Aimee Schechter

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Education

PhD in Astrophysics, *University of Colorado Boulder* — Expected Dec 2025
Master of Astrophysics, *University of Colorado Boulder* — Dec 2021
Bachelor of Science, Astronomy, Honors, *The University of Texas at Austin* — May 2019
Bachelor of Science, Physics, *The University of Texas at Austin* — May 2019
Study Abroad, University of Sussex — Spring 2017

Awards

PI: Chandra Cycle 26 Archival Proposal — Fall 2024
Recommended for funding by the Scientific Peer Review panel. No archival funding available for Cycle 26 awards.

CU APS Department Astrophysics Graduate Fellowship — Spring 2023
NSF Graduate Research Fellowship Program Honorable Mention — Spring 2021
UT College of Natural Sciences Dean's Honored Graduate — Spring 2019
UT College of Natural Sciences Distinction in Research — Spring 2019
UT College of Natural Sciences Distinction in Service & Leadership — Spring 2019
Department of Astronomy Karl G. Henize Memorial Scholarship — Spring 2019
Undergraduate AAS Chambliss Award Honorable Mention — Spring 2019
University of Texas Undergraduate Research Fellowship — Fall 2018
John W. Cox Scholarship for Advanced Studies in Astronomy — Summer 2018

Publications

Beyond the Brightest: A Deep Learning Approach to Identifying Major and Minor Galaxy Mergers in CANDELS at $z \sim 1$, **Schechter, A.,** Nevin, R., Ćiprijanović, A., Shen, X., Comerford, J. & Stemo, A., Submitted, ApJ

Toward Complete Merger Identification at High Redshifts with Deep Learning, **Schechter, A.,** Nevin, R., Ćiprijanović, A., Shen, X., Comerford, J. & Stemo, A., Accepted to NeurIPS ML4PS[1]

Enhanced Star Formation and Black Hole Accretion Rates in Galaxy Mergers in IllustrisTNG50, **Schechter, A.**, Genel, S., Terrazas, B., Comerford, J., Hartley, A., Sommerville, R., Nevin, R., Simon, J., & Nelson, E., The Astrophysical Journal, submitted

Examining the Gas Outflow for a Typical Dusty Star-Forming Galaxy at z=2, **Schechter, A.** & Casey, C., Res. Notes AAS 2018 2 228

"Beads-on-a-string" Star Formation Tied to One of the Most Powerful Active Galactic Nucleus Outbursts Observed in a Cool-core Galaxy Cluster,Omoruyi, O., Tremblay, G. R., Combes, F., Davis, T. A., Gladders, M. D., Vikhlinin, A., Nulsen, P., Kharb, P., Baum, S. A., O'Dea, C. P., Sharon, K., Terrazas, B. A., Nevin, R., **Schechter, A.** L., Zuhone, J. A., McDonald, M., Dahle, H., Bayliss, M. B., Connor, T., Florian, M., Rigby, J. R., & Vaddi, S.,The Astrophysical Journal, 2024, 963, 1.

The first quiescent galaxies in TNG300,Hartley, A. I., Nelson, E. J., Suess, K. A., Garcia, A. M., Park, M., Hernquist, L., Bezanson, R., Nevin, R., Pillepich, **A., Schechter,** A. L., Terrazas, B. A., Torrey, P., Wellons, S., Whitaker, K. E., & Williams, C. C.,Monthly Notices of the Royal Astronomical Society, 2023, 522, 3138.

A Catalog of 204 Offset and Dual Active Galactic Nuclei (AGNs): Increased AGN Activation in Major Mergers and Separations under 4 kpc, Stemo, A., Comerford, J. M., Barrows, R. S., Stern, D., Assef, R. J., Griffith, R. L., & **Schechter, A.,** The Astrophysical Journal, 2021, 923, 36.

[1]The Neural Information Processing Systems conference is a top machine learning conference in the US. This work was accepted into the Machine Learning for Physical Sciences Workshop at NeurIPS 2025 under the ML for Physics track. The submission and acceptance process involves peer review and revising of papers.

