Junhan Kim

Curriculum Vitae

Department of Physics
Korea Advanced Institute of Science and Technology (KAIST)
291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea

junhan@kaist.ac.kr
http://junhan.kim/

RESEARCH INTERESTS

Radio Astronomy, Observational Cosmology, Millimeter-wave Astrophysics, Instrumentation
- Sunyaev-Zel'dovich effect: studies of intracluster medium (ICM) and circumgalactic medium (CGM)
- Line-intensity mapping: Carbon Monoxide (CO) Mapping Array Project (COMAP)
- Very-long-baseline interferometry (VLBI) study of supermassive black holes: Event Horizon Telescope (EHT)

EDUCATION

University of Arizona, Tucson, Arizona, USA 2013 – 2019
Ph.D. Astronomy and Astrophysics
Thesis: *Instruments and Statistical Tools to Study Supermassive Black Holes at Event Horizon Scales*
(Advisor: Prof. Daniel P. Marrone)

Seoul National University, Seoul, Korea 2006 – 2010
B.S. Electrical Engineering, Astronomy

EMPLOYMENT

Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea 2023 – Present
Department of Physics, College of Natural Sciences
Assistant Professor

California Institute of Technology, Pasadena, California, USA 2019 – 2023
Division of Physics, Mathematics and Astronomy
Postdoctoral Scholar Research Associate in Physics 2022 – 2023
Robert A. Millikan Postdoctoral Scholar in Physics (Faculty Sponsor: Prof. Sunil Golwala) 2019 – 2022

MTI Co., Ltd., Seoul, Korea 2010 – 2013
Manufacturing Engineering Team
Skilled Industrial Personnel (compulsory military service)

AWARDS AND HONORS

Outstanding Ph.D. Thesis Award (Instrumentation), Event Horizon Telescope Collaboration 2020

Robert A. Millikan Prize Postdoctoral Fellowship, California Institute of Technology 2019

Certificate of Special Congressional Recognition, U.S. Senator Martha McSally (Arizona) 2019

Technology Research Initiative Fund (TRIF) Imaging Fellowship, University of Arizona 2016

Antarctic Service Medal, National Science Foundation 2015

College of Science Graduate Fellowship, University of Arizona 2013 – 2014

Undergraduate Student Scholarship Program, Korea Foundation for Advanced Studies 2007 – 2010

Presidential Science Scholarship, Korea Science and Engineering Foundation 2006 – 2010

Awarded to the Event Horizon Telescope Collaboration:

Group Achievement Award (Royal Astronomical Society, 2021), **Nelson P. Jackson Aerospace Award** (National Space Club and Foundation, 2020), **Bruno Rossi Prize** (High Energy Astrophysics Division of the American Astronomical Society, 2020), **Einstein Medal** (Albert Einstein Society Berne, 2020), **Breakthrough Prize in Fundamental Physics** (Breakthrough Prize Foundation, 2019), **NSF Diamond Achievement Award** (National Science Foundation, 2019)

SCIENCE COLLABORATION MEMBERSHIPS

Cluster HEritage project with XMM-Newton Mass Assembly and Thermodynamics at the Endpoint of structure formation (CHEX-MATE)	2021 – Present
Carbon Monoxide (CO) Mapping Array Project (COMAP)	2019 – Present
Event Horizon Telescope (EHT)	2017 – Present

OBSERVATION AND INSTRUMENTATION EXPERIENCE

Owens Valley Radio Observatory (OVRO), California Institute of Technology
Carbon Monoxide (CO) Mapping Array Project (COMAP): *I designed and developed a water vapor radiometer that continuously measures the temporal variability of the atmosphere's water vapor content along the telescope's line of sight to better calibrate the COMAP science data.*

