Clarissa Rizzo Credidio Do Ó

Physics Ph.D. Candidate and NSF Fellow, UC San Diego

Education

Clarissa Do O in /clarissardoo

University of California, San Diego

Physics, Ph.D. (Expected)

University of California, San Diego

Physics, M.S.

University of California, Santa Barbara

Physics, B.S. (Honors) - Minor in Astronomy and Planetary Science

September 2020 - Present

San Diego, CA

September 2020 - February 2023

San Diego, CA

San Diego, CA

September 2016 – June 2020

September 2020 - Present

Santa Barbara, CA

Research and Work Experience

University of California, San Diego

Graduate Research Fellow

» 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.

Lockheed Martin January 2020 – September 2020

Test Engineer 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.

NASA Jet Propulsion Laboratory

June 2019 – September 2019

Astrophysics Research Intern

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.

University of California, Santa Barbara

lune 2018 - lune 2020

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.

Awards, Grants and Honors

Undergraduate Researcher

Carol and George Lattimer Award for Graduate Excellence

NASA ExoExplorers Award

The School of Physical Sciences Cohort Program Mentorship Award at UCSD

National Science Foundation Graduate Research Fellowship

San Diego Fellowship

Caltech SURF (Summer Undergraduate Research Fellowship)

Edison GRE Scholarship

Edison Summer Research Program Scholarship

Starting Lines Essay Publication Prize at UCSB

March 2020

September 2022

June 2019

March 2020

February 2023

January 2023

May 2019

June 2018 January 2018

</> Programming Languages and Skills

Python Proficient **MATLAB** Proficient

Linux Proficient

C Advanced Beginner

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Languages

English Fluent **Portuguese** Fluent **Spanish** Proficient **German** Advanced Beginner

Presentations

- 1. **Constraining the Formation of Directly Imaged Exoplanets Using Instrumentation and Orbit Fitting Techniques"** Invited Talk at NASA Ames Research Center Seminar (Santa Clara, CA)
- 2. At the Edge of Chaos: The Dynamics of Directly Imaged Exoplanet Systems iTelescope Webinar (Online)
- Constraining the Formation of Directly Imaged Exoplanets by Upgrading the Gemini Planet Imager (GPI)'s Wavefront Sensor -NASA ExoExplorers Talks (Online)
- 4. Upgrading the Gemini Planet Imager 2.0's Wavefront Sensor NYRIA Workshop (Sarcedo, Italy)
- 5. The Palomar Radial Velocity Instrument's commissioning NASA JPL Intern Talks (Pasadena, CA)

Publications

- 1. **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
- 2. William Thompson, Christian Marois, **Clarissa R. Do Ó**, et al. "Deep orbital search for additional planets in the HR 8799 system", The Astronomical Journal, Volume 165, Issue 1, id.29, 20 pp.
- 3. **Clarissa R. Do Ó**, Saavidra Perera, Jêrome Máire, et al. "GPI 2.0: performance evaluation of the wavefront sensor's EMCCD", AO4ELT 2023 Conference Proceedings (In Prep)
- 4. Saavidra Perera, Jêrome Máire, **Clarissa R. Do Ó**, et al. "GPI 2.0: Pyramid Wavefront Sensor Status", Proceedings of the SPIE, Volume 12185, id. 121854C 7 pp. (2022)
- 5. Eckhart Spalding, **Clarissa Do Ó**, Dillon Peng, et al. "GPI 2.0: Baseline testing of the Gemini Planet Imager before the upgrade", Proceedings of the SPIE, Volume 12184, id. 1218448 11 pp. (2022)
- 6. Dillon Peng, Maeve Curliss, et al. (including **Clarissa Do Ó**). "GPI 2.0: performance of upgrades to the Gemini Planet Imager CAL and IFS", Proceedings of the SPIE, Volume 12184, id. 1218443 9 pp. (2022)
- 7. Jeffrey Chilcote, Quinn M. Konopacky, et al. (including **Clarissa Do Ó**). "GPI 2.0: upgrade status of the Gemini Planet Imager", Proceedings of the SPIE, Volume 12184, id. 121841T 15 pp. (2022)