CLARISSA RIZZO CREDIDIO **DO O**

Ph.D. Candidate and NSF Fellow, Physics and Astrophysics

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Education

Expected : 2025 **Ph.D. in Physics**, University of California, San Diego
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 & Work 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 | Linux | LaTeX

January 2020 – August 2020 | Test Engineer, 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

2023 Carol and George Lattimer Award for Graduate Excellence
2023 NASA ExoExplorers Award
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

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.

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

Presentations

Talks :

April 2023 **Constraining the Formation of Directly Imaged Exoplanets by Upgrading the Gemini Planet Imager (GPI)'s Wavefront Sensor** - NASA ExoExplorers Talks (Online)
November 2022 **Upgrading the Gemini Planet Imager 2.0's Wavefront Sensor** - NYRIA Workshop (Sarcedo, Italy)
August 2019 **The Palomar Radial Velocity Instrument's commissioning** - NASA JPL Intern Talks (Pasadena, CA)

Poster Presentations :

September 2022 **An Analysis of the orbital eccentricities of directly imaged extrasolar planets using observable-based priors** - Keck Science Meeting (Pasadena, CA)

July 2022 **An Analysis of the orbital eccentricities of directly imaged extrasolar planets using observable-based priors** - Spirit of Lyot (Leiden, Netherlands)

July 2022 **GPI 2.0 : performance evaluation of the wavefront sensor's EMCCD** - SPIE Astronomical Telescopes & Instrumentation (Montreal, Canada)

January 2019 **A Database for the Stars Observed by the Mazin Lab using MKID Technology**, APS' Conference for Undergraduate Women in Physics (Santa Barbara, CA)

August 2018 **A Database for the Stars Observed by the Mazin Lab using MKID Technology**, - UCSB Undergraduate Research Colloquium (Santa Barbara, CA)

Publications

Refereed :

(Submitted) March 2023 **Clarissa R. Do Ó**, Kelly K. O'Neil, Quinn M. Konopacky, et al. "The Orbital Eccentricities of Directly Imaged Companions Using Observable-Based Priors : Implications for Population-level Distributions", submitted to The Astronomical Journal

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

Non-Refereed :

In Prep **Clarissa R. Do Ó**, Saavidra Perera, Jêrome Máire, et al. "GPI 2.0 : performance evaluation of the wavefront sensor's EMCCD", AO4ELT Conference Proceedings

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

August 2022 Dillon Peng, Maeve Curliss, et al. (including **Clarissa Do Ó**). "GPI 2.0 : performance of upgrades to the Gemini Planet Imager CAL and IFS", SPIE Astronomical Telescopes + Instrumentation

August 2022 Jeffrey Chilcote, Quinn M. Konopacky, et al. (including **Clarissa Do Ó**). "GPI 2.0 : upgrade status of the Gemini Planet Imager", SPIE Astronomical Telescopes + Instrumentation