

Curriculum Vitae

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Current Position

Sep 2018 – **Associate Research Scholar**
Department of Astrophysical Sciences, Princeton University

Employment

Sep 2017 – **Flatiron Research Fellow**
Aug 2018 Center for Computational Astrophysics, Flatiron Institute
Sep 2016 – **Associate Research Scholar**
Aug 2017 Department of Astrophysical Sciences, Princeton University
Sep 2013 – **Postdoctoral Research Associate**
Aug 2016 Department of Astrophysical Sciences, Princeton University
Oct 2011 – **CITA National Fellow**
Aug 2013 Department of Physics and Astronomy, University of Western Ontario, Canada
Mar 2011 – **BK21 Postdoctoral Research Fellow**
Aug 2011 Department of Physics and Astronomy, Seoul National University, Korea

Education

Mar 2005– **Ph. D in Astronomy**
Feb 2011 Department of Physics and Astronomy, Seoul National University, Korea
Mar 2001– **B. S in Astronomy**
Feb 2005 Department of Physics and Astronomy, Seoul National University, Korea

Teaching Experience

2018 **Erin Kado-Fong**, Graduate student at Princeton University
Semester project in Princeton University (with Eve Ostriker, Jeong-Gyu Kim)
2018 **Kareem El-Badly**, Graduate student at the UC Berkeley
Summer research via [Kavli Summer Program in Astrophysics](#) (with Eve Ostriker)
2018 **Aditi Viyajan**, Graduate student at the Indian Institute of Science
Summer research via [Kavli Summer Program in Astrophysics](#) (with Eve Ostriker, Lucia Armillotta, Miao Li)
2018 **Mohammad Refat**, Undergraduate student at the CUNY
Summer research via [AstroCom NYC](#)

- 2018 **Erin Flowers**, Graduate student at Princeton University
Semester project in Princeton University (with Eve Ostriker)
- 2017 – **Woorak Choi**, Graduate student at Yonsei University
Ph.D Thesis (with Aeree Chung)
- 2014 – 2015 **Roberta Raileanu**, Undergraduate student at Princeton University
Junior Thesis and Summer research (with Eve Ostriker)
- 2005 – 2010 **Teaching Assistant**, Seoul National University
Grading problem sets and leading problem-solving sessions for courses including *Solar System Astronomy and Lab.*, *Astronomical Observation & Lab. I & II*, *Astronomy and Lab.*, *Introduction to Astrophysics I & II*, *Stars and Stellar Systems*, *Man & the Universe*.
Designing and leading the Lab classes.
Teaching basics of programming languages including Fortran, C, and IDL.

Grants

- 2018–2021 **Co-I**, NASA TCAN (PI: Julian Borrill)

Professional Services

- 2017 – **Working Group Leader**, SMAUG* collaboration
SMAUG (Simulating Multi-scale Astrophysics to Understand Galaxies) is an international collaboration funded by the Simons Foundation, consisting 9 PIs from 6 institutions (CCA, Princeton, Harvard, UC Berkeley, Zurich, Heidelberg) and >40 members. The collaboration aims to build a fully predictive galaxy formation theory utilizing next-generation cosmological simulations with physics-based subgrid models for small-scale baryonic physics.
I'm co-leading the working group "Resolved ISM, Star Formation, and Stellar Feedback."
- 2017 **Review Panelist**, NSF Astronomy and Astrophysics Grant Program
- 2016 – 2017 **Organizer**, Star Formation/ISM Rendezvous Seminars at Princeton University
- 2012 – **Referee**, ApJ, ApJL, MNRAS

Recent Presentations

- 2018 **Participant**, PSI2 program: The Milky Way in the age of Gaia, Orsay, France
- 2018 **Contributed Talk**, THINKSHOP15, Potsdam, Germany
- 2018 **Colloquium**, Yonsei University, Seoul, Korea
- 2018 **Colloquium**, KASI, Daejeon, Korea
- 2018 **Mentor**, Kavli Summer Program in Astrophysics, New York, NY
- 2018 **Invited Talk**, MPPC Workshop, Princeton, NJ
- 2018 **Invited Talk**, CMB Foreground Workshop at CCA, New York, NY
- 2018 **Invited Talk**, Computational Galaxy Formation at Ringberg Castle, Germany
- 2017 **Invited Talk**, CMB Foreground Workshop at UCSD, San Diego, CA
- 2017 **Seminar**, CCA, Flatiron institute, New York, NY
- 2017 **Participant**, PSI2 program: The ISM beyond 3D, Orsay, France
- 2017 **Seminar**, Theoretical Astrophysics Group, Osaka, Japan

2017 **Seminar**, Astrophysics Seminar, UCSB, Santa Barbara, CA
 2017 **Colloquium**, UCSB, Santa Barbara, CA
 2016 **Colloquium**, Shanghai Jiao Tong University, Shanghai, China
 2016 **Invited Talk**, 7th East-Asia Numerical Astrophysics Meeting, Beijing, China
 2016 **Colloquium**, KASI, Daejeon, Korea
 2016 **Colloquium**, Seoul National University, Seoul, Korea
 2016 **Invited Talk**, How Galaxies Form Stars, Stockholm, Sweden
 2016 **Invited Talk**, Computational Galaxy Formation at Ringberg Castle, Germany

