeuthen, Berlin, Germany - April 2021
- Astrophysics Seminar, The Hebrew University, Jerusalem - June 2020
- Astrophysics Seminar, Tel Aviv University, Tel Aviv - June 2020
- LIGO Group seminar, MIT, Cambridge, MA, USA - September 2019
- Technion, Haifa, Israel - February 2019
- High Energy Astrophysics Seminar, The Hebrew University, Jerusalem - June 2017
- Astrophysics Seminar, Tel Aviv University, Tel Aviv - November 2015

CONTRIBUTED
TALKS

- High Energy Phenomena in Relativistic Outflows IX, Rio de Janeiro, Brazil - August 2025
- Stellar black hole formation and detection, Kyoto, Japan - March 2025
- Stars & Plasma group, CCA, Flatiron Institute, New York, NY, USA - February 2025
- Stars & Plasma group, CCA, Flatiron Institute, New York, NY, USA - June 2024
- High-Energy Phenomena in Relativistic Outflows VI, Paris, France - October 2023
- GRB50: The Past, Present, and Future of GRBs, Warrenton, VA, USA - August 2023
- The Transient and Variable Universe, Urbana, IL, USA - June 2023
- APS April meeting, Minneapolis, MN, USA - April 2023
- THEA seminar, Columbia University, New York, NY, USA - December 2022
- Stars & Plasma group, CCA, Flatiron Institute, New York, NY, USA - December 2022
- Theoretical Astrophysics seminar, UC Berkeley, Berkeley, CA, USA - October 2019
- Tea talk, Stanford University, Stanford, CA, USA - October 2019
- Special Seminar, UC Santa Cruz, Santa Cruz, CA, USA - October 2019
- TAPIR seminar, Caltech, Pasadena, CA, USA - October 2019
- Theory group, Carnegie Observatory, Pasadena, CA, USA - October 2019
- Astrophysics seminar, UC Los Angeles, Los Angeles, CA, USA - October 2019
- Astrophysics seminar, Northwestern University, Evanston, IL, USA - October 2019
- Astrophysics seminar, Columbia University, New York, NY, USA - September 2019
- High Energy group, University of Chicago, Chicago, IL, USA - September 2019
- Astrophysics seminar, NYU, New York, NY, USA - September 2019
- Compact Objects group, CCA, Flatiron Institute, New York, NY, USA - September 2019
- BBL seminar, MIT, Cambridge, MA, USA - September 2019
- ITC seminar, CfA, Harvard University, Cambridge, MA, USA - September 2019
- GRBs and Related Astrophysics in Multi-Messenger Era, Nanjing University, Nanjing, China - May 2019
- FOE19 Fifty-one Erg, North Carolina State University, Raleigh, NC, USA - May 2019
- KITP seminar, University of California, Santa Barbara, California, USA - August 2018
- Astrophysics seminar, Caltech, CA, USA - August 2018
- High-Energy Phenomena in Relativistic Outflows VI, Space Research Institute of Moscow, Russia - September 2017
- National Israeli Astronomy Seminar Day, Tel Aviv University, Israel - January 2017
- 2016 Israel Physical Society Conference, Tel Aviv University, Israel - December 2016
- Eighth Huntsville Gamma-Ray Burst Symposium, Huntsville, AL, USA - October 2016
- National Israeli Astronomy Seminar Day, Hebrew University, Israel - February 2016

MENTORING

Mentored Postdocs and Students

- Danat Issa (MIT, postdoctoral scholar)
- Nikola Bukowiecka (University of Rhode Island, graduate student)

- Leon Chan (University of Colorado, Boulder, graduate student as intern)
- Justin Bopp (CUNY, M.Sc. student)
- Teresita Ramirez-Aguilar (Northwestern University, graduate student)
- Serena Moseley (Northwestern University, graduate student)
- Tejus Deo-Dixit (MIT, undergraduate student)
- Maggie Sun (MIT, undergraduate student)

Co-mentored Students

- Sean Li (Columbia University, graduate student)
- Aretaios Lalakos (Northwestern University, graduate student)
- Ersilia Guarini (University of Copenhagen, graduate student)
- Gal Birenbaum (Tel Aviv University, graduate student)
- Krishna Kumar (IISER Thiruvananthapuram, M.Sc. student)
- Moshe Eisenberg (Tel Aviv University, M.Sc. student)

