

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. **Neuzil, M.***, **Mansfield, P.**, Kravtsov, A., *The Sheet of Giants: Unusual Properties of the Local Volume*, in review, arxiv:1912.04307
2. **Mansfield, P.**, & Kravtsov, A. V., *The Three Causes of Low-Mass Assembly Bias*, 2019, in review, arXiv:1902.00030
3. 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
4. **Mansfield, P.**, Kravtsov, A. V., & Diemer, B., *Splashback Shells of Cold Dark Matter Halos*, 2017, ApJ, 841, 34
5. Trac, H., Cen, R., & **Mansfield, P.**, *SCORCH I: The Galaxy-Halo Connection in the First Billion Years*, 2015, ApJ, 813, 54
6. 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. **Mansfield, P.**, Avestruz, C., *The Systematic Uncertainty in Dark Matter Halo Properties*
2. **Mansfield, P.**, *Minnow I: A Compression Algorithm for Galaxy Survey Catalogues and Simulation Data*

TEACHING & MENTORING

*I am the primary research mentor for this student.

Research mentor for Maria Neuzil <i>University of St. Thomas undergrad</i>	2018 - Present
KICP Space Explorers Instructor, University of Chicago <i>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.</i>	2016 - 2017
TA, University of Chicago <i>The Physics of Stars, Stellar Astronomy and Astrophysics, Origin of the Universe and How We Know</i>	2014 - 2015
Physics Upper Class Course Center Tutor, Carnegie Mellon University <i>Helped Junior and Senior undergraduates with upperclass coursework.</i>	2013-2014
TA, Carnegie Mellon University <i>Principles of Computing (three times), Parallel and Sequential Data Structures and Algorithms</i>	2011 - 2012

OUTREACH

Office of Special Programs Tutor, University of Chicago <i>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.</i>	2017 - 2019
Yerkes Institute Designer and Instructor, University of Chicago <i>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.</i>	2016 - 2018
— 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 <i>Monthly presentations on astronomy to planetarium visitors.</i>	2014 - 2016

PUBLIC CODES

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

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