Jong-In Park

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Education

Seoul National University (SNU) *Sep 2025 – Aug 2027 (expected)*
M.S. in Astronomy

Seoul National University *Mar 2019 – Aug 2025*
B.S. in Astronomy
GPA: 4.06/4.3 (Major: 4.23/4.3) · Summa Cum Laude (Departmental Highest Honors) · Includes 2 yrs of mandatory military service

Publications

[1] **"The Stellar Mass Function for Nine Massive Galaxy Clusters in the Local Universe"** Apr 2026
Jong-In Park, Jubee Sohn, Margaret J. Geller, Ken J. Rines, Antonaldo Diaferio
10.3847/1538-4357/ae4c60 (*Astrophysical Journal*, 1001, 185)

[2] **"A Redshift Survey of the Nearby Galaxy Cluster Abell 2199: No Upturn of the Faint-End Slope of Galaxy Luminosity Function"** Feb 2026
Jong-In Park, Hyunmi Song, Ho Seong Hwang
10.5303/JKAS.2026.59.1.33 (*Journal of Korean Astronomical Society*, 59, 33)

[3] **"Weak-Lensing Analysis of the Galaxy Cluster Abell 85: Constraints on the Merger Scenarios of Its Southern Subcluster"** May 2026
Soojin Kim, Kim HyeongHan, Wonki Lee, **Jong-In Park**, M. James Jee, Ho Seong Hwang
10.3847/1538-4357/ae5f64 (*Astrophysical Journal*, 1003, 16)

Observation Proposals

[4] **"Investigating the Suspicious Dark Core of Abell 520 Galaxy Cluster"** Gemini-N · 2026B · 11.9 hr
PI: Soojin Kim, Co-I: Jeong Hwan Lee, Ho Seong Hwang, **Jong-In Park**, Sang Hyeon Han, So Yeon Yun

[5] **"Spectroscopic Weak-Lensing Tomography for Three Local Massive Clusters with Subaru/Prime Focus Spectrograph"** Subaru/PFS · 2026A · 4 hr
PI: Jubee Sohn, Co-I: **Jong-In Park**, Taewan Kim, Lillian Wright, via Gemini–Subaru Time Exchange

Research Experience

Graduate Researcher (prev. Undergraduate Intern) *Mar 2023 – present*
Advisor: Prof. Jubee Sohn, Seoul National University

- Survey statistics — stellar mass functions of nine massive clusters, with incompleteness corrections and a volume-limited field sample; tested against TNG300. [1]
- Catalog building — value-added catalogs (CIGALE M*/SFR, pPXF metallicity, caustic membership) for HeCS-omnibus and LoVoCCS clusters.
- Analytical modeling — developed a novel 2D-to-3D deprojection model for stellar mass profiles in galaxy cluster, yielding cluster stellar mass fractions for simulation calibration
- Multi-wavelength SED fitting — star-formation rates from SPHEREx forced photometry; identified infrared bands that best break the M*–SFR–age–metallicity degeneracy.
- Proposal development — led Subaru/PFS target selection and fiber configuration [5]; technical justification for a MeerKAT HI proposal from SED-based HI-mass estimates.

Research Collaborator *Jun 2025 – present*
Advisor: Prof. Ho Seong Hwang, Seoul National University

- Survey compilation — the Abell 2199 luminosity function from SDSS/DESI/MMT redshifts, with K- and completeness corrections; compared with TNG300. [2]
- Cross-probe analysis — SED-based star-formation rates of Abell 85 galaxies, interpreted jointly with weak lensing [3]; tested star-formation trends along putative dark-matter filaments.
- Observation planning — target list and sky chart from public catalogs, setting spectroscopic priorities for the Gemini dark-core proposal. [4]

Undergraduate Research Intern *Jul 2020 – Feb 2023*
Advisor: Prof. Myung Gyoon Lee, Seoul National University

- Learned galaxy image handling and performed basic photometry of cluster galaxies (SExtractor, GALFIT, Photutils).

