

Martin Lopez Jr.

✉ martinlopezjr28@outlook.com | 🏠 www.mjlopezjr.com | 📧 martinlopezjr28 | 🌐 martin-lopez-jr

Education

University of California, Santa Cruz

Santa Cruz, CA

PHYSICS (ASTROPHYSICS) B.S., SUMMA CUM LAUDE

2018

- Overall GPA: 4.0, Highest Honors in the Major

Experience

Astrophysics Researcher

UC Santa Cruz

PROJECTS

2016-2019

- **Stellar Mass Binary Black Hole Systems**
 - Published two refereed-journal papers, including one first-author publication.
 - Presented posters of results at two national conferences.
 - Created initial condition files with Python for hydrodynamic code to run simulations of systems.
 - Developed scripts to automate processing of simulation output.
 - Produced plots and animations of simulation output with UNIX and Python visualization software.
- **Red Giant - Star Collisions:**
 - Presented a poster at a multi-disciplinary research symposium.
 - Simulated collisions using meshgrids with Python package *NumPy*.
 - Developed animated visualizations of simulations using UNIX and Python visualization software.
- **Eccentric X-ray Binary Systems**
 - Successfully implemented stellar wind physics into the Fortran hydrodynamic simulation code, FLASH.
 - Visualized and analyzed data output to study physical phenomena with Python package *yt*.

Publications

“Tidal Disruptions of Stars by Binary Black Holes: Modifying The Spin Magnitudes and Directions of LIGO Sources in Dense Stellar Environments”, **MARTIN LOPEZ JR.**, ALDO BATTÀ, ENRICO RAMIREZ-RUIZ, IRVIN MARTINEZ, JOHAN SAMSING. 2019, THE ASTROPHYSICAL JOURNAL, ACCEPTED TO APJ.

“Probing the Black Hole Merger History in Clusters using Stellar Tidal Disruptions”, JOHAN SAMSING, TEJASWI VENUMADHAV, LIANG DAI, IRVIN MARTINEZ, ALDO BATTÀ, **MARTIN LOPEZ JR.**, ENRICO RAMIREZ-RUIZ, KYLE KREMER. 2019, PHYSICAL REVIEW D, ACCEPTED TO PHYSREV D.

Computational Skills

PROFICIENT

- | | | |
|----------|-------------------|---------------------------------|
| • Python | • Fortran | • Supercomputer Batch Scripting |
| • UNIX | • Shell Scripting | • LaTeX |

FAMILIAR

- | | | |
|---------|----------|------------|
| • C/C++ | • MATLAB | • HTML/CSS |
|---------|----------|------------|

Honors & Awards

2019	Harvard Graduate School of Arts and Sciences Prize Fellowship
2019	NSF Graduate Research Fellowship Honorable Mention
2017	UCSC Women's Club Scholarship (Re-Entry Scholarship)
2016-2017	Ron Ruby Memorial Scholarship
2015-2017	Karl S. Pister Leadership Opportunity Award