

Alexa Morales

Department of Astronomy and Cosmic Frontier Center, University of Texas at Austin

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Education

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| University of Texas at Austin (UT Austin)
College of Natural Sciences
Advisor: Steven Finkelstein
Ph.D. in Astronomy | Expected Graduation: Spring 2026 |
| University of Texas at Austin (UT Austin)
College of Natural Sciences
Advisor: Steven Finkelstein
M.A. in Astronomy | August 2021 – April 2024 |
| Florida International University (FIU)
College of Arts, Science, and Education
Bachelor of Science in Physics, Second Major in Natural and Applied Sciences,
Minors in Mathematics & Astronomy | August 2016 – April 2021 |

Research Experience

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| University of Texas at Austin, Austin, TX
Observational Astrophysics – Dr. Steven Finkelstein | August 2021 – Present |
| <ul style="list-style-type: none">Implement a forward approach to the measurement of the UV spectral slope using spectral energy distribution (SED) fittings to understand differences in the rest-frame ultraviolet (UV) spectral slope (β) and UV colors to tell us about galaxy properties such as stellar mass (SM), dust attenuation, and SM-metallicity relationsAnalyze <i>HST</i> and <i>JWST</i> spectroscopic and photometric data to measure β for a range of redshifts using Python, high-end performance computing provided through UT Austin & TACC, and SAOImage DS9 | |
| Center for Astrophysics Harvard & Smithsonian, Cambridge, MA
Theoretical Astrophysics – Dr. Charlotte Mason | June 2020 – July 2021 |
| <ul style="list-style-type: none">Improved determination of timeline of reionization by studying the evolving shape of the Lyman-alpha luminosity function (LF)Modeled the evolution of the Lyman-alpha luminosity function as a function of redshift and the neutral fraction of hydrogen, by combining theoretical models of Lyman-alpha emission during reionization with the galaxy UV luminosity function | |
| Florida International University, Miami, FL
Observational Astrophysics – Dr. James Webb | July 2019 – October 2019 |
| <ul style="list-style-type: none">Studied the variability and activity of active galactic nuclei (AGN), i.e. galaxies centered with supermassive black holes, using optical telescopesModeled microvariability of different objects, calculated their average absolute magnitudes, light curves, and their look-back in time with an average of 60 years' worth of data | |

Technical Skills

Operating Systems: MAC OS, Windows

Programming Experience: Python, LaTeX, HTML, Bash

Software & Platforms: Microsoft Office, Google Suite, SAOImage DS9, Stampede2/Stampede3/Lonestar6 (High-End/High Performance Computing, UT Austin & TACC)

Publications & Presentations

Publications

- **First Author:**
 - **Morales, A. M.**, Mason, C. A., Bruton, S., et al. 2021, 'The Evolution of the Lyman-Alpha Luminosity Function During Reionization,' ApJ, 919, 120
 - **Morales, A. M.**, Finkelstein, S., Leung, G., et al., 2024 'Rest-Frame UV Colors for Faint Galaxies at $z \geq 9$ with the *JWST* NGDEEP Survey', ApJL, 964, L24
 - **Morales, A. M.**, Finkelstein S., et al. 2025 'The Evolution of Galaxy Rest-Frame UV Colors from $z = 2-4$ with UVCANDELS', ApJ, 985, 174
 - **Morales, A. M.**, Finkelstein S., et al. 'Testing Photometric Techniques for Measuring the UV Spectral Slope Using JWST Prism Spectroscopy', accepted to ApJ Oct. 2025, pending publication.
 - **Morales, A. M.**, Finkelstein S., et al. 'The Evolution of Galaxy Rest-Frame UV Colors from $z=5-16$ with *JWST*', in preparation.
 - **Morales, A. M.**, Finkelstein S., et al. 'Observed and Intrinsic UV Slopes for $z > 5$ Galaxies in the *JWST* CAPERS Survey ', in preparation.
- **Co-author:**
 - Bruton, S., Scarlata, C., et al. 2023, 'The Impact of Cosmic Variance on Inferences of Global Neutral Fraction Derived from Lyman-alpha Luminosity Functions During Reionization', ApJ, 953, 29
 - Finkelstein, S. L., et al. 2022, 'A Long Time Ago in a Galaxy Far, Far Away: A Candidate $z \sim 14$ Galaxy in Early JWST CEERS Imaging ', ApJL, 940, L55
 - Zavala, Jorge A., et al. 2023 'A dusty starburst masquerading as an ultra-high redshift galaxy in JWST CEERS observation', ApJL, 943, L9

