CLARISSA RIZZO CREDIDIO **DO O**

Graduate Student and NSF Fellow, Physics and Astrophysics

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Education

Expected : 2026 **Ph.D. in Physics**, University of California, San Diego
Expected : 2023 **M.S. in Physics**, University of California, San Diego
2020 **B.S. in Physics (Honors), Minor in Astronomy/Planetary Science** , University of California, Santa Barbara

Research Experience

September 2020 – Present | Graduate Research Assistant, University of California, San Diego, San Diego, CA

- Advisor : Prof. Quinn Konopacky
- Analyzing the distribution of exoplanet eccentricities at a population level using observable-based priors and Bayesian statistics.
- Testing and characterizing the EMCCD camera for the Gemini Planet Imager 2.0's (GPI 2.0) new pyramid wavefront sensor.
- Simulated the dynamics and stability of the HR-8799 exoplanet system using NIRC2 data from the Keck II Telescope.

Python C

January 2020 – August 2020 | Test Engineering Intern, Lockheed Martin, Santa Barbara, CA

- Wrote scripts to automate the testing process of infrared focal plane arrays (FPAs) and used these scripts to test parts.
- Used Object-Oriented programming to automate scripts for analyzing telegraph noise on infrared focal plane arrays.
- Analyzed telegraph noise data on infrared FPAs.

MATLAB

June 2019 – September 2019 | Astrophysics Intern, NASA Jet Propulsion Laboratory, Pasadena, CA

- Worked on PARVI (Palomar Radial Velocity Instrument) under the guidance of Drs. Gautam Vasisht and Christopher Matthews.
- Wrote programs to predict the instrument's photon throughput, and performed photometry and spectrophotometry on data to compare my projections to the actual throughput.
- Performed simulations to analyze how the single-mode fiber optics coupling efficiency changes as we introduce optical aberrations into the system.

Python

June 2018 – June 2020 | Undergraduate Research Assistant , Mazin Lab at UCSB, Santa Barbara, CA

- Designed and developed a database for the Mazin Lab, an astrophysics laboratory that uses Microwave Kinetic Inductance Technology to directly image extrasolar planets. The database is a website currently available on the laboratory's server.
- Wrote a program that corrected cosmic ray incidents for the new device developed by the lab (MEC - MKID Exoplanet Camera).
- Performed post-processing (angular differential imaging and spectral differential imaging) and made contrast curves on MEC data.

Python HTML JavaScript

Awards, Grants & Honors

2022 The School of Physical Sciences Cohort Program Mentorship Award at UCSD
2020 National Science Foundation Graduate Research Fellowship (NSF GRFP)
2020 San Diego Fellowship
2019 Caltech SURF (Summer Undergraduate Research Fellowship)
2019 Edison GRE Scholarship
2018 Edison Summer Research Program Scholarship
2018 Starting Lines Essay Publication Prize at UCSB

Programming Languages & Skills

Python	●●●●●
MATLAB	●●●●●
Linux	●●●●●
LaTeX	●●●●○
C	●●●○○

Languages

English	●●●●●
Portuguese	●●●●●
Spanish	●●●●○
German	●●●○○
Armenian	●●○○○

Teaching Experience & Outreach

January 2022 – Present — Author, Astrobites, Online
- Write summaries of astro-ph papers from the arXiv and outreach articles for astrobites.org, funded by AAS.
- Co-Chair of the Diversity, Equity and Inclusion Committee.
- Co-Chair of the Astrotweeps Committee for social media outreach.
- Translate posts to Astropontos, Astrobites' sister website in Portuguese

Wordpress

July 2022 – Present — Mentor, Peer 2 Peer Program (P2P), UC San Diego
- Give 1-to-1 mentoring to current undergraduate students who wish to pursue graduate school
- Monthly lunch and meetings to discuss career goals

January 2022 – March 2022 — Teaching Assistant, Physics 164 (Observational Astrophysics Lab), UC San Diego
- Taught Students how to analyze astronomical data in Python
- Operated and observed with the Lick Observatory's Nickel Telescope

Python | Linux | Jupyter

May 2022 – Present — Organizer and Volunteer, Cosmic Tours, San Diego, CA
- The UCSD Cosmic Tours are short planetarium shows given on a portable planetarium for K-12 schools and other outreach events.
- Set up, run and operate a portable planetarium for outreach shows in the San Diego area.

March 2022 – Present — Volunteer, Young Scientists Club, San Diego, CA
- Volunteer at the Young Scientists Club, a series of science lectures and experiments for students in grades 3-6.
- Guide students in the San Diego Area with hands on experiments in optics, fluid mechanics and other physics concepts.

Presentations

Science Presentations :

September 2022	"An Analysis of the orbital eccentricities of directly imaged extrasolar planets using observable-based priors" - Poster Presentation, Keck Science Meeting
July 2022	"An Analysis of the orbital eccentricities of directly imaged extrasolar planets using observable-based priors" - Poster Presentation, Spirit of Lyot
July 2022	"GPI 2.0 : performance evaluation of the wavefront sensor's EMCCD" - Poster Presentation, SPIE Astronomical Telescopes & Instrumentation
August 2019	"The Palomar Radial Velocity Instrument's commissioning", - Talk, NASA JPL Summer Intern Talks
January 2019	"A Database for the Stars Observed by the Mazin Lab using MKID Technology", - Poster Presentation, APS' Conference for Undergraduate Women in Physics
August 2018	"A Database for the Stars Observed by the Mazin Lab using MKID Technology", - Poster Presentation, UCSB Undergraduate Research Colloquium

Publications

Science Publications :

In Prep	**Clarissa R. Do Ó**, Kelly K. O'Neil, Quinn M. Konopacky, et al. "An Analysis of the orbital eccentricities of directly imaged extrasolar planets using observable-based priors"
In Prep	**Clarissa R. Do Ó**, Saavidra Perera, Jêrome Máire, et al. "GPI 2.0 : performance evaluation of the wavefront sensor's EMCCD"
September 2022	William Thompson, Christian Marois, **Clarissa R. Do Ó**, et al. "Deep orbital search for additional planets in the HR8799 system", The Astronomical Journal
August 2022	Saavidra Perera, Jêrome Máire, **Clarissa R. Do Ó**, et al. "GPI 2.0 : Pyramid Wavefront Sensor Status", SPIE Astronomical Telescopes + Instrumentation
August 2022	Eckhart Spalding, **Clarissa Do Ó**, Dillon Peng, et al. "GPI 2.0 : Baseline testing of the Gemini Planet Imager before the upgrade", SPIE Astronomical Telescopes + Instrumentation

Outreach and Popular Science Publications :

September 2022	**Clarissa Do Ó**, "Learning more about exoplanet orbits using orbitize !", Astrobites
July 2022	**Clarissa Do Ó**, "Interview Series : Dr. Lia Medeiros", Astrobites
July 2022	**Clarissa Do Ó**, "You MAD, flow ?: The hot accretion flow of the M87 supermassive black hole", Astrobites
April 2022	**Clarissa Do Ó**, "The water is strong with this one : the emission features of Kelt-20b", Astrobites
February 2022	**Clarissa Do Ó**, "BlackInAstro Experiences : Christian Aganze", Astrobites
January 2022	**Clarissa Do Ó**, "Is the Sun a Lazy Star ?", Astrobites