# Amanda Wasserman

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## EDUCATION

**University of Illinois Urbana-Champaign** — **Champaign, Illinois**
- Ph.D. Candidate, Department of Astronomy — *Expected May 2027*
- M.S. in Astronomy — *Dec 2023*
- *GPA: 4.00/4.00*
- Advisor: Gautham Narayan

**University of Rochester** — **Rochester, New York**
Bachelor of Science in Physics and Astronomy — *May 2021*
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

## RESEARCH INTERESTS

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

## RESEARCH EXPERIENCE

**Graduate Researcher** | University of Illinois Urbana Champaign — **Champaign, Illinois**
*Advisor: Gautham Narayan* — *Aug 2021 – Present*
- Improving LSST spectroscopic follow-up in the time-domain with an active learning loop

**Undergraduate Researcher** | University of Rochester — **Rochester, New York**
*Advisor: Segev BenZvi* — *Aug 2018 – May 2021*
- Utilized machine learning techniques to identify transients in the Dark Energy Spectroscopic Instrument Survey

**Undergraduate Researcher** | Columbia University — **Gran Sasso, Italy**
*Advisor: Elena Aprile* — *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

- 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

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

## OBSERVING EXPERIENCE

- 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

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

## CONFERENCES AND PRESENTATIONS

- **A. Wasserman,** *The LSST Spectroscopic Recommendation System*, Astroinformatics 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 237th 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

**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** **Champaign, Illinois**

*Teaching Assistant, Department of Astronomy* *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** **Rochester, New York**
*Teaching Intern, Department of Physics & Astronomy* *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** **Rochester, New York**
*Peer Advisor (Physics & Astronomy), College Center for Advising Services* *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

## 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

## 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

## PROFESSIONAL MEMBERSHIPS

- Phi Beta Kappa Academic Honor Society (ΦΒΚ)
- Phi Kappa Phi Honor Society (ΦΚΦ)
- Sigma Pi Sigma, National Physics Honor Society (ΣΠΣ)
- American Astronomical Society (AAS)

## ACTIVE COLLABORATIONS

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

## SKILLS

**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)