

**Alicia Nicole Aarnio, PhD**  
**George Ellery Hale Postdoctoral Fellow of Solar and Space Physics**  
**University of Colorado Boulder**

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EDUCATION	<b>Vanderbilt University</b> Ph.D., Physics, May 2010. Advisor: K. G. Stassun Thesis: The Role of Magnetic Fields in the Pre-Main Sequence Evolution of Solar-type Stars  <b>Smith College</b> , B.A., Physics and Astronomy, May 2005. Advisor: S. Edwards	
AREAS OF INTEREST	<i>solar/stellar connection, solar and stellar flares and coronal mass ejections, pre-main sequence stellar evolution, intermediate to high-mass PMS (Herbig AeBe) stars, stellar angular momentum evolution, radiative transfer, computational astrophysics, circum-stellar disks, stellar magnetic fields, stellar kinematics, stellar X-ray emission</i>	
APPOINTMENTS AND VISITING POSITIONS	<b>University of Colorado Boulder</b> George Ellery Hale Postdoctoral Fellow of Solar and Space Physics, November 2016-present  <b>University of Michigan</b> Assistant Research Scientist, September 2013-October 2016  <b>University of Michigan</b> Research fellow, September 2010-August 2013. Advisor: John Monnier  <b>University of St. Andrews</b> Visiting postdoctoral scholar, June 2010-August 2010. Advisor: Moira Jardine  <b>Smith College</b> NSF Research Experiences for Undergraduates student. Summers 2004 & 2005: Carnegie DTM, Advisor: Alycia Weinberger. Summers 2002 & 2003: NASA Goddard RHESSI team, Advisor: Edward Schmah.	
GRANTS	Science P.I., <b>NSF AST-1311698</b> , Astronomy and Astrophysics Grant, \$416,582, term: 4/2014-4/2017. Co-P.I.: John Monnier.  Co-author, <b>NSF AST-0808072</b> , Astronomy and Astrophysics Grant, \$190,142. P.I.: Keivan Stassun.  P.I., <b>Vanderbilt University Graduate School Dissertation Enhancement Grant</b> , \$2,000, 2008	
SELECTED PUBLICATIONS	<b>Aarnio, A. N.</b> , Monnier, J. D., Harries, T. J., Kraus, S., Calvet, N., Acreman, D., and Che, X. "High cadence, high resolution spectroscopic observations of Herbig stars HD 98922 and V1295 Aquila" 2016, <i>submitted to the ApJ</i>  James, D. J., <b>Aarnio, A. N.</b> , Richert, A. J. W., Santos, N. C., Melo, C. and Bouvier, J. "Fundamental stellar parameters for selected T-Tauri stars in the Chamaeleon and Rho Ophiuchus star-forming regions" 2016, MNRAS, 459, 1363  <b>Aarnio, A. N.</b> , Monnier, J. D., Harries, T. J. and Acreman, D. M. "What do weak magnetic fields mean for magnetospheric accretion in Herbig AeBe star+disk systems?" 2014, <i>Proceedings of the IAU Symposium 302, Magnetic fields throughout stellar evolution</i> , 302, 80	

**Aarnio, A. N.**, Matt, S. P. and Stassun, K. G. “Mass Loss in Pre-Main Sequence Stars via Coronal Mass Ejections and Implications for Angular Momentum Loss” 2012, *ApJ*, 760 9

**Aarnio, A. N.**, Llama, J., Jardine, M. and Gregory, S. G. “Mechanical Equilibrium of Hot, Large-Scale Magnetic Loops on T Tauri Stars” 2012, *MNRAS*, 421 1797

**Aarnio, A. N.**, Stassun, K. G., Hughes, J. W. and McGregor, S. “Statistical Correlations of Solar Flares and CMEs” 2011, *Solar Physics*, 268 195

**Aarnio, A. N.**, Stassun, K. G. and Matt, S. P. “A Search for Star-Disk Interaction Among the Strongest X-ray Flaring Stars in the Orion Nebula Cluster” 2010, *ApJ*, 717 93

**Aarnio, A. N.**, Weinberger, A. J., Stassun, K. G., Mamajek, E. E., and James, D. J. “A Survey for a Coeval, Comoving Group Associated With HD 141569” 2008, *AJ*, 136 2483

INVITED TALKS     *Invited Review: Observational constraints of prominences and flares in stars*, Session E 2.2, COSPAR 2016, Istanbul, Turkey

