

# Jaclyn B. Champagne

Software Engineer II | Space Telescope Science Institute | Baltimore, MD

🌐 jackiechampagne.com

✉ jchampagne@stsci.edu

🐙 jbchampagne

☎ 732-580-5134

## EDUCATION

---

### University of Texas Austin

Austin, TX

*Ph.D., Astronomy*

Aug. 2022

Thesis: "Constraining the Environments of Galaxy Protoclusters at  $2 < z < 6$ ", Supervisor: Prof. Caitlin Casey

*M.A., Astronomy*

Aug. 2018

Thesis: "No Evidence for 1.2 mm Source Overdensities in the Fields of  $z \geq 6$  Quasars," Supervisor: Prof. Caitlin Casey

### Rutgers, State University of New Jersey

New Brunswick, NJ

*B.S., Physics & Astrophysics*

May 2016

Summa Cum Laude with Highest Honors in Physics, Supervisor: Prof. Charles Keeton

## EMPLOYMENT

---

### Space Telescope Science Institute

Baltimore, MD

*Software Engineer II*

May 2026–present

Data Analysis Tools Branch, Data Management Division

### University of Arizona Steward Observatory

Tucson, AZ

*JASPER Postdoctoral Scholar*

Sept. 2022–April 2026

Supervisor: Prof. Xiaohui Fan

## DATA & OBSERVING EXPERIENCE

---

### UNFOLDJWST Pipeline Development

2023–present

Collaborative development of a JWST data pipeline incorporating the STScI JWST reduction pipeline plus custom scripts for image and spectral extraction, source catalog creation, and automated modeling of galaxy properties including photometry, morphology and redshift template fitting

### James Webb Space Telescope

2022–present

Extensive custom data reduction for NIRCам broadband imaging and grism spectroscopy for the ASPIRE medium-size program (PI: F. Wang) and COSMOS-3D large program (PI: K. Kakiichi)

### Keck Observatory

2024

3 nights observing experience with MOSFIRE and LRIS

### Las Campanas Observatory – Magellan

2022

Two nights observing on FIRE, FOURSTAR, and IMACS, PI: J. Yang

### Hubble Space Telescope

2021

Reduction and photometry of 13 orbits ACS/WFC3 imaging in Cycle 25, PI: C. Casey

### Submillimeter Array

2020

1 night awarded for SMA Interferometry School 2020

6 tracks awarded (A-rated) Semester 2020A, PI: J. Champagne

### Australian Telescope Compact Array

2019, 2020

15 nights total, PI: H. Dannerbauer

|                                                                                                           |      |
|-----------------------------------------------------------------------------------------------------------|------|
| <b>Atacama Large Millimeter Array</b><br>15 hours awarded Cycle 7, PI: J. Champagne                       | 2019 |
| <b>Jansky Very Large Array</b><br>Reduction and imaging of 46 hours total in Semester 2015B, Pi: C. Casey | 2016 |

## RESEARCH EXPERIENCE

---

|                                                                                                                                                                  |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Graduate Research Assistant</b><br>UT Austin, Supervisor: Prof. Caitlin Casey                                                                                 | 2016–2022 |
| <b>Research Intern</b><br>Max Planck Institute for Astronomy, Supervisor: Dr. Fabian Walter<br>NSF REU at Cornell University, Supervisor: Prof. Dominik Riechers | 2014–2015 |
| <b>Senior Peer Instructor</b><br>Aresty Research Center for Undergraduates, Rutgers University, Supervisor: Prof. Charles Keeton                                 | 2014–2016 |

## AWARDS & ACHIEVEMENTS

---

Submillimeter Array Fellowship, 2022 (*declined*)  
 NRAO Jansky Fellowship, 2022 (*declined*)  
 Waterloo Centre for Astrophysics Fellowship, 2022 (*declined*)  
 Beatrice Tinsley Graduate Fellowship, UT Astronomy Department, Summer 2022  
 University Continuing Graduate Fellowship, UT Austin Graduate School, 2020-2021  
 Professional Development Award (\$625 for conference travel), UT Austin Graduate School, 2019  
 National Science Foundation Graduate Research Fellowship, Honorable Mention 2016, 2018  
 Astronomy Excellence Fellowship, UT Austin College of Natural Sciences, 2016  
 Chambliss Astronomy Achievement Student Award, American Astronomical Society, 2015  
 Rutgers University Department of Physics Scholarships: Mohan S. Kalelkar (2016), Mary Wheeler Wigner (2015), and Noemie B. Koller (2014) Awards  
 Rutgers School of Arts & Sciences Presidential Scholarship, 2012–2016

