Curriculum Vitae

Intae Jung

Postdoctoral Fellow at the Space Telescope Science Institute
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Lyman-α Emitter | Reionization | High-Redshift Galaxies | Machine Learning

Academic Employment

Postdoctoral Researcher at the Space Telescope Science Institute — 08/*2022 – Present*
JWST Postdoc at NASA's Goddard Space Flight Center (Sponsor: CUA) — 09/*2019 – 08/2022*

Education

Ph.D. in Astronomy, University of Texas at Austin, Texas, USA — *2013 – 2019*
Advisor: Prof. Steven L. Finkelstein

M.S. in Astronomy, Graduate School of **Yonsei University**, Seoul, South Korea — *2010 – 2012*
Advisor: Prof. Sukyoung K. Yi

B.S. in Astronomy and Physics (double major), **Yonsei University**, Seoul, South Korea — *2004 – 2010*

Fellowships, Awards, and Grants

KASI-Arizona Joint Postdoctoral Fellowship, Steward Observatory & KASI, Korea (**4yrs,** *Declined*) — *2022*
CRESST II Postdoc Fellow for an Independent Science Program at NASA GSFC, MD (**3yrs**) — *2019 – 2022*
NASA/Keck Observing Grant 2021A ($16,100) — *2021 Spring*
Chambliss Astronomy Achievement Student Awards, 233rd AAS Meeting, Seattle, WA — 01/2019
The NASA Earth and Space Science Fellowship ($45,000/year, **up to 3yrs**) — *2017 – 2019*
University Graduate School Continuing Fellowship, UT Austin, TX, USA (**~$25,000**) — *2017 – 2018*
The Global Internship Program, The National Research Foundation of Korea (**~$21,200**) — *2011 – 2012*
National Science & Technology Scholarship, South Korea (**~$27,100**) — 2004 – 2009

Awarded Telescope Time

PI: I. Jung, NASA Keck 2021A: 2 nights of Keck + MOSFIRE — *2021 Spring*
Title: *Probing Inhomogeneity of Reionization with a Deep and Wide Lyman-Alpha Emission Survey at z > 7*

PI: I. Jung, Gemini North + GNIRS (6.2 hr) — *2021 Spring*
Title: *Near-infrared Spectroscopy of an Extremely-Large Equivalent-width Lyman-alpha Emitter at z=7.608*

PI: I. Jung, HET + LRS2 (~13hr) — *2017 Spring*
Title: *A spectroscopic search for galaxies in the epoch of reionization*

As **Co-I**nvestigator
***JWST* 6 GO** programs – PIs: Abdurro'uf, Zavala, Chisholm, Dunlop, Finkelstein, Kassin
***Keck* 50+ nights** with DEIMOS, LRIS, MOSFIRE – PIs: Cooper, Casey, Finkelstein, Larson, Hutchison
***HST* 2 GO & 2 AR** programs – PIs: Finkelstein, Jimenez-Andrade, Cleri
***ALMA* 1 Cycle 7** (24.7 hr) – PI: Hashimoto & **1 Cycle 8 DDT** (11.7hr) – PI: Yoon

Publication Statistics

59 papers in total (49 refereed), >2000 citations, H-index 26 (as of Nov 8, 2023)
***10 1st/2nd author papers (278 citations):** 8 1st-author papers (6 published, 2 currently under review)

Teaching & Mentoring Experience

Mentor in the PhA Mentorship program, Physics & Astronomy, Johns Hopkins Univ. — 2023 – *Present*
Department-wide mentorship program for all career levels (undergraduates, graduates, and postdocs)

Intern Student Mentoring

- Mentor for the STScI Space Astronomy Summer Program: Turaba Rahman (the Kent State Univ.) — *2023*
  Project: *Spatially Resolved Stellar Populations of z ~ 4 - 6 Lyman-alpha-emitters with JWST imaging*
- Mentor for the Summer Internship Program at NASA GSFC: Seonwoo Kim (Yonsei Univ. → UIUC) — *2022*
  Project: *Evolution of Lyman Alpha Line Widths at the End of Reionization*

Training in Teaching & Mentorship

Completion of *Concentration in Teaching and Mentoring Courses***, UT Austin, TX — *08/2018*
**Three courses for PhD and postdoctoral fellows for improving teaching and mentoring abilities

Guest lecture in *Galaxies and the Universe* class, UT Austin, TX — *04/2017*
TA for 7 astronomy courses at UT Austin, TX & Yonsei University, Korea — *2010 – 2017*

