ABBY MINTZ

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EDUCATION

Princeton University
Ph.D. in Astrophysical Sciences — *Expected 2027*
M.A. in Astrophysical Sciences — *2024*

Yale University
B.S. in Astrophysics and Statistics & Data Science, *summa cum laude* — *2022*

RESEARCH INTERESTS

Bursty star formation; low-mass galaxies; galaxy morphology; chemical evolution and the low-metallicity universe; survey science and statistical methods.

PUBLICATIONS AND PRESENTATIONS

Refereed First-Author Publications

6. **Mintz, A.**, Green, J., Danieli, S., et al. 2026 (under review in *ApJ*). *Galaxies Below the Fundamental Metallicity Relation Are Morphologically Disturbed: Merian Morphologies and DESI Metallicities*
5. **Mintz, A.**, Setton, D., Greene, J., et al. 2026 *ApJ* 998, 257. *Taking a Break at Cosmic Noon: Continuum-selected Low-mass Galaxies Require Long Burst Cycles.*
4. **Mintz, A.**, Telford, O. G., Kirby, E., et al. 2025 *ApJ* 985, 150. *A Spectroscopic Survey of Metal-Poor OB Stars in Local Dwarf Galaxy NGC 3109.*
3. **Mintz, A.**, Greene, J., Kado-Fong, E., et al. 2024 *ApJ* 974, 273. *A non-parametric morphological analysis of Hα emission in bright dwarfs using the first Merian Survey data release.*
2. **Mintz, A.**, Rafelski, M., Jorgenson, R., et al. 2022 *AJ*, 164, 51. *Constraining the Size of the Circumgalactic Medium Using the Transverse Autocorrelation Function of C IV Absorbers in Paired Quasar Spectra.*
1. **Mintz, A.**, Hora, J., Winston, E. 2021 *AJ*, 162, 236. *Testing Models of Triggered Star Formation with Young Stellar Objects in Cepheus OB4.*

Other Publications

10. Bhattacharyya, J., Herron, G., Asali, Y., et al. (incl. **Mintz, A**) 2026 *(submitted to ApJ)*. *Morphologies of SAGAbg low-mass galaxies in Legacy Survey multi-band imaging: dependence on stellar masses, star-formation rates and low-redshift evolution.*
9. Burnham, E., Wang, B., Leja, J., et al. (incl. **Mintz, A**) 2026 *ApJ* 1001, 205. *It's More Complicated Than You Think: A Forward Model to Infer the Recent Star Formation History, Bursty or Not, of Galaxy Populations.*
8. Pan, Y., Danieli S., Greene, J. et al. (incl. **Mintz, A**) 2026 *ApJ* 1000, 119. *The Merian Survey: A Statistical Census of Bright Satellites of Milky Way Analogs.*
7. Zhang, Y., Miller, T., Price, S. et al. (incl. **Mintz, A**) 2026 ApJS 285, 62z. *Everything Every Band All at Once I: A Global Morphology Catalog in Abell 2744 based on UNCOVER/MegaScience.*
6. Lorenz, B., Suess, K., Kriek, M. et al. (incl. **Mintz, A**) 2026 *(submitted to ApJ)*. *Evidence for Shallow Nebular Attenuation Curves and Patchy Dust Geometry at z 2 with Pa-beta/H-alpha Measurements from JWST-MegaScience Medium Band Photometry.*

5. Mitsuhashi, I., Suess, K., Leja, J, et al. (incl. **Mintz, A**) 2026 *(submitted to ApJ). UNCOVER/MegaScience Finds Uniform and Highly Bursty Star Formation at 3 ¡ z ¡ 9, consistent with the High-Redshift UV Luminosity Function.*

4. Lorenz, B., Suess, K., Kriek, M. et al. (incl. **Mintz, A**) 2025 *ApJ* 988, L20. *Measuring Emission Lines with JWST MegaScience Medium Bands: A New Window into Dust and Star Formation at Cosmic Noon.*

3. Danieli, S., Kado-Fong, E., Huang, S. et al. (incl. **Mintz, A**) 2025 *ApJ* 993, 110. *First Data Release of the Merian Survey: A Wide-field Imaging Survey of Dwarf Galaxies at* $z \sim 0.06 - 0.10$.

