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 Appointment

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*
The NASA Earth and Space Science Fellowship (NESSF) Graduate Student Fellow *09/2017 – 08/2019*

Education

Ph.D. in Astronomy, University of Texas at Austin, Texas, USA *2013 – 2019*
Advisor: Prof. Steven L. Finkelstein (Thesis: *Constraining the End of Reionization with Lya Spectroscopy*)
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* **(NESSF)** ($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) Title: *A spectroscopic search for galaxies in the epoch of reionization* *2017 Spring*
As **Co-I**nvestigator
***JWST* 9 GO** programs – PIs: Chisholm (Cy1), Dunlop (Cy1), Finkelstein (Cy1), Kassin (Cy1), Abdurro'uf (Cy2), Zavala (Cy2), Dickinson (Cy3), Kartaltepe (Cy3), Hutchison (Cy3)
***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

Teaching & Mentoring Experience

Intern Student Mentoring:

- Mentor for the STScI Space Astronomy Summer Program: Turaba Rahman (undergrad at 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. → grad student at UIUC) *2022*
  Project: *Evolution of Lyman Alpha Line Widths at the End of Reionization*
- 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)

Training in Teaching & Mentorship: *Concentration in Teaching and Mentoring Courses***,* UT Austin, TX *08/2018*
**Three courses for PhD and postdoctoral fellows for improving teaching and mentoring abilities beyond a TA level
Guest lecture: *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

Panel Support Scientist for the JWST Cycle 3 TAC, STScI, Baltimore, MD	11/2023 – 02/2024
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*
Subject-matter Expert Reviewer in a NASA peer review	2021
Proposal Review External Panel for HST (Cy 28 & 29), ALMA (Cy 8), & JWST DDT (Cy 1)	*2020 – Present*
Journal Referee for ApJ, A&A, MNRAS	*2019 – Present*
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*
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*

Major 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, 2024 HotSci Summer Colloquium at JHU/STScI, Baltimore, MD, USA	*07/2024*
Colloquium, 2023 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, Astronomer, Space Telescope Science Institute, MD (ferguson@stsci.edu)
Prof. Steven Finkelstein, Professor, University of Texas at Austin, TX (stevenf@astro.as.utexas.edu)
Dr. Amber Straughn, Astrophysicist, NASA's Goddard Space Flight Center, MD (amber.n.straughn@nasa.gov)
Dr. Dan Coe, ESA-AURA Astronomer, Space Telescope Science Institute, MD (dcoe@stsci.edu)

Publications

69 papers in total (60 refereed), >3000 citations, H-index 32 (as of Aug 2024)

As 1st/2nd Author (>350 citations): 9 1st-author papers (8 published/in press, 1 submitted)

1. **Jung et al. 2024b, ApJ, 971, 175,** *Constraints on the Lyman Continuum Escape from Low-mass Lensed Galaxies at $1.3 \leq z \leq 3.0$*
2. **Jung et al. 2024a, ApJ, 967, 73,** *CEERS: Diversity of Lyman-Alpha Emitters during the Epoch of Reionization*
3. **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 $z \sim 7.7$*
4. **Jung et al. 2022a, ApJ, 933, 87,** *CLEAR: Boosted Lyα Transmission of the Intergalactic Medium in UV bright Galaxies*
5. 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*
6. **Jung et al. 2020, ApJ, 904, 144**, *Texas Spectroscopic Search for Lyα Emission at the End of Reionization III. the Lyα Equivalent-width Distribution and Ionized Structures at $z > 7$*
7. **Jung et al. 2019, ApJ, 877, 146**, *Texas Spectroscopic Search for Lyα Emission at the End of Reionization II. The Deepest Near-infrared Spectroscopic Observation at $z \gtrsim 7$*
8. **Jung et al. 2018, ApJ, 864, 103**, *Texas Spectroscopic Search for Lyα Emission at the End of Reionization I. Constraining the Lyα Equivalent-width Distribution at $6.0 < z < 7.0$*
9. **Jung et al. 2017, ApJ, 834, 81,** *Evidence for reduced specific star formation rates in the centers of massive galaxies at $z = 4$*
10. **Jung et al. 2014, ApJ, 749, 74**, *Effects of Large-scale Environment on the Assembly History of Central Galaxies*
11. 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