## SERVICE

---

|                                                                                                                                                                                                                                                                                                                                                |                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Graduate Student Representative</b>                                                                                                                                                                                                                                                                                                         | 2018–2019, 2021–2022 |
| <ul style="list-style-type: none"> <li>○ Liaison between astronomy graduate students and faculty, including attendance at faculty meetings, participation in graduate admissions, representing students in faculty hiring process, and peer mediation between students; represent graduate students at UT Graduate Student Assembly</li> </ul> |                      |
| <b>Journal Referee</b>                                                                                                                                                                                                                                                                                                                         | 2021–present         |
| <ul style="list-style-type: none"> <li>○ Scientific reviewer for the <i>Astrophysical Journal</i>, <i>Astronomy &amp; Astrophysics</i>, and <i>Nature</i></li> </ul>                                                                                                                                                                           |                      |
| <b>Telescope Time Allocation Committees</b>                                                                                                                                                                                                                                                                                                    | 2022–present         |
| <ul style="list-style-type: none"> <li>○ Proposal reviewer for ALMA, Subaru Telescope, Keck Observatory and <i>James Webb Space Telescope</i></li> </ul>                                                                                                                                                                                       |                      |

## PROFESSIONAL DEVELOPMENT & PUBLIC OUTREACH

---

|                                                                                                                                                                                                                                                                                                                               |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Black Hole Fusion Camp</b>                                                                                                                                                                                                                                                                                                 | 2024         |
| <ul style="list-style-type: none"> <li>○ Delivered demonstrations and lessons to 3rd-5th graders at Flandrau Planetarium's Fusion Camp</li> </ul>                                                                                                                                                                             |              |
| <b>Science Writing for the Public</b>                                                                                                                                                                                                                                                                                         | 2023–present |
| <ul style="list-style-type: none"> <li>○ Popular science articles "<a href="#">Powerful black holes might grow up in bustling galactic neighborhoods</a>" and "<a href="#">Why are some black holes bigger than others? An astronomer explains how these celestial vacuums grow</a>" published in The Conversation</li> </ul> |              |
| <b>Early Universe/RE ionization Conversations at Arizona (EURECA)</b>                                                                                                                                                                                                                                                         | 2023–present |

- Co-founded and organize a biweekly seminar hosting software demonstrations, proposal writing retreats, and guest speakers focused on high-redshift science at UA

**GRAdS Mingling with Postdocs Seminar (GRAMPS)** 2023–present

- Co-founded and organize an informal biweekly seminar designed for networking amongst Steward graduate students and postdocs through professional development seminars and casual meetings

**TAURUS Summer Program Student Organizer** 2017–2022

- Organize student seminars including research presentations, career advice panels, and observing workshops; participated in peer mentoring program

**Astronomy on Tap ATX/Space Drafts Tucson** 2016–present

- Help organize events and recruit speakers, lead social media advertising, give monthly public science talks including “Astronomy in the News”

**Association of Women in Astronomy Research & Education (AWARE)** 2016–2022

- Co-organize yearly Girl Day event and lead astronomy demonstrations for K-12 students

## TEACHING & MENTORING

---

**UCSC Institute for Science & Engineer Educators Professional Development Program** 2019–2025

- Participated in 3 semester-long pedagogy training program focused on backward design, inclusive teaching, and undergraduate curriculum development
- Inquiry Design Team Leader for an introductory engineering activity delivered to UT Austin undergraduate researchers (2025)
- Inquiry Design Team Leader for an undergraduate inquiry activity delivered to Akamai Workforce Initiative summer interns developed for Hawai’ian students (2024)
- Inquiry Design Team Member (2019), participated in 6-month inquiry teaching workshop and helped develop and deliver a galaxy spectral classification activity for TAURUS scholars

