

# Yijung Kang

## Curriculum Vitae

Rubin Observatory Base Facility  
Casilla 603  
La Serena, Chile

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### Current Position

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2022-present **Research Associate & Observing Specialist Postdoc**  
**Rubin Observatory/SLAC/Stanford/KIPAC**, La Serena, Chile  
80% for on-site commissioning and operation and 20% for research (first 3 years):  
*Controlling and operating telescopes & cameras with systems, troubleshooting*  
*Reporting nightly observing log and fault reports*  
*Documentation and training newer team members*  
*Contributing to analysis system performance optimization and verification*

### Previous Position

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2019-2022 **Science Fellow**, Research and Science Services  
**Gemini Observatory**, La Serena, Chile  
Postdoctoral fellow, 50% for research and 50% for observatory support:  
*Queue coordinating, night observation, instrument support, user support*

### Education

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2020 Ph.D. in Astronomy, Yonsei University, Seoul, South Korea  
Advisor : Prof. Young-Wook Lee  
Thesis: *“Evidence for Luminosity Evolution in Type Ia Supernova Cosmology  
from Spectroscopy of Early-type Host Galaxies”*

2012 M.S. in Astronomy, Yonsei University, Seoul, South Korea  
Advisor : Prof. Young-Wook Lee

2010 B.S. in Astronomy and Physics, Yonsei University, Seoul, South Korea

### Language Skills

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English (proficient), Spanish (conversant), Korean (native)

## Grants, Fellowships, and Telescope Time Awarded

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### Collaboration

2024 - **LSST Builder: data rights and access to proprietary LSST data**  
: Conferred after 2 full-time equivalent years of contributions to the Rubin Observatory Construction and Operations

### Successful Telescope Proposals

2024 **Gemini S**  
GS-2024B-FT-215 (1.94 hours; PI: **Hyein Yoon**)

2021 **Very Large Array**  
VLA/21A-310 (50 hours; PI: **Yijung Kang**)

2015-2016 **Gemini N & S** via K-GMT science program  
GS-2015B-Q-41, GN-2016A-Q-51 (total 14 hours; PI: Y.-W. Lee)

2014 **MMT** via K-GMT science program  
2014B-UAO-G16 (total 1 night; PI: Y.-W. Lee)

### Assistantship & Scholarship

2011-2017 Teaching/Research assistantship, Yonsei University (\$23,460)

2010-2014 BK 21 (Brain Korea 21) & BK 21 Plus Scholarship (academic excellence; \$34,100)

## Observational Experiences

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### Observatory Support

2022-present **Rubin Observatory (~60 nights/year support at the site)**  
Day- and night-time commissioning and operating activities at the site  
Controlling and operating telescopes, cameras, and systems  
Performing basic troubleshooting and evaluation of the delivered image quality  
Reporting the nightly observing log and submitting fault reports  
Contributing documentations related to observatory operations

2019-2022 **Gemini Observatory**  
Preparing for night queue observation plans (~7 weeks/year)  
Executing night observations (~15 nights/year)  
Specialized program support (~15 queue programs/semester)  
Instrument support for Gemini Multi-Object Spectrographs (GMOS)

### Optical Long-slit spectroscopy

2015-2016 14 hours at Gemini North & South 8.1 m telescope: GMOS long-slit

2014-2016 10 nights at MMT 6.5 m telescope: Blue Channel Spectrograph

2011-2013 27 nights at Irene du Pont 2.5 m telescope: The Boller & Chiven Spectrograph

2010 8 nights at CTIO SMART 1.5 m telescope: The R-C Spectrograph

### Optical Integrated Field Units (IFU) spectroscopy

2011-2012 22 nights at McDonald 2.7 m telescope: Virus-P

## Computing Backgrounds

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<b>Computer languages</b>	IDL, Python, Jupyter notebook, Fortran
<b>Rubin data access, monitoring, operation</b>	Rubin Science Platform (Jupyter notebook) Chronograf (telemetry monitoring infrastructure via InfluxDB) LOVE (LSST Operators Visualization Environment) interface
<b>Data reduction software</b>	IRAF (Image Reduction and Analysis Facility), Ureka, PyRAF (IRAF based on the Python), VACCINE (reduction tool for VIRUS-P), DAOPHOT
<b>Astronomical software</b>	pPXF + GANDALF (Cappellari 2017; Sarzi et al. 2006), EZ_ages (Graves & Schiavon 2008) Prospector (Johnson et al. 2020)
<b>Project management tools</b>	Jira, Confluence
<b>Collaboration and documentation</b>	GitHub, reStructuredText

