Stanislav DeLaurentiis
(+1) 908-400-2744 • sod2112@columbia.edu
70 Morningside Dr, New York, NY 10027

EDUCATION

Columbia College, Columbia University Anticipated Graduation: May 2023
B.A. Astrophysics & Mathematics
- Relevant Coursework: Modeling the Universe, Physical Cosmology, Quantum Mechanics
- GPA: 4.08

SKILLS

Technical Processes: Adaptive Numerical Integration, Numerical Analysis, MCMC Algorithms, Data Cleaning, Signal Processing, ML
Applied Concepts: Astro-statistics, Bayesian Statistics, Binary Formations, Spectroscopy
Programs: IRAF, Pyspeckit, REBOUND, Astropy, LaTeX, git, Linux/Unix
Languages: Python, Java, Fortran

RESEARCH EXPERIENCE

Columbia University | Prof. Zoltan Haiman May 2021-Present
Investigating Black Hole Dynamics, Research Assistant
- Simulating Binary Black Hole formation via dissipative friction [Summer 2021-Present]
- Wrote an adaptive integration code to simulate gravitational systems. Tests preformed included restricted 3 body tests (eg. Horeshoe, Tadpole Orbits), dynamical binary formation, drag forces. [Summer-Fall 2021]

Columbia University | Prof. Marcel Agüeros Feb. 2020-Present
Investigating Magnetic Activity in Low Mass Stars, Research Assistant
- Studying time variability of Hα via repeat low mass stellar spectra [Spring 2021-Present]
- Developed SQUACK (*S*pectral *Q*u*A*lity *C*hec*K*er) [Summer 2021]
  - A data visualization tool for collaborators to collectively interact with optical spectra and its parameters, categorizing noise levels, catalogue errors, and emission lines
- Contributing Developer of PHEW 2.0 (*P*rogram for *H-A*lpha *E*quivalent *W*idth Measurement) [Spring-Summer 2021]
  - Updated and added user functionality tools to the 2016 Alam, Douglas python tool
- Collated low mass star data from various public and private surveys (7 surveys) [Fall-Winter 2020]
- Reduced LAMOST DR5 spectra for Hyades, Praesepe, and Coma Bernices via IRAF [Summer 2020]

New Jersey Institute of Technology| Prof. Kosovichev May 2018-Mar. 2019
Predicting Coronal Mass Ejection Occurrence via Machine Learning, Research Assistant
- Ran preliminary tests on pre-processed CHANDRA data to compare the effectiveness of various algorithms (such as kNN, k-means, and decision trees) [Summer 2018]
- Developed an algorithm to parse and format DONKI and CHANDRA for ML use [Fall 2018-Spring 2019]

PRESENTATIONS/PUBLICATIONS

American Astronomical Society's 237th Meeting Jan. 2021
Poster Presentation
- *A Spectroscopic Study of the Hα Variability in the Open Clusters Coma Ber, Praesepe, and the Hyades (iPoster 124.06)*

Research Notes of the AAS Mar. 2021
Publication
- *"Leave No Low-mass Star Behind: Results from Extended Surveys of Hα Emission from Stars in Praesepe and the Hyades" (Sabine Chu,* ***Stan DeLaurentiis****, Alejandro Núñez, Marcel A. Agüeros, Jason L. Curtis, Stephanie T. Douglas, Rayna Rampalli, 2021)*

Undergraduate Research Symposium | Columbia University Oct. 2021
Poster Presentation
- *Life Source or Electromagnetic Threat: A Search to Typify the Magnetic Activity of Low Mass Stars*

Astrofest | Columbia University Sep. 2021
Poster Presentation
- *Behind the Bubbling: Studying the Variability of Hα Emissions in the Hyades and Praesepe Open Cluster*

TEACHING EXPERIENCE

Intro to Astrophysics I (UN2001) Fall 2021
TA/Grader Time: 8 hrs/wk
- Grade and provide feedback on weekly problem sets and assessments

My Ivy Education Sep. 2020-Present
Staff Tutor Time: Freelance
- Tutor High School and College students in a variety of STEM subjects and test prep.

COMMUNITY ENGAGEMENT

Columbia Undergraduate Science Journal Sep. 2020-Present
Editorial Board, Staff Editor
- Review and edit all CUSJ submissions with particular emphasis on those related to Astronomy, Physics, and Math

Theoretical High Energy Astrophysics Group (THEA) | Columbia Sep. 2021-Present
Undergraduate Member

AWARDS

- Columbia College Dean's List
  - All Applicable Semesters