

Adam Sutherland

Astrophysicist



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Technical Skills

Overview



Programming

Intro —————> Expert

Python • Mathematica • pandas

Fortran • \LaTeX

C • Julia • IDL

Skills

- Time Series Analysis
- Large Data Sets
- High Performance Computing
- Data Visualization: interactive plots, matplotlib, Bokeh, Plot.ly
- Quantitative Analysis
- Numerical & Analytical Mathematics
- Problem Solving
- Collaborative Coding: github
- Independent Work
- Simplifying High Level Concepts

Experience

Aug 2016 -
Jan 2020

Graduate Research Assistant

University of Arizona

- Ran numerical simulations in C and analyzed the results with Python and pandas, comparing to analytic theory.
- Developed analytic theory of mean motion resonances.
- Studied the dynamics of planets in mean motion resonances around binary stars. Identified a number of instabilities for circumbinary planets and determined how planetary migration can contribute to these instabilities.

May 2015 -
June 2016

Senior Honors Thesis Research Asst.

University of Chicago

- Investigated the properties of optical fibers for the development of the MAROON-X high precision radial velocity spectrograph, an instrument for discovering planets around other stars.
- Built optical testing station and developed methods for characterizing the effectiveness of optical fibers of different geometries.
- Processed images using PIL, OpenCV, SciPy, and correlated input and output images using pandas.

Oct 2013 -
Apr 2015

Undergraduate Research Assistant

University of Chicago

- Ran extensive numerical simulations of circumbinary planets in Fortran and analyzed the results in IDL.
- Researched the stability of circumbinary planets and determined the rates at which unstable planets were ejected or collided with a parent star.
- Published results were featured in AAS NOVA and SPACE.COM.

Education

Master of Science: Astronomy & Astrophysics

University of Arizona

2016 - 2018 | Tucson, AZ

Bachelor of Arts: Physics w/ Honors, Geophysical Sciences

Specialization: Astrophysics

University of Chicago

2012 - 2016 | Chicago, IL

Dean's List: First, Second, Third, and Fourth Year

General Honors with Bachelor's Degree

Impact

- 4 publications with a combined 38 citations
- Research featured in 2 popular science articles
- 4 conferences attended: 1 talk and 3 posters

See www.suth.space/portfolio/ for a research project example.