The South Pole Telescope (SPT), National Science Foundation (NSF) Amundsen-Scott South Pole Station
Event Horizon Telescope (EHT) VLBI receiver: *I developed a dual-frequency (230 and 345 GHz) receiver and control software to enable VLBI observations with the SPT, constructed and installed a coherent signal chain suitable for the South Pole environment, and directed the VLBI observation remotely during the EHT observing campaigns (April 2017, April 2018, April 2021, and March 2022). I spent six summer seasons at the South Pole between 2014 and 2022 to deploy and test the receiver system.*

The Submillimeter Telescope (SMT), Arizona Radio Observatory, University of Arizona
SMT 1.3 mm and 0.8 mm receivers: *I installed backend digitization and recording system for the VLBI observation, performed phase stability test, and led the EHT observations (2015, 2016, 2017, 2018).*

Subaru Telescope, National Astronomical Observatory of Japan
"Composition of Flora Asteroidal Family Comet-P/2010 A2" (Code: S11A-038, Suprime-Cam)

OBSERVING PROPOSALS

The Atacama Large Millimeter/submillimeter Array (ALMA)
Cycle 8, "Dynamics of the Centaurus A jet base on a light-day scale" (Co-I, Code: 2021.1.01515.V)
Cycle 8, "Unraveling the nature of the Cen A jet: From cm to mm on light-day scales" (Co-I, Code: 2021.1.00805.V)
Cycle 6, "Imaging the Shadow of a Supermassive Black Hole: Event Horizon Telescope Observations of Sgr A*" (Co-I, Code: 2018.1.01159.V)
Cycle 5, "The light-day scale structure of an extragalactic jet: 1 mm VLBI observations of Centaurus A" (Co-I, Code: 2017.1.01181.V)
Cycle 5, "Imaging the Black Hole Shadow and Jet Launching Region of M87" (Co-I, Code: 2017.1.00841.V)
Cycle 5, "Imaging the Shadow of a Supermassive Black Hole: Event Horizon Telescope Observations of Sgr A*" (Co-I, Code: 2017.1.00797.V)
Cycle 5, "Imaging the Global Accretion and Outflow of Sgr A*: 3 mm VLBI with GMVA+ALMA" (Co-I, Code: 2017.1.00795.V)

TEACHING EXPERIENCE AND STUDENT SUPERVISION

KAIST

Aron Lee (Graduate student)	Spring 2024 – Present
Jungeun Kim (Undergraduate student, 2024 Winter/Spring Semester URP Program)	Winter 2023 – Present

California Institute of Technology

Yuxuan Xie (Visiting graduate student, Shanghai Normal University)	Winter 2022 – Present
Adriana Gavidia (Graduate student in Physics)	Fall 2022 – Present
Sandra O'Neill (Undergraduate student)	Summer 2022 – Spring 2023

University of Arizona

Guest Lecturer, ASTR 296: Topics in Astronomical Research (Prof. Edward W. Olszewski)	Spring 2019
Teaching Assistant, ASTR 202: Life in the Universe	Fall 2018
Teaching Assistant, ASTR 202: Life in the Universe	Fall 2015

SERVICE

Referee, American Astronomical Society Journals: Astronomical Journal, Astrophysical Journal	2021 – Present
Subject Matter Expert Reviewer and Review Panelist, NASA Peer Reviews	2020 – 2023
Organizer, Astronomy Tea Talk, Caltech	2021 – 2023
Chambliss Astronomy Achievement Student Award Judge, 240th AAS Meeting	2022
Travel Grants Judge, Graduate & Professional Student Council (GPSC), University of Arizona	2017
Coordinator, Graduate Mentoring Program, Department of Astronomy, University of Arizona	2016
Graduate Student Council, Department of Astronomy, University of Arizona	2015 – 2017

SELECTED TALKS AND PRESENTATIONS

"Studying Circumgalactic and Intracluster Media with the Thermal Sunyaev–Zel'dovich Effect" — Jan. 2024
East Asian Young Astronomers Meeting 2024 (EAYAM2024), Chiang Mai, Thailand (invited)