1. Hu et al. (incl. I. Jung) 2024, ApJ, 971, 21, *Characterizing the Average Interstellar Medium Conditions of Galaxies at $z \sim 5.6$–9 with Ultraviolet and Optical Nebular Lines*
2. Cooper et al. (incl. I. Jung) 2024, ApJ, 970, 50, *The Web Epoch of Reionization Lyα Survey (WERLS). I. MOSFIRE Spectroscopy of $z \sim 7$–8 Lyα Emitters*
3. Finkelstein et al. (incl. I. Jung) 2024, ApJL, 969, L2, *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*
4. Pirzkal et al. (incl. I. Jung) 2024, ApJ, 969, 90, *The Next Generation Deep Extragalactic Exploratory Public Near-infrared Slitless Survey Epoch 1 (NGDEEP-NISS1): Extragalactic Star-formation and Active Galactic Nuclei at $0.5 < z < 3.6$*
5. Heintz et al. (incl. I. Jung) 2024, Sci, 384, 890, *Strong damped Lyman-α absorption in young star-foring galaxies at redshifts 9 to 11*
6. Mascia et al. (incl. I. Jung) 2024, A&A, 685, A3, *New insight on the nature of cosmic reionizers from the CEERS survey*

7. Abdurro'uf et al. (incl. I. Jung) 2024, arXiv:2404.16201, *JWST NIRSpec High-resolution Spectroscopy of MACS0647-JD at z=10.167: Resolved [OII] Doublet and Electron Density in an Early Galaxy*
8. Hsiao et al. (incl. I. Jung) 2024, arXiv:2404.16200, *JWST MIRI detections of Hα and [O III] and direct metallicity measurement of the $z=10.17$ lensed galaxy MACS0647$-$JD*
9. Bagley et al. (incl. I. Jung) 2024, ApJL, 965, L6, *The Next Generation Deep Extragalactic Exploratory Public (NGDEEP) Survey*
10. Zavala et al. (incl. I. Jung) 2024, arXiv:2403.10491, *Detection of ionized hydrogen and oxygen from a very luminous and young galaxy 13.4 billion years ago*
11. Urbano Stawinski et al. (incl. I. Jung) 2024, MNRAS, 528, 5624, *Deeper than DEEP: a spectroscopic survey of $z > 3$ Ly α emitters in the Extended Groth Strip*
12. Shen et al. (incl. I. Jung) 2024, ApJL, 963, L49, *NGDEEP Epoch 1: Spatially Resolved Hα Observations of Disk and Bulge Growth in Star-forming Galaxies at $z \sim 0.6$–2.2 from JWST NIRISS Slitless Spectroscopy*
13. Napolitano et al. (incl. I. Jung) 2024, arXiv:2402.11220, *Peering into cosmic reionization: the Lyα visibility evolution from galaxies at z = 4.5-8.5 with JWST*
14. Backhaus et al. (incl. I. Jung) 2024, ApJ, 962, 195, *CEERS Key Paper. VIII. Emission-line Ratios from NIRSpec and NIRCam Wide-Field Slitless Spectroscopy at $z > 2$*
15. Arrabal Haro et al. (incl. I. Jung) 2023, Natur, 622, 707, *Confirmation and refutation of very luminous galaxies in the early Universe*
16. 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*
17. 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*
18. 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*
19. 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*
20. Arrabal Haro et al. (incl. I. Jung) 2023, ApJL, 951, L22, *Spectroscopic Confirmation of CEERS NIRCam-selected Galaxies at $z \simeq 8$-10*
21. Yoon et al. (incl. I. Jung) 2023, ApJ, 950, 61, *ALMA Observation of a $z \gtrsim 10$ Galaxy Candidate Discovered with JWST*
22. Hsiao et al. (incl. I. Jung) 2023, ApJL, 949, L34, *JWST Reveals a Possible z 11 Galaxy Merger in Triply Lensed MACS0647-JD*
23. Fujimoto et al. (incl. I. Jung) 2023, ApJL, 949, L25, *CEERS Spectroscopic Confirmation of NIRCam-selected $z \gtrsim 8$ Galaxy Candidates with JWST/NIRSpec: Initial Characterization of Their Properties*
24. Hsiao et al. (incl. I. Jung) 2023, arXiv:2305.03042, *JWST NIRSpec spectroscopy of the triply-lensed $z = 10.17$ galaxy MACS0647$-$JD*
25. Simons et al. (incl. I. Jung) 2023, ApJS, 266, 13, *CLEAR: Survey Overview, Data Analysis, and Products*
26. Cleri et al. (incl. I. Jung) 2023, ApJ, 948, 112, *CLEAR: High-ionization [Ne V] λ3426 Emission-line Galaxies at $1.4 < z < 2.3$*
27. 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*
28. 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?*
29. 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*
30. Zavala et al. (incl. I. Jung) 2023, ApJL, 943, L9, *Dusty Starbursts Masquerading as Ultra-high Redshift Galaxies in JWST CEERS Observations*
31. Backhaus et al. (incl. I. Jung) 2023, ApJ, 943, 37, *CLEAR: Spatially Resolved Emission Lines and Active Galactic Nuclei at $0.6 < z < 1.3$*
32. Finkelstein et al. (incl. I. Jung) 2022, ApJL, 940, L55, *A Long Time Ago in a Galaxy Far, Far Away: A Candidate $z \sim 12$ Galaxy in Early JWST CEERS Imaging*

