Lou Baya OULD ROUIS

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Education

Boston University	Ph.D. Candidate in Astronomy	2021 – 2027 *[expected]*
Advisor: Dr. JJ Hermes	M.A. Astronomy	May 2024
University of California, Los Angeles	B.S. in Physics	2017 – 2021

Research Appointments

Boston University	**Ph.D. Candidate**	2021-Present
Advisor: Dr. JJ Hermes	Conducting spectroscopic surveys (from optical to ultraviolet) to constrain how populations of massive white dwarfs relate to planetary systems evolution and stellar merger remnants.	
UCLA	**Undergraduate Research Assistant**	2018 – 2021
Advisors: Dr. Ben Zuckerman and Dr. Beth Klein	Studied young forming planetary systems in the Alpha Per cluster with infrared excess emissions, trained in spectrum reduction.	
UCLA	**Upsilon Lab Member**	2018
Advisors: Dr. Troy Carter	Worked in research bootcamp on a Raspberry Pi high-speed camera	

Honors and Awards

Boston University	**NASA FINESST in Astrophysics**	2024
	Proposal title: *"Missing Planets around Massive White Dwarfs?"* Awarded $150,000 of total funding as Future Investigators in NASA Earth and Space Science and Technology within ROSES-23.	
Boston University	**Outstanding Teaching Fellow**	2022
	Awarded from the Graduate School of Arts & Sciences	

Awarded Grants

HST Proposal Cycle 34	7 Orbits for *"FUV Spectroscopy of Transiting Exoplanetary Debris Orbiting near the Roche Limit of a White Dwarf"*, **Co-I**	2026
Massachusetts Space Grant Fellowship	*"Inclusive Astronomy at Boston University"* $7,216 to support DEI and outreach initiatives, **Co-I**	2024
HST Proposal Cycle 32	67 Orbits for *"The Frequency and Bulk Composition of Terrestrial Exoplanets Across Galactic History"*, **Co-I**	2024

Publications

View ADS Library

Refereed publications: 90 citations (incl. 48 first-author, H-index = 5). In prep: 3 first-author + 7 contributions.

First Author (3)

Searching for Massive Remnant Planetary System Hosts with White Dwarf Gaia XP Spectra
Ould Rouis, Lou Baya; et al. *The Astrophysical Journal, In Press* 2026

White Dwarf Merger Remnants with Cooling Delays on the Q Branch Lack Strong Magnetism
Ould Rouis, Lou Baya; et al. *The Astrophysical Journal, Volume 999, Issue 1, id. 146* 2026

Constraints on Remnant Planetary Systems as a Function of Main-sequence Mass with HST/COS
Ould Rouis, Lou Baya; et al.*The Astrophysical Journal, Volume 976, Issue 2, id.156* 2024

Contributing Author (6)

Compositions of Exoplanetary Debris Shaped by Milky Way Stellar Abundance Patterns
Trierweiler, Isabella L. et al. (incl. **Ould Rouis, L.B.**) *The Astrophysical Journal, under review* 2026

Near-Ultraviolet and Optical Observations of the White Dwarf ZTF J0328−1219 Reveal Variable Periodicity in its Transiting Debris
Guidry, Joseph A. et al. (incl. **Ould Rouis, L.B.**) *The Astrophysical Journal, under review* 2026

Now you see me, now you don't. Deep, long-lived obscuration events of white dwarfs by dust and debris from disintegrating planetesimals
van Roestel, Jan et al. (incl. **Ould Rouis, L.B.**) *Astronomy & Astrophysics, under review* 2026

Transiting Planetary Debris near the Roche Limit of a White Dwarf on a 4.97 hr Orbit – and its Vanishing
Guidry, Joseph A. et al. (incl. **Ould Rouis, L.B.**) *The Astrophysical Journal, Volume 992, Issue 2, id.167* 2025

Using 3.4 μm Variability toward White Dwarfs as a Signpost of Remnant Planetary Systems
Guidry, Joseph A. et al. (incl. **Ould Rouis, L.B.**) *The Astronomical Journal, Volume 972, Issue 1, id.126* 2024

A Test of Spectroscopic Age Estimates of White Dwarfs Using Wide WD+WD Binaries
Heintz, Tyler M. et al. (incl. **Ould Rouis, L.B.**) *The Astronomical Journal, Volume 969, Issue 1, id.68* 2024

Non-Refereed Publications, or *White Papers* (3)

White dwarf planetary systems in the ultraviolet
Williams, Jamie et al. (incl. **Ould Rouis, L.B.**) *"Building a Roadmap for Hubble Science into the 2030s"* 2026