"CHEX-MATE: CLUster Multi-Probes in Three Dimensions (CLUMP-3D)" — Dec. 2023
2023 Merging Cluster Workshop, Yonsei University, Seoul, Korea (invited)

"Experimental and Observational Astrophysics: Perspectives in Radio Astronomy" — Nov. 2023
Korea Advanced Institute of Science and Technology (KAIST) Physics Colloquium, Daejeon, Korea

"Hierarchical Phased-Array Antennas Coupled to Lumped-Element Aluminum KIDs: Band-Defining Millimeter/Submillimeter Filter Design and Characterization" (poster) — Jul. 2023
The 20th International Workshop on Low Temperature Detectors (LTD20), Daejeon, Korea

"A Water Vapor Radiometer for the CO Mapping Array Project (COMAP)" — Jan. 2023
USNC-URSI National Radio Science Meeting 2023, Boulder, CO (remote)

"Studying Baryonic Flow Across the Cosmic Scales Using Radio and Millimeter Wavelength Experiments" — Dec. 2022
Korea Advanced Institute of Science and Technology (KAIST) Physics Seminar, Daejeon, Korea

"Early Science Results from the CO Mapping Array Project (COMAP)" — Oct. 2022
Yonsei University Astronomy Colloquium, Seoul, Korea (remote)

"A Multi-Probe Analysis of the 3-D Shapes and Non-Thermal Pressure in the CHEX-MATE Galaxy Clusters" — Aug. 2022
IAUGA 2022 Focus Meeting 6 (Dynamics of the ICM: Radio and X-ray Observations and Theory), Busan, Korea

"Probing Hot Gas Components of the Circumgalactic Medium in Cosmological Simulations with the Thermal Sunyaev–Zel'dovich Effect" — Jun. 2022
The 240th American Astronomical Society Meeting, Pasadena, CA

"First M87 Event Horizon Telescope Results: Array and Instrumentation" — Jan. 2020
The 235th American Astronomical Society Meeting, Honolulu, HI

"Instruments and Statistical Tools to Study Supermassive Black Holes at Event Horizon Scales" — Jan. 2020
The 235th American Astronomical Society Meeting, Honolulu, HI

"Instruments and Statistical Tools to Study Supermassive Black Holes at Event Horizon Scales" — Nov. 2019
High Energy & Astro Particle (HEAP) Seminar, University of California, Los Angeles (UCLA)

"First Event Horizon Telescope Results: M87" — Apr. 2019
Kavli Institute for Cosmological Physics Friday Noon Seminar, University of Chicago, IL

"A VLBI receiving system for the South Pole Telescope" (poster) — Jun. 2018
SPIE Astronomical Telescopes + Instrumentation: Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX, Austin, TX

"Tilted beam measurement of VLBI receiver for the South Pole Telescope" (poster) — Mar. 2018
29th IEEE International Symposium on Space THz Technology (ISSTT), Pasadena, CA

"Incorporating the South Pole Telescope into the Event Horizon Telescope" — Jan. 2016
Korea Astronomy and Space Science Institute (KASI), Daejeon, Korea

SCIENCE COMMUNICATION AND OUTREACH

Selected Public Talks

"Exploring the Universe from the South Pole" Jun. 2021
Astronomy on Tap, Los Angeles, CA

"Seeing the Invisible: Studying Black Holes with the Event Horizon Telescope" Dec. 2019
MAUNAKEA SKIES Astronomy Talk Series, 'Imiloa Astronomy Center, Hilo, HI

"Studying Black Holes from the South Pole" Nov. 2019
American Institute of Aeronautics & Astronautics, Los Angeles - Las Vegas Section, Los Angeles, CA

"The Event Horizon Telescope: Studying Black Holes from the South Pole" Feb. 2018
Sunday Science Lecture, NSF Amundsen-Scott South Pole Station, Antarctica

Documentary Filming

Filmed South Pole deployments for documentaries, including Space's Deepest Secrets Season 2 (Discovery Science, April 2017), Anthony Bourdain: Parts Unknown (CNN, June 2017), How to See a Black Hole: The Universe's Greatest Mystery (BBC Four, April 2019), Black Holes: The Edge of All We Know (Peter Galison, March 2021).

