

# Jaemyoung (Jason) Lee

Department of Physics and Astronomy, University of Pennsylvania

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## Research Interests

**Cosmology and Extragalactic Astronomy:** SN Ia cosmology, atmospheric effects on photometry, Cosmic Infrared Background (CIB), weak gravitational lensing, higher-order statistics, Baryon Acoustic Oscillations (BAO)

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## Education and Employment

**Ph.D. Candidate in Physics and Astronomy** *University of Pennsylvania*  
*Advisor: Masao Sako* *September 2020 - Present*

**B.S. in Physics and B.A. in English Language and Literature** *Korea University*  
*Dual major* *March 2013 - February 2020*

**Study Abroad** *University of Toronto*  
*Engaged in undergraduate research & took numerous astronomy courses* *September 2018 - April 2019*

**Military Service as an English Interpreter** *Army Signal School, South Korea*  
*Discharged as a sergeant on March 1st, 2016* *June 2014 - March 2016*

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## Research Experience

**Graduate Researcher** *September 2021 - Present*  
*Department of Physics and Astronomy, University of Pennsylvania* *Philadelphia, Pennsylvania*

- Impact of wavelength-dependent atmospheric effects on Type Ia supernova photometry  
Advisor: Masao Sako

**Undergraduate Researcher** *September 2018 - August 2019*  
*Canadian Institute for Theoretical Astrophysics, University of Toronto* *Toronto, Ontario, Canada*

- Exploring the Non-Gaussianity of the Cosmic Infrared Background (CIB) and Its Gravitational Lensing Using Band Filtering  
Advisors: J. Richard Bond, Alexander van Engelen, Pavel Motloch, George Stein

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## Awards and Honors

**Summer Undergraduate Research Program (SURP) Student of the Week** *July 2019*  
*Department of Astronomy and Astrophysics (University of Toronto)* *Toronto, Ontario, Canada*

- <http://www.dunlap.utoronto.ca/surp-sow/surp-sow-jason-jaemyoung-lee/>

**Mitacs Globalink Research Award** *May 2019 - August 2019*  
*Canadian Institute for Theoretical Astrophysics* *Toronto, Ontario, Canada*

- Advisor: J. Richard Bond

National Excellence Scholarship for Science and Technology Majors *Mar. 2017 - Feb. 2019*  
*Department of Physics (Korea University) Seoul, South Korea*

- Full funding for university tuition (4 semesters) by the Korea Student Aid Foundation

## *Publications*

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### *Lead author publications*

- [1] **Lee J.**, Bond J.R., Motloch P., van Engelen A. and Stein G. (2023)  
[Exploring the Non-Gaussianity of the Cosmic Infrared Background and Its Weak Gravitational Lensing](#)  
*arXiv: 2304.07283, to be submitted to MNRAS*
- [2] **Lee J.** and Acevedo M., Sako M., Vincenzi M., Brout D., Sanchez B., et al. (2023)  
[The Dark Energy Survey Supernova Program: Corrections on photometry due to wavelength-dependent atmospheric effects](#)  
*arXiv: 2304.01858, accepted by the Astronomical Journal*

### *Publications with major contributions*

- [1] Doux, C., Jain B., Zeurcher D., **Lee J.**, Rosenfeld, R., et al. (2022)  
[Dark energy survey year 3 results: cosmological constraints from the analysis of cosmic shear in harmonic space](#)  
*Monthly Notices of the Royal Astronomical Society, 515, 1942*

## *Talks*

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**“The Dark Energy Survey Supernova Program: Corrections on photometry due to wavelength-dependent atmospheric effects”** *May 2022*  
*Duke University Durham, North Carolina*

- Dark Energy Survey (DES) Collaboration Meeting Supernova Working Group (SNWG) session

**“The Dark Energy Survey Supernova Program: Corrections on photometry due to wavelength-dependent atmospheric effects”** *January 2023*  
*University of Portsmouth Portsmouth, United Kingdom*

- DES Collaboration Meeting SNWG session

## *Posters*

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**“The Dark Energy Survey Supernova Program: Corrections on photometry due to wavelength-dependent atmospheric effects”** *January 2023*  
*American Astronomical Society Winter Meeting Supernovae Poster Session Seattle, Washington*

- <https://aas241-aas.ipostersessions.com/?s=FB-2D-A1-75-B1-60-73-5B-AC-1F-39-E7-A1-A2-78-9B>

**“Non-Gaussianity of the CIB and Its Gravitational Lensing”** *August 2019*  
*Summer Undergraduate Research Program in Astronomy and Astrophysics Poster Presentation Toronto, Ontario, Canada*

- Department Members Invited  
<https://drive.google.com/drive/folders/1zfQRRB0NqWLjzhqQXPqrU3dPLC4pipCP?usp=sharing>

## *Skills*

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<b>Programming Languages/Tools</b>	Python, C++, L <sup>A</sup> T <sub>E</sub> X
<b>Languages</b>	Fully bilingual in Korean and English

## *Outreach*

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### **Speaker**

*Astronomy on Tap*

*June 2022*

*Philadelphia, Pennsylvania*

- Pub talk on “Where We Might Find Aliens, Under the Ice”

### **Volunteer**

*AstroTours at the University of Toronto*

*February 2019 - August 2019*

*Toronto, Ontario, Canada*

- A once-a-month public event; demonstrated the WWT (World Wide Telescope) and Oculus Rift (Virtual Reality)

### **Volunteer**

*Science Rendezvous at the University of Toronto*

*May 2019*

*Toronto, Ontario, Canada*

- A public event with the Department of Astronomy and Astrophysics; explained 3D printed models of several asteroid missions as well as planetary features

## *Other Interests*

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- Violin/Piano (Currently a violinist at the Penn Symphony Orchestra)
- Traveling (been to 20+ countries)