

ROMY RODRÍGUEZ MARTÍNEZ

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RESEARCH INTERESTS/GOALS

I am interested in the detection and characterization of extrasolar planets. My chief research goals are to combine precise measurements of small exoplanets's masses and radii with the chemical abundances of their host stars to constrain planetary structure and composition.

EDUCATION

PhD, Astronomy

The Ohio State University

Advisor: B. Scott Gaudi

August 2017 - Present

Master of Science, Physics

University of Puerto Rico, Río Piedras

August 2015 - June 2017

Bachelor of Science, Physics

University of Puerto Rico, Río Piedras

August 2009 - May 2015

PUBLICATIONS

11 total; 6 first author

11. Duck, A., Martin, D.V., Gill, S., et al. (incl. **Rodríguez Martínez, R.**) “The EBLM project X. Benchmark masses, radii and temperatures for two fully convective M-dwarfs using K2”, *Under Review*
10. Martin, D.V., Armitage, T., Duck, A., et al. (incl. **Rodríguez Martínez, R.**) “Revised Temperatures For Two Benchmark M-dwarfs – Outliers No More”, *Under Review*
9. **Rodríguez Martínez, R.**, Gaudi, B.S., Schulze, J., et al. “A Reanalysis of the Composition of K2-106b: an Ultra-short Period Super-Mercury Candidate”, *AAS Journals, Under Review*
8. Fitzmaurice, E., Martin, D. V., **Rodríguez Martínez, R.**, et al. “Spectroscopy of TOI-1259B - an unpolluted white dwarf companion to an inflated warm Saturn”, *Monthly Notices of the Royal Astronomical Society*
7. **Rodríguez Martínez, R.**, Stevens, D.J., Gaudi, B.S., Panero, W., “Analytic Estimates of the Achievable Precision on the Physical Properties of Transiting Planets using Purely Empirical Measurements”, 2021, *The Astrophysical Journal*, 911, 84.
6. Godoy-Rivera, D., Tayar, J., Pinsonneault, M., **Rodríguez Martínez, R.**, et al., “Testing the Limits of Precise Subgiant Characterization with APOGEE and Gaia: Opening a Window to Unprecedented Astrophysical Studies”, *The Astrophysical Journal*
5. **Rodríguez Martínez, R.**, Gaudi, B.S., Rodriguez, Joseph E., “KELT-25b and KELT-26b, a Hot Jupiter and a Substellar Companion Transiting Young A-stars observed by TESS”, 2020, *The Astronomical Journal*, 160, 3.
4. Rodriguez, J. E., Eastman, J. D., Zhou, G., et al. (incl. **Rodríguez Martínez, R.**) “KELT-24b: A $5M_J$ Planet on a 5.6 day Well-Aligned Orbit around the Young V=8.3 F-star HD 93148”, 2019, *The Astronomical Journal*, 158, 197.
3. **Rodríguez Martínez, R.**, Lopez, L., Shappee, B., Kochanek, C.S., Jayasinghe, T., Schmidt, S., “A Catalog of Flares on M dwarfs with ASAS-SN”, 2020 *The Astrophysical Journal*, 892, 144.
2. **Rodríguez Martínez, R.**, Ballard, S., Mayo, A., Vanderburg, A., Montet, B., Christiansen, J. L., “Characterization of Low Mass K2 Planet Hosts Using Near-Infrared Spectroscopy”, 2019, *The Astronomical Journal*, 158, 155.

1. **Rodríguez Martínez, R.**, Schmidt, S. J., Jayasinghe, T., Stanek, K. Z., Prieto, J. L., Shappee, B., Kochanek, C.S., Thompson, T. A., Holoiu, T. W.-S., Bersier, D., Brimacombe, J., “ASASSN-18di: Discovery of a Powerful Flare on a Mid-M Dwarf”, 2018, *Research Notes of the American Astronomical Society*, 2, 2.