Science Writing in Korean

Translated "Einstein's Monsters" by Chris Impey (2018): "별의 무덤을 본 사람들" (시공사, 2023).

Translated "The Last Stargazers" by Emily Levesque (2020): "오늘 밤은 별을 볼 수 없습니다" (시공사, 2021).

Wrote "남극점에서 본 우주" (Exploring the Universe from the South Pole, 시공사, 2019). *The book won the Asia Pacific Center for Theoretical Physics (APCTP)'s science book of the year 2020.*

Junhan Kim

List of Publications

First/Second Author Publications

9. "Hierarchical Phased-array Antennas Coupled to Al KIDs: a scalable architecture for multi-band mm/submm focal planes"
Martin, J.-M., **Kim, J.**, Defrance, F., Shu, S., Beyer, A. D., Day, P. K., Sayers, J., & Golwala, S. R
2024, *submitted to Journal of Low Temperature Physics*, arXiv:2401.17535
(https://arxiv.org/abs/2401.17535)

8. "CHEX-MATE: CLUster Multi-Probes in Three Dimensions (CLUMP-3D), I. Gas Analysis Method using X-ray and Sunyaev–Zel'dovich Effect Data"
Kim, J., Sayers, J., Sereno, M., Bartalucci, I., Chappuis, L., De Grandi, S., De Luca, F., De Petris, M., Donahue, M. E., Eckert, D., Ettori, S., Gaspari, M., Gastaldello, F., Gavazzi, R., Gavidia, A., Ghizzardi, S., Iqbal, A., Kay, S., Lovisari, L., Maughan, B. J., Mazzotta, P., Okabe, N., Pointecouteau, E., Pratt, G. W., Rossetti, M., & Umetsu, K.
2023, *accepted for publication in Astronomy & Astrophysics*, arXiv:2307.04794
(https://doi.org/10.1051/0004-6361/202347399)

7. "A Water Vapor Radiometer for the CO Mapping Array Project (COMAP)"
Kim, J., Cleary, K. A., O'Neill, S., Lamb, J. W., Woody, D. P., Harris, A. I., Dunne, D. A., Catha, M., Hobbs, R., Kocz, J., Pearson, T. J., Philip, L., Powell, T. W., & Readhead, A. C. S.
2023, *United States National Committee of URSI National Radio Science Meeting (USNC-URSI NRSM)*, 133-134.
(https://ieeexplore.ieee.org/document/10043109)

6. "Probing Hot Gas Components of the Circumgalactic Medium in Cosmological Simulations with the Thermal Sunyaev–Zel'dovich Effect"
Kim, J., Golwala, S., Bartlett, J. G., Amodeo, S., Battaglia, N., Benson, A. J., Hill, J. C., Hopkins, P. F., Hummels, C. B., Moser, E., & Orr, M. E.
2022, *The Astrophysical Journal*, 926, 179
(https://iopscience.iop.org/article/10.3847/1538-4357/ac4750)

5. "Tilted beam measurement of VLBI receiver for the South Pole Telescope"
Kim, J., & Marrone, D. P.
2018, *Proceedings of the 29th International Symposium on Space Terahertz Technology*, 159-163.
(http://www.nrao.edu/meetings/isstt/papers/2018/2018159163.pdf)

4. "A VLBI receiving system for the South Pole Telescope"
Kim, J., Marrone, D. P., Beaudoin, C., Carlstrom, J. E., Doeleman, S. S., Folkers, T. W., Forbes, D., Greer, C. H., Lauria, E. F., Massingill, K. D., Mayer, E., Nguyen, C. H., Reiland, G., SooHoo, J., Stark, A. A., Vertatschitsch, L., Weintroub, J., & Young, A.
2018, *Proceedings of SPIE*, 10708, 107082S
(http://doi.org/10.1117/12.2301005)

