

Yongjung Kim | CV

Kyungpook National University – Daegu, Korea
☎ +82 (010) 6892 0502 • ✉ yjkim.ast@gmail.com
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Positions

Senior Researcher <i>Korea Astronomy and Space Science Institute (KASI)</i> Space Astronomy Group (PI: Dr. Woong-Seob Jeong)	Daejeon, Korea 2023.07 – present
Sejong Science Fellow <i>Kyungpook National University, continued at KASI</i> Advisor: Prof. Minjin Kim	Daegu, Korea 2021.09 – present
KIAA Fellow <i>Kavli Institute for Astronomy and Astrophysics at Peking University</i> Advisor: Prof. Linhua Jiang	Beijing, China 2019.11 – 2021.09
Postdoctoral Fellow <i>Research Institute for Basic Sciences at Seoul National University</i> Advisor: Prof. Myungshin Im	Seoul, Korea 2019.09 – 2019.10

Education

Seoul National University <i>Ph.D. in Astronomy</i> Thesis title: Survey of Faint Quasars at High Redshifts Supervisor: Prof. Myungshin Im	Seoul, Korea 2013.03 – 2019.08
Seoul National University <i>B.S. in Astronomy</i> Minor: Physics	Seoul, Korea 2009.03 – 2013.02

Research Interests

- Observational Cosmology with Quasars**.....
- High-redshift Quasar Survey with Infrared Medium-deep Survey (IMS)
 - Contribution of faint quasars to the cosmic reionization and ionizing backgrounds
 - Growth of the supermassive black holes with their host galaxies at various redshifts
 - Demography of quasars along the cosmic time
 - Multi-wavelength surveys (participating in IMS, DESI, CSST & SPHEREx)

Research Grants

The Sejong Science Fellowship <i>Funded by National Research Foundation of Korea (\$420,000)</i> Subject: Cosmic Evolution of Quasar-Galaxy by developing an Integrated Analysis Model for the Observational Big Data	2021-2026
The 2020 China Postdoc Science Special Grant <i>Funded by China Postdoctoral Science Foundation (\$26,000)</i> Subject: Quasar and Host Galaxy Properties with the Newest Large Survey Data	2020
The 2020 China Postdoc Science General Grant <i>Funded by China Postdoctoral Science Foundation (\$12,000)</i> Subject: Quasar and Host Galaxy Properties with the Newest Large Survey Data	2020

Top 100 Fellowship

Postdoc International Exchange Program at PKU (\$7,000)

2019

Subject: Enhanced Studies on High-redshift Quasars

Honors and Awards

Scholarship for Creative Academic Performance

Brain Korea 21 Program for Leading Universities and Students as a BK fellow (\$ 58,000)

2013 – 2019

awarded by National Research Foundation of Korea

Academic Excellence Scholarship

Partial tuition scholarship (\$2,000)

2014, 2015

awarded by Seoul National University

SNU in Global Research Awards

2nd place

2013

awarded by Office of International Affairs at Seoul National University

Best Poster Presentation Awards at the 2012 Fall KAS Meeting

1st place

2012

awarded by Korean Astronomical Society

Lotte Scholarship

Full tuition scholarship (\$5,000)

2012

awarded by Lotte Foundation

Presidential Science Scholarship

Full tuition scholarship (\$10,000)

2009 – 2010

awarded by National Research Foundation of Korea

Observational Experience

Classical/Remote Observations.....

Palomar 200 inch Telescope

DBSP (Remote)

2 nights in 2020B, 2 nights in 2021A

Palomar Observatory
(Telescope Access Program)

Magellan Baade 6.5 m Telescope

IMACS & FIRE

2015 January 18-19, September 11-13; 2016 December 3-5; 2018 September 9-10 (10 nights)

Las Campanas Observatory

Otto Struve 2.1 m Telescope

SQUEAN & CQUEAN

2014 June 3-8, November 3-9; 2015 June 19-28; 2016 July 25-28; 2017 February 1-11, April 19-26, September 16-24, December 26-31; 2018 April 16-25; 2019 February 5-14 (81 nights)

McDonald Observatory

Maidanak 1.5 m Telescope

SNUCAM

2013 August 2-7 (6 nights)

Maidanak Observatory

Observations awarded as PI.....