33. Welch et al. (incl. I. Jung) 2022, ApJL, 940, L1, *JWST Imaging of Earendel, the Extremely Magnified Star at Redshift z = 6.2*
34. 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*
35. 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*
36. 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*
37. Park et al. (incl. I. Jung) 2022, ApJ, 931, 126, *Scattering of Lyα Photons through the Reionizing Intergalactic Medium: I. Spectral Energy Distribution*
38. 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*
39. Cleri et al. (incl. I. Jung) 2022, ApJ, 929, 3, *CLEAR: Paschen-β Star Formation Rates and Dust Attenuation of Low-redshift Galaxies*
40. 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*
41. 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*
42. Backhaus et al. (incl. I. Jung) 2022, ApJ, 926, 161, *CLEAR: Emission-line Ratios at Cosmic High Noon*
43. 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*
44. 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*
45. 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*
46. 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*
47. 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*
48. Papovich et al. (incl. I. Jung) 2019, BAAS, 51, 266, *UV Diagnostics of Galaxies from the Peak of Star-Formation to the Epoch of Reionization*
49. Finkelstein et al. (incl. I. Jung) 2019, BAAS, 51, 221, *Unveiling the Phase Transition of the Universe During the Reionization Epoch with Lyman-alpha*
50. Hong et al. (incl. I. Jung) 2019, MNRAS, 483, 3950, *Statistics of two-point correlation and network topology for Ly α emitters at z ≈ 2.67*
51. Broussard et al. (incl. I. Jung) 2019, ApJ, 873, 74, *Star Formation Stochasticity Measured from the Distribution of Burst Indicators*
52. McLure et al. (incl. I. Jung) 2018, MNRAS, 479, 25, *The VANDELS ESO public spectroscopic survey*
53. Pentericci et al. (incl. I. Jung) 2018, A&A, 616, A174, *The VANDELS ESO public spectroscopic survey: Observations and first data release*
54. 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*
55. Wang et al. (incl. I. Jung) 2016, MNRAS, 459, 1554, *Sussing merger trees: stability and convergence*
56. 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*
57. Srisawat et al. (incl. I. Jung) 2013, MNRAS, 436, 150, *Sussing Merger Trees: The Merger Trees Comparison Project*
58. Yi et al. (incl. I. Jung) 2013, A&A, 554, A122, *Merger relics of cluster galaxies*

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