

# Alexa Morales

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## Education

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

## Research Experience

<b>University of Texas at Austin, Austin, TX</b>	August 2021 – Present
Observational Astrophysics – Dr. Steven Finkelstein	
<ul style="list-style-type: none"><li>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 (<math>\beta</math>) and UV colors to tell us about galaxy properties such as stellar mass (SM), dust attenuation, and SM-metallicity relations</li><li>Analyze <i>HST</i> and <i>JWST</i> spectroscopic and photometric data to measure <math>\beta</math> for a range of redshifts using Python, high-end performance computing provided through UT Austin &amp; TACC, and SAOImage DS9</li></ul>	
<b>Center for Astrophysics   Harvard &amp; Smithsonian, Cambridge, MA</b>	June 2020 – July 2021
Theoretical Astrophysics – Dr. Charlotte Mason	
<ul style="list-style-type: none"><li>Improved determination of timeline of reionization by studying the evolving shape of the Lyman-alpha luminosity function (LF)</li><li>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</li></ul>	
<b>Florida International University, Miami, FL</b>	July 2019 – October 2019
Observational Astrophysics – Dr. James Webb	
<ul style="list-style-type: none"><li>Studied the variability and activity of active galactic nuclei (AGN), i.e. galaxies centered with supermassive black holes, using optical telescopes</li><li>Modeled 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</li></ul>	

## 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

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### 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  $z = 2\text{-}4$  with UVCANDELS', ApJ, 985, 174
  - **Morales, A. M.**, Finkelstein S., et al. 2025 'Testing Photometric Techniques for Measuring the UV Spectral Slope Using JWST Prism Spectroscopy', ApJ 994 212
  - **Morales, A. M.**, Finkelstein S., et al. 'The Evolution of Galaxy Rest-Frame UV Colors from  $z=5\text{-}16$  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: 141, Total publications: 20 – Citations: 2,718 as of Dec. 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 Cielo Institute's Astromerique Student Talk Series: 'The Evolution of Rest-Frame UV Spectral Slopes with the UVCANDELS + NGDEEP Surveys at  $z=2\text{-}4$  and  $z=9\text{-}16$ ', 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  $z \sim 2\text{-}4$  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 GOODSN Field at  $z=2\text{-}4$  with UVCANDELS', AAS 241<sup>st</sup> 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 237<sup>th</sup> Meeting, 2021

## Telescope Time Awarded

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- **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

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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

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

## Affiliations & Involvement

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<b>Member of the following HST/JWST collaborations:</b>	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

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<b>UT Astronomy Department: Teaching Assistant for Intro to Astronomy</b>	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	
<b>FIU Online: Student Course Developer</b>	October 2019 – August 2021
• Maintained, produced, tested, and quality assured courseware for online deployment	
• Collaborated closely with a development team on multiple projects	
<b>FIU Physics Department: Learning Assistant for Physics with Calculus II</b>	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**

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**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

## Current List of Publications as of December 2025

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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: 53](#))
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: 6](#))
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  $z=10$* . *Astrophysical Journal*, **993**, 224. ([Cited: 12](#))
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*. *Astrophysical Journal*, **994**, 212. ([Cited: 3](#))
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., Calabro, 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: 13](#))
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: 79](#))
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: 7](#))
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: 235](#))
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: 47](#))
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: 113](#))
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: 103](#))
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: 391](#))
14. **Bruton, S., Scarlata, C., Haardt, F., et al.** (2023). *The Impact of Cosmic Variance on Inferences of Global Neutral Fraction Derived from Ly $\alpha$  Luminosity Functions during Reionization*. *Astrophysical Journal*, **953**, 29. ([Cited: 11](#))
15. **Arrabal Haro, P., Dickinson, M., Finkelstein, S. L., et al.** (2023). *Spectroscopic Confirmation of CEERS NIRCam-selected Galaxies at  $z \simeq 8-10$* . *Astrophysical Journal*, **951**, L22. ([Cited: 206](#))
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: 555](#))
17. **Bagley, M. B., Finkelstein, S. L., Koekemoer, A. M., et al.** (2023). *CEERS Epoch 1 NIRCam Imaging: Reduction Methods and Simulations Enabling Early JWST Science Results*. *Astrophysical Journal*, **946**, L12. ([Cited: 276](#))
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: 156](#))
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: 361](#))
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: 84](#))

\*\* = First Author