

J. Drew Hogg

Department of Astronomy
Physical Sciences Complex
University of Maryland
College Park, MD 20742-2421

Phone: (303) 818-2325
Fax: (301) 314-9067
Email: jdrewhogg@drewhogg.com

EDUCATION

Ph.D. Astronomy, University of Maryland, expected August 2018.

– *Thesis*: "Accretion Physics Through the Lens of the Observer: Connecting Fundamental Theory with Variability from Black Holes"

M.S. Astronomy, University of Maryland, 2014.

B.A. Physics, University of Colorado, 2012.

B.A., *magna cum laude*, Astronomy, University of Colorado, 2012.

RESEARCH EXPERIENCE

Graduate Research Assistant August 2012 - Present
Department of Astronomy, College Park, MD

- Currently using large MHD simulations to characterize the dynamical features, large-scale magnetic field evolution (e.g. the dynamo), and temporal properties of accretion disks around black holes. The broader aim is to connect these phenomena to observable variability signatures, which can then serve as a probe of the accretion physics.
- Leading follow-ups efforts of one of the strongest recoiling AGN candidates discovered to date. Using high-resolution, multiband imaging from the *Hubble Space Telescope*, *Chandra X-ray Observatory*, and the *Atacama Large Millimeter/submillimeter Array*, in conjunction with multi-epoch optical spectroscopic monitoring.

Research Assistant June 2012 - August 2012
Department of Physics, Boulder, CO

- Helped develop an analytic prescription for ultrarelativistic nucleus-nucleus collisions in five-dimensional, asymptotic AdS space.

Undergraduate Research Assistant May 2010 - May 2012
Center for Astrophysics and Space Astronomy, Boulder, CO

- Analyzed *XMM-Newton* X-ray spectra of two unusually obscured AGNs.
- Led efforts to take the first optical spectra of 17 newly detected AGN by NASA's *Swift* Burst Alert Telescope, which served as my undergraduate honors thesis. Role included planning project, applying for funding, taking spectra on the 3.5-meter telescope at the Apache Point Observatory, and conducting analysis of optical and X-ray spectra.

Undergraduate Research Assistant January 2010-May 2010
Laboratory for Atmospheric and Space Physics, Boulder, CO

- Studied the energy deposition of particles from the solar wind in Earth's polar cap regions using updated atmospheric models.

HONORS, AWARDS, & LEADERSHIP

NASA Earth & Space Science Fellowship, September 2016 - Present
Andrew S. Wilson Prize for Excellence in Research, *University of Maryland Astronomy Department*, October 2017
Department of Astronomy Graduate Student President, Spring 2015 - Spring 2016
Joint Space-Science Institute Graduate Fellowship, August 2014 - August 2015
Dean's Fellowship, *University of Maryland*, January 2014 - August 2014
Philip E. Angerhofer Outstanding Teaching Assistant, *University of Maryland Astronomy Department*, November 2013
Distinguished Teaching Assistant, *University of Maryland Center for Teaching Excellence*, May 2013
Chambliss Student Achievement Award, *American Astronomical Society*, 2012
Chambliss Student Achievement Award, *American Astronomical Society*, 2011
Wesley Scholarship, *University of Colorado Astrophysical and Planetary Science Department*, 2011

PEER REVIEWED PUBLICATIONS

- **Hogg, J. D.**, Reynolds, C. S. "The Influence of Accretion Disk Thickness on the Large-Scale Magnetic Dynamo", 2018, *ApJ*, 861, 1
- **Hogg, J. D.**, Reynolds, C. S. "The Dynamics of Truncated Black Hole Accretion Disks. II. Magnetohydrodynamic Case", 2018, *ApJ*, 854, 1
- Koss, M. + 22 co-authors inc. **Hogg, J. D.**, "BAT AGN Spectroscopic Survey I: Spectral Measurements, Derived Quantities, and AGN Demographics", 2017, 850, 74
- **Hogg, J. D.**, Reynolds, C. S. "The Dynamics of Truncated Black Hole Accretion Disks. I. Viscous Hydrodynamic Case", 2017, *ApJ*, 843, 80
- **Hogg, J. D.**, Reynolds, C. S. "Testing the Propagating Fluctuations Model with a Long, Global Accretion Disk Simulation", 2016, *ApJ*, 826, 40,
- Romatschke, P., **Hogg, J.D.**, "Pre-Equilibrium Radial Flow from Central Shock-Wave Collisions in AdS5", 2013, *JHEP*, 04, 048
- **Hogg, J. D.**, Winter, L.M., Mushotzky, R., Reynolds, C.S., and Trippe, M.L., "The Swift BAT Survey Detects Two Possible Low-Redshift EROs: NVSS 193013 + 341047 and IRAS 05218 – 1212", 2012, *ApJ*, 752, 153

