

SAMUEL M. FACTOR

Curriculum Vitae

Univ. of Texas at Austin Dept. of Astronomy, 2515 Speedway, Stop C1400, Austin, TX 78712

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EDUCATION

The University of Texas at Austin, Austin, TX
Ph.D., Astronomy (Advisor: Dr. Adam Kraus) (expected) 2020
Wesleyan University, Middletown, CT
M.A., Astronomy (Advisor: Dr. A. Meredith Hughes) 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
Member of Φ BK

RESEARCH EXPERIENCE

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

- Applying an interferometric analysis technique to archival HST imaging to search for companions to nearby stars below the diffraction limit.

Graduate Student Researcher Advisor: Dr. A. Meredith Hughes 2014 - 2015
Astronomy Department, Wesleyan University, Middletown, CT

- Modeled the temperature and density structure of a protoplanetary disk in the Orion Nebula Cluster using Atacama Large Millimeter/submillimeter Array observations of molecular gas.
- Analysis utilized Wesleyan University's High Performance Compute Cluster.

Undergraduate Research Assistant 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.

TEACHING EXPERIENCE

Teaching Assistant AST 301: Introduction to Astronomy Fall 2015
Department of Astronomy, The University of Texas at Austin, Austin, TX
Teaching Assistant ASTR 107: The Universe, ASTR 211: Observational Astronomy 2014 - 2015
Astronomy Department, Wesleyan University, Middletown, CT
Course Assistant COMP 112: Intro. to Programming, PHYS 215: Special Relativity 2012, 2013
Computer Science and Physics Departments, Wesleyan University, Middletown, CT

FUNDING

Kernel-Phase Interferometry for Super-resolution Detection of Faint Companions
PI of Cycle 24 Hubble Space Telescope Archival Research Grant 14561, 2016 \$141,430
Travel to: 225th Meeting of the American Astronomical Society
PI of Student Travel Grant, CT Space Grant College Consortium, 2015 \$1,000

PUBLICATIONS

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 2017, “ALMA Observations of Asymmetric Molecular Gas Emission from a Protoplanetary Disk in the Orion Nebula,” *AJ*, 153, 233

J. M. Lee, **S. Factor**, Z. Lin, I. Vitebskiy, F. Ellis, T. Kottos, “Reconfigurable directional lasing modes in cavities with generalized \mathcal{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

Kernel-Phase Interferometry for Super-Resolution Detection of Faint Companions (poster number 118.03), *230th Meeting of the AAS*, June 2017, Austin, TX

Kernel-Phase Interferometry for Super-Resolution Detection of Faint Companions (poster number 146.25), *229th Meeting of the AAS*, January 2017, Grapevine, TX (Chambliss Honorable Mention)

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*, October 2015, Austin, TX

Characterizing a Young Protoplanetary Disk in the Orion Nebula Cluster (poster number 349.06), *225th Meeting of the American Astronomical Society*, January 2015, Seattle, WA

HONORS & AWARDS

Computer Officer , Astronomy Graduate Student Executive Committee, UT Austin	2017 - 2018
Chambliss Astronomy Achievement Award , Honorable Mention, AAS	Winter, 2016
Frank N. Edmonds, Jr. Memorial Fellowship in Astronomy , UT Austin	2016
John W. Cox Graduate Excellence Fellowship , UT Austin	2015
ΦBK , Wesleyan University	Spring, 2014
Barry M. Goldwater Scholarship , Honorable Mention	2013
Karl Van Dyke Prize , Wesleyan University Physics Dept.	2013
Dean’s List , Wesleyan University	2010 - 2014

OBSERVING EXPERIENCE

Harlan J. Smith, Tull Coude Spectrograph (TS23), McDonald Observatory (P.I. A. Rizzuto)	9 nights
Keck, NIRC2 LGS, Mauna Kea Observatory, (P.I. A. Mann)	1 night

OUTREACH

TAURUS Summer Program , McDonald Trip Committee	2017
Organized and lead the program’s observing trip to McDonald Observatory	
Astronomy on Tap ATX , Organizing Committee	2016 - Present
Present free, accessible astronomy talks in a pub	
UT Austin Girl Day Festival ,	2017
Facilitated hands on astronomy activities for over 8,000 middle school girls and their families	
Ask an Astronomer ,	2015 - Present
Answered questions from the public through askanastronomer.org	

Public Observing, Van Vleck Observatory, Wesleyan University, Middletown, CT
Hosted weekly public observing nights on the 16"

2014 - 2015

MEMBERSHIPS

Junior Member, American Astronomical Society

2015 - Present

PROGRAMMING LANGUAGES & SOFTWARE

Python, Git, L^AT_EX, MIRIAD, CASA, Mathematica, C, Ruby, Rails, Java, Visual Basic, SML, Agda

EXTRACURRICULAR ACTIVITIES

Certified Open Water Diver, PADI

2013 - Present

Volunteer Assistant Coach, Wesleyan University Men's Varsity Rowing

Fall 2015

Wesleyan University Men's Varsity Rowing

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

Head of the Charles Men's Collegiate 8+, 5th place

2013

New England Rowing Championships Men's JV 8+, 3rd place

2013, 2014