Sanghyuk Moon | Curriculum Vitae

Department of Astrophysical Sciences
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Employment

10/2022–*present* **Postdoctoral Research Associate**, Princeton University

Education

09/2016–08/2022 **Ph.D in Astronomy**, Seoul National University

03/2012–08/2016 **B.S. in Astronomy (minor: physics)**, Seoul National University

Honors

08/2022 **Best PhD Thesis Award**, SNU CNS

03/2017–02/2022 **Global Ph.D. Fellowship**, NRF Korea

Advising Experience

2022–2024 **Woorak Choi**, PhD student in Yonsei University, *Giant molecular clouds in the nuclear ring of barred galaxies*, co-advised with Prof. Aeree Chung and Dr. Chang-Goo Kim

Code Development Contributions

2023 `GRID-dendro`: a python implementation of the hierarchical structure identification algorithm of Mao et al. (2020)

2021–*present* Core developer of `TIGRESS` project (PI: Chang-Goo Kim)

2018–2019 James Poisson solver in Cartesian/cylindrical coordinates in `Athena++`

Publications

04/2023 **Moon, S.**, Kim, W.-T., Kim, C.-G., and Ostriker, E. C. (2023). Effects of Magnetic Fields on Gas Dynamics and Star Formation in Nuclear Rings. *The Astrophysical Journal, 946*, 114. https://doi.org/10.3847/1538-4357/acc250

01/2022 **Moon, S.**, Kim, W.-T., Kim, C.-G., and Ostriker, E. C. (2022). Effects of Varying Mass Inflows on Star Formation in Nuclear Rings of Barred Galaxies. *The Astrophysical Journal, 925*, 99. http://dx.doi.org/10.3847/1538-4357/ac3a7b

06/2021 **Moon, S.**, Kim, W.-T., Kim, C.-G., and Ostriker, E. C. (2021). Star Formation in Nuclear Rings with the TIGRESS Framework. *The Astrophysical Journal, 914*, 9. http://dx.doi.org/10.3847/1538-4357/abfa93

04/2019 **Moon, S.**, Kim, W.-T., and Ostriker, E. C. (2019). A Fast Poisson Solver of Second-order Accuracy for Isolated Systems in Three-dimensional Cartesian and Cylindrical Coordinates. *The Astrophysical Journal Supplement Series, 241*, 24. http://dx.doi.org/10.3847/1538-4365/ab09e9

09/2016 Kim, W.-T. and **Moon, S.** (2016). Equilibrium Sequences and Gravitational Instability of Rotating Isothermal Rings. *The Astrophysical Journal, 829*, 45. http://dx.doi.org/10.3847/0004-637X/829/1/45

Presentations

08/2024 **Invited Talk**, Star Formation Workshop, McMaster University, Hamilton, Canada

06/2024 **Seminar**, Kyung Hee Univ., Suwon, Korea

06/2024 **Seminar**, Chungnam Nat'l Univ., Daejeon, Korea

06/2024 **Seminar**, KASI, Daejeon, Korea

06/2024 **Seminar**, Yonsei Univ., Seoul, Korea

06/2024 **Seminar**, Seoul Nat'l Univ., Seoul, Korea

06/2024 **Seminar**, CCA Galaxy Group Meeting, New York, USA

05/2024 **Poster**, The Early Phase of Star Formation, Ringberg Castle, Germany

02/2024 **Seminar**, Space Telescope Science Institute, Baltimore, USA

02/2024 **Seminar**, Star Formation/ISM Rendezvous, Princeton, USA

12/2023 **Seminar**, Bahcall Lunch, Princeton, USA

06/2023 **Poster**, The Physics of Star Formation, Lyon, France

05/2023 **Invited Talk**, ATHENA++ Workshop 2023, New York, USA

04/2023 **Contributed Talk**, Galactic Center Workshop, Granada, Spain

08/2022 **Contributed Talk**, IAUS373, Busan, Korea (*e-talk*)

06/2022 **Poster**, AAS240, Pasadena, USA

04/2022 **Contributed Talk**, 2022 KAS Spring Meeting, Busan, Korea

01/2022 **Seminar**, TAG Special Seminar, KASI, Daejeon, Korea

01/2022 **Workshop**, Origins Workshop, Salt Lake City, USA (*virtual*)

11/2021 **Seminar**, Internal Group Meeting, Heidelberg, Germany (*virtual*)

11/2021 **Seminar**, CCA Galaxy Group Meeting, New York, USA (*virtual*)

10/2021 **Contributed Talk**, 2021 KAS Fall Meeting, Jeju, Korea

04/2021 **Contributed Talk**, 2021 KAS Spring Meeting (*virtual*)

01/2021 **Workshop**, 2nd Numerical Galaxy Formation Mini-Workshop, Seoul, Korea (*virtual*)

01/2020 **Workshop**, Numerical Galaxy Formation Mini-Workshop, Seoul, Korea

11/2019 **Seminar**, Star Formation/ISM Rendezvous, Princeton, USA

07/2019 **Invited Talk**, ASTRONUM 2019, Paris, France

04/2019 **Contributed Talk**, 2019 KAS Spring Meeting, Busan, Korea

03/2019 **Invited Talk**, ATHENA++ Workshop 2019, Las Vegas, USA

10/2016 **Poster**, 2016 KAS Fall Meeting, Daejeon, Korea

Competitively-Obtained Computing Time

2021 **National Supercomputing Center, KISTI, Korea** (1.4×10^7 core-hours)
Co-I: Effects of Magnetic Fields on Star Formation in Galactic Nuclear Rings and Formation of Circumnuclear Disks

2019 **National Supercomputing Center, KISTI, Korea** (2.0×10^7 core-hours)
Co-I: Understanding Star Formation in Centers of Disk Galaxies

Departmental Services and Teaching Experience

2021–2022 **Founder and Organizer**, SNU Astronomy Graduate Student Journal Club

2019 **Founding Member**, SNU Open Astronomy Innovation Group

2018–2019 **Founder and Organizer**, SNU Astronomy Graduate Student Colloquium (aka Golloquium)

2017 **Graduate Student Representative** in SNU Astronomy Department

2017 **Teaching Assistant**, Computational Astronomy

2016 **Teaching Assistant**, Introduction to Astrophysics

Academic References

- **Prof. Woong-Tae Kim**
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- **Prof. Eve C. Ostriker**
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August 26, 2024