INVITED TALKS

- "Accretion Disk Variability and the Large-Scale Magnetic Dynamo," Los Alamos National Lab, Los Alamos, New Mexico, March 29, 2018.
- "Learning How Monsters Feed: Unraveling the Physics of Black Hole Accretion," Drexel University Physics & Astronomy Colloquium, Drexel University, Philadelphia, Pennsylvania, December 1, 2016.
- "Understanding Accretion Disk Variability From First Principles," The Multi-Scale Physics of Massive Black Hole Formation, Fueling and Feedback TCAN Seminar, The University of Maryland, College park, Maryland, May 10 – 11, 2016.
- "Accretion Disks Never Forget: An MHD Test of the Propagating Fluctuations Model," The Magneto-Rotational Instability Confronts Observations, Ringberg Castle, Bavaria, Germany, April 13 – 17, 2015.

**CONTRIBUTED
TALKS / PRESEN-
TATIONS**

- "Disorder in the Disk: The Influence of Accretion Disk Thickness on the Large-scale Magnetic Dynamo," American Astronomical Society 231st Meeting, Washington, DC, January 7, 2018 (Poster).
- "Black Hole Variability in MHD: A Numerical Test of the Propagating Fluctuations Model," High Energy Astrophysics Division 16th Meeting, Sun Valley, ID, August 20, 2018 (Poster).
- "2MASS J00423991 + 3017515: An Interacting Oddball or a Recoiling AGN?," American Astronomical Society 230th Meeting, Austin, TX, June 7, 2017 (Poster).
- "You're Cut Off: HD and MHD Simulations of Truncated Accretion Disks," American Astronomical Society 229th Meeting, Grapevine, TX, January 4, 2017 (Poster).
- "Driving of Accretion Disk Variability by the Disk Dynamo," High Energy Astrophysics Division 15th Meeting, Naples, FL, April 4, 2016 (Poster).
- "Driving of Accretion Disk Variability by the Disk Dynamo," American Astronomical Society 227th Meeting, Kissimmee, FL, January 4, 2016 (Poster).
- "Temporal Variability in a Long, Global Accretion Disk Simulation," American Astronomical Society 225th Meeting, Seattle, WA, January 7, 2015 (Poster).
- "Propagating Fluctuations In A Global Accretion Disk Simulation," American Astronomical Society 223th Meeting, Washington, DC, January 6, 2014 (Poster).
- "First Optical Spectra of Newly Detected Swift BAT AGN," American Astronomical Society 219th Meeting, Austin, TX, January 8, 2012 (Poster).
- "First Optical Spectra of Newly Detected Swift BAT AGN," American Astronomical Society 218th Meeting, Boston, MA, May 22, 2011 (Poster).
- "Unusual Swift-BAT Detected AGN," American Astronomical Society 217th Meeting, Seattle, WA, January 9, 2011 (Poster).

**SUCCESSFUL
PROPOSALS
AS PI**

- *Atacama Large Millimeter/submillimeter Array (ALMA)*, Cycle 5, 3 hours
- *Hubble Space Telescope*, Cycle 24, 3 orbits with WFC3 + 8 ksec w/ *Chandra*
- *Discovery Channel Telescope*, Q4 2017, 2 half-nights
- MARCC/*Bluecrab* Supercomputer, Q3 2017, 2 MSU quarterly allocation
- *Discovery Channel Telescope*, Q3 2017, 1 half-night
- *Discovery Channel Telescope*, Q2 2017, 2 half-nights
- *Discovery Channel Telescope*, Q4 2016, 2 half-nights
- MARCC/*Bluecrab* Supercomputer, Q4 2015 - Q2 2017, 400 kSU quarterly allocation
- *Apache Point Observatory ARC Telescope*, Q4 2011, 1 half-night
- *Apache Point Observatory ARC Telescope*, Q3 2011, 2 half-nights
- *Apache Point Observatory ARC Telescope*, Q4 2010, 3 half-nights