

Holly A. Sheets

9519 48th Place
College Park, MD 20740
Cell Phone: (570) 768-1807
Email: hsheets@umd.edu



EDUCATION:

- **Ph.D., Astronomy**, University of Maryland, **expected 2016**
Thesis Advisor: Dr. Drake Deming
- **M.S., Astronomy**, University of Maryland, **December 2010**
- **M.S., Physics**, Dartmouth College, **June 2006**
- **B.S., Physics**: with Classical Studies minor, Gettysburg College, **summa cum laude May 2003**
Senior Thesis: "BVRI Photometry of the Spectroscopic Eclipsing Binary V1061 Cygni"
Advisor: Dr. Laurence Marschall

RESEARCH EXPERIENCE:

University of Maryland:

- Jan 2012 – present: Research Assistant
Advisor: Drake Deming
 - Used the *Kepler* candidate table at the Exoplanet Archive to select sub-Saturn candidates that had greatest potential to show a reflected-light secondary eclipse
 - Used archival *Kepler* data and IDL to stack eclipses of multiple planet candidates with similar radii to determine average eclipse depth
 - Determined average albedo of sub-Saturn candidates from the average eclipse depth
- Jan 2011 – Dec 2011: Research Assistant (Jan – Jul) and Faculty Research Assistant (Aug – Dec)
Advisor: Jessica Sunshine
 - Calibrated data of the Lunar Poles from the Deep Impact spacecraft using IDL
 - Developed several IDL codes to estimate and remove the Moon's thermal emission from the reflected light
 - Created temperature and band depth maps to study the 3 micron OH/H₂O feature
- Jun 2008 – Dec 2010: Research Assistant
Advisor: Alberto Bolatto
 - Reduced optical spectra of O and B stars with IR excess from La Silla's NTT using IRAF/Pyraf and MATLAB
 - Classified the stars based on these spectra
 - Used MATLAB and IDL to estimate color temperature and masses of the dust around the stars

Dartmouth College:

- June 2004 – May 2006: Research Assistant
Advisor: John Thorstensen
 - 59 nights of photometric and spectroscopic observations of cataclysmic variables (CVs) with 1.3m and 2.4m optical telescopes at MDM Observatory
 - Used Python, PPGPLOT, and IRAF/Pyraf to determine orbital periods of the CVs
 - Aided in the instruction of one undergraduate student in the use of the 1.3m telescope

Gettysburg College:

- August 2002 – May 2003: Senior Thesis
Advisor: Laurence Marschall
 - Observed the eclipsing binary V1061 Cygni with the Gettysburg College Observatory's 16" telescope
 - Reduced the data using IRAF
 - Built BVRI light curves of the system with the MIRA photometry program

- Determined the system's properties with BinaryMaker3
- June 2001 – August 2001: Student Research Assistant
Advisor: Timothy Good
 - Sparked plasma in a vacuum chamber
 - Diagnosed plasma with a Langmuir probe
 - Calibrated a tunable laser using laser-induced fluorescence

TEACHING EXPERIENCE:

University of Maryland:

- Lecturer, Summer Session I 2015: ASTR100/101: Introduction to Astronomy/General Astronomy (for Non-Science Majors)
Responsibilities: setting lecture and lab schedule, preparing and presenting lectures, writing quizzes, homeworks, and exams
- Teaching Assistant for the following courses:
Spring 2009, Spring 2011, Spring 2012, Spring 2013: ASTR121: Introductory Astrophysics for Science Majors II: Stars and Beyond
Spring 2010: ASTR220: Collisions in Space: The Threat of Asteroid Impacts (for Non-Science Majors)
Fall 2008, Fall 2009: ASTR310: Observational Astronomy (Majors only)
Spring 2008, Fall 2012: ASTR100: Introduction to Astronomy (for Non-Science Majors)
Fall 2007: ASTR101: General Astronomy (for Non-Science Majors)
Responsibilities: leading discussion sections and labs, exam review, grading labs, homework and exams, selecting labs (ASTR121), developing labs using MATLAB (ASTR121 Spring 2011-2013), leading night observing sessions with the Department's 20", 14", and 7" telescopes (ASTR121 Spring 2011-2013), assisting students with data collection on the Department's 14" and 20" telescopes (ASTR 310), assisting students with IDL and MATLAB codes to reduce data (ASTR 310)
Supervisors: Derek Richardson (Spring 2011 - 2013), Melissa Hayes-Gehrke (Spring 2008,2010), Chris Reynolds (Spring 2009), Alberto Bolatto (Fall 2008, 2009), Lee Mundy (Fall 2012), Grace Deming (Fall 2007)