TEACHING
EXPERIENCE

- 2022-2023: Guest Lecturer: Northwestern University & Columbia University undergraduate courses.
- 2018-2019: Teaching Assistant: "Introduction to Astrophysics" - course for physics majors.
- 2016-2020: Teaching Assistant: "General Physics B1" - course for chemistry and geophysics majors.
- 2016: *Initiator & developer of the "Dark Matter experiment" for physics sophomores at Tel Aviv University.*
- 2015-2020: Instructor in second-year undergraduate physics teaching laboratories.
- 2014-2015: Instructor in first-year undergraduate physics teaching laboratories.

OUTREACH
ACTIVITY

- 2020: Co-author of a high-school textbook on space and astrophysics for final exams in Israel.
- 2014 - 2021: Science-oriented-youth program at Tel Aviv University
Half-day seminars in selected topics in physics and astrophysics to middle- and high-school classes.
Physics and astrophysics full-semester courses to middle- and high-school kids.
- 2014 - 2018: Tel Aviv University Astronomy Club ("TAU AstroClub")
Taking part in monthly public lectures, guided night sky observations, observatory "open house" evenings, and other outreach activities.
- 2014 - 2015: Netivim to the University
Science education in high schools of low socioeconomic status, including the development of the educational programs.
- 2011 - 2016: Perach
Science education in elementary schools and therapeutic boarding school.
Technion excelling mentor.

SELECTED
PRESS
RELEASE

- ['Impossible' black hole collision pushed relativity to its breaking point — and scientists finally understand how, Live Science, 2025](#)
- [Astronomers solve cosmic mystery surrounding two massive black holes that shouldn't exist, Yahoo!, 2025](#)
- [Scientists solve the mystery of 'impossible' merger of 'forbidden' black holes, SPACE, 2025](#)
- [Simulations reveal black holes inherit magnetic fields from parent stars, Phys, 2024](#)
- [Astrophysical simulations predict new detectable gravitational wave source from collapsing stars, Phys, 2024](#)
- [The elusive origins of long gamma-ray bursts may finally be revealed, SPACE, 2023](#)
- [New astrophysics model sheds light on additional source of long gamma-ray bursts, Science Daily, 2023](#)
- [Scientists find explanation for 'impossible' blast of light that hit Earth, Yahoo!, 2023](#)
- [Unprecedented gamma-ray burst explained by long-lived jet, Science Daily, 2023](#)
- [This gamma-ray space mystery may finally be solved with new black hole simulations, SPACE, 2023](#)
- [We Could Soon "Hear" the Gravitational Waves of Dying Stars, Sky & Telescope, 2023](#)
- [Dying stars build humongous 'cocoon' that shake the fabric of space-time, Live Science, 2023](#)
- [Gravitational waves may come from 'cocoon' of debris around dying stars, SPACE, 2023](#)
- [Dying stars' cocoons could be new source of gravitational waves, Science Daily, 2023](#)
- [Gravitational waves may come from 'cocoon' of debris around dying stars, Yahoo!, 2023](#)
- [AAS Journal author Series, YouTube, 2022](#)
- [How wobbling black holes explain blinking cosmic lights, Yahoo!, 2022](#)
- [Gamma-ray bursts might be much rarer than we thought, study suggests, SPACE, 2022](#)
- [Falling stardust, wobbly jets explain blinking gamma ray bursts, Science Daily, 2022](#)

- What makes gamma-ray bursts blink on and off?, Astronomy, 2022
- Otherworldly blue lights in space are no longer shrouded in mystery, Yahoo!, 2022
- Cocooned, dying stars may cause sudden, bright blasts that confound scientists, SPACE, 2022
- Dying stars' cocoons might explain fast blue optical transients, Science Daily, 2022
- Radio observations point to likely explanation for neutron-star merger phenomena, Science Daily, 2019
- Exactly how fast is the universe expanding?, Science Daily, 2019
- Faster Than Light? Neutron-Star Merger Shot Out a Jet with Seemingly Impossible Speed, Scientific American; SPACE, 2018
- Radio observations confirm superfast jet of material from neutron star merger, Science Daily, 2018