

Matthew J. Rutala

Boston University
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[mjrutala.github.io](https://github.com/mjrutala)

Current as of: June 8, 2022

RESEARCH POSITIONS

PRESENT	Research Fellow
SEPTEMBER 2017	Boston University (Prof. John Clarke) Boston, Massachusetts Experience with HST observations, in-situ measurements, and models of Jupiter's magnetosphere-driven aurorae using IDL, Python, NASA NAIF/SPICE.
MAY 2017	Undergraduate Research Assistant
SEPTEMBER 2015	Rutgers University (Prof. Jack Hughes) New Brunswick, New Jersey Experience with Chandra observations of supernovae remnants using IDL.
AUGUST 2015	REU Research Assistant
JUNE 2015	Boston University (Prof. Catherine Espaillat) Boston, Massachusetts Experience with modeling protoplanetary discs using Python.
MAY 2015	Undergraduate Research Assistant
JUNE 2014	Rutgers University (Prof. Troy Shinbrot) New Brunswick, New Jersey Experience with experimental fluid flows and granular physics.

TEACHING EXPERIENCE

MAY 2019	Teaching Fellow
JANUARY 2019	AS100 "Cosmic Controversies" at Boston University
DECEMBER 2018	Teaching Fellow
SEPTEMBER 2018	AS107 "Life Beyond Earth" at Boston University
DECEMBER 2017	Coadjutant
JANUARY 2017	Coursera MOOC "Analyzing the Universe" via Rutgers University

PUBLICATIONS

Vogt, M., **Rutala, M.**, Bonfond, B., Clarke, J. T., Moore, L., Nichols, J. D. (2022) Variability of Jupiter's Main Auroral Emission and Satellite Footprints Observed With HST During the Galileo Era. JGR Space Physics, [doi:10.1029/2021JA030011](https://doi.org/10.1029/2021JA030011)

Shinbrot, T., **Rutala, M.**, and Herrmann, H. (2017). Surface contact charging. Phys. Rev. E, 96:032912.

Shinbrot, T., **Rutala, M.**, Montessori, A., Prestininzi, P., and Succi, S. (2015). Paradoxical ratcheting in cornstarch. Physics of Fluids, 27(10):103101.

ABSTRACTS

DECEMBER 2021	The role of Corotation Enforcement Currents in driving the Behavior of Jupiter's Ultraviolet Main Emission Talk at the American Geophysical Union Fall conference
JULY 2021	Illuminating the Physics behind the Motions of Jupiter's Auroral Dawn Storms Poster at the Magnetospheres of the Outer Planets conference
DECEMBER 2020	Illuminating the Physics of Jupiter's Auroral Dawn Storms Poster at the American Geophysical Union Fall conference
JUNE 2019	New Insights into Jupiter's Dawn Storms Poster at the Magnetospheres of the Outer Planets conference
JULY 2018	Characterizing Local and Interplanetary Control of Jupiter's Auroral Dawn Storms using HST and Juno Poster at the Magnetospheres of the Outer Planets conference
MAY 2015	Size Segregation in Asteroid Regolith Poster at the New Jersey Space Grant Consortium Poster Session
APRIL 2015	Size Segregation in Asteroid Regolith Poster at the Aresty Research Symposium
AUGUST 2014	Paradoxical Ratcheting in Oobleck Poster at the Aresty Summer Research Symposium

AWARDS

JUNE 2021	Research Fellowship Awarded by: The Massachusetts Space Grant Consortium
JUNE 2020	Research Fellowship Awarded by: The Massachusetts Space Grant Consortium
MAY 2019	Outstanding Teaching Fellow in the Department of Astronomy Awarded by: Boston University College and Graduate School of Arts and Sciences
MAY 2017	Honors Scholar Awarded by: Rutgers University School of Arts and Sciences
MAY 2017	Richard T. Weidner Physics Prize Awarded by: Rutgers University Department of Physics and Astronomy
MARCH 2016	Phi Beta Kappa Scholar Awarded by: The Phi Beta Kappa Society
SEPTEMBER 2015	Herman Y. Carr Scholarship Awarded by: Rutgers University Department of Physics and Astronomy
OCTOBER 2014	Research Fellowship Awarded by: the New Jersey Space Grant Consortium (NJSGC)

OUTREACH

PRESENT SEPTEMBER 2017	Boston University Public Open Night An event hosted by the graduate students at Boston University which invites the public to view the night sky and learn more about astronomy.
APRIL 2022	Boston University Academy Open Night An open-night-like event with physical demonstrations of spectroscopy and plasma dynamics for students of the Boston University Academy interested in studying science and astronomy.
AUGUST 2019	GWISE Open Night An open-night-like event held for the members of the Graduate Women In Science and Engineering group at Boston University.
JULY 2018	Precollege Women Open Night An open-night-like event for held for precollege women interested in studying science in college.
JUNE 2018	Space Science for Kids An educational event for elementary- and middle-school children, coinciding with the 30 th anniversary of the Center for Space Physics at Boston University.

EDUCATION

CURRENT	Ph.D. Candidate in Astronomy Boston University <i>Boston, Massachusetts</i> Advisor: Prof. John T. Clarke
SEPTEMBER 2019	M.A. in Astronomy Boston University <i>Boston, Massachusetts</i> Advisor: Prof. John T. Clarke
MAY 2017	B.Sc. in Astrophysics and Linguistics <i>summa cum laude</i> Rutgers University <i>New Brunswick, New Jersey</i> Advisor: Prof. Jack P. Hughes Graduated with Highest Honors in Astrophysics and Honors in Linguistics

LEADERSHIP

APRIL 2022 AUGUST 2018	Graduate Student Social Event Coordinator Helped to coordinate weekly events, including Friday evening socials and board game nights with pizza provided for students, postdocs, and faculty.
SEPTEMBER 2019 SEPTEMBER 2018	Graduate Student Representative Represented the interests of the graduate students to departmental faculty, so that students could anonymously voice questions or complaints; arranged weekly journal clubs and seminars for students to present their own research; arranged department-sponsored social events to promote student interaction.