3. "The 1.4 mm core of Centaurus A: First VLBI results with the South Pole Telescope"
Kim, J., Marrone, D. P., Roy, A. L., Wagner, J., Asada, K., Beaudoin, C., Blanchard, J., Carlstrom, J. E., Chen, M.-T., Crawford, T. M., Crew, G. B., Doeleman, S. S., Fish, V. L., Greer, C. H., Gurwell, M. A., Henning, J. W., Inoue, M., Keisler, R., Krichbaum, T. P., Lu, R.-S., Muders, D., Müller, C., Nguyen, C. H., Ros, E., SooHoo, J., Tilanus, R. P. J., Titus, M., Vertatschitsch, L., Weintroub, J., & Zensus, J. A.
2018, *The Astrophysical Journal*, 861, 129
(http://iopscience.iop.org/article/10.3847/1538-4357/aac7c6)

2. "Bayesian Techniques for Comparing Time-dependent GRMHD Simulations to Variable Event Horizon Telescope Observations"
Kim, J., Marrone, D. P., Chan, C.-K., Medeiros, L., Özel., F., & Psaltis, D.
2016, *The Astrophysical Journal*, 832, 156
(http://iopscience.iop.org/article/10.3847/0004-637X/832/2/156)

1. "Multiband Optical Observation of the P/2010 A2 Dust Tail"
Kim, J., Ishiguro, M., Hanayama, H., Hasegawa, S., Usui, F., Yanagisawa, K., Sarugaku, Y., Watanabe, J., & Yoshida, M.
2012, *The Astrophysical Journal Letters*, 746, L11
(http://iopscience.iop.org/article/10.1088/2041-8205/746/1/L11)

Secondary Author Publications

56. "First Sagittarius A* Event Horizon Telescope Results. VIII. Physical Interpretation of the Polarized Ring"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2024, *The Astrophysical Journal Letters*, 964, L26
(https://iopscience.iop.org/article/10.3847/2041-8213/ad2df1)

55. "First Sagittarius A* Event Horizon Telescope Results. VII. Polarization of the Ring"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2024, *The Astrophysical Journal Letters*, 964, L25
(https://iopscience.iop.org/article/10.3847/2041-8213/ad2df0)

54. "Ordered magnetic fields around the 3C 84 central black hole"
Paraschos, G. F. et al., including **Kim, J.**, 2024, *Astronomy & Astrophysics*, 682, L3
(https://www.aanda.org/articles/aa/abs/2024/02/aa48308-23/aa48308-23.html)

53. "CHEX-MATE: Characterization of the intra-cluster medium temperature distribution"
Lovisari, L. et al., including **Kim, J.**, 2024, *Astronomy & Astrophysics*, 682, A45
(https://www.aanda.org/articles/aa/abs/2024/02/aa46651-23/aa46651-23.html)

52. "The persistent shadow of the supermassive black hole of M87. I. Observations, calibration, imaging, and analysis"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2024, *Astronomy & Astrophysics*, 681, A79
(https://www.aanda.org/articles/aa/abs/2024/01/aa47932-23/aa47932-23.html)

51. "Polarimetric Geometric Modeling for mm-VLBI Observations of Black Holes"
Roelofs, F. et al., including **Kim, J.**, 2023, *The Astrophysical Journal Letters*, 957, L21
(https://iopscience.iop.org/article/10.3847/2041-8213/acff6f)

50. "First M87 Event Horizon Telescope Results. IX. Detection of Near-horizon Circular Polarization"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2023, *The Astrophysical Journal Letters*, 957, L20
(https://iopscience.iop.org/article/10.3847/2041-8213/acff70)

49. "A Search for Pulsars around Sgr A* in the First Event Horizon Telescope Data Set"
Torne, P. et al., including **Kim, J.**, 2023, *The Astrophysical Journal*, 959, 14
(https://iopscience.iop.org/article/10.3847/1538-4357/acf4f2)