2. Luo, Y., Leauthaud, A., Greene, J. et al. (incl. **Mintz, A**) 2023 *MNRAS*, 530, 4988L. *The Merian Survey: Design, Construction, and Characterization of a Filter Set Optimized to Find Dwarf Galaxies and Measure their Dark Matter Halo Properties with Weak Lensing.*

1. Green, S., **Mintz, A.,** Xu, X., & Cisewski-Kehe, J. *Topology of Our Cosmology with Persistent Homology.* 2019 CHANCE, 32:3, 6-13.

Talks (∗ = invited)

13. ∗**Yale University Galaxy Lunch** *November 2025*
Taking a Break at Cosmic Noon: Continuum-selected Low-mass Galaxies Require Long Burst Cycles.

12. **Galactic Frontiers II: Dwarf Galaxies in the Local Volume and Beyond** *June 2025*
Bursty Star Formation in Low-Mass Galaxies at Cosmic Noon.

11. ∗**University of Michigan Galaxy Seminar** *April 2025*
Probing Star Formation and Morphology in Dwarf Galaxies with the Merian Survey.

10. **245th Meeting of the American Astronomical Society** *January 2025*
A Spectroscopic Survey of Metal-Poor OB Stars in Local Dwarf Galaxy NGC 3109.

9. ∗**University of Notre Dame Astrophysics Seminar** *November 2024*
Probing Star Formation and Morphology in Dwarf Galaxies with the Merian Survey.

8. **Small Galaxies, Cosmic Questions - II** *August 2024*
Early Science from the Merian Survey: Morphology of Hα Emission in Bright Dwarfs.

7. ∗**Space Telescope Science Institute Galaxy and AGN Journal Club** *March 2024*
A non-parametric morphological analysis of Hα emission in bright dwarfs using the first Merian Survey data release.

6. ∗**University of Toronto Galaxy Journal Club** *February 2024*
A non-parametric morphological analysis of Hα emission in bright dwarfs using the first Merian Survey data release.

5. **Yale University Astrophysics Department Senior Thesis Presentations** *December 2021*
Magnetic Fields in Orion: A Particularly Pleasant Process of Procuring Palomar Polarimetry

4. **Summer Science Program TA Talk** *July 2021*
How a Star is Born: Stellar Nurseries and Triggered Star Formation

3. **Nantucket Maria Mitchell Association's Science Speaker Series** *February 2021*
How a Star is Born: Stellar Nurseries and Triggered Star Formation

2. **Smithsonian Astrophysical Observatory, Summer REU Symposium** *August 2020*
Testing Models of Triggered Star Formation with Young Stellar Objects in Cepheus OB4

1. **Maria Mitchell Observatory, Summer REU Symposium** *August 2019*
Galaxies: The Bigger Picture

Posters

7. **IAUS 402: Massive stars across redshifts in the era of JWST and large surveys** *Ensenada, MX September 2025*
   A Spectroscopic Survey of Metal-poor OB Stars in Local Dwarf Galaxy NGC 3109.
6. **Dwarf Galaxies, Star Clusters, and Streams in the LSST Era** *Chicago, IL* *July 2024*
   Morphology of Hα emission in bright dwarfs using the first Merian Survey data release
5. **237th Meeting of the American Astronomical Society** *Virtual* *January 2021*
   Testing Models of Triggered Star Formation with Young Stellar Objects in Cepheus OB4
4. **Harvard-Heidelberg Star Formation Workshop** *Virtual* *December 2020*
   Testing Models of Triggered Star Formation with Young Stellar Objects in Cepheus OB4
3. **Keck Science Meeting** *Virtual* *September 2020*
   Probing the High-Redshift Circumgalactic Medium Through Quasar Absorption Line Tomography
2. **235th Meeting of the American Astronomical Society** *Honolulu, HI* *January 2020*
   Probing the High-Redshift Circumgalactic Medium Through Quasar Absorption Line Tomography
1. **Conference for Undergraduate Women in Physics** *Yale University* *January 2020*
   Probing the High-Redshift Circumgalactic Medium Through Quasar Absorption Line Tomography

RESEARCH POSITIONS AND FELLOWSHIPS

National Science Foundation *2022 – 2027*
Graduate Research Fellow

Yale University Department of Astronomy *2020 – 2022*
Undergraduate Researcher, Advised by Héctor Arce

Space Telescope Science Institute *2020 – 2021*
Spectroscopy Intern, Advised by Marc Rafelski

