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EDUCATION

Ph.D. Physics, University of Delaware 2021 – Present

M.S Physics, University of Delaware 2021-2023
Thesis: Rayleigh Criterion Applied to Radial Velocity Planet Searches
Advisor: Sarah Dodson-Robinson

Honors B.S. Physics and Astronomy, University of Delaware 2017-2021
Minor in Mathematics
Undergraduate Thesis: Coherence Method Applied to Radial Velocity Planet Searches
Advisor: Sarah Dodson-Robinson

RESEARCH POSITIONS

University of Delaware
Unidel Distinguished Fellow 2021 – Present

Mathematics and Computer Science Division, Argonne National Lab
Visiting Student 2024-Present
Visiting Student 2021-2022

University of Delaware, Undergraduate Research Program
Summer Fellow 2020

PUBLICATIONS: 2 as first author, 1 as second author, 4 as contributing author

1. **Ramirez Delgado, V.**, Caicedo Vivas J., Dodson-Robinson, S., Haley C. (2025). "The Rayleigh Criterion: Resolution Limits of Astronomical Periodograms". Under review in PASP.
2. Castro Nieva P.A., Dodson-Robinson S., **Ramirez Delgado V.** (2025). "Validation of Two Earth-mass Planets Orbiting GJ 1002". Research Notes of the AAS. DOI: 10.3847/2515-5172/adb612.
3. Dodson-Robinson, S., **Ramirez Delgado, V.**, Harrel, J., Haley, C. (2022). "Magnitude-squared Coherence: A Powerful Tool for Disentangling Doppler Planet Discoveries from Stellar Activity". The Astronomical Journal. DOI: 10.3847/15383881/ac52ed.
4. Zhao, L., Fischer, D., Ford, E., Wise, A., et al. (incl. **Ramirez Delgado, V.**) (2022). "The EXPRES Stellar Signals Project II. State of the Field in Disentangling Photospheric Velocities". The Astronomical Journal. DOI: 10.3847/15383881/ac5176
5. Bortle, A.; Fausey, H.; Ji, J.; Dodson-Robinson, S.; **Ramirez Delgado, V**.; Gizis, J. (2021). "A Gaussian Process Regression Reveals No Evidence for Planets Orbiting Kapteyn's Star". The Astronomical Journal. DOI: 10.3847/15383881/abec89
6. **Ramirez Delgado, V.**, Dodson-Robinson, S. (2020). "Modeling the Quasiperiodic Radial Variations of γ Draconis". Research Notes of the AAS. DOI: 10.3847/2515-5172/abb6ee

PRESENTATIONS

Invited:

1. Talk: "Separating Stellar Activity from Planet Signals in Radial Velocity Surveys". Exoplanet Group Meeting. The Ohio State University Department of Astronomy, April 25th, 2025.
2. Talk: "Disentangling Radial Velocities Signals in the Frequency Domain". Gemini North Talks. Hilo, Hawaii. July 30th, 2024.

Contributed:

1. Poster: "Describing the Stellar Activity of the Binary System of Sun-like Stars HD 9941-HD 99492". Know Thy Star Know Thy Planet Conference. California Institute of Technology. February 3rd-7th, 2025.
2. Talk: "Analyzing the Stellar Activity of the Binary System of Sun-like Stars HD 99491-HD 99492". 245th Meeting of the AAS. National Harbor, Maryland. January 15th, 2025.
3. Poster: "Describing the Stellar Activity of the Binary System 83 Leo". SEEC Symposium. NASA Goddard Space Flight Center. April 15th-19th, 2024.
4. Virtual Talk: "Recreating the 10% Incidence of Magnetic Massive Stars through Population Synthesis and Observational Constraints". Magnetic Fields from Clouds to Stars, National Astronomical Observatory of Japan. March 29th, 2024.
5. Talk: "Describing the Radial Velocities of the 83 Leonis System". Annual Meeting of the APS Mid-Atlantic Section, University of Delaware. November 3rd-5th, 2023.
6. Poster: "Exploring the Presence of a new 95-days Signal in the RVs of HD 99492". Emerging Researchers in Exoplanet Sciences, Yale University. June 19-20th, 2023.
7. Poster: "Rayleigh Criterion Applied to Astronomical Time Series". Extreme Precision Radial Velocity V, Santa Barbara, CA. March 26-30th, 2023.
8. Talk: "Exploring the Initial B-Field Function of massive stars by simulating magnetic detectability of in star clusters". Annual Meeting of the APS Mid-Atlantic Section, Penn State University. December 3th, 2022.
9. Talk: "Correcting stellar activity from radial velocity measurements using frequency domain linear regression in exoplanet searches". Annual Meeting of the APS Mid-Atlantic Section, Rutgers University. December 4th, 2021.
10. Virtual Talk: "Disentangling stellar variability from radial velocities using the coherence method". Emerging Researchers in Exoplanet Science Symposium. May 24th, 2021.
11. Virtual Talk: "Analyzing and developing a model for the Radial Velocity data of γ Draconis' Star". 236th Meeting of the AAS. June 1st, 2020.
12. Virtual Talk: "Correcting stellar variability from radial velocity measurements using coherence methods: examples from the EXPRES Stellar Signals Project". Chesapeake Bay Area Exoplanet (CHEXO) Meeting. December 11th, 2020.

MENTORSHIP

University of Delaware Undergraduate Research Program 2025:

Students: Oscar A. Flores Gaitán (Universidad del Valle de Guatemala) & Marcela Echevarri Gallego (Universidad de Antioquia)

Project Title: Reanalyzing Barnard's star 4 Planetary System

University of Delaware Undergraduate Research Program 2024:

Student: Paula Andrea Castro Nieva (Universidad del Valle)

Project Title: Validation of Two Earth-mass Planets Orbiting GJ 1002

Student: Dajah Drummond (University of Delaware)

Project: Analyzing the Critical Magnetic Field and Detection Thresholds for MESA Models

University of Delaware Undergraduate Research Program 2022:

Student: Joan Sebastián Caicedo Vivas (Universidad de Cali)

Project Title: The Rayleigh Criterion: Resolution Limits of Astronomical Periodograms

AWARDS & HONORS

1. Unidel Distinguished Graduate Scholars Award, University of Delaware Graduate College, 2021.
2. Hancock Award for Best Undergraduate Research, University of Delaware Department of Physics and Astronomy, 2021.
3. Immigrant Heritage Week Award, Accompany Capital, 2021.
4. Merit Scholarship, University of Delaware Honors College, 2017– 2021.

TEACHING & OUTREACH

Teaching Assistant, University of Delaware

1. PHYS 207: Calculus Based Fundamentals of Physics I — Spring 2021, Fall 2019-2020
2. PHYS 202: Algebra Based Introductory Physics II — Winter 2021
3. PHYS 201: Algebra Based Introductory Physics — Summer 2019

Department of Physics and Astronomy Committee for Diversity, Equity, and Inclusion

Committee Member — July 2020 – May 2021

Interview on Gamma Draconis

"Stellar work: Studying the "wobble" of the red giant Gamma Draconis". UDaily. — October 30th, 2020.

WORKSHOPS

1. Sagan Summer Workshop: Exoplanet Science in the Gaia era — July 2025
2. Sagan Summer Workshop: Exoplanet Science in the Gaia era — July 2022
3. MESA Summer School 2022 — August 2022