Service Experience / Public Outreach

Subject Matter Expert* for NASA's Webb Space Telescope Community Events *2021 – 2022*
*Speaker at the JWST Public Talk at Cape Fear Museum of History and Science on 10/15/2021

Scientist Featured in a NASA JWST Astronomy Day Q&A in Social Media *05/2021*
Proposal Review External Panel for HST (Cycle 28 & 29) & ALMA (Cycle 8) *2020 – Present*
Journal Referee for ApJ, A&A, MNRAS *2019 – Present*
Subject-matter Expert Reviewer in a NASA peer review 2021
Development Team of Exemplar Key Science Programs For GMT and TMT *2018 Fall*
Graduate student committee for the 2017 Dept external review self-study, UT Austin, TX *2017*
Representative to the Graduate Student Assembly, UT Austin, TX *2016 – 2017*
Seminar speaker to the TAURUS undergrad summer research program, UT Austin *2016 Summer*
Student Representative at the Astronomy department, Yonsei University, Seoul, Korea *2007 – 2008*
Military Service, the Military Police in Republic of Korea Army, Hwacheon, Korea *2005 – 2007*

Collaborations

JWST-**CEERS** (PI: Finkelstein), JWST-**Cosmic Spring** (PI: Coe), JWST-**NGDEEP** (Co-PIs: Finkelstein, Papovich and Pirzkal), HST-**CLEAR** (PI: Papovich), HST-**CANDELS** (Co-PIs: Faber & Ferguson), VLT-**VANDELS** (Co-PIs: McLure, & Pentericci)

Colloquia/Seminar Talks

Colloquium, HotSci Summer Colloquium at JHU/STScI, Baltimore, MD, USA *08/2023*
Seminar Talk, Arizona State University, Tempe, AZ, USA *11/2021*
Seminar Talk, Georgia Tech, Atlanta, GA, USA *11/2021*
EURECA Seminar Talk, University of Arizona, Tucson, AZ, USA *09/2021*
Seminar Talk, Seoul National University, Seoul, Korea *07/2021*
Seminar Talk, Yonsei University, Seoul, Korea *06/2021*
Seminar Talk, Director's Seminar, SED, NASA GSFC, Greenbelt, MD *03/2021*
Colloquium, Department of Physics and Astronomy, University of Louisville *02/2021*
Seminar Talk, Galaxies & AGN Journal Club at STScI/JHU, Baltimore, MD, USA *02/2021*
Colloquium, Astrophysics Science Division Colloquium, NASA GSFC, Greenbelt, MD *05/2020*
Seminar Talk, University of California - Riverside, Riverside, CA *10/2018*
Seminar Talk, Yonsei University, Seoul, Korea *04/2018*
Best Paper Award Talk, Korean-American Scientists & Engineers Association-Austin, TX *02/2017*
Seminar Talk, Korea Astronomy Space Science Institute, Daejeon, Korea *12/2016*

Other Presentations

Contributed Talk, Roman Science Inspired by Emerging JWST Results, STScI, MD, USA *06/2023*
Contributed Talk, CEERS Team Meeting, Austin, TX, USA *05/2023*
Contributed Talk, Summer All Zoom Epoch of Reionization Astronomy Conference 2.0 *06/2021*
Contributed Talk, Summer All Zoom Epoch of Reionization Astronomy Conference *07/2020*
Contributed Talk, AAS 235th Meeting, Honolulu, HI, USA *01/2020*
Contributed Talk, Extremely Big Eyes … UCLA, Los Angeles, CA, USA *01/2019*
Contributed Talk, Special session talk, AAS 233rd Meeting, Seattle, WA, USA *01/2019*
Poster, AAS 233rd Meeting, Seattle, WA, USA *01/2019*
Poster, Tokyo Spring Cosmic Lyman-Alpha Workshop, Tokyo, Japan *03/2018*
Contributed Talk, The growth of galaxies in the Early Universe – IV, Sesto, Italy *01/2018*
Dissertation Talk, 231st AAS Meeting, Washington DC, USA *01/2018*
Poster, BashFest 2017, Austin, TX, USA *10/2017*
Contributed Talk, 5th GMT Community Science Meeting, Tarrytown, NY, USA *09/2017*
Poster, AAS 230th Meeting, Austin, TX, USA *06/2017*
Contributed Talk, Snowbird Cosmic Lyman-Alpha Workshop, Snowbird, UT, USA *03/2017*
Contributed Talk, 2016 Santa Cruz Galaxy Workshop, Santa Cruz, CA, USA *08/2016*
Contributed Talk, Signals from the Deep Past, Valletta, Malta *07/2016*

