Undergraduate Honors Research Projects

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.


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


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

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 Hig Inclination, Curran Muhlberger, (Douglas P. Hamilton) 2008.


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

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 McGauth) 2001


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