

Junehyoung Jeon

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<b>Research Interests</b>	I am interested in how the early Universe and its components such as galaxies and black holes evolved. I am further interested in creating/using theoretical models and hydrodynamical simulations to study early structure formation.	
<b>Education</b>	<i>Doctor of Philosophy in Astronomy</i>	Expected completion 2026
	Astronomy Department, University of Texas at Austin, Austin, Texas	
	<i>Master of Arts in Astronomy</i>	August 2023
	Astronomy Department, University of Texas at Austin, Austin, Texas	
	<i>Bachelor of Science in Astrophysics, Minor in Physics</i>	May 2021
	Barrett Honors College, Arizona State University, Tempe, Arizona	
	Average unweighted GPA: 4.0/4.0	
<b>Publication</b>	Jeon, J. et al. (2023). <i>Observability of Low-Luminosity AGN in the Early Universe with JWST</i> . <a href="https://ui.adsabs.harvard.edu/abs/2023MNRAS.524..176J/abstract">https://ui.adsabs.harvard.edu/abs/2023MNRAS.524..176J/abstract</a> . Published in MNRAS	
	Jeon, J. et al. (2022). <i>Maximal X-ray feedback in the pre-reionization Universe</i> . <a href="https://ui.adsabs.harvard.edu/abs/2022MNRAS.515.5568J/abstract">https://ui.adsabs.harvard.edu/abs/2022MNRAS.515.5568J/abstract</a> . Published in MNRAS	
<b>Conference presentations</b>	<i>Observability of Low-Luminosity AGN in the Early Universe with JWST</i> . Young Astronomers on Galactic Nuclei, Palermo, Italy	
	October 2023	
	<ul style="list-style-type: none"><li>Presented the work of the publication under the same name published in MNRAS Volume 524, Issue 1, pp.176-187</li></ul>	
<b>Teaching</b>	Cosmology	2022
	<ul style="list-style-type: none"><li>Explained course topics to students after class, helping them individually to grasp lecture concepts that they might not have fully understood.</li><li>Guided students through their homeworks, assisting them in understanding questions and steps to solve various cosmology problems.</li></ul>	
	Practical Introduction to Research	2021
	<ul style="list-style-type: none"><li>Guided students through in-class activities such as coding, writing resume, and making posters, providing them with introductory skills in academia.</li><li>Prepared coding and lecture modules for the students, leading the students to understand the concepts.</li></ul>	
	<i>Tutor</i> , Arizona State University School of Earth and Space Exploration: Introduction to Astrophysics and Cosmology II	2021
	<ul style="list-style-type: none"><li>Participated in the live classes to answer the questions students asked, aiding the instructor in the lectures</li></ul>	

- Graded assignments with feedback, helping students better understand the problems and their mistakes
- Held office hours for students to come and ask questions on the course and homework
- Created visual figures that demonstrated important topics in cosmology, easing the students' understanding of the topics

*Learning Assistant*, Arizona State University Physics Department: Science of Musical Instruments, University Physics I Mechanics, University Physics II Electricity and Magnetism 2019 - 2021

- Participated in three physics courses as a sub-instructor
- Aided students during in-class problems, activities and questions regarding homework or exam problems
- Held office hours for students to come and ask questions

## Awards and Honors

The College of Liberal Arts and Sciences Dean's Medal, ASU 2021  
 Moeur Award, ASU Alumni Association 2021  
 New American University Award(\$5000) 2018-2021  
 The College of Liberal Arts and Sciences Dean's List, ASU 2018-2020

## Research Experiences

*Studying galaxies at  $z \sim 6$*  2019 - 2021  
 Arizona State University  
 Dr. Rogier Windhorst

- Modeled 53 galaxies using the CIGALE code for SED modeling and determined 47 with valid models with data from previous papers and also extracted data from SDF K-band to add flux data points to the models
- Worked as the primary author in the paper detailing the creation and analysis of the models
- Analyzed the models to determine the fraction of high escape fraction galaxies around  $z = 6$  and concluded on their significance on reionization

*JWST Cycle-1 Proposed Program: NIRSpec/IFU Observations of Luminous Galaxies at  $5.7 < z < 6.6$*  2020  
 University of Arizona  
 Dr. Eiichi Egami

- Worked as a co-investigator and performed realistic simulations of Near Infrared Spectrograph (NIRspec) with the Exposure Time Calculator (ETC) to predict JWST observations of extremely blue galaxies that couldn't be modeled accurately so far
- Compared SED models from Jeon, J. et al. (2020) to the predicted spectra of the galaxies to determine where most data was needed
- Created figures showing the model and simulated spectra of the galaxies along with their images to be put in the proposal and improve the case for observing these galaxies

## Skills

Programming: Python, High Performance Computing  
 Operating systems: Windows, Linux  
 Software: LaTeX, Mathematica  
 Languages: Korean, English