References

Woong-Tae Kim – wkim@astro.snu.ac.kr, +82-2-880-6769

Department of Physics and Astronomy, Seoul National University

Eve Ostriker – eco@astro.princeton.edu, +1-609-258-7240

Department of Astrophysical Sciences, Princeton University

Greg Bryan – gbryan@astro.columbia.edu, +1-212-854-6837

Department of Astronomy, Columbia University

Center for Computational Astrophysics, Flatiron Institute

Letters available upon request – James Stone (Princeton), Rachel Somerville (CCA/Rutgers),
 Snezana Stanimirović (Wisconsin), Amiel Sternberg (Tel Aviv/CCA), Shantanu Basu (Western)

Refereed Publications

1. C. E. Murray, S. Stanimirovic, W. M. Goss, C. Heiles, J. M. Dickey, B. Babler, and **Chang-Goo Kim**, June 2018, ArXiv e-prints, June 2018, *The 21-SPONGE HI Absorption Line Survey II: The temperature of Galactic HI*.
2. M. Gong, E. C. Ostriker, and **Chang-Goo Kim**, May 2018, ApJ, 858:16, May 2018, *The X_{CO} Conversion Factor from Galactic Multiphase ISM Simulations*.
3. **Chang-Goo Kim** and E. C. Ostriker, February 2018, ApJ, 853:173, February 2018, *Numerical Simulations of Multiphase Winds and Fountains from Star-forming Galactic Disks. I. Solar Neighborhood TIGRESS Model*.
4. **Chang-Goo Kim** and E. C. Ostriker, September 2017, ApJ, 846:133, September 2017, *Three-phase Interstellar Medium in Galaxies Resolving Evolution with Star Formation and Supernova Feedback (TIGRESS): Algorithms, Fiducial Model, and Convergence*.
5. C. E. Murray, S. Stanimirović, **Chang-Goo Kim**, E. C. Ostriker, R. R. Lindner, C. Heiles, J. M. Dickey, and B. Babler, March 2017, ApJ, 837:55, March 2017, *Recovering Interstellar Gas Properties with HI Spectral Lines: A Comparison between Synthetic Spectra and 21-SPONGE*.
6. C. Safraneck-Shrader, M. R. Krumholz, **Chang-Goo Kim**, E. C. Ostriker, R. I. Klein, S. Li, C. F. McKee, and J. M. Stone, February 2017, MNRAS, 465:885–905, February 2017, *Chemistry and radiative shielding in star-forming galactic discs*.
7. **Chang-Goo Kim**, E. C. Ostriker, and R. Raileanu, January 2017, ApJ, 834:25, January 2017, *Superbubbles in the Multiphase ISM and the Loading of Galactic Winds*.
8. **Chang-Goo Kim** and E. C. Ostriker, December 2015, ApJ, 815:67, December 2015, *Vertical Equilibrium, Energetics, and Star Formation Rates in Magnetized Galactic Disks Regulated by Momentum Feedback from Supernovae*.
9. **Chang-Goo Kim** and E. C. Ostriker, April 2015, ApJ, 802:99, April 2015, *Momentum Injection by Supernovae in the Interstellar Medium*.
10. **Chang-Goo Kim**, E. C. Ostriker, and W.-T. Kim, May 2014, ApJ, 786:64, May 2014, *Three-dimensional Hydrodynamic Simulations of Multiphase Galactic Disks with Star Formation Feedback. II. Synthetic H I 21 cm Line Observations*.
11. **Chang-Goo Kim** and S. Basu, December 2013, ApJ, 778:88, December 2013, *Long-term Evolution of Decaying Magnetohydrodynamic Turbulence in the Multiphase Interstellar Medium*.
12. **Chang-Goo Kim**, E. C. Ostriker, and W.-T. Kim, October 2013, ApJ, 776:1, October 2013, *Three-dimensional Hydrodynamic Simulations of Multiphase Galactic Disks with Star Formation Feedback. I. Regulation of Star Formation Rates*.
13. **Chang-Goo Kim**, W.-T. Kim, and E. C. Ostriker, December 2011, ApJ, 743:25, December 2011, *Regulation of Star Formation Rates in Multiphase Galactic Disks: Numerical Tests of the Thermal/Dynamical Equilibrium Model*.
14. **Chang-Goo Kim**, W.-T. Kim, and E. C. Ostriker, September 2010, ApJ, 720:1454–1471, September 2010, *Galactic Spiral Shocks with Thermal Instability in Vertically Stratified Galactic Disks*.

15. **Chang-Goo Kim**, W.-T. Kim, and E. C. Ostriker, July 2008, ApJ, 681:1148–1162, July 2008, *Galactic Spiral Shocks with Thermal Instability*.
16. **Chang-Goo Kim**, W.-T. Kim, and E. C. Ostriker, September 2006, ApJL, 649:L13–L16, September 2006, *Interstellar Turbulence Driving by Galactic Spiral Shocks*.

Conference Proceedings

1. **Chang-Goo Kim** and E. C. Ostriker, 2016, In P. Jablonka, P. André, and F. van der Tak, editors, *From Interstellar Clouds to Star-Forming Galaxies: Universal Processes?*, volume 315 of *IAU Symposium*, pages 38–41, *Feedback Regulated Turbulence, Magnetic Fields, and Star Formation Rates in Galactic Disks*.
2. **Chang-Goo Kim**, E. C. Ostriker, and W.-T. Kim, March 2015, Highlights of Astronomy, 16:609–610, March 2015, *Numerical modeling of multiphase, turbulent galactic disks with star formation feedback*.