*Winds, Outflow, and Accretion: Mass Transit in Young Stellar Objects*, Michigan State University Astronomy & Astrophysics Seminar, 24 September, 2014

*The Sun as a Star*, [Saturday Morning Physics](#), University of Michigan, November 2012  
Video: <http://lecb.physics.lsa.umich.edu/CWIS/browser.php?ResourceId=4373>

*The Sun in its Youth*, [The Faint Early Sun: Paradox, Problem, or Distraction?](#) Space Telescope Science Institute, April 2012

*Optical Spectroscopy of Herbig AeBe Stars: Line Morphologies and Radiative Transfer Modeling*, MIT Brown Bag Lunch series, November 2011

*A Solar Flare Flux-CME Mass Relationship: Towards Assessing Angular Momentum Loss in Young Solar Analogs*, University of Exeter, August 2010

*A Search for Star-Disk Interaction Among the Strongest X-ray Flaring Stars in the Orion Nebula Cluster*, [St. Andrews University](#), May 12 2009

SCHOLARSHIP:     *Star Formation 2016*, NN-MM August 2016, University of Exeter, Exeter, UK

CONFERENCES

ATTENDED,

ORGANIZED

*Inclusive Astronomy 2015*, 17-19 June 2015, Vanderbilt University, Nashville, USA

*The Solar-Stellar Connection: Influence of Stars on their Astrospheres*. 18-19 May 2015, Michigan Institute for Research in Astrophysics (MIRA). Organized workshop, an effort to bring together researchers from Michigan Astronomy, Physics, and Climate & Space Departments to explore various aspects of the solar-stellar connection used in our research. From the workshop, a collaborative funding proposal was submitted, and a publication is in preparation.

*Piotr Decowski memorial symposium*, 1 November 2014, Smith College, Northampton, USA

*2014 CHARA meeting: year ten science review*, 24-26 March 2014, UM, Ann Arbor, USA

*Herbig Ae/Be stars: The missing link in star formation*, 7-11 April 2014, ESO, Santiago, Chile

*Magnetic fields throughout stellar evolution*, 20-25 August 2013, IAU Symposium 302, Biarritz, France

*Nature of prominences and their role in space weather*, 10-16 June 2013, IAU Symposium 300, Paris, France

*17th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun*, 24-29 June 2012, Barcelona, Spain

*The faint early Sun: paradox, problem, or distraction?*, 9-10 April 2012, STScI Workshop, Baltimore, USA

*Origins of Solar Systems*, 17-22 July 2011, Gordon Research Conference, South Hadley, USA

PROFESSIONAL  
LEADERSHIP

**American Astronomical Society**

Co-author, signatory, and coordinating committee member on proposal to form WGDA: Working Group on Disability and Accessibility. Submitted to AAS Executive Committee 9th November, 2015

Co-author, signatory on proposal to allow junior members to serve on committees and panels. Proposal submitted to AAS Executive Committee October 2015.

**University of Michigan, Michigan Institute for Research in Astrophysics (MIRA)**

*The Solar-Stellar Connection: Influence of Stars on their Astrospheres*. Organized workshop, an effort to bring together researchers from Michigan Astronomy, Physics, and Climate & Space Departments to explore various aspects of the solar-stellar connection used in our research. From the workshop, a collaborative funding proposal was submitted, and a publication is in preparation.

**University of Michigan Astronomy Department**

Colloquium committee co-chair, 2014-2015 academic year. Worked with fellow committee co-chair to ensure colloquium speakers represented a diverse subset of our field in terms of science (evenly representing the major sub-fields at UM: extragalactic, stars/formation, and high energy astrophysics) and identity. This was the first year in available department record (going back ~10 years) in which we both had Black astronomers give colloquia, and were able to reach gender parity.

TEACHING AND  
ADVISING

**University of Michigan**

Developed and augmented course material, administered lectures upon teaching faculty member's absence.

A115, Undergraduate introduction to astrobiology. Wrote and gave lecture on solar system explorers, substantially updating extant course material to include most recent missions (e.g., Curiosity, Dawn, New Horizons). February 2015.

A220, Undergraduate current topics in astronomical research. Led class discussion on research done by that weeks' colloquium speaker. February 2015.

