Daniel K. Giles

e-mail: Daniel.K.Giles@gmail.com
website: d-giles.github.io

Publications

Searching the SN 1987A SETI Ellipsoid with TESS
Cabrales, B., Davenport, J., Sheikh, S., Croft, S., Siemion, A., **Giles, D.,** Cody, A.M., *Submitted to AAS Journals*.

Searching the SETI Ellipsoid with Gaia
Davenport, J., Cabrales, B., Sheikh, S. Croft, S., Siemion, A., **Giles, D.,** Cody, A.M., 2022, *AJ*, 164, 117.

A method for finding anomalous astronomical light curves and their analogues
Martínez-Galarza, J.R., Bianco, F., Crake, D., Tirumala, K., Mahabal, A.A., Graham, M. J., **Giles, D.**, 2021, *MNRAS,* 508*,* 5734-5756.

Systematic Serendipity: Outlier Scoring for the Kepler Mission
Giles, D., Walkowicz, L. M., 2020, MNRAS, 499, 524*.*

Systematic Serendipity: A Test of Unsupervised Machine Learning as a Method for Anomaly Detection
Giles, D., Walkowicz, L. M., 2019, MNRAS, 484, 834.

Professional Experience

Postdoctoral Researcher, The SETI Institute XRP Project – From Exocomets to Technosignatures: Hidden Occulters in Planetary Systems	January 2021-Present
Researcher, Frontier Development Laboratory Heliophysics Starspots team	Summer 2020
Teaching/Research Assistant & Tutor, Illinois Institute of Technology Classes: Classical Mechanics, Electricity and Magnetism, Electronics, and Computational Methods	2013-2019
Technical Analyst, The Boeing Company Group: Product Integrity and Safety, Post-production Modifications	2012-2013

Education

Illinois Institute of Technology, Chicago, IL Ph.D. in Physics Thesis Title: Systematic Serendipity: A Method to Discover Anomalous Astrophysics Thesis Advisor: Lucianne Walkowicz	December 2020
Westminster College, New Wilmington, PA B.S. in Physics	May 2012

Selected Proceedings

Technosignatures with TESS: The Search for Hidden Stellar Occulters
Giles, D., 2021, *The 2021 Assembly of the Order of the Octopus, A Virtual Conference for early-career researchers in SETI,* id.25.

From Dust to Technosignatures: Searching for Stellar Occulters with Machine Learning
Giles, D., 2021, *72nd International Astronautical Congress 2021,* IAC-21,A4,1,10,x67003.

***RotNet*: Fast and Scalable Estimation of Stellar Rotation Periods Using Convolutional Neural Networks**
FDL Starspots Team, 2020, *Machine Learning and the Physical Sciences Workshop, NeurIPS 2020.*

Presentation: Systematic Serendipity: Automated Anomaly Detection and Prioritization for Large Datasets
Giles, D., Walkowicz L. M., 2020, *American Astronomical Society*, 235, 232.02.

Presentation: Systematic Serendipity: A Signal-Agnostic Search for Technosignatures Using Unsupervised Machine Learning
Giles, D., Walkowicz, L. M., 2019, *Astrobiology Conference*, 308.6.

Presentation: Systematic Serendipity: A Method to Discover the Anomalous
Giles, D., Walkowicz L. M., 2018, *American Astronomical Society*, 231, 332.03.

Invited Roles and Talks

NASA Technosignatures Workshop Universities Space Research Association	Fall 2018
Decolonizing Mars Unconference Library of Congress	Summer 2018
Research Colloquia, Speaker Westminster College	Spring 2018
Sigma Pi Sigma, Speaker Illinois Institute of Technology	Spring 2018
Scientific English Instructor and Presenter Tsinghua University, Institute of Modern Physics	Summer 2016, 2017
Detecting the Unexpected Space Telescope Science Institute	Spring 2017
Networking Symposium, Panelist Westminster College	Fall 2015

Grants and Awards

NASA XRP: From Exocomets to Technosignatures: Hidden Occulters in Planetary Systems	2021-Present
Large Synoptic Survey Telescope Data Science Fellowship Program Fellow	2017-2019
Illinois Space Grant Consortium Fellowship	2016-2019
Illinois Institute of Technology Research Scholarship	2013-2014
Albright Scholarship	2009-2012
Young Presbyterian Scholars	2009-2012