

# Amanda Wasserman

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## EDUCATION

### University of Illinois Urbana-Champaign

- Ph.D. Candidate, Department of Astronomy
- M.S. in Astronomy
- *GPA: 4.00/4.00*
- Advisor: Gautham Narayan

**Champaign, Illinois**

*Expected May 2027*

*Dec 2023*

### University of Rochester

Bachelor of Science in Physics and Astronomy  
Minor in Mathematics

- *GPA: 3.88/4.00*
- *Cum Laude* with Highest Distinction
- Thesis Title: *Using Machine Learning to Identify Transients in the DESI Survey*
- Thesis Advisor: Segev BenZvi

**Rochester, New York**

*May 2021*

## RESEARCH INTERESTS

Time-domain astronomy; Transients in large surveys; SN Ia Cosmology; Machine learning

## RESEARCH EXPERIENCE

### Graduate Researcher | University of Illinois Urbana Champaign

Advisor: Gautham Narayan

**Champaign, Illinois**

*Aug 2021 – Present*

- Improving LSST spectroscopic follow-up in the time-domain with an active learning loop

### Undergraduate Researcher | University of Rochester

Advisor: Segev BenZvi

**Rochester, New York**

*Aug 2018 – May 2021*

- Utilized machine learning techniques to identify transients in the Dark Energy Spectroscopic Instrument Survey

### Undergraduate Researcher | Columbia University

Advisor: Elena Aprile

**Gran Sasso, Italy**

*May 2019 – Aug 2019*

- Modeled liquid xenon purification for XENONnT

## PUBLICATIONS

- Aleo, P. D., et al. incl. **Wasserman, A.** "The Young Supernova Experiment Data Release 1 (YSE DR1): Light Curves and Photometric Classification of 1975 Supernovae" *ApJ*, 266, 2023.
- Kilpatrick, C., et al. incl. **Wasserman, A.** "Type II-P Supernova Progenitor Star Initial Masses and SN 2020jfo: Direct Detection, Light Curve Properties, Nebular Spectroscopy, and Local Environment" *MNRAS*, 524, 2023.
- Jacobson-Galán, W. V., et al. incl. **Wasserman, A.** "Final Moments II: Observational Properties and Physical Modeling of CSM-Interacting Type II Supernovae" arXiv:2403.02382, 2024 submitted.

## FELLOWSHIPS AND GRANTS

- LINCC Frameworks Incubator Program (\$22,500) *2024*
- Center for Astrophysical Surveys Graduate Fellow (\$66,000) *2022, 2024*
- DOE Science Graduate Student Research Program (\$15,000) *2024*
- LSSTC Wasabi Enabling Science Grant (\$25,000) *2022*

## TELESCOPE PROPOSALS

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- Gemini Observatory – 22 hours awarded (PI) - The Young Supernova Experiment: Creating the Reference low-*z* Supernova Sample for Cosmology

## OBSERVING EXPERIENCE

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- Cerro-Tololo Inter-American Observatory with DECam (17 nights)
- University of Rochester C.E.K. Mees Observatory 24 inch Cassegrain Telescope (6 nights)

## SUMMER SCHOOL

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|--|-----------------|
| • AIAFI Summer School ( <i>Boston, MA</i> )                          | <i>Aug 2024</i> |
| • LSST Data Science Fellowship Program ( <i>Champaign, IL</i> )      | <i>Jun 2024</i> |
| • La Serena School for Data Science ( <i>La Serena, Chile</i> )      | <i>Aug 2023</i> |
| • Michigan Cosmology Summer School ( <i>Ann Arbor, MI</i> )          | <i>Jun 2023</i> |
| • Zwicky Transient Facility Summer School ( <i>Minneapolis, MN</i> ) | <i>Jul 2022</i> |

## CONFERENCES AND PRESENTATIONS

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- **A. Wasserman**, *The LSST Spectroscopic Recommendation System*, Astrominformatics 2024, talk, Dec 2024
- **A. Wasserman**, *The Time Domain Spectroscopic Recommendation System Pipeline*, LSST DESC Collaboration Meeting, plenary talk, Jul 2024
- **A. Wasserman**, *Uncovering Transient Physics and Optimizing Cosmological Inference with a Recommendation Engine for Rapid-Response Spectroscopy*, AAS, talk, Dec 2023
- **A. Wasserman**, *Uncovering Transient Physics and Optimizing Cosmological Inference with a Recommendation Engine for Rapid-Response Spectroscopy*, NOIRLab AURA La Serena, talk, Oct 2023 (invited)
- **A. Wasserman**, *Spectroscopic Follow-up in the Time Domain*, LSSTC Board Meeting, talk, Oct 2022
- **A. Wasserman**, *Selecting LSST Transients for Spectroscopic Follow-up with an Active Learning Loop*, LSST Project and Community Workshop, poster, Aug 2022
- **A. Wasserman**, V. Tiwari, S. BenZvi, *Developing a Transient Identification Pipeline for DESI Using Machine Learning*, CUWiP Virtual, talk, Jan 2021
- **A. Wasserman**, V. Tiwari, S. BenZvi, *Using Machine Learning to Develop a Transient Identification Pipeline for DESI*, AAS 237<sup>th</sup> Meeting, poster, Jan 2021
- **A. Wasserman**, D. Gandhi, S. BenZvi, *Using Machine Learning to Identify Astrophysical Transients in the DESI Survey*, APS April Meeting, poster, 2020
- **A. Wasserman**, *Liquid Xenon Purification Modeling for XENONnT*, CUWiP Pittsburgh, talk, Jan 2020

