

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, Φ BK, GPA: 3.93 2014

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

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

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	2014 - 2015
Hosted weekly public observing nights on the 16”	

OBSERVING EXPERIENCE

Harlan J. Smith, Tull Coude Spectrograph (TS23), McDonald Observatory (P.I. A. Rizzuto)	9 nights
Harlan J. Smith, GCMS (VIRUS-P), McDonald Observatory (P.I. TAURUS)	3 nights
Keck II, NIRC2 LGS, Mauna Kea Observatory, (P.I. A. Mann)	1 night

MEMBERSHIPS

Junior Member, American Astronomical Society	2015 - Present
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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