Ethan Bair

Boston University
Department of Astronomy
725 Commonwealth Ave. Boston, MA 02215
esb265@bu.edu

Education

2021–present **Ph.D Student, Astronomy**, *Boston University*

2020–2021 **M.Eng., Engineering Physics**, *Cornell University*

2016–2020 **B.S., Engineering Physics**, *Cornell Univerity*
cum laude

Research Experience

2021-present **Graduate Research Assistant**, *Boston University*, Advisor: Prof. Merav Opher
Global simulations of the outer heliosphere

2020-2021 **M.Eng. Thesis Project**, *Cornell University*, Advisor: Prof. Gregory Bewley
High mach number turbulence and heat exchanger design

2020 **SULI Intern**, *Princeton Plasma Physics Laboratory*, Advisor: Dr. Jason TenBarge
Simulations of the ion firehose instability in the solar wind

2018-2020 **Undergraduate Research Assistant**, *Cornell University*, Advisor: Prof. James Cordes
Pulsar timing and spectrum classification with neural networks

2019 **REU Intern**, *MIT Haystack Observatory*, Advisor: Dr. Alan Rogers
Simulations of antenna beam patterns and signal loss for EDGES III

Teaching Experience

2021-2022 **Teaching Assistant for AS 109: Intro to Cosmology**, *Boston University*, Instructor: Prof. Tereasa Brainerd

Leadership Experience

2019-2020 **Vice-President**, *Cornell Applied and Engineering Physics Society*
- Organized events such as lunches with faculty members
- Helped bring back the AEP mentorship program in which upperclassman act as student mentors to incoming AEP students

2018-2020 **President**, *Cornell Archery Club*
- Coordinated members for weekly practices and tournament participation
- Instructed members on proper archery safety and technique
- Represented the club in communications with Cornell University and other organizations

2017-2018 **Officer**, *Cornell Archery Club*
- Helped coordinate members for weekly practices and tournament participation
- Instructed members on proper archery safety and technique

Conference Abstracts

Bair, E., Opher, M., Kornbleuth, M. Z., Zieger, B., Toth, G., & van der Holst, B. (2022, December). A 3D Global Simulation of the Heliosphere with Hot Electrons. In *AGU Fall Meeting Abstracts* (Vol. 2022, p. SH45G-2397).

Bair, E., Tenbarge, J., Juno, J., & Hakim, A. (2020, January). Two fluid, ten moment simulations of temperature anisotropy driven instabilities in the solar wind. In *APS Division of Plasma Physics Meeting Abstracts* (Vol. 2020, p. JP13.008).

Programming Languages

Python	6 years	Mathematica	6 years
C++	2 years	MATLAB	2 years
Fortran	2 year	IDL	1 year
Java	1 year	LabVIEW	1 year

Other Computer Skills

LaTeX	PyTorch
TensorFlow	FEKO
Microsoft Office	Tecplot