[See my full list of first and co-authored papers hyperlinked here.](#)

First author: 4 – Citations: 135, Total publications: 20 – Citations: 2,581 as of Oct. 2025

Presented Talks & Posters

- **Conference Poster + Lightning Talk** – 'Observed vs. Intrinsic UV Spectral Slopes for $z > 4$ Galaxies with the *JWST* CAPERS Survey', CFC Conference, UT Austin, Texas, 2025
- **Seminar Speaker** – 'Rest-Frame UV Spectral Slope Best Practices in the Era of JWST', UT Astronomy Galaxies and Cosmology Seminar, Austin, TX, 2025
- **Invited Speaker** – Université de Montréal Ciela Institute's Astromerique Student Talk Series: 'The Evolution of Rest-Frame UV Spectral Slopes with the UVCANDELS + NGDEEP Surveys at $z=2-4$ and $z=9-16$ ', 2024
- **Conference Poster** – 'Rest-Frame UV Colors for Faint Galaxies at $z \geq 9$ with the *JWST* NGDEEP Survey', First Stars Conference, Flatiron Institute, NYC, 2024
- **Invited Speaker** – JHU/STSci Exgal Seminar: 'Rest-Frame UV Colors for Faint Galaxies at $z \geq 9$ with the *JWST* NGDEEP Survey', 2024
- **Seminar Speaker** – 'Rest-Frame UV Colors for Faint Galaxies at $z \geq 9$ with the *JWST* NGDEEP Survey', UT Astronomy Galaxies and Cosmology Seminar, Austin, TX, 2024
- **Conference Poster** – 'Rest-Frame UV Colors for Faint Galaxies at $z \geq 9$ with the *JWST* NGDEEP Survey', First Light Conference, MIT, Boston, 2023
- **Seminar Speaker** – 'The Evolution of Galaxy Rest-Frame UV Colors from $z \sim 2-4$ with HST UVCANDELS', UT Astronomy Galaxies and Cosmology Seminar, Austin, TX, 2023
- **Invited Speaker** – UVCANDELS Special Session: 'The Evolution of Galaxy Rest-Frame UV Colors in the GOODS-N Field at $z=2-4$ with UVCANDELS', AAS 241st Meeting, 2023
- **Seminar Speaker** – 'The Evolution of the Lyman-Alpha Luminosity Function During Reionization', UT Astronomy Galaxies and Cosmology Seminar, Austin, TX, 2022
- **Conference Speaker** – 'The Evolution of the Lyman-Alpha Luminosity Function During Reionization', SAZERAC Summer Conference, 2021
- **Conference Poster** – 'The Evolution of the Lyman-Alpha Luminosity Function During Reionization', AAS 237th Meeting, 2021

Telescope Time Awarded

- **JWST Cycle 3**
 - 5507 - Deep Spectroscopy of Galaxies at $z=4-14$: Uncovering Drivers of Early Galaxy Formation and Black Hole Growth (Hutchison PI – Morales CoI)
- **HST Cycle 30 GO**
 - 17281 - Revealing the Nature of Five Potential Bright Galaxies at $z > 10$ (Leung PI – Morales CoI)

Academic Achievements & Awards

NSF Graduate Research Fellow	September 2023 – Present
AAS 237th Meeting Chambliss Astronomy Achievement Award (Honorable Mention)	February 2021
NSF S-STEM Scholarship	January 2018 – April 2021
Inducted Member of Sigma Pi Sigma Physics National Honor Society	April 2018
FIU Dean's List	August 2016 – April 2021