Dartmouth College:

- Public Observing, Spring 2004, Winter 2006
Responsibilities: sunspot observing and nighttime observing with an 8" telescope open to the public
- Teaching Assistant, Winter 2004, Summer 2004, Fall 2005: ASTR2/3: Exploring the Universe
Responsibilities: leading labs (ASTR3) using 4.5" Dobsonian reflectors, a Meade 8" reflector, a Clark 9" refractor, and a 7' SRT radio telescope, grading labs (ASTR3) and exams (ASTR2/3)
Supervisors: Gary Wegner (2004), John Thorstensen (2005)

Gettysburg College:

- Teaching Assistant, Fall 2001 through Spring 2003: ASTR101/102: Solar System Astronomy/Stellar Astronomy
Responsibilities: assisting instructor with student questions and technical difficulties in lab, leading homework help sessions
Supervisors: Jacquelynne Milingo (homework help), Dick Cooper (lab), Ian Clarke (lab)

OTHER EXPERIENCE:

Gettysburg College:

- Jun 2002 – August 2002: Student Assistant
Supervisor: Jacquelynne Milingo
 - Edited the operation manual for the Gettysburg College Observatory (GCO) 16" reflector
 - Updated the GCO website using MaximDL and Netscape
 - Reduced images in IRAF

REFEREED PUBLICATIONS:

"Statistical Eclipses of Close-in *Kepler* Sub-Saturns," (2014) **Holly A. Sheets** and Drake Deming, *The Astrophysical Journal*, **794**, 133-141.

"Dusty Main Sequence O/B Stars in the Small Magellanic Cloud," (2013) **Holly A. Sheets**, Alberto D. Bolatto, Jacco Th. van Loon, Karin Sandstrom, Joshua D. Simon, Joana M. Oliveira, and Rodolfo Barbá, *The Astrophysical Journal*, **771**, 111-140.

"Rapid Oscillations in Cataclysmic Variables. XVII. 1RXS J070407+262501," (2011) Joseph Patterson, John R. Thorstensen, **Holly A. Sheets**, Jonathan Kemp, Laura Vican, Helena Uthas, and 7 coauthors, *Publications of the Astronomical Society of the Pacific*, **123**, 130-137.

"Spectroscopy of Nine Cataclysmic Variable Stars," (2007) **Holly A. Sheets**, John R. Thorstensen, Christopher J. Peters, Ann B. Kapusta, and Cynthia J. Taylor, *Publications of the Astronomical Society of the Pacific*, **119**, 494-507.

"The Eclipsing Binary V1061 Cygni: Confronting Stellar Evolution Models for Active and Inactive Solar-Type Stars," (2006) G. Torres, C. H. Lacy, L. A. Marschall, **H. A. Sheets**, and J. A. Mader, *The Astrophysical Journal*, **640**, 1018-1038.

"A Spectroscopic Study of HL Canis Majoris," (2005) **H. A. Sheets** and J. R. Thorstensen, *Publications of the Astronomical Society of the Pacific*, **117**, 741-744.

CONTRIBUTED TALKS:

"A Statistical Characterization of Reflection and Refraction in the Atmospheres of sub-Saturn *Kepler* Planet Candidates," DPS 47th Annual Meeting, National Harbor, MD, 11/12/15.

"Statistical Eclipses of *Kepler* Neptune-like Candidates," AAS 225th Meeting, Seattle, WA, 01/05/15.

"Statistical Eclipse of Close-in *Kepler* Sub-Saturns," DPS 46th Annual Meeting, Tucson, AZ, 11/10/14.

HONORS/AWARDS:

Phi Beta Kappa (2002)

Miller-Mara Senior Prize (Outstanding Senior Physics Major, 2003)

NASA Delaware Valley Space Grant Scholarship (2002-2003)

Eta Sigma Phi (Classics Honor Society, 2002)

Julius Eno Junior Prize (Outstanding Junior Physics Major, 2001)

Alpha Lambda Delta (2000)

Samuel Garver Greek Prize (2000)

SKILLS:

Literate in IDL, IRAF/Pyraf, Python, FORTRAN, C, MATLAB, Latex/AAS_{TeX}, PPGPLOT, MS Office, Vim, Mac OSX, Linux