CLARISSA RIZZO CREDIDIO DO Ó

NSF and San Diego Fellow at UCSD –> B. Thomas Soifer Fellow at Caltech
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EDUCATION

University of California, San Diego *09/2020 - 06/2025*
Physics, Ph.D.
University of California, San Diego *09/2020 - 02/2023*
Physics, M.S.
University of California, Santa Barbara *09/2016 - 06/2020*
Physics, B.S. (Honors) - Minor in Astronomy and Planetary Science

RESEARCH AND WORK EXPERIENCE

California Institute of Technology September 2025 – Present
B. Thomas Soifer (EXP) Postdoctoral Fellow *Pasadena, CA*

University of California, San Diego September 2020 – June 2025
NSF/San Diego Research Fellow (Advisor: Prof. Quinn Konopacky) *San Diego, CA*

Lockheed Martin January 2020 – September 2020
Test Engineer Intern *Santa Barbara, CA*

NASA Jet Propulsion Laboratory June 2019 – September 2019
Caltech SURF Fellow (Mentor: Dr. Gautam Vasisht) *Pasadena, CA*

University of California, Santa Barbara June 2018 – June 2020
Edison Scholar (Advisor: Prof. Ben Mazin) *Santa Barbara, CA*

AWARDS, GRANTS AND HONORS

Total: $540,500

Caltech EXP (B. Thomas Soifer) Fellowship (January 2025)

ExoPAG 31 Travel Grant (November 2024)

SPIE Astronomical Telescopes+Instrumentation Travel Grant (April 2024)

Carol and George Lattimer Award for Graduate Excellence (February 2023)

NASA ExoExplorers Award (January 2023)

The School of Physical Sciences Cohort Program Mentorship Award at UCSD (September 2022)

National Science Foundation Graduate Research Fellowship (NSF GRFP) (March 2020)

San Diego Fellowship (March 2020)

UCSD Physics Excellence Award (January 2020)

Caltech SURF (Summer Undergraduate Research Fellowship) (June 2019)

Edison GRE Scholarship (May 2019)

Edison Summer Research Program Scholarship (June 2018)

Starting Lines Essay Publication Prize at UCSB (January 2018)

PUBLICATIONS

Summary: 5 first-author publications (3 peer-reviewed, 2 instrumentation proceedings); h-index = 6; 126 total citations

First Author:

1. **Clarissa R. Do Ó**, Jaehan Bae, Quinn M. Konopacky, et al. "How Disk Migration and Dispersal Shape the Long-Term Stability of Ultra-Massive Multi-planet Systems: Applications to the case of PDS 70", submitted to ApJ
2. **Clarissa R. Do Ó**, Ben Sappey, Quinn M. Konopacky, et al. "Orbital and Atmospheric Characterization of the 1RXS J034231.8+121622 System Using High-Resolution Spectroscopy Confirms That The Companion is a Low-Mass Star", The Astronomical Journal, Volume 167, Issue 6, id.278, 24 pp. (2024)
3. **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", The Astronomical Journal, Volume 166, Issue 2, id.48, 22 pp. (2023)
4. **Clarissa R. Do Ó**, Saavidra Perera, Jêrome Máire, et al. "GPI 2.0: GPI 2.0: Exploring The Impact of Different Readout Modes on the Wavefront Sensor's EMCCD", Proc. SPIE 13097, Volume 13097, Adaptive Optics Systems IX; 1309742 (2024)
5. **Clarissa R. Do Ó**, Saavidra Perera, Jêrome Máire, et al. "GPI 2.0: performance evaluation of the wavefront sensor's EMCCD", Adaptive Optics for Extremely Large Telescopes 7th Edition, ONERA, Jun 2023, Avignon, France. ⟨10.13009/AO4ELT7-2023-045⟩. ⟨hal-04419969⟩ (2023)

Significant Contributions:

1. Ben Sappey, Quinn M. Konopacky, **Clarissa R. Do Ó**, et al. "HD 206893 B at High Spectral Resolution using KPIC/NIRSPEC", The Astronomical Journal, Volume 169, Issue 3, id.175, 30 pp. (2025)
2. Saavidra Perera, Jerome Maire, **Clarissa Do Ó**, et al. "GPI 2.0: pre-integrated pyramid wavefront sensor results", Proc. SPIE 13097, Adaptive Optics Systems IX, 130971S (2024)

3. 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. (2023)

4. Saavidra Perera, Jeffrey Chilcote, Quinn M. Konopacky, et al. (including **Clarissa Do Ó**), et al. "Upgrading the Gemini planet imager to GPI 2.0", Proceedings of the SPIE 12680, Techniques and Instrumentation for Detection of Exoplanets XI, 1268001 (2023)