## Teaching and Institutional Experiences

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2016-2017	Observing Facility Assistant, Dept. of Astronomy, Yonsei University
Spring 2010	Teaching Assistant of Introduction to Astronomy I, Yonsei University
Fall 2010, 2011	Teaching Assistant of Galaxies And The Universe I, Yonsei University

## Scientific Activities and Public Outreach

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2022	SOC, <i>Joint Observatories Kavli Science Forum 2021</i> , Santiago, Chile
2021-2022	Panelist, Extragalactic Panel in <i>Chilean Telescope Allocation Committee</i>
2018	Mentor, mentoring program for high school students via <i>Korea Center for Women in Science, Engineering, and Technology (WISET)</i>
2016	SOC, <i>2016 Korean Young Astronomers Meeting and We Love Galaxies</i>
2015	LOC, <i>We Love Galaxies 2015</i>
2014-2015	Chair, <i>Korean Young Astronomers Meeting (KYAM)</i> Organizing KYAM attendees for EAYAM 2015 (Feb. 2015) Organizing Regular KYAM meetings (Oct. 2014, Apr. 2015) Organizing APRIM-KYAM dinner meeting, the exhibition booth at APRIM 2014 (Aug.2014)
2009	Undergraduate researcher, Undergraduate Research Program (URP) Research on the Light Pollution in Seoul and Gyeonggi Province, Korea
2007-2009	Regular member, Student club for the public outreach in astronomy President of the club (2008) Volunteering for public outreach programs at center of Korea observatory Public education and outreach activities at Yonsei-Samae campus

## Presentations

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### Talks & Colloquias

- Feb. 2025 Contributed talk, *LSST Korean Community Workshop*, South Korea
- Sep. 2023 Colloquium talk, *Yonsei University*, South Korea
- Sep. 2023 Seminar talk, *Korea Astronomy and Space Science Institute*, South Korea
- Aug. 2023 Contributed talk, *LSST Korean Community Workshop*, South Korea
- Nov. 2020 Contributed talk, *K-GMT Science Program Users Meeting 2020*, virtual
- Apr. 2020 Colloquium talk, *University of Valparaiso*, Chile (virtual)
- Jan. 2019 Dissertation talk, *American Astronomical Society, AAS Meeting #233*, Seattle, USA
- Feb. 2018 Contributed talk, *K-GMT Science Program Users Meeting 2018*, South Korea
- Feb. 2017 Contributed talk, *K-GMT Science Program Users Meeting 2017*, South Korea
- Jan. 2016 Contributed talk, *American Astronomical Society, AAS Meeting #227*, FL, USA
- Feb. 2015 Contributed talk, *East Asian Young Astronomers Meeting 2015*, Taiwan
- Apr. 2014 Contributed talk, *Korean Astronomy Society Fall meeting 2014*, South Korea
- Apr. 2013 Contributed talk, *Korean Astronomy Society Fall meeting 2013*, South Korea

### Poster Presentations

- Dec. 2020 XVI SOCHIAS Annual Meeting (virtual), Chile
- Aug. 2018 Science and Evolution of Gemini Observatory, USA
- Apr. 2017 Korean Astronomy Society Fall meeting, South Korea
- Sep. 2014 Type Ia Supernovae: progenitors, explosions, and cosmology, USA
- Aug. 2014 12th Asia-Pacific Regional IAU Meeting (APRIM), South Korea
- Jun. 2014 The Evolution of Stellar Populations in Globular Clusters & Early-type Galaxies, South Korea
- Aug. 2012 XXVIII General Assembly of IAU, China
- Oct. 2013 Korean Astronomy Society Fall meeting, South Korea
- Oct. 2011 Korean Astronomy Society Fall meeting, South Korea