Leadership Activities

FIU Society of Physics Students (SPS)	August 2018 – April 2021
• Executive Board Member – CSO Representative	
FIU Society for the Advancement of Women in STEM (AWSTEM)	August 2018 – December 2019
• Executive Board Member – Secretary	

Affiliations & Involvement

Member of the following <i>HST</i>/<i>JWST</i> collaborations:	August 2021 – Present
• UVCANDELS, CEERS, NGDEEP, COSMOS-Web, MEOW, THRILs, CAPERS	
Astronomy on Tap Austin	November 2023 – Present
UT Austin Astronomy E&I Organization	August 2021 – Present
UT Austin Astronomy Vertically Integrated Projects (VIP) Program	August 2021 – Present
FIU Sigma Pi Sigma Physics National Honor Society	August 2016 – April 2021
FIU AWSTEM (Society for the Advancement of Women in STEM)	August 2017 – April 2021
FIU Society of Physics Students	August 2016 – April 2021
American Physical Society	August 2016 – April 2021
FIU Astronomy Club	August 2016 – April 2021

Employment Experience

UT Astronomy Department: Teaching Assistant for Intro to Astronomy	August 2022 – December 2022
• Worked as an in-class tutor to help facilitate an active learning environment	
• Held tutoring and review sessions outside of class to aid student understanding of various astronomy concepts	
FIU Online: Student Course Developer	October 2019 – August 2021
• Maintained, produced, tested, and quality assured courseware for online deployment	
• Collaborated closely with a development team on multiple projects	
FIU Physics Department: Learning Assistant for Physics with Calculus II	January 2019 – May 2019
• Worked as an in-class tutor in order to help facilitate an active learning environment	
• Aided student understanding of complex physics and math concepts through office hours and review sessions	

Additional Information

Languages: Fluent in English & Spanish

Additional Relevant Courses: Regression Analysis, Survey of the Interstellar Medium, Computational Astrophysics, Gravitational Dynamics, Math Methods in Astrophysics, Radiative Processes & Radiative Transfer, Elements of Cosmology, Astronomical Data Analysis, Observational Astronomy + Lab, Modern Astrophysics, Mathematical Methods for Theoretical Physics, Ordinary and Advanced Partial Differential Equations, Linear Algebra, Calculus I-II-III, Statistical Methods I