From Hubble to HWO: Bridging the Frontier of White Dwarf Exoplanet Science
Rogers, Laura K. et al. (incl. **Ould Rouis, L.B.**) *"Building a Roadmap for Hubble Science into the 2030s"* 2026

Picture an Astronomer: Best Practices for Retaining Talent in Astrophysics
Polvin, A. et al. (incl. **Ould Rouis, L.B.**) *Picture an Astronomer Symposium* 2025

Presentations and Invited Talks*

Contributions (10), Invitations (7)*

Insights on Remnant Planetary Systems and Stellar Mergers from Massive White Dwarfs
- *Astronomy Seminar, *Trinity College Dublin* Jan. 2027 (*scheduled*)
- *Astronomy Seminar, *The University of Warwick* July 2026

Finding Remnant Planetary Systems Around White Dwarfs with MAGIC Narrowband Photometry
- *FLASH Astrophysics Seminar, *NSF-NOIRLab* Oct. 2026

Searching for Massive Remnant Planetary System Hosts with White Dwarf Gaia XP Spectra
- Poster, *EUROWD 2026: 24th European Workshop on White Dwarfs* Aug. 2026

White Dwarf Merger Remnants with Cooling Delays on the Q Branch Lack Strong Magnetism
- Contributed Talk, *EUROWD 2026: 24th European Workshop on White Dwarfs* Aug. 2026

Constraints on Remnant Planetary Systems as a Function of Main-sequence Mass with HST/COS
- Contributed Talk, *Boston Area Planetary Science Meeting* Jan. 2026
- *Stars and Exoplanet Seminar, *Yale University* Oct. 2025
- *Tea Talk, *California Institute of Technology* Feb. 2025
- Contributed Talk (Link), *Know Thy Star, Know Thy Planet 2, IPAC Conference* Feb. 2025

Missing Planets around Massive White Dwarfs?
- Contributed Talk, *EUROWD24: 23rd European Workshop on White Dwarfs* July 2024
- Poster (Abstract), *AASTCS 10: Extreme Solar Systems V Conference* Mar. 2024

*Astronomy Seminar, *Tufts University* Feb. 2024
*Exoplanet Lunch Seminar, *Center for Astrophysics | Harvard & Smithsonian* Sept. 2023
Contributed Talk (Link), *KITP Conference: White Dwarfs from Physics to Astrophysics* Nov. 2022
Kinematics of White Dwarfs With(out) Metal Pollution
Poster, *EUROWD22: 22nd European Workshop on White Dwarfs* Aug. 2022
Young Forming Planetary Systems in the Alpha Persei Cluster
Contributed Talk (Abstract), *APS CUWiP Conference for Undergraduate Women in Physics* Jan. 2021
REU Presentation, *University of California, Los Angeles* Aug. 2019

Observing Programs

SURVEYS

Member	DELVE/MAGIC, SDSS-V
Public User	ATLAS, DESI, Gaia, Pan-STARRS, SDSS, SkyMapper, TESS, ZTF

SELECTED TELESCOPE TIME

4.3-m Lowell Discovery Telescope *Happy Jack, AZ*	33 nights, **PI** & 18 nights, **Co-I** Low-resolution spectroscopy of white dwarfs with *DeVeny* and high-speed, time-series photometry with *LMI*	2022B–2026B
4.1-m SOAR Telescope *AEON Queue*	5.6 nights (56 hr.), **PI** & 2 nights (20 hr.), **Co-I** Low-resolution spectroscopy of white dwarfs with *Goodman*	2024B–2026B
1.8-m Perkins Telescope *Flagstaff, AZ*	13 nights, **Co-I** High-speed, time-series photometry with *PRISM*	2025-3, 2025-4, 2026-3
2.1-m Otto Struve Telescope *McDonald Observatory, TX*	18 nights, **Co-I** High-speed, time-series photometry with *ProEM*	2025-2, 2026-3

Teaching Experience

Boston University *Teaching Fellow*	**AS100 - Cosmic Controversies** Primary Instructor: Professor Mendillo *TF course evaluation rating: 4.79/5*	Spring 2022
	AS105 - Alien Worlds Primary Instructor: Professor Hermes *TF course evaluation rating: 4.74/5*	Fall 2021
University of California, Los Angeles *Embedded Inquiry Specialist*	**Cluster 21: History of Modern Thought** Writing and research assistance	Fall 2018 – Spring 2020
University of California, Los Angeles *Library Research Assistant*	**UCLA Library** Undergraduate Writing center	Fall 2018 – Spring 2020