Selected Talks

"Star Formation Rate Measurement in Galaxy Clusters using SPHEREx" *Aug 2026*
2026 SPHEREx Workshop, Jeju

"Galaxy Stellar Mass Function of Local Massive Clusters Based on Dense Spectroscopy" *Sep 2025*
CL2025: Entering a Golden Age of Galaxy Cluster Studies, ASIAA (Taipei)

"The Stellar Mass Function of Nine Massive Cluster in the Local Universe" *Apr 2026*
Spring 2026 Korean Astronomical Society Meeting, Suwon

Awards and Scholarships

SNU Scholarship for Next Generation Scholars in Basic Sciences *Mar 2026 – present*
Selected as a promising future academic leader. (~$10,000/year)

Brain Korea 21 (BK21) Four Fellowship *Sep 2025 – Feb 2026*
Government-funded research stipend for graduate students. (~$800/month)

Graduate Fellowship for Research in Basic Science *Sep 2025 – Feb 2026*
Merit-based fellowship awarded for academic excellence to graduate students. (~$3,000/semester)

STX Foundation Scholarship *Feb 2023 – Feb 2025*
Awarded to outstanding talents demonstrating creative ideas. (~$9,500/year)

1st Place (Team Project), KIAS Extragalactic Astronomy & Cosmology Summer School *2024*

4th Place (Team Project), 14th KIAS CAC Summer School on AI & Parallel Computing *2023*

Silver & Bronze Medal, International Astronomy Olympiad *2016, 2017*

Teaching Experience

Instructor, Korean Astronomical Olympiad *2022 – present*

- Final Boot Camp for the 17th, 18th & 19th International Olympiad on Astronomy and Astrophysics and the 26th International Astronomy Olympiad.
- Led theoretical and practical sessions for the national Summer/Winter Schools (2023–2026).

Teaching Assistant & Peer Tutor, Seoul National University *2022 – present*

- Teaching Assistant — 'Modern Cosmology' (Fall 2025), 'Understanding the Principles of Information Universe' (Spring 2026), 'Introduction to Astrophysics 1' (Fall 2026); Peer Tutor, 'Writing in Science and Technology' (Fall 2022).
- Teaching Assistant, 'Student-Directed Research' (Fall 2026) — mentored an undergraduate project on open-cluster dynamics via white-dwarf spatial distributions (Gaia DR3 + N-body).

Instructor & Main Organizer, Student-Directed Seminar, Seoul National University *Spring 2023*
Designed and taught the credit-bearing course 'STEM Outreach Events using Planetariums'.

Technician & Vice Team Leader, 26th International Astronomy Olympiad *Oct 2022*

Extra Activities

President, Korea Young Astronomers Meeting *Mar 2026 – present*
Leading the nationwide academic network for young astronomers. (Official Division of the Korean Astronomical Society)

Military Service, Republic of Korea Air Force *Jan 2021 – Oct 2022*
18th Fighter Wing; served as Intelligence Watchstander and RFID System Manager.

Planetarium Operator, Gwan-heo Cosmos Hall, Seoul National University *Nov 2022 – present*
500+ hours of programming for 100+ public events, 6,000+ visitors; trained incoming operators.

Member, GongJinDan (Seoul National University Open Astronomy Event Organizers) *Sep 2022 – present*
Organized 20+ events with 100+ hours of public outreach, including a public science lecture (Jul 2026).

Departmental Service, Seoul National University Astronomy Program *2023 – present*

- Head Representative, Undergraduate Research Intern Office (2023–2025).
- Manager, Department Slack workspace (2023–).

Skills

Programming Languages: Python, SQL, C++, Bash/Shell, LaTeX, Git

Data Science & ML: PyTorch, Scikit-learn, Pandas, NumPy, Matplotlib, Jupyter

Astronomical Software: Astropy, SExtractor, GALFIT, RVSNUpy, CausticSNUpy, SkyExplorer, DS9

SED fitting tools: CIGALE, ppxF, DenseBasis, EAZY

Languages: Korean (Native), English (Fluent, TOEFL: 104/120)