

Undergraduate Honors Research Projects

Effects of Anisotropic Viscosity on the Evolution of AGN Bubbles in Galaxy Clusters, Matthew Kingsland (Karen Yang, Richard Mushotzky), 2018.

Asteroids Under Stress: Constraining Strength and Evolution Through Spin-Up Simulations, Andrew Leisner (Derek Richardson), 2018.

Finding Escaper YSOs in the Serpens Cloud Complex, Roxana Popescu (Isabelle Joncour, Lee Mundy), 2018.

Tidal Stresses in the 2029 Close Encounter with Earth of Proposed APEX Mission Target 99942 Apophis, Joseph DeMartini (Derek Richardson), 2018.

Removing Terrestrial Alteration from Meteorite Sample GRA 06128/9 Via Chemical Leaching, Anna Engle (Jessica Sunshine), 2018.

Assessing the Quality of Grid-Based Gravitational Fields, Mark Hubbert (Doug Hamilton), 2018.

Exploring Shear-free Ringlet Formation with Direction Simulations of Saturn's A and B Rings, Yuxi (Lucy) Lu (Derek Richardson), 2018.

Prospects for Ground-Based Detection and Follow-Up of TESS-Discovered Planets, Matthew Varakian (Drake Deming), 2018.

Suppression of AGN-Driven Turbulence by Magnetic Fields in a Magnetohydrodynamic Model of the Intracluster Medium, Christopher Bambic (Cole Miller, Chris Reynolds), 2017.

Primordial Black Holes as Dark Matter Candidates: A Numerical Model of Primordial Black Hole Binary Formation and Evolution, Victor Meszaros (Massimo Ricotti), 2017.

Sky Localization, Electromagnetic Follow-up, and Cosmology for Third Generation Gravitational Wave Detectors, Shreya Anand (Leo Singer, Cole Miller), 2017.

Characterizing Hot Jupiters with Secondary Eclipses: A Statistical Study Using Pixel-Level Decorrelation, Emily Garhart (Drake Deming), 2017.

Heating in Intracluster Gas via Gravity Waves, Xiao (Jennifer) Liang (Chris Reynolds), 2016.

Confirming Variability in the Secondary Eclipse Depth of the Super-Earth 55 Cnc e, Patrick Tamburo (Drake Deming), 2016.

Tracing Exotic Photon Trajectories around Black Holes, Allison Bostrom (Cole Miller, Chris Reynolds), 2015.

Tracing Dense Gas in NGC 1333, Kenneth Koester (Lee Mundy), 2015.

Library of Tools for Manipulating 3-D Grids Including the Production of Numerically Determined Gravitational Fields, Harry Arnold (Doug Hamilton), 2015.

Testing and Exploration of the Rotating Neutron Star Code, Justin Tervalá (Cole Miller), 2015.

Assessing Flat Field Quality at the University of Maryland Observatory, David Blankenship, (Andrew Harris) 2014.

Global Variations in Lunar Highlands Composition, Lily Mannoia, (Jessica Sunshine) 2014.

The Formation of the Kepler-36 Planetary System, Thomas Rimlinger, (Doug Hamilton and Derek Richardson) 2014.

Formation Scenarios and Evolution of the Milky Way's Old Globular Cluster Population, Harley Katz, (Massimo Ricotti) 2013.

Characterizing Star Formation in the Perseus Cloud, Lauren Bittle, (Lee Mundy) 2013.

The Modeling and Observation of Exoplanetary Transits, Nolan Matthews, (Drake Deming) 2013.

Numerical Studies of Stochastically Perturbed Accretion Discs, Philip Cowperthwaite, (Chris Reynolds) 2013.

Numerical Modeling of Rotational Fission of Contact Binary Asteroids, Brett M. Morris, (Derek Richardson) 2012.

Neutron Star Radii: Theoretical Tests of Frequency-Dependent Light curve Analysis, Bryan Holler, (Cole Miller) 2012.

Tracking Energetic Particle Trajectories in Simulations of Collisionless Magnetic Reconnection, Kalman Knizhnik, (Massimo Ricotti) 2011.