Smithsonian Astrophysical Observatory *Summer 2020*
NSF-REU Astronomy Intern, Advised by Joseph Hora

Maria Mitchell Observatory *Summer 2019*
NSF-REU Astronomy Intern, Advised by Regina Jorgenson

Yale University Department of Statistics & Data Science *2019*
Undergraduate Researcher, Advised by Jessi Cisewski Kehe and Sheridan Green

Yale University *Summer 2018*
Dufault Summer Research Fellow, Advised by Debra Fischer

TEACHING AND MENTORING

Summer Research in Astronomy *Summer 2026*
Primary mentor for Rutgers Undergraduate in summer research program

Prison Teaching Initiative: Astronomy *Spring 2025 – present*
Instructor

Princeton University: AST203 - The Universe *Spring 2025, Spring 2026*
Teaching Assistant

Coding Foundations of Research: Python Module *Summer 2025*
Instructor

Prison Teaching Initiative: Basic Math *Fall 2024*
Instructor

Princeton University: AST205 - Planets in the Universe *Fall 2024*
Teaching Assistant

The Summer Science Program *Summer 2021*
Teaching Assistant and Residential Mentor

Yale University Center for Teaching and Learning *2018 – 2020*
Course-Based Peer Tutor

Online Experience for Yale Scholars *Summers 2018 – 2020*
Super Coach

Yale University Department of Mathematics *2018 – 2019*
Science and Quantitative Reasoning Tutor

LEADERSHIP AND OUTREACH

Prison Teaching Initiative *2025 – present*
Course Coordinator

Spring into Science *Spring 2026*
Volunteer

Princeton Astronomy Climate Committee *2023 – 2025*
Graduate Student Representative

Princeton Astronomy Astrojustice Seminar *2023 – 2024*
Organizer

Yale Admissions Office *2019 – 2021*
Head Science Tour Guide

Yale Astronomy Climate and Diversity Committee *2019 – 2021*
Member

Yale Astronomy Journal Club on Inclusivity, Diversity, and Equity *2020 – 2021*
Founding member

SSP Connect *2020*
Mentor

Community Health Educators *2017 – 2020*
Head High School Liaison and Teacher

TELESCOPE PROPOSALS

WIYN 3.5m Observatory (Hydra) *Princeton 2025A*
Probing Dwarf Burstiness with Morphology and the Fundamental Metallicity Relation Using Follow-up Spectroscopy of Galaxies in the Merian Survey

· 4 nights awarded (PI)

Palomar Observatory (WIRC+Pol) *Yale 2021B*
Mapping the Magnetic Field in the Orion A Molecular Cloud

· 6 nights awarded (Co-I)

Multiple Mirror Telescope (MMIRS) *CfA 2020B*
Star Formation in Cepheus OB4

· 5 nights awarded (Co-I)

Palomar Observatory (WIRC+Pol) *Yale 2020B*
Mapping the Magnetic Field in the Orion A Molecular Cloud

· 5 nights awarded (Co-I)

OBSERVING EXPERIENCE

WIYN 3.5m Observatory *Tucson, Arizona* *Spring 2025*

· Observed for 4 nights on Hydra multi-object spectrograph.

Keck Observatory *Waimea, Hawaii* *Spring 2024*

· Observed for 1.5 nights (3 half nights) using DEIMOS multi-object spectrograph.

Palomar Observatory *Palomar, California* *Fall 2020, 2021*

· Observed for 9 nights (3 in fall 2020 and 6 in fall 2021) using Palomar's new polarimeter WIRC+Pol to measure polarization from background stars in the Orion A Molecular Cloud.

Lowell Observatory *Flagstaff, Arizona* *Summer 2018*

· Observed for 10 consecutive nights using the newly commissioned Extreme Precision Spectrograph (EXPRES) on the Discovery Channel Telescope.

Sommers-Bausch Observatory *Boulder, Colorado* *Summer 2016*

· Observed near-earth asteroids over the course of 6 weeks using the 18" and 26" telescopes at the University of Colorado at Boulder.

AWARDS

George Beckwith Prize *Yale University Astronomy Department* *May 2022*

Chambliss Poster Award *American Astronomical Society* *January 2020*

MEMBERSHIPS

Phi Beta Kappa *2021 – present*

American Astronomical Society *2019 – present*