Poster, AAS 227th Meeting, Kissimmee, FL, USA	*01/2016*
Contributed Talk, 2015 CANDELS Team Meeting, Santa Cruz, CA, USA	*07/2015*
Defense talk, Qualifying exam/2nd-year Defense, Austin, TX, USA	*05/2015*
Poster, South by High Redshift, Austin, TX, USA	*04/2015*
Contributed Talk, Sussing Merger Trees, Midhurst, West Sussex, UK	*07/2013*

References

Dr. Harry Ferguson, Space Telescope Science Institute, MD (Email: ferguson@stsci.edu)
Prof. Steven L. Finkelstein, University of Texas at Austin, TX (Email: stevenf@astro.as.utexas.edu)
Dr. Dan Coe, Space Telescope Science Institute, MD (Email: dcoe@stsci.edu)

Publications

59 papers in total (49 refereed), >2000 citations, H-index 26 (as of Nov 8, 2023)

As 1st/2nd Author (278 citations): 8 1st-author papers (6 published, 2 submitted)

1. **Jung et al. 2023, submitted to ApJ, arXiv:2304.05385,** *CEERS: Diversity of Lyman-Alpha Emitters during the Epoch of Reionization*
2. **Jung et al. 2022b, submitted to ApJ, arXiv:2212.09850,** *New z>7 Lyman-alpha Emitters in EGS: Evidence of an Extended Ionized Structure at z ~ 7.7*
3. **Jung et al. 2022a, ApJ, 933, 87,** *CLEAR: Boosted Lya Transmission of the Intergalactic Medium in UV bright Galaxies*
4. H. Park, **I. Jung**, et al. **2021, ApJ, 922, 263**, *Crucial Factors of Lyman-alpha Transmission in the Reionizing Intergalactic Medium: Infall Motion, HII Bubble Size, and Self-shielded Systems*
5. **Jung et al. 2020, ApJ, 904, 144**, *Texas Spectroscopic Search for Lya Emission at the End of Reionization III. the Lya Equivalent-width Distribution and Ionized Structures at z > 7*
6. **Jung et al. 2019, ApJ, 877, 146**, *Texas Spectroscopic Search for Lya Emission at the End of Reionization II. The Deepest Near-infrared Spectroscopic Observation at z ≳ 7*
7. **Jung et al. 2018, ApJ, 864, 103**, *Texas Spectroscopic Search for Lya Emission at the End of Reionization I. Constraining the Lyα Equivalent-width Distribution at 6.0 < z < 7.0*
8. **Jung et al. 2017, ApJ, 834, 81,** *Evidence for reduced specific star formation rates in the centers of massive galaxies at z = 4*
9. **Jung et al. 2014, ApJ, 749, 74**, *Effects of Large-scale Environment on the Assembly History of Central Galaxies*
10. S. Peirani, **I. Jung,** J. Silk, and C. Pichon, **2012, MNRAS, 427, 2625**, *Evolution of the baryon fraction in the Local Group: accretion versus feedback at low and high z*

As Contributing Author (incl. 8 submitted)

1. Arrabal Haro et al. (incl. **I. Jung**) 2023, Natur, 622, 707, *Confirmation and refutation of very luminous galaxies in the early Universe*
2. Shen et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2310.13745, *NGDEEP Epoch 1: Spatially Resolved Hα Observations of Disk and Bulge Growth in Star-Forming Galaxies at z ~ 0.6 - 2.2 from JWST NIRISS Slitless Spectroscopy*
3. Leung et al. (incl. **I. Jung**) 2023, ApJL, 954, L46, *NGDEEP Epoch 1: The Faint End of the Luminosity Function at z 9-12 from Ultradeep JWST Imaging*
4. Cooper et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2309.06656, *The Web Epoch of Reionization Lyman-alpha Survey (WERLS) I. MOSFIRE Spectroscopy of z ~ 7 - 8 Lyman-alpha Emitters*
5. Napolitano et al. (incl. **I. Jung)** 2023, A&A, 677, A138, *Identifying Lyα emitter candidates with Random Forest: Learning from galaxies in the CANDELS survey*
6. Bradley et al. (incl. **I. Jung**) 2023, ApJ, 955, 13, *High-redshift Galaxy Candidates at z = 9-10 as Revealed by JWST Observations of WHL0137-08*
7. Mascia et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2309.02219, *New insight on the nature of cosmic reionizers from the CEERS survey*
8. Larson et al. (incl. **I. Jung**) 2023, ApJL, 953, L29, *A CEERS Discovery of an Accreting Supermassive Black Hole 570 Myr after the Big Bang: Identifying a Progenitor of Massive z > 6 Quasars*

