PHILIP MANSFIELD

Website and updated CV: phil-mansfield.github.io
mansfield@uchicago.edu
5640 S. Ellis Ave, Chicago, IL 60637 ⋄ ERC 416

EDUCATION

The University of Chicago *2014 - 2020 (Expected)*
Ph.D, Department of Astronomy & Astrophysics
Thesis Advisor: *Andrey Kravtsov*
Thesis Topic: *The Joint Likelihood of the Local Planes of Satellites*

Carnegie Mellon University *2010 - 2014*
BS, Department of Physics
Graduated with University Honors

FELLOWSHIPS AND AWARDS

James Cronin Graduate Student Fellowship *2019-2020*
William Rainey Harper Dissertation Fellowship *2019-2020*
McCormick Fellowship *2014-2016*
Richard E. Cutkosky Award *2014*

PUBLICATIONS

1. **Mansfield, P.**, & Kravtsov, A. V., *The Three Causes of Low-Mass Assembly Bias*, 2019, in review, arXiv:1902.00030
2. Diemer, B., **Mansfield, P.**, Kravtsov, A. V., & More, S., *The Splashback Radius of Halos from Particle Dynamics. II. Dependence on Mass, Accretion Rate, Redshift, and Cosmology*, 2017, ApJ, 843, 140
3. **Mansfield, P.**, Kravtsov, A. V., & Diemer, B., *Splashback Shells of Cold Dark Matter Halos*, 2017, ApJ, 841, 34
4. Trac, H., Cen, R., & **Mansfield, P.**, *SCORCH I: The Galaxy-Halo Connection in the First Billion Years*, 2015, ApJ, 813, 54
5. Matty, M., **Mansfield, P.**, Hallinen, K., Albert, J., Swendsen, R., *Cluster simulations of multi-spin Potts models*, 2015, JSTAT, 1, 1026

PUBLICATIONS IN PREPARATION

These are publications which will be submitted in the next 1-2 months.

1. **Neuzil, M.**, **Mansfield, P.**, Kravtsov, A., *The Sheet of Giants: Unusual Properties of the Local Volume*
2. **Mansfield, P.**, Avestruz, C., *The Systematic Uncertainty in Dark Matter Halo Properties*
3. **Mansfield, P.**, *Minnow I: A Compression Algorithm for Galaxy Survey Catalogues and Simulation Data*

TEACHING & MENTORING

Research mentor for Maria Neuzil *2018 - Present*
University of St. Thomas undergrad

KICP Space Explorers Instructor, University of Chicago *2016 - 2017*
Designed and taught year-long high school thermal physics and engineering class. Students proposed, designed, and launched experiments on a weather balloon. I gave a talk on this class during the 2018 national meeting of the National Science Teachers Association.

TA, University of Chicago *2014 - 2015*
The Physics of Stars, Stellar Astronomy and Astrophysics, Origin of the Universe and How We Know

Physics Upper Class Course Center Tutor, Carnegie Mellon University *2013-2014*
Helped Junior and Senior undergraduates with upperclass coursework.

TA, Carnegie Mellon University *2011 - 2012*
Principles of Computing (three times), Parallel and Sequential Data Structures and Algorithms

OUTREACH

Office of Special Programs Tutor, University of Chicago *2017 - 2019*
Weekly tutoring for low-income, minority, and first-generation high school students on classes ranging from AP Computer Science to Introductory Geometry. 2-5 hours per week.

Yerkes Institute Designer and Instructor, University of Chicago *2016 - 2018*
Designed over 50 hours of novel lab material and taught over 200 hours of labs for six high school-level winter and summer science camps. I was the head designer for two of these camps.
— Self-Driving Cars *2018*
— City of Tomorrow *2018*
— Demystifying Everyday Electronics *2017*
— The Physics of Toys (lead designer) *2017*
— Up and Down (lead designer) *2016*
— Spy vs. Spy *2016*

Astronomy Conversations Presenter, Adler Planetarium *2014 - 2016*
Monthly presentations on astronomy to planetarium visitors.

PUBLIC CODES

Minnow, (2019), `github.com/phil-mansfield/minnow`
A compression algorithm for galaxy survey catalogs and simulation data
Shellfish, (2017), `github.com/phil-mansfield/shellfish`
An algorithm for finding the splashback edge of dark matter halos in simulations
Gotetra, (2015) `github.com/phil-mansfield/gotetra`
Tesselation-based visualization software for N-body simulations

CONFERENCE TALKS AND SEMINARS

Cosmology Seminar, University of California, Berkeley *2019*
Cosmology Seminar, KIPAC, Stanford University *2019*
Halo and Galaxy Assembly Bias, Tsung Dao Lee Institute, Shanghai *2019*
National Science Teachers Association 2018 National Conference, Atlanta, GA *2018*
Quantifying and Understanding the Galaxy–Halo Connection, KITP, University of California *2017*
Astronomy & Astrophysics Chalk Talk, University of Chicago *2016*