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Talks and Posters

T: From the Little Leagues to the Big Leagues: The Impact of Low-mass Minor to Massive Major Galaxy Mergers on Galaxy Evolution
UMass Amherst, Yale, MIT, and STScI September 2025

T: Identifying Galaxy Mergers and Their Role in Star Formation and AGN Activity Across Cosmic Time
Dancing In The Dark, Sexten Center for Astrophysics June 2025

T: The Uses and Limitations of CNNs for Galaxy Merger Identification
Cosmic Horizons Conference, NSF-Simons Cosmic AI Institute May 2025

T: CANDELS Merger Identification with IllustrisTNG50 Using a Convolutional Neural Network
Data Driven Galaxy Evolution, KITP-CCA Jan 2023

T: How to Identify Galaxy Mergers in CANDELS with IllustrisTNG50
Galaxies and AGN Seminar, STScI Sept 2021

T: Merging galaxies in HST and JWST: An interpretable suite of CNNs for identifying and understanding merger features
Hernquist Group, Harvard CfA Oct 2021

T: How to Identify Galaxy Mergers in CANDELS with IllustrisTNG50
Clash of the Titans, Lorentz Center Workshop Mar 2021

P: Examining the Gas Outflow for a Typical Dusty Star-Forming Galaxy at z=2
Conference for Undergraduate Women in Physics Jan 2019

P: Examining the Gas Outflow for a Typical Dusty Star-Forming Galaxy at z=2
233rd Meeting of the American Astronomical Society Jan 2019

T: Examining the Gas Outflow for a Typical Dusty Star-Forming Galaxy at z=2
Texas Astronomy Undergraduate Research Symposium Oct 2018

Research Experience

CANDELS Merger Identification with IllustrisTNG50 **Jan 2020 — Present**
CU Boulder, with Prof. Julie Comerford, Dr. Rebecca Nevin, and Dr. Aleksandra Ćiprijanović

Star Formation and Black Hole Accretion in Galaxy Mergers in TNG50 **Aug 2022 — Jun 2025**
CU Boulder | CCA, with Dr. Rachel Somerville, Dr. Shy Genel, and Prof. Bryan Terrazas

Mapping Dust Emission in M101 to Improve Precision Cosmology **Oct 2018 — Dec 2019**
UT Austin, with Prof. Caitlin Casey

Examining the Gas Outflow for a Typical Dusty, Star-Forming Galaxy at z=2 **Aug 2017 — Sep 2018**
UT Austin, with Prof. Caitlin Casey

Analyzing the Cooling Tracks of Extremely Low Mass White Dwarfs **Aug 2016 — Dec 2016**
UT Austin, with Dr. Mike Montgomery

Type II Supernovae Simulations in MESA **Mar 2016 — Jun 2016**
UT Austin, with Dr. Mike Montgomery

Teaching Experience

Research Mentor Merger Observability Timescales with CNNs Fall 2025 — Present
Post-baccalaureate student at University of Florida with Prof. Laura Blecha
Lecture TA, ASTR 2030 Black Holes Fall 2024
Lecture TA, ASTR 1200 Stars and Galaxies Spring 2020, Fall 2020
Lab TA ASTR 1010 Introductory Astronomy I Fall 2019

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Outreach

Event Planner and Telescope Operator *Jun 2024*
Nature Heals, Sommers-Bausch Observatory

- Organized and led "Stargazing at the Farm", a meditation and stargazing event with Nature Heals
- Operated two mobile telescopes
- Gave public talk discussing stellar and galaxy evolution

Lead Facilitator and Treasurer *Jul 2020 — Jul 2022*
Science Under the Dome, Fiske Planetarium, CU Boulder

- Fundraise and manage finances for the organization
- Run auditions for future speakers
- Provide feedback to speakers on visuals, content, and public speaking

President *May 2018 — May 2019*
Undergraduate Women in Physics, UT Austin

- Organized speakers and activities for weekly meetings
- Worked with department to improve undergraduate curriculum and department culture
- Created support system for underrepresented people in the department

Outreach Coordinator *Aug 2017 — Sep 2018*
Undergraduate Women in Physics, UT Austin

- Planned events and coordinated volunteers
- Set up demos and explained complex physics to the public

Program Ambassador/Member *Aug 2015 — May 2019*
Women in Natural Sciences Program, UT Austin

- Selected based on academic achievement and commitment to the community
- Represent the WINS Program at College events
- Tutored fifth grade student in reading comprehension and success strategies
- Mentored an incoming WINS student (August 2018-May 2019)

Programming and Tools

Programming Languages: Python
Libraries & Tools: Astropy, scikit-learn, PyTorch, tensorflow, statmorph, pandas, h5py, astropy.io.fits
Workflow & Dev Tools: Github, Jupyter Notebooks, SLURM, LaTeX

Relevant Graduate Level Coursework

Atomic and Molecular Processes, Observations & Statistics, Radiatve &Dynamic Processes, Galaxies, High-Energy Astrophysics, Astrophysical Instrumentation, Cosmology, Statistical Learning, Science Writing

CU Astrophysical and Planetary Sciences Department Committees

Lead Graduate Representative, Friday Lunch Seminar Organizing Committee Fall 2021 — Spring 2024
Graduate Representative, Graduate Curriculum and Concerns Committee Fall 2021 — Spring 2022
Graduate Representative, Undergraduate Curriculum and Concerns Committee Fall 2019 — Spring 2021