Lindsey Gordon

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Formal Education

University of Minnesota Twin Cities

Graduate Student in Astrophysics

September 2021 – Present Minneapolis MN

GPA: 3.67. Advisor: Tom Jones. 2022-2023 DSMMA Fellow

Wellesley College

B.A. Astrophysics, minor in Computer Science

September 2017 – June 2021 Wellesley, MA

GPA: 3.73. Sigma Xi, Cum Laude, Honors in the Major

Select Research Projects

WombatWisdom - MHD Simulations of AGN Jets

Dr. Tom Jones (UMN) & Dr. Pete Mendygral (HPE)

June 2021 – UMN

Rewriting the WOMBAT simulation suite (C, Python, FORTRAN) for HPC optimization in collaboration with HPE. Developing ML concurrent and post-processing routines for analysis. Simulating AGN jets propagating through the ISM & impact on star formation conditions.

Detection & Analysis of Early Time TESS Supernovae Data

Dr. Tansu Daylan (MIT), Dr. Richard French (Wellesley)

August 2020 – Wellesley College

Python data mining program to identify Type Ia supernovae observed by TESS. Bayesian model fitting to recovered data including use of Gaussian Processes for noise removal. Python package etsfit and a paper in prep.

Unsupervised Pipeline for TESS Light Curve Classification

Dr. Tansu Daylan, Dr. George Ricker

January 2020 – August 2020 MIT

Python pipeline to perform unsupervised ML classification and anomaly detection on TESS data. Feature extraction through convolutional autoencoders coupled with prepackaged learning algorithms.

TESS Follow-Up Observing Program

Dr. Kim McLeod

January 2020 – June 2021 Wellesley College

Observed TESS candidate planets and performed data reduction using AIJ, ds9. One n-th author credit for work on TOI-628 b. Assisted with observatory projects.

A Compact Multi-Beam Linear Accelerator Prototype

Dr. Arun Persaud

August 2019 – December 2019 LBNL (SULI Program)

Electrical engineering work on parts testing for new components for prototype energy upgrade. Computational physics work updating Python simulations of the internal fields and ion motion within the accelerator, running batch simulations via SLURM on cluster.

Areas of Interest

- Computational Astrophysics
- Data Science and Data Visualization

Skills & Languages

Python
General Packages: numpy, pandas, matplotlib, PyMySQL, yt
ML: scikit-learn, TensorFlow, emcee
Astronomy: Astropy, Astroquery, SciPy

Java

C

SQL

Development Tools
Docker, Git, JIRA

HTML/CSS/Javascript
Flask, Ajax, Jinja2

FORTRAN, R, MATLAB

English

French

VR Development
Unity, SteamVR, Windows MR

Office Skills
Microsoft Office, GSuite, LaTeX

Publications

[1] J. Rodriguez ***et al.*** "TESS Delivers Five New Hot Giant Planets..." Accepted to ApJ Jan. 2021. https://arxiv.org/abs/2101.01726

[2] **L. Gordon** *et al.* "etsfit: Bayesian Power Law Modeling of TESS Supernovae" In prep.

[3] E. Chickles **et al.** "Novel Stellar Variability in the TESS Data" In prep.

Misc. Projects

Welp: A Yelp Reconstruction

Oct. 2020 Wellesley College

Built a Yelp-style database and communication platform using SQL, Flask, Ajax & Jinja2.

Wellesley Resources App: UX Design

July 2020 Wellesley College

WResources2020

Designed and user-tested a UI for a hypothetical application to consolidate health, career, and residential life resources.