A501, Graduate instrumentation. Wrote and delivered lecture on double échelle spectrographs, in-littrow instrument setup, and operation/data reduction for the MIKE spectrograph, specifically. October 2013

Students advised

PhD Committee member, Rachael Roettenbacher. Anticipated graduation: December, 2015

**University of Michigan Undergraduate Research Opportunity Program:** Advised UM student C. Whalen in construction of spectral energy distributions. Spring semester, 2011.

### **Central Academy, Ann Arbor**

Advised local High School student Asha Omar in her senior Capstone independent research project, mentoring during her transition to college. December 2012-May 2014.

### **Vanderbilt University**

Laboratory instruction

Astronomy teaching assistant for introductory course lab section; course for both astronomy majors and non-majors. Supervisor: Dr. Robert Knop. 2005-2006 academic year.

### **Vanderbilt Physics REU Program**

Summer student co-mentor with Professor Keivan Stassun. Students: Natalia Alzate (FIT) and India Anderson (SU). Summer 2007. Project: construct light curves in order to identify eclipsing binary systems in Orion's belt region and Rosette Nebula.

**Fisk-Vanderbilt Masters-Ph.D. Bridge Program** is a diversity initiative, PI: Keivan Stassun. My role was to help direct students' M. S. thesis work.

Co-mentor, Erica Morgan, February 2009-August 2010. Thesis topic: tracing solar energetic particle events at Earth back to the active regions whence they originated.

Co-mentor, Sharina Haynes, January 2009-August 2010. Thesis topic: comparison of contemporaneous narrow-band H $\alpha$  and COUP X-ray light curves.

Science advisor/collaborator, Teresa Monsue, September 2014-present. Thesis topic: observational connections between helioseismology, solar flares, and coronal mass ejections.

### **Smith College**

Astronomy laboratory teaching assistant, telescopes course for both non-majors and majors (introductory astronomy course pre-requisite). Supervisor: M. Thacher. Fall semester 2002-Spring 2005.

## **OUTREACH**

### **Detroit Observatory**

Beginning in 2014 with funds from NSF AST-1311698, interactive exhibits constructed for visitors to the DO. These exhibits designed with astronomical instruction in mind, adding science complementary to the DO's present historical focus and scope of public outreach activities. Both permanent and seasonally rotating exhibits made for the public to interact with; the permanent displays focus on fundamental astronomical concepts while seasonal or rotating exhibits focus on astronomical news or supplement the focus of open house observing during a given time period.

### **University of Michigan Department of Astronomy**

Presenter, MIRA talk series: Conversations on Equity and Inclusion in Astronomy. In October 2015, participated in a panel presenting the highlights and major outcomes of Inclusive Astronomy 2015.

Presenter, Wolverine Express. The Wolverine Express travels to underserved high schools in Southeast Michigan; UM faculty talk to students about their career paths and advise students about the college application process.

Speaker, UM Saturday Morning Physics (SMP). The SMP program hosts public lectures given by scientists from UM and the academic community. The lectures are webcast and also aired on the local public-access MChannel.

Panelist, WISE (Women in Science and Engineering) Graduate Womens' luncheon. Discussed applying for postdoctoral fellowships, life after graduate school. Fall, 2011.

Speaker, Central Academy of Ann Arbor career day. Event for college-bound high school juniors and seniors. Spring, 2011.

### **Vanderbilt Dyer Observatory**

Volunteer: Bluebird on the Mountain, middle TN teacher workshop, summer space camp, kids' nights. 2006-2010. Set up/take-down of materials, guided attendees through flight simulator usage, bottle rocket construction, radio antenna setup for Jovian observations.

Speaker, kids' night, August 2009. Gave hour long presentation on the Moon with interactive exercises; event targets children ages 6-15.

### **Fisk-Vanderbilt NASA Roadshow**

Planetarium assistant, May 2006-February 2007. Taught students astronomical concepts, answered questions, assisted in operation of the traveling planetarium. Delivered a hands-on learning experience to students in underserved school districts.

### **Vanderbilt Summer Academy**

Assistant Instructor, astronomy class, June, 2007. Week-long summer course for 7th and 8th grade students; curriculum similar to Dyer summer space camp.

### **TWISTER**

TN Women in Science, Technology, Engineering and Research is an organization with the goal of making high school aged females aware of potential careers in the STEM disciplines. Volunteer, February 2009, presenter, February 2010.

### **Smith College Department of Astronomy**

Astronomy open house assistant, 2002-2005 academic years. Set up telescopes, described object being viewed, answered guests' questions.