5. 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)

6. 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)

N-th Author:

1. Chih-Chun Hsu, Jason J. Wang, et al. (including **Clarissa R. Do Ó**). "Detection and Characterization of PDS 70 b from Keck/KPIC High-resolution Spectroscopy", Submitted to ApJL (2024)

2. Jeffrey Chilcote, Quinn M. Konopacky, et al. (including **Clarissa Do Ó**). "GPI 2.0: upgrade status of the Gemini Planet Imager", Proc. SPIE 13096, Ground-based and Airborne Instrumentation for Astronomy X, 1309699 (2024)

3. Sarah Blunt, Jason J. Wang, et al. (including **Clarissa Do Ó**). "orbitize! v3: Orbit fitting for the High-contrast Imaging Community", accepted to the Journal of Open Source Software (2024)

4. Katelyn Horstman, Jean-Baptiste Ruffio, et al. (including **Clarissa R. Do Ó**). "RV measurements of directly imaged brown dwarf GQ Lup B to search for satellites", The Astronomical Journal, Volume 168, Issue 4, id.175, 10 pp. (2024)

5. Jerry W. Xuan, Jason Wang, et al. (including **Clarissa R. Do Ó**). "Validation of Elemental and Isotopic Abundances in Late-M Spectral Types with the Benchmark HIP 55507 AB System", The Astrophysical Journal, Volume 962, Issue 1, id.10, 21 pp. (2024)

6. Yapeng Zhang, Jerry Xuan, et al. (including **Clarissa Do Ó**). "Atmospheric Characterization of the Super-Jupiter HIP 99770 b with KPIC", The Astronomical Journal, Volume 168, Issue 3, id.131, 14 pp. (2024)

7. Dillon Peng, Jeffrey Chilcote, et al. (including **Clarissa Do Ó**). "GPI 2.0: Testing and Performance of IFS Upgrades for GPI 2.0", Proceedings of the SPIE, Volume 12680, id. 126801Y 8 pp. (2023)

8. 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)

9. 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)
10. Katie A. Crotts, Brenda C. Matthews, et al. (including **Clarissa R. Do Ó**). "A Uniform Analysis of Debris Disks with the Gemini Planet Imager. I. An Empirical Search for Perturbations from Planetary Companions in Polarized Light Images", The Astrophysical Journal, Volume 961, Issue 2, id.245, 35 pp. (2024)
11. William Thompson, Jensen Lawrence, et al. (including **Clarissa R. Do Ó**). "Octofitter: Fast, Flexible, and Accurate Orbit Modeling to Detect Exoplanets", The Astronomical Journal, Volume 166, Issue 4, id.164, 20 pp. (2023)
12. Anne-Lise Marie, Laetitia Derez, et al. (including **Clarissa Do Ó**). "Workshop Summary: Exoplanet Orbits and Dynamics", Publications of the Astronomical Society of the Pacific, Volume 135, Issue 1052, id.106001, 17 pp. (2023)
13. Yinzi Xin, Jerry W. Xuan, et al. (including **Clarissa Do Ó**). "On-sky speckle nulling through a single-mode fiber with the Keck Planet Imager and Characterizer", July 2023, Journal of Astronomical Telescopes, Instruments, and Systems, Volume 9, id. 035001 (2023).

PROGRAMMING SKILLS

- **Advanced:** Python (including multiprocessing, Numpy, Scipy, Astropy, Matplotlib, REBOUND and orbitize!), MATLAB, LaTeX
- **Intermediate:** Unix, Git
- **Basic:** C/C++ (including OpenMP, Efit5/MultiNest, FARGO3D, Dusty FARGO), HTML/JavaScript

OBSERVING EXPERIENCE AND MEMBERSHIP

JWST Cycle 4 GO 8063 Co-I (2025)

Gemini Planet Imager 2.0 Science and Instrument Team Member (2020 -)

Keck/KPIC Science Team Member (2023 -)

W.M. Keck Observatory - KPIC (NIR High Resolution Spectroscopy), 3 Nights (2023 - 2024)

W.M. Keck Observatory - NIRC2 (NIR Imaging), 6 Nights (2021 - 2023)

Palomar Observatory - PARVI (NIR High Resolution Spectroscopy), 6 Nights (2019)

Subaru/MEC Data Reduction Pipeline Member (2018-2019)

STUDENTS MENTORED

Annika Feng (UCLA Undergrad) July 2024 – Present

Tyler Tuttle (UCSD Undergrad) January 2025 – Present

Sergio Gomez (USD Undergrad) September 2024 – Present

TEACHING, SERVICE AND OUTREACH

STARTastro Mentoring Program July 2024 – Present
Mentor *San Diego, CA*

NYRIA Workshop 2024 December 2023 – Present
Local Organizing Committee Member *San Diego, CA*