**Undergraduate Research Advising** 2023–present

Lorraine Marcelin, U. Arizona (RNAAS published 2025)

Saksham Yadav, U. Arizona

**Computational Research Access Network (CRANE) Instructor** 2022–present

- Lead instructor for Astronomy Data Analysis unit of CRANE, an NSF-supported virtual teaching network designed to provide undergraduates with computational research methods

**Teaching Assistant** 2015–2020

AST376: Observational Techniques in Astronomy, UT Austin

AST307: Introductory Astronomy, UT Austin

Analyzing the Universe, Rutgers University

## INVITED PRESENTATIONS (10)

---

**“Hunting for Emission Line Galaxies in the Reionization Era with COSMOS-3D”**

University of Michigan Galaxies Seminar

October 2025

**“The Varied Properties of AGN in Reionization-Era Protoclusters”**

The Multiscale Environment of AGN Across Cosmic Time, Ringberg

November 2025

**“The Richest Quasar-Anchored Protocluster at  $z = 6.6$  with JWST”**

Galaxies & Diffuse Gas in Large-Scale Overdense Environments at High Redshift: Sesto

July 2024

**“Revealing the Environment around a Luminous  $z = 6.6$  Quasar with JWST”**

NASA/Goddard AGN Seminar

May 2024

|                                                                                                                                                              |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>"Extreme Environments at <math>2 &lt; z &lt; 7</math>: A Gallery of Protocluster Case Studies"</b><br><i>First Structures in the Universe 2023, Paris</i> | September 2023 |
| <b>"A Range of Overdensity Signals in the Fields of 3 HST-Observed Quasars"</b><br><i>NOIRLab FLASH Talk</i>                                                 | March 2023     |
| <b>"The Hunt for Galaxy Protoclusters around the Earliest Quasars"</b><br><i>ESO Santiago AGN Meeting</i>                                                    | December 2022  |
| <b>"Hunting for Ancient Galaxy Clusters in the Radio Universe"</b><br><i>Beatrice Tinsley Prize Lecture, UT Austin</i>                                       | August 2022    |
| <b>"A Protocluster Core Caught in the Beginning of Virialization"</b><br><i>Harvard CfA Galaxy Cluster Group Meeting</i>                                     | November 2021  |
| <b>"Comprehensive Gas Characterization of a <math>z = 2.5</math> Protocluster"</b><br><i>Princeton University, Galread</i>                                   | September 2021 |

## SELECTED CONTRIBUTED PRESENTATIONS

---

|                                                                                                                                                                                                                  |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>"Large-Scale Structures Traced by [OIII] Emitters at <math>z = 7</math> with COSMOS-3D"</b><br><i>COSMOS-3D/EREBUS 2025</i>                                                                                   | June 2025      |
| <b>"Revealing the Environment around a Luminous <math>z = 6.6</math> Quasar with JWST and ALMA"</b><br><i>First Gigayears, Hilo, HI</i>                                                                          | September 2024 |
| <b>"Investigating the Richest Protoclusters at <math>z &gt; 6.5</math> in the ASPIRE Survey"</b><br><i>Galaxies &amp; Diffuse Gas in Large-Scale Overdense Environments at High-<math>z</math>, Sesto, Italy</i> | July 2024      |
| <b>"Revealing the Environment around a Luminous <math>z = 6.6</math> Quasar with JWST"</b><br><i>Extreme Galaxies in Extreme Environments at Extremely Early Epochs, Reykjavik</i>                               | April 2024     |
| <b>"First Characterization of [OIII] Emitters in the Field of a <math>z=6.6</math> Quasar"</b><br><i>First Light Boston, EAS Krakow</i>                                                                          | June 2023      |
| <b>"Searching for LBG Overdensities in the Fields of <math>6 &lt; z &lt; 7</math> Quasars"</b><br><i>UT Austin ExGal Seminar</i>                                                                                 | October 2021   |
| <b>"The highest redshift cluster core at <math>z = 2.5</math>: is it too good to be true?" E-poster</b><br><i>Protoclusters: Galaxies in Confinement</i>                                                         | August 2020    |