# Publication List

## Refereed Journal Papers

- 8) "Early-type Host Galaxies of Type Ia Supernovae. III. Star Formation History of the Host Galaxies"  
**Y. Kang** et al., in preparation
- 7) "Tracing back the birth environments of Type Ia supernova progenitor stars: a pilot study based on 44 early-type host galaxies"  
Y.-L. Kim, L. Galbany, I. Hook, **Y. Kang** 2024, MNRAS, 529, 3806 [\[ADS\]](#)
- 6) "Evidence for strong progenitor age dependence of type Ia supernova luminosity standardization process"  
Y.-W. Lee, C. Chung, P. Demarque, S. Park, J. Son, and **Y. Kang** 2022, MNRAS, 517, 2697 [\[ADS\]](#)
- 5) "Further Evidence for Significant Luminosity Evolution in Supernova Cosmology"  
Y.-W. Lee, C. Chung, **Y. Kang**, M. J. Jee 2020, ApJ, 903, 22, 22 pages [\[ADS\]](#)
- 4) "Early-type Host Galaxies of Type Ia Supernovae. II. Evidence for Luminosity Evolution in Supernova Cosmology"  
**Y. Kang**, Y.-W. Lee, Y.-L. Kim, et al. 2020, ApJ, 889, 8 [\[ADS\]](#)
- 3) "The Globular Cluster Origin of the Milky Way Outer Bulge: Evidence from Sodium Bimodality"  
Y.-W. Lee, J. J. Kim, C. I. Johnson, **Y. Kang**, et al. 2019, ApJL, 878 [\[ADS\]](#)
- 2) "Environmental Dependence of Type Ia Supernova Luminosities from the YONSEI Supernova Catalog"  
Y.-L. Kim, **Y. Kang**, and Y.-W. Lee 2019, JKAS, 52 [\[ADS\]](#)
- 1) "Early-type Host Galaxies of Type Ia Supernovae. I. Evidence for Downsizing"  
**Y. Kang**, Y.-L. Kim, Dongwook Lim, et al. 2016, ApJS, 223, 7 [\[ADS\]](#)

## Proceedings

- 8) "Rubin ToO 2024: Envisioning the Vera C. Rubin Observatory LSST Target of Opportunity program",  
I. Andreoni et al. 2024, arXiv e-prints, [\[ADS\]](#) (co-author)
- 7) "Rubin M1M3 support system dynamic performance",  
B. C. Quint et al. 2024, SPIE Conference Series, [\[ADS\]](#) (co-author)
- 6) Rubin Observatory Simonyi Survey Telescope integrated mount performance,  
B. Stalder et al 2024, SPIE Conference Series [\[ADS\]](#) (co-author)
- 5) The Vera C. Rubin's M2 support system integration and verification at the TMA,  
G. Rodeghiero et al. 2024, SPIE Conference Series, [\[ADS\]](#) (co-author)
- 4) Investigation of Stellar Populations in the Early-type Host Galaxies of Type Ia Supernovae  
**Y. Kang**, and Y.-W. Lee 2019, American Astronomical Society Meeting #233, [\[ADS\]](#)
- 3) "Early-type Host Galaxies of Type Ia Supernovae: Origin of the Correlation between Hubble Residual and Host Mass"  
**Y. Kang**, Y.-L. Kim, D. Lim, et al. 2016, American Astronomical Society Meeting #227, [\[ADS\]](#)
- 2) "The Luminosity of Type Ia Supernova and the Properties of Their Early-type Host Galaxies"  
**Y. Kang**, Y.-L. Kim, Y.-W. Lee et al. 2015, PKAS, 30, 487, 2 pages [\[Link\]](#)
- 1) "YOnsei Nearby Supernova Evolution Investigation (YONSEI) Supernova Catalogue"  
Y.-L. Kim, **Y. Kang**, Y.-W. Lee 2015, PKAS, 223, 485, 2 pages [\[Link\]](#)