

Christopher D. Bochenek

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Education

Ph.D Astrophysics, California Institute of Technology, expected 2021.

M.S. Astrophysics, California Institute of Technology, 2018.

B.A. Physics, University of Chicago, 2016.

Graduated with general and department honors

B.S. Mathematics, University of Chicago, 2016.

Research Interests

Fast Radio Bursts

Magnetars/Magnetar formation

Time domain astronomy

Refereed Publications

1. **Bochenek, C. D.**, Ravi, V., Belov, K. V. et al., (2020). *A fast radio burst associated with a Galactic magnetar. Accepted to Nature* arXiv:2005.10828
2. **Bochenek, C. D.**, McKenna, D. L., Belov, K. V. et al., (2020). *STARE2: Detecting Fast Radio Bursts in the Milky Way. PASP* 132, 1009.
3. **Bochenek, C. D.**, Dwarkadas, V. V., Silverman, J. M. et al., (2018). *X-ray Emission from SN 2012ca: A Type Ia-CSM Supernova Explosion in a Dense Surrounding Medium. MNRAS* 473, 336.
4. **Bochenek, C.**, Ransom, S. M., & Demorest, P. (2015). *The Feasibility of Using Black Widow Pulsars in Pulsar Timing Arrays for Gravitational Wave Detection. ApJ* 813, L4.

Conference Proceedings

1. **Bochenek, C.** & McCann, A. (2015). *On the Spectral Shape of Gamma-ray Pulsars Above the Break Energy. PoS(ICRC2015)1232. arXiv:1507.03136.*

Conference Presentations

1. **Bochenek, C. D.**, Ravi, V., Belov, K. V. et al., (2020) . *A Fast Radio Burst Associated with a Galactic Magnetar* FRB2020, July 2020, Online Conference
2. **Bochenek, C. D.**, McKenna, D. L., Belov, K. V. et al., (2019) . *STARE2: Fast Radio Transients Close to Home* European Week of Astronomy and Space Sciences, June 2019, Lyon, France

3. **Bochenek, C. D.**, (2018) . *Detection Strategies for Fast Radio Transients VLBI Futures*, March 2018, Texas Tech University
4. **Bochenek, C. D.**, McKenna, D. L., Kulkarni, S. R. et al., (2018) . *Fast Radio Bursts in the Local Universe FRB2018*, February 2018, Swinburne Institute of Technology
5. **Bochenek, C. D.**, Dwarkadas, V. V., Silverman, J. M., et al. (2018). *X-ray Emission from SN 2012ca: A Type Ia-CSM Supernova Explosion in a Dense Surrounding Medium. American Astronomical Society Meeting Abstracts 231, #123.45*
6. **Bochenek, C.** & Demorest, P. (2016). *Shedding Light on the Eclipses of PSR 1748-2446A. American Astronomical Society Meeting Abstracts 227, #241.06.*
7. **Bochenek, C.** & McCann, A. (2015). *On the Spectral Shape of Gamma-ray Pulsars Above the Break Energy. PoS(ICRC2015)1232. arXiv:1507.03136.*
8. **Bochenek, C.**, Ransom, S. M., & Demorest, P. (2015). *On the Sensitivity of Black Widow Pulsars to the Stochastic Gravitational Wave Background. American Astronomical Society Meeting Abstracts 225, #346.12.*

Accepted Observing Proposals (PI only)

2020B: **Bochenek, C.**; Ravi, V.; Hallinan, G.; Law, C. – *The Host Galaxies of Fast Radio Bursts* – Awarded 2 nights on the Palomar 200-inch.

2020A: **Bochenek, C.**; Ravi, V.; Hallinan, G. – *The Host Galaxies of Fast Radio Bursts* – Awarded 6 nights on the Palomar 200-inch.

Grants, Scholarships, and Awards

Gordon Garmire Scholar, 2019

JPL President's Director's Fund, 2018–2020, \$300,000

Grant for Travel to the 34th International Cosmic Ray Conference from the Dean's Fund for Student Life. \$1,313. 2015.

Dean's List, University of Chicago. 2013, 2014, 2015.

COPT Scholarship for Academic and Extracurricular Excellence.

Teaching

Designed learning goals, interactive lectures, and two lab activities for two days of the upcoming OVRO Radio Instrumentation Summer School.

Completed E110: Fundamentals of Teaching and Learning. 9/19-12/19

Attended Mentoring Conference at Caltech. 5/19

Gave lecture in Interstellar Scattering/Scintillation. 10/18

Teaching Assistant for an undergraduate level class on high energy astrophysics (Ay 104). 3/18-6/18

Teaching Assistant for a graduate level class on stellar physics (Ay 123). 9/17-12/17

Organized tour of the Owens Valley Radio Observatory for undergraduates at Pomona College. 10/17

Outreach

Lecturer, OVRO Fall Lecture Series. "The Lives of Massive Stars". 10/18

Telescope Volunteer, Caltech Astronomy, Stargazing and Lecture Series. Set up telescopes for the public to stargaze with. 10/16-present

Lecture Volunteer, Caltech Astronomy, Stargazing and Lecture Series. Answered questions from attendees of a public talk. 10/16-present

Tour Guide for a cumulative total of ~300 people for the Karl G. Jansky Very Large Array. 6/15-8/15.

Spoke to Margaret Wing's 3rd grade class at Cory Elementary in Denver, CO about neutron stars, gravitational waves, and black holes. 3/15.

Participated in a Q&A with high school summer students studying astronomy in Maine as a part of the Very Large Array's Science Club Connection program. 7/15

Taught a class on lightning for Splash! Chicago 2013. 10/13.

Service

Referee for Nature Astronomy.

Co-organizer of Cahill for Black Lives, a group coordinating anti-racist actions in Caltech Astronomy. 6/20-present

Organizer of Caltech's Radio/sub-mm Pizza Lunch Talk series. 3/19-present

Graduate student Treasurer. 10/18-9/20

Skills

Programming Languages: Python, C++, L^AT_EX

Data Science Tools: Scikit-learn, Keras, pandas, seaborn, SQL

Pulsar/FRB Tools: PSRDADA, Heimdall, sigpyproc

X-ray and Gamma-ray Analysis: FermiTools, CIAO, Sherpa, ds9

FPGA Programming: Xilinx Simulink, CASPER toolflow