**Refereed and Working Papers (First Author or \*Student-Led)**

8. Champagne, J.B. et al. *ASPIRE: The [OIII] Line Luminosity Function at  $5.3 < z < 7$  in 25 Quasar Sightlines*. 2026, in prep.
7. **Champagne, J.B.**, Dannerbauer, H., Casey, C. et al. *Chaotic Molecular Gas in Five Dusty Star-forming Galaxies in the Spiderweb Protocluster at  $z = 2.16$*  2026, submitted to ApJ Feb. 2026
6. \*Marcelin, L. C., **Champagne, J. B.**, et al. *Enhanced Merger Fractions in a Reionization-Era Protocluster*. **2025**, RNAAS, 9, 133M
5. **Champagne, J. B.**, Wang, F, Fan, X., Hennawi, J. et al. *A Quasar-Anchored Protocluster at  $z = 6.6$  in the ASPIRE Survey II. An Environmental Analysis of Galaxy Properties in an Overdense Structure*. **2025b**, ApJ, 981, 114C
4. **Champagne, J. B.**, Wang, F., Zhang, H., et al. *A Quasar-Anchored Protocluster at  $z = 6.6$  in the ASPIRE Survey I. Properties of [OIII] Emitters in a 10 Mpc Overdense Structure*. **2025a**, ApJ, 981, 113C
3. **Champagne, J. B.**, Casey, C. M., Finkelstein, S. L., Bagley, M., Cooper, O., Larson, R., Long, A., Wang, F. *A Mixture of LBG Overdensities in the Fields of Three  $6 < z < 7$  Quasars: Implications for the Robustness of Photometric Selection*. **2023**, ApJ, 952, 99C
2. **Champagne, J. B.**, Casey, C. M., Zavala, J. A., Cooray, A., Dannerbauer, H., Fabian, A., Hayward, C. C., Long, A. S., Spilker, J. S. *Comprehensive Gas Characterization of a  $z = 2.5$  Protocluster: A Cluster Core Caught in the Beginning of Virialization?* **2021**, ApJ, 913, 110
1. **Champagne, J.B.**, Decarli, R., Casey, C. M., Venemans, B., Bañados, Eduardo, Walter, F., et al. *No Evidence for Millimeter Continuum Source Overdensities in the Environments of  $z \geq 6$  Quasars*. **2018**, ApJ, 867, 153

**Selected Co-authored Papers (53 total, \*Significant Contribution)**

- Long, A.S. *The Extended Mapping Obscuration to Reionization with ALMA (Ex-MORA) Survey:  $5\sigma$  Source Catalog and Redshift Distribution*. **2026**, accepted to ApJ
- \*Nguyen, B. incl. JBC, et al. *Sparse by the River: Diverse Environments of  $z > 3$  Massive Quiescent Galaxies*, **2026**, submitted to ApJ
- Zavala, J. incl. JBC, et al. *ALMA and JWST Identification of Faint Dusty Star-Forming Galaxies up to  $z \sim 8$* . **2026**, accepted to ApJL
- Akins, H. incl. JBC, et al. *COSMOS-Web: The over-abundance and physical nature of “little red dots” – Implications for early galaxy and SMBH assembly*. **2025a**, ApJ, 991, 37
- \*Akins, H. incl. JBC, et al. (3/17). *JWST+ALMA reveal the ISM kinematics and stellar structure of MAMBO-9, a merging pair of DSFGs in an overdense environment at  $z = 5.85$* . **2025b**, submitted to ApJ
- Kakiichi, K. incl. JBC, et al. *JWST ASPIRE: How Did Galaxies Complete Reionization? Evidence for Excess IGM Transmission around [OIII] Emitters during Reionization*. **2025**, accepted to Open Journal of Astrophysics
- Li, Z-J. incl. JBC, et al. *COSMOS-3D: Two Obscured X-ray AGNs with Hot Dust and HeI Absorption at  $z \sim 3$* . **2025**, ApJS, 280, 62

