# Milena Crnogorčević
PhD | Astrophysics

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## Professional Appointments

August 2023 – now: **Postdoctoral Fellow at the Oskar Klein Centre for Cosmoparticle Physics, Stockholm University,** Advisor: Prof. Timothy Linden

## Education

2023: **Doctor of Philosophy, University of Maryland**, Department of Astronomy
- Thesis Title: *New Messengers & New Physics: A Survey of the High-energy Universe*

2019: **Master of Science, University of Maryland**, Department of Astronomy
- Thesis Title: *Axion-like Particles and Where to Find Them: Searching for ALP-induced Core-collapse Supernovae with Fermi*

2017: **Bachelor of Arts, Middlebury College**, major in physics and minor in mathematics
- Honors Thesis: *Probing into quasar/galaxy co-evolution using the OSIRIS data*

## Research Experience

April 2018 – July 2023: NASA Goddard Space Flight Center, Graduate Research Assistant. Advisor: Dr. R. Caputo

September 2016 – May 2017: Department of Physics, Middlebury College, Undergraduate Research Assistant. Advisor: Prof. E. Glikman

May 2016 – August 2016: Department of Physics, Middlebury College, Undergraduate Research Assistant. Advisor: Prof. N. Graham

May 2015 – August 2015: Department of Physics, Middlebury College, Undergraduate Research Assistant. Advisor: Prof. E. Glikman

## Grants, Honors, & Awards (selected)

2024: HEAD Dissertation Prize Finalist ($1.5k)
2022: Fermi GI Program Cycle 15: Principal Investigator ($50k)
*Light at the end of the Tunnel: Search for ALP dark matter in precursor emission of long GRBs*
2022: Andrew S. Wilson Prize for Excelence in Research, Department of Astronomy, University of Mayland
2022: **Department Service Award**, Department of Astronomy, University of Maryland
*Honoring exceptional contributions to the department through service.*
2022: **Best Poster Award: The High Energy Astrophysics Division (HEAD)**, 19th Divisional Meeting of HEAD
2022: **Outstanding Graduate Research Assistant Award**, University of Maryland
*Recognized as among the top 2% Graduate Assistants in a given year at the University of Maryland.*
2021: Award for the best talk promotion video, Kashiwa Dark Matter Symposium
2020: John Mather Nobel Scholar ($3k)
2019–20: College of Computer, Mathematical, and Natural Sciences Dean's Fellowship ($5k)
2017–18: Graduate School Dean's Fellowship ($10k)

## Publication List (selected)

4. **M. Crnogorčević** and Timothy Linden, Phys. Rev. D 109, 083018
   *Strong Constraints on Dark Matter Annihilation in Ursa Major III/UNIONS 1*
3. C. Fletcher et. al *on behalf of the Fermi-GBM Team*; **M. Crnogorčević** et al. *on behalf of the Swift-BAT*, and the LVK Collaboration, 2024 ApJ **964** 149F
   *A Joint Fermi-GBM and Swift-BAT Analysis of Gravitational-Wave Candidates from the Third Gravitational-wave Observing Run*
2. M. Negro, **M. Crnogorčević**, E. Burns, E. Charles, L. Marcotulli, and R. Caputo, 2023 ApJ **951** 83
   *Search for spatial correlation between IceCube neutrino events and the Fermi-LAT unresolved gamma-ray sky*
1. **M. Crnogorčević**, R. Caputo, M. Meyer, N. Omodei, and M. Gustafsson, 2021, Phys. Rev. D., 104, 103001
   *Searching for Axion-like Particles from Core-Collapse Supernovae with Fermi LAT's Low Energy Technique*

A full list of publications, **including 16 peer-reviewed articles, 14 GCN notices, and a PhD dissertation**, can be found at the ADS website. *inspire*: 888, h-index: 11.

## Invited Talks (selected)

Research:

- "Fermi Listens for WISPers: Past, Present, and Future of Fermi's Axion-like Particle Searches," 11th International Fermi Symposium, plenary talk, College Park, MD (Septembar, 2024)
- "WISPs, WIMPs, and Gammas: Searches for New Physics with the Fermi Large Area Telescope," 2nd General Meeting of COST Action COSMIC WISPers, Istanbul, Turkey (August, 2024)
- "Astrophysical Probes of Dark Matter: Past, Present, and Future of Gamma-ray Observations" plenary talk at the Dark Matter Beyond the Weak Scale II workshop, Durham University, UK (March, 2024)
- "Beyond the Visible: New Messengers and New Physics," oral presentation at the Center for Neutrino Physics Seminar, Virginia Tech, Blacksburg, VA (April, 2023)
- "Beyond the Visible: New Messengers and New Physics," oral presentation at SED Director's Seminar, NASA Goddard Space Flight Center, Greenbelt, MD (February, 2023)
- "Light at the End of the Tunnel: Searching for Axion-like Particles in Gamma-ray Energies," oral presentation at the HEP Seminar, Columbia University, New York City, NY (December, 2022)
- "Light at the End of the Tunnel: Searching for Axion-like Particles in Gamma-ray Energies," oral presentation at the SLAC Theory Group Seminar, Stanford University, Stanford, CA (October, 2022)
- "New Physics through a Multimessenger Lens: an Exploration of the High-energy Universe," oral presentation at the CCAPP Seminar Series, The Ohio State University, Columbus, OH (September, 2022)
- "Astrophysical searches for axion-like particles in gamma-ray energies & multimessenger studies of the high-energy Universe," oral presentation at the Department of Physics/WIPAC Seminar Series, University of Wisconsin, Madison, WI (September, 2022)
- "Catching the next wave: Searching for gamma-ray counterparts to gravitational-wave events with Fermi-GBM and Swift-BAT," oral presentation at the NASA Marshall Space Flight Center & University of Alabama, Huntsville, AL (July, 2022)
- "Astrophysical searches for axion-like particles in gamma-ray energies & multimessenger studies of the high-energy Universe," oral presentation at the THEAPA seminar, IoA, Cambridge, UK (June, 2022)
- "Searching for Axion-like Particles from Core-Collapse Supernovae with Fermi LAT's Low Energy Technique," oral presentation at the CCAPP Seminar Series, The Ohio State University, Columbus, OH (November, 2021)
- "Searching for Axion-like Particles from Core-Collapse Supernovae with Fermi LAT's Low Energy Technique," oral presentation at the NASA Astroparticle Physics Lab Seminar Series, Greenbelt, MD (August, 2021)