Cosmic Tours Planetarium Shows May 2022 – Present
Co-Organizer and Volunteer *San Diego, CA*

Physics Identity Program September 2024 – Present
Mentor *San Diego, CA*

Astrobites January 2022 – December 2023
Author *Online Website*

Cool Stars 22 June 2024
Local Organizing Committee Member *San Diego, CA*

Cohort Mentoring Program at UCSD September 2022 – June 2023
Mentor *San Diego, CA*

Physics 164 (Observational Astrophysics Lab at UCSD) January – March 2022
Teaching Assistant *San Diego, CA*

PRESENTATIONS

Invited Talks:

"Constraining the Formation of Directly Imaged Exoplanets Using their Orbital Architectures" - Machine Learning for Planetary Dynamics Workshop (April 2025, New York, NY)

"Constraining the Formation of Directly Imaged Exoplanets Using their Orbital Architectures" - University of Florida Seminar (April 2025, Gainesville, FL)

"The Pathway to Imaging Entire Exoplanet Systems" - Caltech (November 2024, Los Angeles, CA)

"Imaging Other Solar Systems!" - San Diego Comic Fest (October 2024, San Diego, CA)

"Constraining the Formation of Directly Imaged Exoplanets Using Orbit Fitting Techniques" - Stanford KIPAC Tea Talks (October 2024, Palo Alto, CA)

"Constraining the Formation of Directly Imaged Exoplanets Using Instrumentation and Orbit Fitting Techniques" - UCLA Lunch Seminar Series (April 2024, Los Angeles, CA)

"Constraining the Formation of Directly Imaged Exoplanets Using Instrumentation and Orbit Fitting Techniques" - NASA Jet Propulsion Laboratory Lunch Seminars (April 2024, Pasadena, CA)

"Constraining the Formation of Directly Imaged Exoplanets Using Instrumentation and Orbit Fitting Techniques" - Space Telescope Science Institute ESPF Seminar (October 2023, Baltimore, MD)

"Constraining the Formation of Directly Imaged Exoplanets Using Instrumentation and Orbit Fitting Techniques" - NASA Ames Research Center Seminar (May 2023, Santa Clara, CA)

"At the Edge of Chaos: The Dynamics of Directly Imaged Exoplanet Systems" - iTelescope Webinar (May 2023, Online)

Contributed Talks:

"Constraining the Formation and Orbital Architectures of Directly Imaged Exoplanets" - American Astronomical Society Meeting 245 (January 2025, National Harbor, MD)

"Constraining the Formation and Orbital Architectures of Directly Imaged Exoplanets" - ExoPAG 31 (January 2025, National Harbor, MD)

"The Orbital Eccentricities of Directly Imaged Exoplanets using Observable-based Priors" - Brazilian Colloquium on Orbital Dynamics (December 2024, São José dos Campos, Brazil)

"Constraining the Formation of Directly Imaged Exoplanets by Upgrading the Gemini Planet Imager (GPI)'s Wavefront Sensor" - NASA ExoExplorers Talks (April 2023, Online)

"Upgrading the Gemini Planet Imager 2.0's Wavefront Sensor" - NYRIA Workshop (November 2022, Sarcedo, Italy)

"The Palomar Radial Velocity Instrument's commissioning" - NASA JPL Intern Talks (July 2019, Pasadena, CA)

Posters:

"Orbital and Atmospheric Characterization of the 1RXS J034231.8+121622 System Using High-Resolution Spectroscopy Confirms That The Companion is a Low-Mass Star"" - Cool Stars 22 (June 2024, San Diego, CA)

"GPI 2.0: GPI 2.0: Exploring The Impact of Different Readout Modes on the Wavefront Sensor's EMCCD" - SPIE Astronomical Telescopes+Instrumentation (June 2024, Yokohama, Japan)

"The Orbital Eccentricities of Directly Imaged Companions Using Observable-Based Priors: Implications for Population-level Distributions" - Keck Science Meeting (September

2023, Berkeley, CA)

"GPI 2.0: performance evaluation of the wavefront sensor's EMCCD" - AO4ELT Conference (June 2023, Avignon, France)

"The Orbital Eccentricities of Directly Imaged Companions Using Observable-Based Priors: Implications for Population-level Distributions" - Keck Science Meeting (September 2022, Pasadena, CA)

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

"The Orbital Eccentricities of Directly Imaged Companions Using Observable-Based Priors: Implications for Population-level Distributions" - Spirit of Lyot Conference (June 2022, Leiden, Netherlands)

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

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