James Clerk Maxwell Telescope

SCUBA-2

9.00 hr in 2018A

East Asian Observatory

Gemini 8 m Telescopes

GMOS-N, GMOS-S, & FLAMINGOS-2

9.00 hr in 2016B; 13.00 hr in 2017B; 7.92 hr in 2018A; 14.00 hr in 2018B; 10.14 hr in 2019A; 6.9 hr in 2020A

Gemini Observatory
(K-GMT Science Program)

Atacama Large Millimeter/submillimeter Array

12m Arrays

3.6 hr in Cycle 4; 2.6 hr in Cycle 5

Observations awarded as Co-PI.....

Gemini 8 m Telescope

GMOS-S

1 night in 2015A; 6.70 hr in 2016A; 24.00 hr in 2017A (for thesis; PI: Myungshin Im)

Gemini Observatory
(K-GMT Science Program)

Outreach and Other Experiences

TAC of K-GMT Program

Gemini-2023B

2023-

KIAA-DoA Seminar Committee

Organizing seminar talks at KIAA & DoA at PKU

2021

PKU Lunch Talk Committee

Organizing lunch talks at PKU

2020

Technical Research Personnel

Serving duty on Korean military service

2016 – 2019

Lecturer for International Astronomy Olympiad (IAO) students in Korea

Subject: Basic and Application of Observational Astronomy

2017

Teaching assistant & lecturer for undergraduate class

Astronomical Observation and Lab (1 semester); Astronomy Lab (1 year)

2013 – 2014

Undergraduate internship

Center for the Exploration of the Origin of the Universe (CEOU) at SNU

Subject: The Red Objects in the GRB 100205A Field

Supervisor: Prof. Myungshin Im

2012 – 2013

Computer Skills

Programming: IDL (fluent), PYTHON (fluent), R (basic)

Data Analysis: IRAF, SExtractor, SWARP, SCAMP, CASA, GALFIT, TOPCAT, etc.

Others: L^AT_EX, Microsoft Office, Adobe Photoshop, etc.

Academic References

Professor Myungshin Im

◦ mim@astro.snu.ac.kr, +82-2-880-6585

◦ Department of Physics and Astronomy, Seoul National University, Korea

Professor Linhua Jiang

◦ jiangKIAA@pku.edu.cn, +86-10-62755783

◦ Kavli Institute for Astronomy and Astrophysics, Peking University, China

Professor Minjin Kim

◦ mkim@knu.ac.kr, +82-53-950-7136

◦ Department of Astronomy and Atmospheric Sciences, Kyungpook National University, Korea

Publications

Refereed Publications

- 19 in total (8 as first author, and 11 as co-author) [Link to ADS Library](#)

19. **Kim, Y.**, Im, M., et al. 2022, AJ, 164, 114: *The Infrared Medium-deep Survey. IX. Discovery of Two New $z \sim 6$ Quasars and Space Density down to $M_{1450} \sim -23.5$ mag*
18. **Kim, Y.** & Im, M., 2021, ApJL, 910, 11: *Pure Density Evolution of the Ultraviolet Quasar Luminosity Functions at $2 \lesssim z \lesssim 6$*
17. **Kim, Y.**, Im, M., et al. 2020, ApJ, 904,111: *The Infrared Medium-deep Survey. VIII. Quasar Luminosity Function at $z \sim 5$*