Equity, Diversity, Inclusion, and Accessibility:

- "*Fermi* Mentoring Program: lessons learned from near and far," oral presentation at the Community Round Table, Department of Physics, Columbia University, New York City, NY (December, 2022)
- "Picture a Scientist," panelist at the ICRC 2021 Diversity session, online (July, 2021)
- "Equity, Diversity, and Inclusion Initiatives at the University of Maryland Astronomy Department," Multimessenger Diversity Network seminar, online (October, 2020)

## Teaching Experience

- **Teaching Assistant** for Introductory Astronomy (University of Maryland, College Park, 2017–18), Applied Mathematics to Physical Sciences (Middlebury College, 2016), Electricity and Magnetism (Middlebury College, 2014–15), Newtonian Physics (Middlebury College, 2014).
- **Laboratory Assistant** for Newtonian Physics (Middlebury College, 2015).
- **Astronomy Outreach & Telescope Operator** at the Mittelman Observatory (Middlebury College, 2015–17).
- **Tutor at the Center for Teaching, Learning, and Research** for Newtonian Physics and Electromagnetism (2014–17).

## Service & Outreach

- Team Lead, ScientiFika — 2024–now
- Co-chair of Future Innovations in Gamma rays Science Analysis Group, FIG SAG — 2023–now
- Journal reviewer for Physical Review Letters, Physical Review D, Journal of Cosmology and Astroparticle Physics — 2022–now
- Science coordinator of Dark Matter & New Physics working group, *Fermi*-LAT — 2022–2023
- Mentoring Program founder & organizer, *Fermi*-LAT/GBM Collaborations — 2020–2023
- DEI Committee Member, *Fermi*-LAT — 2020–2023
- Gamma-ray Burst Advocate, ∼10 week-long shifts/year, *Fermi*-LAT — 2018–2023
- GRAD-MAP Team co-lead, University of Maryland — 2019–2022
- BANG! Seminar lead organizer, University of Maryland — 2019–2021
- EDI Committee member, Department of Astronomy, University of Maryland — 2017–2021
- Fermi-LAT Reddit Ask Me Anything — August 2020
- ACE (formerly known as AGN) mentor to undergraduate students, University of Maryland — 2018–2019
- Equity Constellation, The Access Network member, University of Maryland — 2017–2018
- Women in Physics luncheon co-founder, Middlebury College — 2016–2017

*I served on a number of short-term initiatives, including but not limited to conducting graduate student interviews, participating in faculty searches, organizing the UMD Astronomy peer mentoring program, organizing and participating in a number of panels (e.g. applying to graduate school, GSFC/UMD connection, etc.), organizing visits to GSFC for prospective students, acting as a point person for the Department of Astronomy Mental Health Survey, organizing virtual check-in spaces during the Covid-19 pandemic, etc.*

## In the News

- Brightest-Ever Space Explosion Reveals Possible Hints of Dark Matter, *Quanta Science Podcast*, March 2023
- Brighest ever space explosion could help explain dark matter, *Quanta Magazine*, October 2022
- Early-career Scientist Spotlight at NASA Goddard: Milena Crnogorčević, June 2022

## Summer Schools, Workshops, and Competitions

- Summer School in Astrostatistics and Astroinformatics, Center for Astrostatistics at the Pennsylvania State University (June, 2022)
- SSI 2020 "The Almost Invisibles: Exploring the Weakly Coupled Universe," SLAC Summer Institute (August 2020)
- *Fermi* Summer School, Lewes, DE (June, 2018)
- The Access Network Assembly, Denver, CO (May, 2018)
- Four-time participant of the Mathematics Program at the Petnica Scientific Center, Petnica, Serbia (2010)
- Member of the Montenegrin National Team and a two-time participant of the Junior Balkan Mathematical Olympiad (JMBO)

## Computing Skills

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| **Programming** | Highly proficient in MATLAB, Python, XSPEC, *GtBurst*, Wolfram Mathematica, LaTeX; proficient in PyRAF, IDL, Adobe Illustrator, TOPCAT, DS9; beginner in Bash, C, Git, HTML/CSS. |
| **Operating Systems** | macOS, Linux, Windows |

## General Information

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| Membership: | American Astronomical Society (AAS), American Physical Society (APS), European Astronomical Society (EAS) |
| Languages: | Serbian (native), English (bilingual proficiency), Italian (professional working proficiency), Spanish and German (elementary proficiency) |

*Curriculum Vitæ last time updated on April 8, 2025.*