9. Backhaus et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2307.09503, *CEERS Key Paper VIII: Emission Line Ratios from NIRSpec and NIRCam Wide-Field Slitless Spectroscopy at z > 2*
10. Urbano Stawinski et al. (incl. **I. Jung)** 2023, arXiv, arXiv:2307.04782, *Deeper than DEEP: A Spectroscopic Survey of z > 3 Lyman-alpha Emitters in the Extended Groth Strip*
11. Arrabal Haro et al. (incl. **I. Jung**) 2023, ApJL, 951, L22, *Spectroscopic Confirmation of CEERS NIRCam-selected Galaxies at z ≃ 8-10*
12. Yoon et al. (incl. **I. Jung**) 2023, ApJ, 950, 61, *ALMA Observation of a z ≳ 10 Galaxy Candidate Discovered with JWST*
13. Fujimoto et al. (incl. **I. Jung**) 2023, ApJL, 949, L25, *CEERS Spectroscopic Confirmation of NIRCam-selected z ≳ 8 Galaxy Candidates with JWST/NIRSpec: Initial Characterization of Their Properties*
14. Heintz et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2306.00647, *Extreme damped Lyman-alpha absorption in young star-forming galaxies at z = 9 - 11*
15. Hsiao et al. (incl. **I. Jung**) 2023, ApJL, 949, L34, *JWST Reveals a Possible z ~11 Galaxy Merger in Triply Lensed MACS0647-JD*
16. Cleri et al. (incl. **I. Jung**) 2023, ApJ, 948, 112, *CLEAR: High-ionization [Ne V] λ3426 Emission-line Galaxies at 1.4 < z < 2.3*
17. Simons et al. (incl. **I. Jung**) 2023, ApJS, 266, 13, *CLEAR: Survey Overview, Data Analysis, and Products*
18. Hsiao et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2305.03042, *JWST NIRSpec spectroscopy of the triply-lensed z = 10.17 galaxy MACS0647-JD*
19. Kartaltepe et al. (incl. **I. Jung**) 2023, ApJL, 946, L15, *CEERS Key Paper. III. The Diversity of Galaxy Structure and Morphology at z = 3 - 9 with JWST*
20. Abdurro'uf et al. (incl. **I. Jung**) 2023, ApJ, 945, 117, *Spatially Resolved Stellar Populations of 0.3 < z < 6.0 Galaxies in WHL 0137-08 and MACS 0647+70 Clusters as Revealed by JWST: How Do Galaxies Grow and Quench over Cosmic Time?*
21. Trump et al. (incl. **I. Jung**) 2023, ApJ, 945, 35, *The Physical Conditions of Emission-line Galaxies at Cosmic Dawn from JWST/NIRSpec Spectroscopy in the SMACS 0723 Early Release Observations*
22. Zavala et al. (incl. **I. Jung**) 2023, ApJL, 943, L9, *Dusty Starbursts Masquerading as Ultra-high Redshift Galaxies in JWST CEERS Observations*
23. Bagley et al. (incl. **I. Jung**) 2023, arXiv, arXiv:2302.05466, *The Next Generation Deep Extragalactic Exploratory Public (NGDEEP) Survey*
24. Backhaus et al. (incl. **I. Jung)** 2023, ApJ, 943, 37, *CLEAR: Spatially Resolved Emission Lines and Active Galactic Nuclei at 0.6 < z < 1.3*
25. Finkelstein et al. (incl. **I. Jung**) 2022, ApJL, 940, L55, *A Long Time Ago in a Galaxy Far, Far Away: A Candidate z ~ 12 Galaxy in Early JWST CEERS Imaging*
26. Welch et al. (incl. **I. Jung**) 2022, ApJL, 940, L1, *JWST Imaging of Earendel, the Extremely Magnified Star at Redshift z = 6.2*
27. Papovich et al. (incl. **I. Jung**) 2022, ApJ, 937, 22, *CLEAR: The Ionization and Chemical-enrichment Properties of Galaxies at 1.1 < z < 2.3*
28. Matharu et al. (incl. **I. Jung**) 2022, ApJ, 937, 16, *CLEAR: The Evolution of Spatially Resolved Star Formation in Galaxies between 0.5 ≲ z ≲ 1.7 Using Hα Emission Line Maps*
29. McCarron et al. (incl. **I. Jung**) 2022, ApJ, 936, 131, *Stellar Populations of Lyα-emitting Galaxies in the HETDEX Survey. I. An Analysis of LAEs in the GOODS-N Field*
30. Park et al. (incl. **I. Jung**) 2022, ApJ, 931, 126, *Scattering of Lyα Photons through the Reionizing Intergalactic Medium: I. Spectral Energy Distribution*
31. Larson et al. (incl. **I. Jung**) 2022, ApJ, 930, 104, *Searching for Islands of Reionization: A Potential Ionized Bubble Powered by a Spectroscopic Overdensity at z = 8.7*
32. Cleri et al. (incl. **I. Jung**) 2022, ApJ, 929, 3, *CLEAR: Paschen-β Star Formation Rates and Dust Attenuation of Low-redshift Galaxies*
33. Finkelstein et al. (incl**. I. Jung**) 2022, ApJ, 928, 52, *A Census of the Bright z = 8.5-11 Universe with the Hubble and Spitzer Space Telescopes in the CANDELS Fields*
34. Tacchella et al. (incl. **I. Jung**) 2022, ApJ, 927, 170, *On the Stellar Populations of Galaxies at z = 9-11: The Growth of Metals and Stellar Mass at Early Times*

