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 ΦBK

HONORS & AWARDS

Chambliss Astronomy Achievement Award, Honorable Mention, AAS 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

EXPERIENCE

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

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

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

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: 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, "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 $\mathcal{P}\tilde{\mathcal{T}}$ 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 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

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

MEMBERSHIPS

Junior Member, American Astronomical Society

PROGRAMMING LANGUAGES & SOFTWARE

Python, Git, LaTeX, 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 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