Relevant Skills

Programming	Python, C++, Mathematica
Libraries	Astropy, Astroquery, IRAF, PypeIt, NumPy, Matplotlib, Pandas, SciPy, Seaborn
Other	Microsoft Office, Google Workspace, Adobe Premiere Pro, TOPCAT
Languages	French [*Native*], English [*Fluent*], Spanish [*Proficient*], Arabic [*Conversational*]

Outreach

KIPP Academy Mattapan *Boston, MA*	**Astronomy Classroom Visit**, *Lead* Science activity and Q&A with a 3rd grade classroom to show what astronomers do and answer burning questions about space	March 2026
Boston University *Boston, MA*	**Deaf-friendly Interactive Night**, *Volunteer* Interactive night working with interpreters to introduce astronomical concepts to audiences aged five to eighty-five	Nov. 2024
Boston University *Boston, MA*	**Astro365**, *Volunteer* Yearly interactive nights to give astronomy exposure to low-income high school students	Dec. 2023 – Present
Boston University *Boston, MA*	**Science Train**, *Lead* Monthly ride to answer astronomy questions from the general public aboard the MBTA, Boston subway system Featured in Spanish language newspaper, *El Planeta* [Linked]	May 2023 – Present
Boston University *Boston, MA*	**BU Academy Interactive Night**, *Volunteer* Interactive night with Center for Space Physics and Engineering	Apr. 2022
Boston University *Boston, MA*	**NASA Downlink**, *Volunteer* STEM education day with the ISS which gathered 500 middle- and high-school students and educators from across Massachusetts	July 2022
Boston University *Boston, MA*	**Public Open Night**, *Volunteer* Weekly event to observe the night sky through 8 inch telescopes	Sept. 2021 – Present

Professional Service

dotAstro 12 Conference *New York City, NY*	**Astro Grad Congress**, *Co-Founder* Initiative to connect graduate students in Astronomy across US institutions to promote interdepartmental discourse	Sep. 2023 – Present
Boston University *Boston, MA*	**Inclusive Astronomy**, *Co-Founder* Initiative to facilitate outreach, public engagement & DEI efforts while fostering community within the Astronomy department	Aug. 2022 – Present
Boston University *Boston, MA*	**Graduate School Application Panel**, *Moderator* Info session for BU Astronomy Society undergraduate students	Oct. 2024
Boston University *Boston, MA*	**Women in Physics Mentorship**, *Mentor* One-on-one mentoring of undergraduate astronomy-major women	Apr. 2024 – Present
Boston University *Boston, MA*	**Graduate School Experience Panel**, *Invited Panelist* Invited by the Graduate Women in Science and Engineering (GWISE)	Nov. 2022
Boston University *Boston, MA*	**HERstory Art Proposal**, *Astronomy Jury* Art installation commissioned to honor Dr. Priscilla Bok	Oct. 2021
UCLA *Los Angeles, CA*	**Academic Affairs Committee**, *Physics rep.* Participation in Physics & Astronomy curriculum matters	Sept. 2020 – June 2021
UCLA *Los Angeles, CA*	**Society of Physics Students**, *Board officer* Social media and website board officer	Oct. 2019 – June 2021

Research Advising* and Mentoring

Ariyana Bonab*	Boston University	Nov. 2023 – Dec. 2025
	→ M.S. in Astrophysics at CUNY	
Shelby Cavanaugh	Boston University	Apr. 2024 – Dec. 2025
	→ Applying for Graduate School	
Filippo Nicolai*	Boston University Academy	May 2023 – May 2025
	→ B.S. in Physics and Astrophysics at Boston University	
Nicole Flors	Boston University	Nov. 2023 – May 2024
	→ Ph.D. in Astronomy at Northwestern University	

Conferences and Symposium Participation

Contribution Type: Poster* (3), Talk** (6)

EUROWD 2026: 24th European White Dwarf Workshop*,**	Vienna, AT	Aug. 2026
Local Organizing Committee (LOC)		
Boston Area Planetary Science Meeting**	Boston, MA	Jan. 2026
Local Organizing Committee (LOC), Session Chair		
Picture An Astronomer Symposium	Chicago, IL	Mar. 2025
Know Thy Star, Know Thy Planet 2, IPAC Conference**	Pasadena, CA	Feb. 2025
EUROWD24: 23rd European Workshop on White Dwarfs**	Barcelona, ES	July 2024
AASTCS 10: Extreme Solar Systems V Conference*	Christchurch, NZ	Mar. 2024
dotAstronomy 12 Conference	New York City, NY	Oct. 2023
KITP: White Dwarfs from Physics to Astrophysics**	Santa Barbara, CA	Nov. 2022
EUROWD22: 22nd European Workshop on White Dwarfs*	Tübingen, DE	Aug. 2022
APS Conference for Undergraduate Women in Physics**	Virtual	Jan. 2021