35. Backhaus et al. (incl**. I. Jung**) 2022, ApJ, 926, 161, *CLEAR: Emission-line Ratios at Cosmic High Noon*
36. Simons et al. (incl. **I. Jung**) 2021, ApJ, 923, 203, *CLEAR: The Gas-phase Metallicity Gradients of Star-forming Galaxies at 0.6 < z < 2.6*
37. Garilli et al. (incl. **I. Jung**) 2021, A&A, 647, A150, *The VANDELS ESO public spectroscopic survey. Final data release of 2087 spectra and spectroscopic measurements*
38. Yang et al. (incl. **I. Jung**) 2021, ApJ, 908, 144, *JWST/MIRI Simulated Imaging: Insights into Obscured Star Formation and AGNs for Distant Galaxies in Deep Surveys*
39. Estrada-Carpenter et al. (incl. **I. Jung**) 2020, ApJ, 898, 171, *CLEAR. II. Evidence for Early Formation of the Most Compact Quiescent Galaxies at High Redshift*
40. Hutchison et al. (incl. **I. Jung**) 2019, ApJ, 879, 70, *Near-infrared Spectroscopy of Galaxies During Reionization: Measuring C III] in a Galaxy at z = 7.5*
41. Hong et al. (incl. **I. Jung**) 2019, MNRAS, 483, 3950, *Statistics of two-point correlation and network topology for Ly a emitters at z ≈ 2.67*
42. Broussard et al. (incl. **I. Jung)** 2019, ApJ, 873, 74, *Star Formation Stochasticity Measured from the Distribution of Burst Indicators*
43. McLure et al. (incl. **I. Jung**) 2018, MNRAS, 479, 25, *The VANDELS ESO public spectroscopic survey*
44. Pentericci et al. (incl. **I. Jung**) 2018, A&A, 616, A174, *The VANDELS ESO public spectroscopic survey: Observations and first data release*
45. Larson et al. (incl. **I. Jung**) 2018, ApJ, 858, 94, *Discovery of a z = 7.452 High Equivalent Width Lyα Emitter from the Hubble Space Telescope Faint Infrared Grism Survey*
46. Wang et al. (incl. **I. Jung**) 2016, MNRAS, 459, 1554, *Sussing merger trees: stability and convergence*
47. Lee et al. (incl. **I. Jung**) 2014, MNRAS, 445, 4197, *Sussing merger trees: the impact of halo merger trees on galaxy properties in a semi-analytic model*
48. Srisawat et al. (incl. **I. Jung**) 2013, MNRAS, 436, 150, *Sussing Merger Trees: The Merger Trees Comparison Project*
49. Yi et al. (incl. **I. Jung**) 2013, A&A, 554, A122, *Merger relics of cluster galaxies*

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https://ui.adsabs.harvard.edu/public-libraries/VqKK7ngHQv2hTnwD6ULVrQ