## MENTORING, TEACHING, AND ADVISING EXPERIENCE

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### Undergraduate Students

Arjun Chainani, (UIUC) August 2024 – present

- Created an anomaly detection algorithm utilizing a hierarchical recurrent neural network

Henna Abunemeh, (University of Illinois Chicago) May 2023 – present

- Reduced supernova spectra, studied supernova uniqueness and population diversity
- Graduated May 2024, began PhD at University of Illinois Urbana Champaign Fall 2024

### University of Illinois Urbana-Champaign

Teaching Assistant, Department of Astronomy

Champaign, Illinois

Aug 2021 – May 2022

- ASTR 310: Computing in Astronomy, Spring 2022
- ASTR 350: The Big Bang, Black Holes, and the End of the Universe, Fall 2021

**University of Rochester***Teaching Intern, Department of Physics & Astronomy***Rochester, New York***Jan 2019 – May 2021*

- AST 104: Planets, Life and Civilizations, Spring 2021
- AST 105: Introduction to the Milky Way Galaxy, Fall 2020
- PHY 113P: General Physics I (Self Paced), Spring 2020
- AST 111: The Solar System and its Origin, Fall 2019
- AST 102: Relativity, Black Holes, and the Big Bang, Spring 2019

**University of Rochester***Peer Advisor (Physics & Astronomy), College Center for Advising Services***Rochester, New York***Aug 2020 – May 2021*

- Advised and counseled undergraduate students on course selection, major declaration, research involvement, independent study, study abroad, and any other academic queries

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**LEADERSHIP, SERVICE, AND OUTREACH****LSST DESC Collaboration Meeting Science Organizing Committee****Zurich, Switzerland***Member**Apr 2024 – Jul 2024*

- Organized poster presentations and junior member lightning talks. Aided in planning the schedule.

**Graduate Admissions Committee****Champaign, Illinois***Member**Jan 2024 – May 2024*

- Read applications to the UIUC Astronomy Department. Interviewed applicants. Provided input to make final admissions decisions.

**Astronomy on Tap, Urbana-Champaign****Champaign, Illinois***Organizer**Apr 2022 – May 2023*

- Coordinated speakers and location, advertised, and set up for monthly outreach talks

**Girls' Astronomy Summer Camp****Champaign, Illinois***Organizer**Mar 2022 – Present*

- Planned camp activities, presented introductory astronomy topics, led coding activities

**Astrofest, University of Illinois Urbana-Champaign****Champaign, Illinois***Organizer**Feb 2022 – Apr 2022*

- Organized speakers and poster presenters, coordinated poster judging, and advertised for an annual showcase of research in astronomy

**Society for Equity in Astronomy, University of Illinois Urbana-Champaign****Champaign, Illinois***Chair, Member**Aug 2021 – Present*

- Organized graduate to undergraduate mentorship program, outreach, and colloquium teas
- Mentored four undergraduate students; aided in research involvement, class selection, and graduate school planning

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**ARTICLES**

- **A. Wasserman**, *Using Machine Learning to Identify Transients in the DESI Survey*, *Astrobites*, 2021
- M. Griston, **A. Wasserman**, *University of Rochester SPS Chapter Responds to Black Lives Matter: How We Need to Change*, *SPS Observer*, 2020

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**PROFESSIONAL MEMBERSHIPS**

- Phi Beta Kappa Academic Honor Society ( $\Phi BK$ )
- Phi Kappa Phi Honor Society ( $\Phi K \Phi$ )
- Sigma Pi Sigma, National Physics Honor Society ( $\Sigma \Pi \Sigma$ )
- American Astronomical Society (AAS)

## **ACTIVE COLLABORATIONS**

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- Dark Energy Science Collaboration (LSST/DESC)
- Young Supernova Experiment (YSE)

## **SKILLS**

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### **Computer Programming and Data Analysis:**

- Python, Java, Fortran, C++, C#, Mathematica, SQL, ROOT
- UNIX shell scripting (Bash)
- Git, Docker
- SAOImage DS9, CCDSoft, CCDStack, TheSkyX, Igor Pro

### **Document Editing:**

- LaTeX, Microsoft Office, Google Workspace

### **Technical Skills:**

- Working in a clean room, soldering, working with photomultiplier tubes
- Operating a 24-inch computerized Cassegrain telescope

### **Languages:**

- English (native), Chinese (Mandarin, basic)