

CURRICULUM VITAE

SAMUEL M. FACTOR

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EDUCATION

The University of Texas at Austin, Austin, TX
Ph.D., Astronomy (Advisor: Dr. Adam Kraus) **2020 (expected)**
Wesleyan University, Middletown, CT
M.A., Astronomy (Advisor: Dr. A. Meredith Hughes), GPA: 4.0 **2015**
Thesis Title: *ALMA Observations of Molecular Gas Emission from a Protoplanetary Disk in the Orion Nebula*
B.A., Physics and Computer Science, GPA: 3.93 **2014**

HONORS, AWARDS & CERTIFICATIONS

ΦBK, Wesleyan University **Spring, 2014**
Barry M. Goldwater Scholarship, Honorable Mention **2013**
Karl Van Dyke Prize, Wesleyan University Physics Department **2013**
Dean's List, Wesleyan University **2010 – 2014**
NESCAC All Sportsmanship Team, New England Small College Athletic Conference **2014**
Stewards' All Academic Team, Eastern College Athletic Conference **2012 – 2014**
NESCAC All Academic Team, New England Small College Athletic Conference **2012 – 2014**
Open Water Diver, PADI **2013 – Present**
Wilderness First Responder, Wilderness Medical Associates **2013 – 2015**

EXPERIENCE

Graduate Student Researcher (Advisor: Dr. Adam Kraus) **2015 – Present**
Astronomy Department, The University of Texas at Austin, Austin, TX

- Developing a new pipeline for applying interferometric analysis techniques to archival HST imaging to look for companions at or below the diffraction limit.

Teaching Assistant AST 301: Introduction to Astronomy **Fall 2015**
Astronomy Department, The University of Texas at Austin, Austin, TX

Graduate Student Researcher (Advisor: Dr. A. Meredith Hughes) **2014 – 2015**
Astronomy Department, Wesleyan University, Middletown, CT

- Modeling the temperature and density structure of a protoplanetary disk around a young star in the Orion Nebula Cluster using Atacama Large Millimeter/submillimeter Array (ALMA) observations of molecular gas.
- Markov Chain Monte Carlo (MCMC) analysis utilizing Wesleyan University's High Performance Compute Cluster.

Teaching Assistant ASTR 107: The Universe, ASTR 211: Observational Astronomy **2014 – 2015**
Astronomy Department, Wesleyan University, Middletown, CT

Undergraduate Researcher (Advisor: Dr. Fred Ellis) **2012 – 2014**
Physics Department, Wesleyan University, Middletown, CT

- Built and tested the scattering properties of electronic circuits modeling optical systems.
- Research topics include: PT-Symmetric systems, wave transport, asymmetric transport, nonlinear systems, unidirectional lasing.

Course Assistant COMP 112: Introduction to Programming, PHYS 215: Special Relativity **2012, 2013**
Computer Science and Physics Departments, Wesleyan University, Middletown, CT

FUNDING

<i>Kernel-Phase Interferometry for Super-Resolution Detection of Faint Companions,</i> PI of Cycle 24 Hubble Space Telescope Archival Research Grant, 2016,	\$141,430
<i>John W. Cox Graduate Excellence Fellowship,</i> University of Texas at Austin, 2015,	One Semester Fellowship
<i>Travel to: 225th Meeting of the American Astronomical Society, Seattle, Washington,</i> PI of Student Travel Grant, CT Space Grant College Consortium, 2015,	\$1,000

PUBLICATIONS

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- S. Factor**, A. M. Hughes, K. Flaherty, R. K. Mann, J. Di Francesco, J. P. Williams, L. Ricci, B. C. Matthews, J. Bally, D. Johnstone, "ALMA Observations of Asymmetric Molecular Gas Emission from a Protoplanetary Disk in the Orion Nebula," *AAS Journals*, submitted September 2016
- J. M. Lee, **S. Factor**, Z. Lin, I. Vitebskiy, F. Ellis, T. Kottos, "Reconfigurable directional lasing modes in cavities with generalized PT~ Symmetry," *Phys. Rev. Lett.*, vol 112, p. 253902, Jun 2014
- M. Chitsazi, **S. Factor**, J. Schindler, H. Ramezani, F. M. Ellis and T. Kottos, "Experimental observation of lasing shutdown via asymmetric gain," *Phys. Rev. A*, vol. 89, p. 043842, Apr 2014
- N. Bender, **S. Factor**, J. D. Bodyfelt, H. Ramezani, D. N. Christodulides, F. M. Ellis, and T. Kottos, "Observation of asymmetric transport in structures with active nonlinearities," *Phys. Rev. Lett.*, vol. 110, p. 234101, June 2013

PRESENTATIONS

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- Kernel-Phase Interferometry for Super-Resolution detection of Faint Companions (poster),
Sagan Exoplanet Summer Workshop, July 2016, Pasadena, CA
- ALMA Observations of Molecular Gas Emission from a Protoplanetary Disk in the Orion Nebula Cluster (poster), Frank N. Bash Symposium, Oct 2015, Austin, TX
- Characterizing a Young Protoplanetary Disk in the Orion Nebula Cluster (poster number 349.06),
American Astronomical Society Meeting #225, Jan 2015, Seattle, WA

MEMBERSHIPS

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- Junior Member, American Astronomical Society

EXTRACURRICULAR ACTIVITIES

Volunteer Assistant Coach, Wesleyan University Men's Varsity Rowing	2015
Wesleyan University Men's Varsity Rowing	2010 – 2014
• Head of the Charles Men's Collegiate 8+, 5th place	2013
• New England Rowing Championships Men's JV 8+, 3rd place	2013, 2014
Assistant Coach, Camp Randall Rowing Club, Madison, WI	2011
Youth Paddling Instructor, Rutabaga Paddlesports Outdoor Programs, Madison, WI	2010 – 2011

PROGRAMMING LANGUAGES & SOFTWARE

Python, MIRIAD, CASA, Mathematica, LaTeX, Git, C, Ruby, Rails, Java, Visual Basic, SML, Agda