16. **Kim, Y., & Im, M.** 2019, ApJ, 879, 117: *High Star Formation Rates of Low Eddington Ratio Quasars at $z \gtrsim 6$*
15. **Kim, Y., Im, M., et al.** 2019, ApJ, 870, 86: *The Infrared Medium-deep Survey. VI. Discovery of Faint Quasars at $z \sim 5$ with a Medium-band-based Approach*
14. **Kim, Y., Im, M., et al.** 2018, ApJ, 855, 138: *The Infrared Medium-deep Survey. IV. The Low Eddington Ratio of A Faint Quasar at $z \sim 6$: Not Every Supermassive Black Hole is Growing Fast in the Early Universe*
13. **Kim, Y., Im, M., et al.** 2015, ApJL, 813, 35: *Discovery of a Faint Quasar at $z \sim 6$ and Implications for Cosmic Reionization*
12. **Kim, Y., Im, M., et al.** 2015, PKAS, 30, 463: *Newly Discovered Footprints of Galaxy Interaction around Seyfert 2 Galaxy NGC 7743*
11. Shin, S., Im, M., & **Kim, Y.** 2022, ApJ, accepted: *The quasar luminosity function at $z \sim 5$ via deep learning and Bayesian information criterion*
10. Shin, S., Im, M., **Kim, Y.** & Jiang, L. 2022, JKAS, accepted: *Newly Discovered $z \sim 5$ Quasars via Deep Learning and Bayesian Information Criterion*
9. Taak, Y.-C., Im, M., **Kim, Y.**, et al. 2022, A&A, accepted: *High- z Universe probed via Lensing by QSOs (HULQ) II. Deep GMOS Spectroscopy of a QSO Lens Candidate*
8. Lee, B., Wang, J., ..., **Kim, Y.** et al. 2022, ApJS, accepted: *ALMA/ACA CO Survey of the IC 1459 and NGC 4636 Groups: Environmental Effects on the Molecular Gas of Group Galaxies*
7. Shin, S., Im, M., **Kim, Y.**, et al. 2020, ApJ, 893, 45: *The Infrared Medium-deep Survey. VII. Faint Quasars at $z \sim 5$ in the ELAIS-N1 Field*
6. Lee, S.-K., Im, M., ..., and **Kim, Y.** 2019, MNRAS, 490, 135: *More connected, more active: galaxy clusters and groups at $z \sim 1$ and the connection between their quiescent galaxy fractions and large-scale environments*
5. Im, M., Choi, C., ..., **Kim, Y.**, et al. 2019, JKAS, 52, 11: *Intensive Monitoring Survey of Nearby Galaxies (IMSNG)*
4. Jeon, Y., Im, M., Kim, D., **Kim, Y.** et al. 2017, ApJS, 231, 16: *The Infrared Medium-deep Survey. III. Survey of Luminous Quasars at $4.7 \leq z \leq 5.4$*
3. Kim, J.-W., Im, M., ..., **Kim, Y.** et al. 2016, ApJ, 821, 10: *Discovery of a Supercluster at $z \sim 0.91$ and Testing the Λ CDM Cosmological Model*
2. Jeon, Y., Im, M., ..., **Kim, Y.** et al. 2016, JKAS, 49, 25: *The Infrared Medium-Deep Survey. V. A New Selection Strategy for Quasars at $z > 5$ Based on Medium-Band Observations with SQUEAN*
1. Karouzos, M., Im, M., ..., **Kim, Y.** et al. 2014, ApJ, 797, 26: *The Infrared Medium-Deep Survey. II. How to Trigger Radio AGNs? Hints from their Environments*

Conferences

Invited Talks

- "Hunting for Faint High-redshift Quasars with Infrared Medium-deep Survey", K-GMT Science Program Users Meeting 2020, On-line, 2020, November 19-20.
- "Discoveries and Properties of High-redshift Quasars with IMS", Science and Evolution of Gemini Observatory 2018, San Francisco (USA), 2018, July 22-26.

Selected Talks

- "Quasar Luminosity Function at $z \sim 5$ with IMS", Summer All Zoom Epoch of Reionization Astronomy Conference (SAZERAC), On-line, 2020, July 6-9.
- "High Star Formation Rates of Low Eddington Ratio Quasars at $z \gtrsim 6$ ", Cosmic Evolution of Quasars: from the First Light to Local Relics, Beijing (China), 2019, October 21-25.
- "IMS J2204+0112, a Low Eddington Ratio in the Epoch of Reionization", Extremely Big Eyes on the Early Universe at Kavli IPMU, Tokyo (Japan), 2019, March 25-29.
- "The Low Eddington Ratio of IMS J2204+0112, a Faint Quasar at $z \sim 6$ ", Extremely Big Eyes on the Early Universe at UCLA, Los Angeles (USA), 2019, January 28 - February 1.
- "Discovery and Properties of IMS J2204+0112, a Faint Quasar with Low Eddington Ratio at $z \sim 6$ ", K-GMT Science Program Users Meeting 2018, Daejeon (Korea), 2018, February 26-27.
- "High- z Quasar Survey with IMS: Are Quasars Growing Fast in the Early Universe?", East-Asia AGN Workshop 2017, Kagoshima (Japan), December 4-6.