1. **Leung, G. C. K., Finkelstein, S. L., Pérez-González, P. G., et al.** (2025). *Exploring the Nature of Little Red Dots: Constraints on Active Galactic Nucleus and Stellar Contributions from PRIMER MIRI Imaging*. *Astrophysical Journal*, **992**, 26. (Cited: 46)
2. **Lambrides, E., Larson, R., Hutchison, T., et al.** (2025). *Discovery of Multiply Ionized Iron Emission Powered by an Active Galactic Nucleus in a $z \sim 7$ Little Red Dot*. arXiv:2509.09607. (Cited: 4)
3. **Donnan, C. T., Dickinson, M., Taylor, A. J., et al.** (2025). *Very bright, very blue, and very red: JWST CAPERS analysis of highly luminous galaxies with extreme UV slopes at $z=10$* . arXiv:2507.10518. (Cited: 11)
4. **** Morales, A. M., Finkelstein, S. L., Arrabal Haro, P., et al.** (2025). *Testing Photometric Techniques for Measuring the Rest-Frame UV Spectral Slope Against JWST PRISM Spectroscopy*. arXiv:2507.03118. (Cited: 2)
5. **** Morales, A. M., Finkelstein, S. L., Bagley, M. B., et al.** (2025). *Galaxy Rest-frame UV Colors at $z \sim 2-4$ with HST UVCANDELS*. *Astrophysical Journal*, **985**, 174. (Cited: 7)
6. **Dottorini, D., Calabrò, A., Pentericci, L., et al.** (2025). *Evolution of the UV slope of galaxies at cosmic morning ($z > 4$): The properties of extremely blue galaxies*. *Astronomy & Astrophysics*, **698**, A234. (Cited: 12)
7. **Finkelstein, S. L., Bagley, M. B., Arrabal Haro, P., et al.** (2025). *The Cosmic Evolution Early Release Science Survey (CEERS)*. *Astrophysical Journal*, **983**, L4. (Cited: 70)
8. **Mehta, V., Rafelski, M., Sunnquist, B., et al.** (2024). *UVCANDELS: Catalogs of Photometric Redshifts and Galaxy Physical Properties*. *Astrophysical Journal Supplement Series*, **275**, 17. (Cited: 6)
9. **Finkelstein, S. L., Leung, G. C. K., Bagley, M. B., et al.** (2024). *The Complete CEERS Early Universe Galaxy Sample: A Surprisingly Slow Evolution of the Space Density of Bright Galaxies at $z \sim 8.5-14.5$* . *Astrophysical Journal*, **969**, L2. (Cited: 218)
10. **** Morales, A. M., Finkelstein, S. L., Leung, G. C. K., et al.** (2024). *Rest-frame UV Colors for Faint Galaxies at $z \sim 9-16$ with the JWST NGDEEP Survey*. *Astrophysical Journal*, **964**, L24. (Cited: 46)
11. **Larson, R. L., Hutchison, T. A., Bagley, M., et al.** (2023). *Spectral Templates Optimal for Selecting Galaxies at $z > 8$ with the JWST*. *Astrophysical Journal*, **958**, 141. (Cited: 110)
12. **Leung, G. C. K., Bagley, M. B., Finkelstein, S. L., et al.** (2023). *NGDEEP Epoch 1: The Faint End of the Luminosity Function at $z \sim 9-12$ from Ultradeep JWST Imaging*. *Astrophysical Journal*, **954**, L46. (Cited: 94)
13. **Larson, R. L., Finkelstein, S. L., Kocevski, D. D., et al.** (2023). *A CEERS Discovery of an Accreting Supermassive Black Hole 570 Myr after the Big Bang: Identifying a Progenitor of Massive $z > 6$ Quasars*. *Astrophysical Journal*, **953**, L29. (Cited: 374)
14. **Bruton, S., Scarlata, C., Haardt, F., et al.** (2023). *The Impact of Cosmic Variance on Inferences of Global Neutral Fraction Derived from Ly α Luminosity Functions during Reionization*. *Astrophysical Journal*, **953**, 29. (Cited: 10)
15. **Arrabal Haro, P., Dickinson, M., Finkelstein, S. L., et al.** (2023). *Spectroscopic Confirmation of CEERS NIRC*am*-selected Galaxies at $z \simeq 8-10$* . *Astrophysical Journal*, **951**, L22. (Cited: 199)
16. **Finkelstein, S. L., Bagley, M. B., Ferguson, H. C., et al.** (2023). *CEERS Key Paper. I. An Early Look into the First 500 Myr of Galaxy Formation with JWST*. *Astrophysical Journal*, **946**, L13. (Cited: 532)
17. **Bagley, M. B., Finkelstein, S. L., Koekemoer, A. M., et al.** (2023). *CEERS Epoch 1 NIRC*am* Imaging: Reduction Methods and Simulations Enabling Early JWST Science Results*. *Astrophysical Journal*, **946**, L12. (Cited: 267)
18. **Zavala, J. A., Buat, V., Casey, C. M., et al.** (2023). *Dusty Starbursts Masquerading as Ultra-high Redshift Galaxies in JWST CEERS Observations*. *Astrophysical Journal*, **943**, L9. (Cited: 155)
19. **Finkelstein, S. L., Bagley, M. B., Arrabal Haro, P., et al.** (2022). *A Long Time Ago in a Galaxy Far, Far Away: A Candidate $z \sim 12$ Galaxy in Early JWST CEERS Imaging*. *Astrophysical Journal*, **940**, L55. (Cited: 357)
20. **** Morales, A. M., Mason, C. A., Bruton, S., et al.** (2021). *The Evolution of the Lyman-alpha Luminosity Function during Reionization*. *Astrophysical Journal*, **919**, 120. (Cited: 82)

** = First Author