

Drummond B. Fielding

OFFICE ADDRESS

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EDUCATION

Ph.D., Astrophysics 2018
University of California, Berkeley
Advisor: Eliot Quataert
Thesis: Interplay of Galactic Winds and Circumgalactic Media

Master of Arts, Astrophysics 2014
University of California, Berkeley

Bachelors of Arts, Physics & *Bachelors of Arts*, Mathematics 2012
Johns Hopkins University

RESEARCH INTERESTS

- Astrophysical fluid dynamics using computational techniques.
- The circumgalactic medium; modeling its evolution and phase structure to establish its important role in galaxy formation and to improve interpretation of observations.
- Galactic winds; identifying their dominant driving mechanisms, and understanding their impact on the surrounding medium.

AWARDS & HONORS

National Science Foundation Graduate Research Fellow 2014 - 2017 (awarded 2012)
Berkeley Fellow for Graduate Study 2012 - 2014
Outstanding Graduate Student Instructor Award 2013 - 2014
Donald E. Kerr Award for Outstanding Physics Undergraduate (JHU) 2012

GRANTS

APS-IUSSTF Physics Ph.D. Student & Postdoc Visitation Program 2016
U.S.-India Travel Grant to Indian Institute of Science with Prof. Prateek Sharma

Hubble Space Telescope cycle 25 Archival Research Grant 2017
Towards an Understanding of the Origin of OVI in the Circumgalactic Medium
PI: Michael McCourt, Co-Is: Drummond Fielding, Peng Oh, Crystal Martin

NSF Extreme Science and Engineering Discovery Environment (XSEDE) 2016-2018
TG-AST160020 — 775,784 SUs on COMET 2016
TG-AST160020 — 1,732,096 SUs on COMET 2017
The Physics of Supernova Feedback: Global 3D Simulations of Galactic Disks
PI: Davide Martizzi, Co-Is: Drummond Fielding, Eliot Quataert

NSF Extreme Science and Engineering Discovery Environment (XSEDE) 2016-2017
TG-AST140083 — 1,159,956 SUs on Stampede
Conduction, Convection, and Thermal Instability in Hot Halos
PI: Michael McCourt, Co-I: Drummond Fielding

PROFESSIONAL SERVICE & TEACHING

Referee: ApJL, MNRAS since 2016
Graduate Student Instructor: Astronomy C12 ‘The Planets’, Astronomy 7A 2012, 2013

SCIENCE OUTREACH

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| Taught a series of astronomy classes to 2nd and 3rd grade students North Oakland Community Charter School | 2017 |
| Undergrad mentor UC Berkeley Astronomy | 2016-2017 |
| UC Berkeley Astronomy Department Public Liason | 2015 |
| <i>East Bay Astronomical Society</i> Public Lecture Chabot Space and Science Center | 2014 |
| <i>The Berkeley Compass Project</i> Summer Evening Instructor | 2013 |

PUBLICATIONS

FIRST AUTHOR

- Drummond Fielding**, Eliot Quataert, and Davide Martizzi. *Clustered Supernovae Drive Powerful Galactic Winds After Super-Bubble Breakout*. *ArXiv e-prints*, page arXiv:1807.08758, July 2018
- Drummond Fielding**, Eliot Quataert, Davide Martizzi, and Claude-André Faucher-Giguère. *How supernovae launch galactic winds*. *MNRAS*, 470:L39–L43, September 2017
- Drummond Fielding**, Eliot Quataert, Michael McCourt, and Todd A. Thompson. *The impact of star formation feedback on the circumgalactic medium*. *MNRAS*, 466:3810–3826, April 2017
- Drummond Fielding**, Christopher McKee, Aristotle Socrates, Andrew Cunningham, and Richard Klein. *The turbulent origin of spin-orbit misalignment in planetary systems*. *MNRAS*, 450:3306–3318, July 2015

CONTRIBUTING AUTHOR

- Davide Martizzi, Eliot Quataert, Claude-Andre Faucher-Giguere, and **Drummond Fielding**. Simulations of Jet Heating in Galaxy Clusters: Successes and Numerical Challenges. *ArXiv e-prints*, page arXiv:1805.06461, May 2018
- Jonathan Stern, Claude-André Faucher-Giguère, Joseph F. Hennawi, Zachary Hafen, Sean D. Johnson, and **Drummond Fielding**. *Does circumgalactic OVI trace low-pressure gas beyond the accretion shock? Clues from HI and low-ion absorption, line kinematics, and dust extinction*. *ArXiv e-prints*, page arXiv:1803.05446, March 2018
- Davide Martizzi, **Drummond Fielding**, Claude-André Faucher-Giguère, and Eliot Quataert. *Supernova feedback in a local vertically stratified medium: interstellar turbulence and galactic winds*. *MNRAS*, 459:2311–2326, July 2016
- Stella S. R. Offner, Michael M. Dunham, Katherine I. Lee, Héctor G. Arce, and **Drummond Fielding**. *The Turbulent Origin of Outflow and Spin Misalignment in Multiple Star Systems*. *ApJ*, 827:L11, August 2016
- Joshua E. Schlieder, Sébastien Lépine, Emily Rice, Michal Simon, **Drummond Fielding**, and Rachael Tomasino. *The Na 8200 Å Doublet as an Age Indicator in Low-mass Stars*. *AJ*, 143:114, May 2012

SELECT PRESENTATIONS

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| Lunch Talk, Center for Comp. Astro. (11/2017) | Astronomy Department Colloquium, Indian Institute of Science (10/2016) |
| TAPIR Seminar, Caltech (11/2017) | Lunch Talk U.C. Berkeley (10/2016) |
| Hernquist group meeting, Harvard CfA (10/2017) | Astronomy Seminar U.C. Santa Barbara (9/2016) |
| SFIR Seminar, Princeton University (10/2017) | Contributed Talk, Crossing the Rubicon (9/2016) |
| FLASH Seminar, U.C. Santa Cruz (10/2017) | Contributed Talk, U.C. Santa Cruz Galaxy Workshop (8/2016) |
| Astronomy Seminar, University of Washington (10/2017) | Galaxy Group Seminar, University of Michigan (3/2016) |
| Contributed Talk, UCSC Galaxy Workshop (8/2017) | Lunch Talk U.C. Berkeley (12/2013) |
| IMPS seminar, U.C. Santa Cruz (5/2017) | |
| Astronomy Seminar, Raman Research Institute (12/2016) | |