Tilting Uranus—Toward a Collisionless Model, Lauren Woolsey, (Douglas P. Hamilton) 2011.

Modes of Two Planet Migration via Planetesimal Scattering using HNBODY, James Keane, (Douglas P. Hamilton) 2011

Measurements of the Mass and Radius of the Neutron Star 4U 1636-53 Using Millisecond Brightness Oscillations during Thermonuclear X-ray Bursts, Ryan Abrahams, (Cole Miller) 2010.

Mass and Radius Constraints of 4U 1728-34, Brian Prager, (Cole Miller) 2010.

Mass Segregation around Supermassive Black Holes, Ashley King, (Cole Miller) 2009.

Resonant Origins for Pluto's High Inclination, Curran Muhlberger, (Douglas P. Hamilton) 2008.

Calibration of the Baryonic Tully-Fisher Relation Using Gas Dominated Galaxies, David V. Stark, (Stacy McGaugh) 2008.

Dynamics of Uranian Dust Sheets, Alexandra Lockwood, (Douglas P. Hamilton) 2007.

Searching for Low Surface Brightness Galaxies, Daniel Schwartz, (Stacy McGaugh) 2007.

A Chandra X-ray Study of NGC 5775, Diana Hanson, (Chris Reynolds) 2007.

CCD Photometry of the Globular Cluster ESO452-SC11, Alexis Cornish (Suchitra Balachandran) 2006

Numerical Experiments with Rubble Piles: Critical Breakup Densities for Oblate Spheroids, Pradeep Elankumaran (Douglas Hamilton) 2006

Magnetorotational Instability: Theory and Experiment in Accretion Disk Dynamics, Barbara Brawn (Eve Ostriker) 2006

Dust Transfer Between Earth and Mars, Paul Ries (Douglas Hamilton) 2005

Optical Monitoring of Blazars MRK421 and PKS1406-076, Jessica Ennis (Christopher Reynolds) 2004

A Computational Study of Core Rotation in Globular Clusters, Mia Bovill (Cole Miller) 2004

The Orbital Evolution of the Galilean Satellites, Kaveh Pahlevan (Douglas Hamilton) 2004

An Analytical Approach to the Distribution of Oort Cloud-Originating Comets, Jeremy Miller (Douglas Hamilton) 2004

Orbital Dynamics of Asteroidal Dust, Patrick Taylor (Douglas Hamilton) 2003

Interaction of a Planar Shock Wave with Cloud Material in the Interstellar Medium, Eric Schindhelm (James Stone, Douglas Hamilton, Cole Miller) 2003

Determination of the Density of Jupiter's Moon, Amalthea, Robyn Sanderson (Douglas Hamilton) 2003

Undergraduate Comprehension of Cosmology by Gender and Informal Education, Elizabeth Miller (Grace Deming) 2002

A Superstar Cluster in NGC 3690, Stacy Teng (Lee Mundy) 2002

Dynamical Evolution of the Jovian Satellite System, Amada Proctor (Douglas Hamilton) 2002

Optical and Far-Ultraviolet Morphology of Galaxies, Melanie Freed (Sylvain Veilleux) 2001

Cosmological Constraints from Rotation Curves of Low Surface Brightness Galaxies, Michael Barker (Stacy McGaugh) 2001

Origins of the Terrestrial Planets: Numerical Simulations to Explore Planetary Formation, Amir Caspi (Douglas Hamilton) 2000

Seeking Evidence of Frame Dragging in Active Galactic Nuclei, Sheri Calvo (Wan Chen) 1999

Emission Line Observations of Comet Hale-Bopp, Nathaniel Doane (Michael A'Hearn) 1999

Dusty Rings around Saturn, Linda Harden (Douglas Hamilton) 1998

Modeling of CO Line Emission from Circumstellar Disks, Stephanie McLaughlin (Lee Mundy) 1998

An Infrared Study of Saturn's Rings during the Ring Plane Crossing of 1995, Lori Lanier (Douglas Hamilton) 1997