48. "COMAP Early Science: VIII. A Joint Stacking Analysis with eBOSS Quasars"
Dunne, D. A. et al., including **Kim, J.**, 2023, arXiv: 2304.09832
(https://arxiv.org/abs/2304.09832)

47. "Comparison of Polarized Radiative Transfer Codes used by the EHT Collaboration"
Prather, B. S. et al., including **Kim, J.**, 2023, *The Astrophysical Journal*, 950, 35
(https://iopscience.iop.org/article/10.3847/1538-4357/acc586)

46. "The Event Horizon Telescope Image of the Quasar NRAO 530"
Jorstad, S. et al., including **Kim, J.**, 2023, *The Astrophysical Journal*, 943, 170
(https://iopscience.iop.org/article/10.3847/1538-4357/acaea8)

45. "Resolving the Inner Parsec of the Blazar J1924–2914 with the Event Horizon Telescope"
Issaoun, S. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 934, 145
(https://iopscience.iop.org/article/10.3847/1538-4357/ac7a40)

44. "COMAP Early Science: V. Constraints and Forecasts at z$\sim$3"
Chung, D. T. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 933, 186
(https://iopscience.iop.org/article/10.3847/1538-4357/ac63c7)

43. "COMAP Early Science: IV. Power Spectrum Methodology and Results"
Ihle, H. T. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 933, 185
(https://iopscience.iop.org/article/10.3847/1538-4357/ac63c5)

42. "COMAP Early Science: III. CO Data Processing"
Foss, M. K. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 933, 184
(https://iopscience.iop.org/article/10.3847/1538-4357/ac63ca)

41. "COMAP Early Science: II. Pathfinder Instrument"
Lamb, J. W. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 933, 183
(https://iopscience.iop.org/article/10.3847/1538-4357/ac63c6)

40. "COMAP Early Science: I. Overview"
Cleary, K. A. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 933, 182
(https://iopscience.iop.org/article/10.3847/1538-4357/ac63cc)

39. "Synergies between the COMAP CO Line Intensity Mapping mission and a Lyα galaxy survey: How to probe the early universe with voxel based analysis of observational data"
Silva, M. B. et al., including **Kim, J.**, 2021, *submitted to Astronomy & Astrophysics*, arXiv:2111.05354
(https://arxiv.org/abs/2111.05354)

38. "Characterizing and Mitigating Intraday Variability: Reconstructing Source Structure in Accreting Black Holes with mm-VLBI"
Broderick, A. E. et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L21
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6584)

37. "A Universal Power-law Prescription for Variability from Synthetic Images of Black Hole Accretion Flows"
Georgiev, B. et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L20
(https://iopscience.iop.org/article/10.3847/2041-8213/ac65eb)

36. "Millimeter Light Curves of Sagittarius A* Observed during the 2017 Event Horizon Telescope Campaign"
Wielgus, M. et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L19
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6428)

35. "Selective Dynamical Imaging of Interferometric Data"
Farah, J. et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L18
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6615)

34. "First Sagittarius A* Event Horizon Telescope Results. VI. Testing the Black Hole Metric"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L17
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6756)

33. "First Sagittarius A* Event Horizon Telescope Results. V. Testing Astrophysical Models of the Galactic Center Black Hole"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L16
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6672)

32. "First Sagittarius A* Event Horizon Telescope Results. IV. Variability, Morphology, and Black Hole Mass"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L15
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6736)

31. "First Sagittarius A* Event Horizon Telescope Results. III. Imaging of the Galactic Center Supermassive Black Hole"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L14
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6429)

