

Michael S. Petersen

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EDUCATION & AWARDS	Doctor of Philosophy, Astronomy 2018 <i>The non-linear dynamics of barred galaxy evolution in ΛCDM</i> Advisors: Martin D. Weinberg, Neal Katz Master of Science, Astronomy 2012 UMass Amherst, Amherst, MA Mary Dailey Irvine Travel Grant 2016, 2017, 2018 Massachusetts Space Grant 2010, 2011, 2015 Bachelor of Arts, Astronomy & Physics, Music 2010 Colgate University, Hamilton, NY Astronomy & Physics Honors
RESEARCH	Design, implement, execute, and analyze precision numerical models to understand dynamical evolution in disk galaxies.
PUBLICATIONS	<u>Refereed Publications</u> Petersen, M.S. , Katz, N. , & Weinberg, M.D. <i>The Dynamical Response of Dark Matter to Galaxy Evolution Affects Direct-Detection Experiments</i> , Phys Rev D, 2016 Petersen, M. S. , Weinberg, M. D., and Katz, N. <i>Dark matter trapping by stellar bars: the shadow bar</i> MNRAS, 463:19521967. Bary, Jeffrey S. & Petersen, M. S. <i>Anomalous Accretion Activity and the Spotted Nature of the DQ Tau Binary System</i> MNRAS, 463:19521967. <u>Publications In Preparation</u> Petersen, M. S. , Weinberg, M. D., and Katz, N. <i>Using commensurabilities and orbit structure to understand barred galaxy evolution</i> Petersen, M. S. , Weinberg, M. D., and Katz, N. <i>Using angular momentum and torque to understand barred galaxy evolution</i> Petersen, M. S. , Weinberg, M. D., and Katz, N. <i>Using harmonic decomposition to understand barred galaxy evolution</i> Petersen, M. S. , Weinberg, M. D., and Katz, N. <i>Understanding trends in bar formation and evolution in varied n-body models</i> Petersen, M. S. , Weinberg, M. D., and Katz, N. <i>Using the bar to drive radial mixing and bulge formation in a Milky Way-like galaxy</i>

SELECTED MEETINGS & CONFERENCES	AAS 231, January 2018 , Washington, D.C. Dissertation: <i>A Modern Picture of Barred Galaxy Dynamics</i>
	APS April Meeting, January 2017 , Washington, D.C. Contributed Talk: <i>The Dynamical Response of Dark Matter to Galaxy Evolution Affects Direct-Detection Experiments</i>
	What Shapes Galaxies?, April 2016 , STScI, Baltimore, MD Contributed Poster: <i>Dark Matter Trapping by Stellar Bars: The Shadow Bar</i>
SELECTED OBSERVATIONAL EXPERIENCE	Large Millimeter Telescope , PI (Early Science 2,3,4 2014-2016), 60 hours <i>Circumstellar Disk Masses in IC 348</i> Using AzTEC, a 1.1 mm camera.
	KPNO 0.9m , PI (2016-2017), 5 nights; Co-I (2014-2018), 30 nights <i>Deep Imaging of Nearby Low Surface Brightness Disks</i> <i>Ionization States of Green Pea Galaxies</i> Using the Half-Degree Imager (HDI).
TEACHING, MENTORING, & OUTREACH	Five College Astronomy Teaching Assistant, 2014-2018 Assisted Professor James Lowenthal, Dr. Anne Jaskot, and Dr. Kim Ward-Duong in Observational Techniques I/II, a two-semester observing course involving a yearly observational component at Kitt Peak National Observatory.
	Continuing Education Head Instructor, 2013-2018 Developed a two-week intensive continuing education class for the University of Massachusetts, then reshaped the class into a program involving many graduate students.
	Research Mentor, 2016-2017 Mentored and advised Amelia Vinciguerra (UMass 2017) in her senior undergraduate research project in collaboration with Martin Weinberg.
	Python Instructor, 2014-present Provided Python instruction and support to the undergraduate Five College summer undergraduate researchers.
PROFESSIONAL LINKS	Research Webpage https://people.umass.edu/mpete0/ Github Code Repository https://github.com/michael-petersen
REFERENCES	Martin D. Weinberg Primary dissertation advisor. Neal Katz Co-dissertation advisor.