- Lin, X. *incl. JBC, et al. Bridging Quasars and Little Red Dots: Insight into Broad-Line AGNs at  $z = 5 - 8$  from the First JWST COSMOS-3D Dataset. 2025a*, accepted to ApJ
- Lin, X. *incl. JBC, et al. The Discovery of Little Red Dots in the Local Universe: Signatures of Cool Gas Envelopes. 2025b*, accepted to ApJ
- \*Meyer, R. A. *incl. JBC, et al. JWST COSMOS-3D: Spectroscopic Census and Luminosity Function of [O III] Emitters at  $6.75 < z < 9.05$  in COSMOS. 2025*, submitted to A&A
- McKinney, J. *incl. JBC, et al. SCUBADive I: JWST+ALMA Analysis of 289 sub-millimeter galaxies in COSMOS-Web. 2025, ApJ, 979, 229M*
- Perez Martinez, J. *incl. JBC, et al. COALAS III: The ATCA CO(1-0) look at the growth and death of H $\alpha$  emitters in the Spiderweb protocluster at  $z = 2.16$ . 2025, A&A, 696A, 236P*
- Protušová, K. *incl. JBC, et al. A unique window into the Epoch of Reionisation: A double-peaked Lyman- $\alpha$  emitter in the proximity zone of a quasar at  $z \sim 6.6$ . 2025, A&A, 700A, 218P*
- \*Pudoka, M. *incl. JBC (5/19), et al. Lyman-Break Galaxies in the Mpc-Scale Environments around Three  $z \sim 7.5$  Quasars with JWST Imaging. 2025, ApJ, 987, 198*
- Shuntov, M. *incl. JBC, et al. COSMOS2025: The COSMOS-Web galaxy catalog of photometry, morphology, redshifts, and physical parameters from JWST, HST, and ground-based imaging. 2025*, submitted to A&A
- \*Spilker, J. S. *incl. JBC (2/7), et al. Direct Evidence for AGN Feedback From Fast Molecular Outflows in Reionization-Era Quasars. 2025, ApJ, 982, 72S*
- \*Sun, F. *incl. JBC (4/28), et al. A SPectroscopic survey of biased halos In the Reionization Era (ASPIRE): Spectroscopically Complete Census of Obscured Cosmic Star Formation Rate Density at  $z = 4 - 6$ , 2025a*, ApJ, 980, 12S
- Tanaka, T. *incl. JBC, et al. Discovery of a Little Red Dot candidate at  $z \geq 10$  in COSMOS-Web based on MIRI-NIRCam selection. 2025, ApJ, 995, 21*
- Zhu, Y. *incl. JBC, et al. Quasar Radiative Feedback May Suppress Galaxy Growth on Intergalactic Scales at  $z = 6.3$ . 2025, ApJL, 995L, 5*
- \*Zou, S. *incl. JBC, et al. Disturbed cold gas in galaxy and structure formation. 2025, ApJL, 994L, 53*
- \*Lin, X. *incl. JBC (5/36), et al. A SPectroscopic survey of biased halos In the Reionization Era (ASPIRE): Broad-line AGN at  $z = 4 - 5$  revealed by JWST/NIRCam WFSS. 2024, ApJL, 974, 147L*
- \*Pudoka, M. *incl. JBC (5/17), et al. Large Scale Overdensity of Lyman Break Galaxies Around the  $z = 6.3$  Ultraluminous Quasar J0100+2802. 2024, ApJ, 968, 118*
- \*Zou, S. *incl. JBC (5/30), et al. A SPectroscopic survey of biased halos In the Reionization Era (ASPIRE): Impact of Galaxies on the Circumgalactic Medium Metal Enrichment at  $z > 6$  Using the JWST and VLT. 2024, ApJL, 963, L28*
- \*Chen, Z., *incl. JBC (7/27), et al. COALAS II. Extended molecular gas reservoirs are common in a distant, forming galaxy cluster. 2023, MNRAS 527, 3*
- \*Larson, R., *incl. JBC, et al. A CEERS Discovery of an Accreting Supermassive Black Hole 570 Myr after the Big Bang: Identifying a Progenitor of Massive  $z > 6$  Quasars. 2023, ApJ, 953L, 29L*
- \*Wang, F., *incl. JBC (6/59), et al. A SPectroscopic survey of biased halos In the Reionization Era (ASPIRE): JWST Reveals a Filamentary Structure around a  $z=6.61$  Quasar 2023, ApJL, 951, L4*