

**Milena Crnogorčević**  
PhD Student, Astronomy  
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## Education

**Doctor of Philosophy, University of Maryland**, College Park, MD exp. December 2022

Department of Astronomy

Research: axions and axion-like particles, indirect dark matter searches,  $\gamma$ -ray astronomy, high-energy astroparticle physics, gamma-ray bursts, core-collapse supernovae

**Master of Science, University of Maryland**, College Park, MD December 2019

Department of Astronomy

Thesis: Axion-like Particles and Where to Find Them: Searching for ALP-induced Core-collapse Supernovae with *Fermi* • Advisors: Dr. Regina Caputo (NASA/GSFC), Dr. Manuel Meyer (Stanford University/KIPAC), Dr. Massimo Ricotti (Univ. of Maryland) • Grade: Excellent (oral & written report)

**Bachelor of Arts, Middlebury College**, Middlebury, VT May 2017

Major: Physics, with a minor in Mathematics, *magna cum laude* with high honors

Honors Thesis: Probing into the quasar/galaxy co-evolution using the OSIRIS data • Advisor: Dr. Eilat Glikman

**Li Po Chun United World College**, Hong Kong May 2013

Bi-lingual International Baccalaureate Diploma

## Honors and Awards

John Mather Nobel Scholar (\$3k) 2020

College of Computer, Mathematical, and Natural Sciences Dean's Fellowship (\$5k) 2019–20

Graduate School Dean's Fellowship (\$10k) 2017–18

Davis UWC Scholar (\$20k per annum) 2013–17

Li Po Chun UWC, full merit-based scholarship (\$30k per annum) 2011–13

Junior Balkan Mathematical Olympiad, bronze medal 2009

## Research Experience

**Department of Astronomy, University of Maryland** 2018–

**& NASA Goddard Space Flight Center**

Research Assistant to Dr. Regina Caputo

Member of the *Fermi* Dark Matter & New Physics and Gamma-ray Burst Group. *Fermi*-LAT Burst Advocate

**Department of Physics, Middlebury College** 2016–2017

Research Assistant to Dr. Eilat Glikman; Honors Thesis

**Department of Physics, Middlebury College** Summer 2016

Research Assistant to Dr. Noah Graham

*Computing edge-correction coefficients to the proximity force approximation for the Casimir energy of an oblate spheroid facing a plane*

**Department of Physics, Middlebury College** Summer 2015

Research Assistant to Dr. Eilat Glikman

*Analyzing new selection criteria for red and obscured quasars in SDSS Stripe 82*

## Work and Teaching Experience

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**Teaching Assistant for Introductory Astronomy**, College Park, MD 2017–2018  
*Astronomical observations and history of astronomy, Solar system, stellar evolution, galaxy morphology and evolution, cosmology.* • Instructors: Dr. Suvi Gezari (Fall 2017), Dr. Alberto Bolatto (Spring 2018)

**Astronomy Outreach & Telescope Operator**, Middlebury, VT 2015–2017  
*Conducting observatory events and operating telescopes at the Mittelman Observatory.* • Advisor: Jonathan Kemp

**Tutor at the Center for Teaching, Learning, and Research**, Middlebury, VT 2014–2017  
*Newtonian Physics, Electricity and Magnetism*

**Teaching Assistant for Applied Mathematics to Physical Sciences**, Middlebury, VT 2016  
*Complex numbers and functions, sequences and series, ODE's, Fourier analysis, multi-variable calculus, special functions, and vector calculus.* • Instructor: Dr. Stephen J. Ratcliff

**Laboratory Assistant for Newtonian Physics**, Middlebury, VT 2015  
*Demonstrating techniques and instruments used in the experiments pertaining to classical mechanics: inertia, force, Newton's laws of motion, work and energy, linear momentum, collisions, gravitation, rotational motion, torque, angular momentum, and oscillatory motion.* • Instructor: Dr. Richard Wolfson

**Teaching Assistant for Electricity and Magnetism**, Middlebury, VT 2014–2015  
*Practical topics from electricity and magnetism, voltage, current, resistance, capacitance, inductance, and AC and DC circuits.* • Instructor: Dr. Noah Graham

**Teaching Assistant for Newtonian Physics**, Middlebury, VT 2014  
*Introductory level classical mechanics.* • Instructor: Dr. Anne Goodsell

## Publications

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- [3] **M. Crnogorčević**, R. Caputo, M. Meyer, N. Omodei, and M. Gustafsson, in prep.  
*Axion-like Particles from Core-collapse Supernovae: Investigating Fermi's Sensitivity*
- [2] M. Ajello and 123 co-authors, incl. **M. Crnogorčević**, 2019, ApJ.  
*A Decade of Gamma-Ray Bursts Observed by Fermi-LAT: The Second GRB Catalog*
- [1] E. Glikman and 13 co-authors incl. **M. Crnogorčević**, 2018, ApJ.  
*Luminous WISE-selected Obscured, Unobscured, and Red Quasars in Stripe 82*

A full list of publications, including the GCN notices (real-time notices in the transient community), can be found at the ADS website.