30. "First Sagittarius A* Event Horizon Telescope Results. II. EHT and Multiwavelength Observations, Data Processing, and Calibration"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L13
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6675)
29. "First Sagittarius A* Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole in the Center of the Milky Way"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2022, *The Astrophysical Journal Letters*, 930, L12
(https://iopscience.iop.org/article/10.3847/2041-8213/ac6674)
28. "Markov Chains for Horizons (MARCH). I. Identifying Biases in Fitting Theoretical Models to Event Horizon Telescope Observations"
Psaltis, D., Özel., F., Medeiros, L., Christian, P., **Kim, J.**, Chan, C.-K., Conway, L. J., Raithel, C. A., Marrone, D. P., & Lauer, T. R. 2022, *The Astrophysical Journal*, 928, 55
(https://iopscience.iop.org/article/10.3847/1538-4357/ac2c69)
27. "The Variability of the Black-Hole Image in M87 at the Dynamical Time Scale"
Satapathy, K. et al., including **Kim, J.**, 2022, *The Astrophysical Journal*, 925, 13
(https://iopscience.iop.org/article/10.3847/1538-4357/ac332e)
26. "Event Horizon Telescope observations of the jet launching and collimation in Centaurus A*"
Janssen, M. et al., including **Kim, J.**, 2021, *Nature Astronomy*, 5, 1017
(https://www.nature.com/articles/s41550-021-01417-w)
25. "Constraints on black-hole charges with the 2017 EHT observations of M87*"
Kocherlakota, P. et al., including **Kim, J.**, 2021, *Physical Review D*, 103, 104047
(https://journals.aps.org/prd/abstract/10.1103/PhysRevD.103.104047)
24. "The Polarized Image of a Synchrotron-emitting Ring of Gas Orbiting a Black Hole"
Narayan, R. et al., including **Kim, J.**, 2021, *The Astrophysical Journal*, 912, 35
(https://iopscience.iop.org/article/10.3847/1538-4357/abf117)
23. "Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign"
The Event Horizon Telescope Collaboration Multi-wavelength Science Working Group et al., including **Kim, J.**, 2021, *The Astrophysical Journal Letters*, 911, L11
(https://iopscience.iop.org/article/10.3847/2041-8213/abef71)
22. "Polarimetric Properties of Event Horizon Telescope Targets from ALMA"
Goddi, C. et al., including **Kim, J.**, 2021, *The Astrophysical Journal Letters*, 910, L14
(https://iopscience.iop.org/article/10.3847/2041-8213/abee6a)
21. "First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2021, *The Astrophysical Journal Letters*, 910, L13
(https://iopscience.iop.org/article/10.3847/2041-8213/abe4de)
20. "First M87 Event Horizon Telescope Results. VII. Polarization of the Ring"
The Event Horizon Telescope Collaboration et al., including **Kim, J.**, 2021, *The Astrophysical Journal Letters*, 910, L12
(https://iopscience.iop.org/article/10.3847/2041-8213/abe71d)
19. "Gravitational Test beyond the First Post-Newtonian Order with the Shadow of the M87 Black Hole"
Psaltis, D. et al., including **Kim, J.**, 2020, *Physical Review Letters*, 125, 141104
(https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.125.141104)
18. "Monitoring the Morphology of M87* in 2009–2017 with the Event Horizon Telescope"
Wielgus, M. et al., including **Kim, J.**, 2020, *The Astrophysical Journal*, 901, 67
(https://iopscience.iop.org/article/10.3847/1538-4357/abac0d)
17. "Event Horizon Telescope imaging of the archetypal blazar 3C 279 at an extreme 20 microarcsecond resolution"
Kim, J.-Y. et al., including **Kim, J.**, 2020, *Astronomy & Astrophysics*, 640, A69
(https://doi.org/10.1051/0004-6361/202037493)

16. "Verification of Radiative Transfer Schemes for the EHT"
Gold, R. et al., including **Kim, J.**, 2020, *The Astrophysical Journal*, 897, 148
(https://iopscience.iop.org/article/10.3847/1538-4357/ab96c6)

15. "SYMBA: An end-to-end VLBI synthetic data generation pipeline"
Roelofs, F. et al., including **Kim, J.**, 2019, *Astronomy & Astrophysics*, 636, A5
(https://doi.org/10.1051/0004-6361/201936622)

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