## Contributed Talks

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- "Axion-like Particles from Core-collapse Supernovae: Investigating Fermi's Sensitivity," oral presentation at the virtual *Fermi* Collaboration Meeting (March, 2020)
- "Axion-like Particles from Core-collapse Supernovae: Investigating Fermi's Sensitivity," poster presentation at UCLA Dark Matter 2020, Los Angeles, CA (March, 2020)—*canceled due to the COVID-19 outbreak*.
- "ALP-induced Core-collapse Supernovae," oral presentation at *Fermi* Collaboration Meeting, Santa Cruz, CA (September, 2019)
- "Axion-like Particles and Where to Find Them," oral presentation at *Fermi* Summer School, Lewes, DE (June, 2018)

- “Quasar/Galaxy Co-evolution with OSIRIS,” oral presentation at Undergraduate Spring Research Symposium, Middlebury College (April, 2017)
- “Quasar/Galaxy Co-evolution with OSIRIS,” oral presentation at APS Conference for Undergraduate Women in Physics, Harvard University (January, 2017)
- “Edge Expansion of Scalar Casimir Energies,” poster presentation at Undergraduate Summer Research Symposium, Middlebury College (August, 2016)
- “New Selection Criteria for Red and Obscured Quasars in Stripe 82,” poster presentation at APS Conference for Undergraduate Women in Physics, Syracuse University (January, 2016)
- “New Selection Criteria for Red and Obscured Quasars in Stripe 82,” presentation at Keck Northeast Astronomy Consortium Undergraduate Symposium on Research in Astronomy, Williams College (October, 2015)
- “New Selection Criteria for Red and Obscured Quasars in Stripe 82,” Keck Northeast Astronomy Consortium Undergraduate Research in Astronomy Journal (October, 2015)
- “Hilbert’s Theorem 90,” publication in “Petničke sveske” and a presentation at the IX Conference of Scientific Research Center Petnica, Belgrade (September, 2010)

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## Outreach

- GRAD-MAP team co-lead, University of Maryland (September 2019– ); Member (September 2017– )
- BANG! Seminar Organizing Committee coordinator, University of Maryland (June 2019– )
- EDI Committee member, University of Maryland. (September 2017– )
- *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 (2017–2018)
- Women in Physics, luncheon co-founder, Middlebury College (2016–2017)

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## Summer Schools, Workshops, and Competitions

- SSI 2020 - SLAC Summer Institute 2020: “The Almost Invisibles: Exploring the Weakly Coupled Universe,” Online ZOOM video-conference (August 2020)
- ISAPP School 2020: “Gamma rays to shed light on dark matter,” Madrid, Spain (June 2020, *postponed due to the COVID-19 outbreak*)
- *Fermi* Summer School, Lewes, DE (June, 2018)
- The Access Network Assembly, Denver, CO (May, 2018)
- Four-time participant of the Mathematics Program at Petnica Scientific Center, Petnica, Serbia (2010)
- Member of the Montenegrin National Team and a two-time participant of the Junior Balkan Mathematical Olympiad (JMBO)

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## Computing Skills

Highly proficient in MATLAB, Python, XSPEC, *GtBurst*, Wolfram Mathematica,  $\text{\LaTeX}$ ; proficient in PyRAF, IDL, Adobe Illustrator, TOPCAT, DS9; beginner in Bash, C, Git, HTML/CSS

**Operating Systems:** macOS, Linux, Windows

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## Membership

American Astronomical Society (AAS), American Physical Society (APS)

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## General Information

Languages: Serbian (native), English (fluent), Italian (intermediate)

Pronouns: she/her/hers

**Hobbies:** US Masters Swimming, IM Volleyball player (member of the departmental team *Dirty Snowballs*), spoken-word poetry, creative writing, chess, fencing, getting lost in DC.

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*Curriculum Vitae last time updated on October 28, 2020.*