TALKS PRESENTED

“Revisiting the Composition of K2-106b: an Ultra-dense, Ultra-short Period Exoplanet” NASA JPL Exoplanet Seminar (Invited Talk)	April 25, 2022
“Journey into the Centers of Super-Earths: Constraining the Interior Structure and Composition of Low-Mass Exoplanets” Carnegie Observatories invited seminar talk	March 18, 2022
“Revisiting the Composition of K2-106b: an Ultra-dense, Ultra-short Period Exoplanet” ExoExplorer Science Talks	March 18, 2022
“Analytic Estimates of the Achievable Precision on the Physical Properties of Transiting Exoplanets” Habitable Worlds 2021 conference	February 2021
“Analytic estimates of the achievable precision of the properties of transiting exoplanets” National Society of Black Physicists conference	November 2020
“Finding Flares with ASAS-SN” Invited talk at Cool Stars conference 2020	Cancelled due to COVID-19
“KELT-25b & KELT-26b: A hot Jupiter and a substellar companion transiting young A-stars observed by TESS” Invited “Astronomy Tea” talk - Carnegie Observatories	July 2020
“Searching for Hot Planets Around Hot Stars with the KELT Survey”, Harvard-Smithsonian Center for Astrophysics, Stars & Planets Seminar invited talk	October 2019
“Strange New Worlds”, Arecibo Observatory invited seminar talk	April 2017

AWARDS AND HONORS

ExoExplorers Program (ExoPAG Executive Committee/ NASA Exoplanet Exploration Program)	January 2021
Presidential Fellowship, The Ohio State University	December 2021
Two Sigma Diversity PhD Fellowship Grant (\$2000)	March 2021
Two Sigma Diversity PhD Fellowship Finalist	March 2021
Honorable Mention for Ford Foundation Predoctoral Fellowship	January 2019
Beth A. Brown Award for Best Graduate Poster Presentation National Society of Black Physicists conference	November 2018
Ann S. Tuttle Scholarship (OSU)	September 2017

TELESCOPE PROPOSALS

- Large Binocular Telescope (LBT), “Characterizing the atmospheres of white dwarf companions to known exoplanets” (PI), 10 hours awarded, August 2022
- Large Binocular Telescope (LBT) “Confirming the First Super Mercury? Exploring the Composition of K2-229b, an Ultra-Dense, Ultra-Short Period Exoplanet” (PI), 8 hours awarded, August 2020

TEACHING & ADVISING

Summer Undergraduate Research Program (SURP) at OSU*Tayt Armitage, astronomy undergraduate, Co-advisor: David V. Martin*

May 2022 - present

Columbia High School Science Research Program*Informal advisor for Nicholas Pugliese, high school student in the Science Research Program*

January 2021 - December 2021

SciAccess Zenith Mentorship Program*Informal mentor for Olvia Wilkerson, high school student in the Space Science**Mentoring Program at OSU*

August - December 2020

Polaris Mentorship Program*Kevin Hoy and Hannah Parsons; astronomy undergraduates, Co-advisor: Alison Duck*

May 2020

August 2019 -

University of Puerto Rico, Río Piedras**University of Puerto Rico, Río Piedras, Intermediate Lab II**

Graduate Teaching Assistant (TA)

January 2016

University of Puerto Rico, Río Piedras, Introduction to Physics Lab I

Graduate Teaching Assistant (TA)

August 2015

A tiempo Tutoring Center

Math and Physics Tutor for Middle School students

August 2011

OUTREACH & SERVICE

Panelist for *Women in Space*

Q&A webinar for elementary school and high school students

May 2022

Panelist for *Galaxy Quest* Monthly Movie Nights - Science Fiction vs Science Fact

Q&A webinar, Astronomy Department, OSU

August 2021

American Astronomical Society Journal Author Series

Discussion of the paper “Analytic Estimates of the Achievable Precision
on the Physical Properties of Transiting Planets Using Purely Empirical Measurements”

May 2021

Speaker for “Magnifying Voices in Physics” event through

Womxn in Physics and Astronomy (WiPA) at UC Irvine

May 2021

Invited speaker at the Columbus School for Girls

April 2021

Invited speaker for middle and high school students at Colegio

Congregacion Mita (Virtual)

March 2021

Panelist for Space4Women Show (Webinar)

February 2021

Invited Speaker for OSU’s Astronomical Society

November 2020

Speaker for Friends of Ohio State Astronomy and Astrophysics (FOSAA) event

“The Search for Life in the Universe and the Exoplanet Revolution”

October 2020

Panelist for *Women in Space*

Q&A webinar for elementary school and high school students

September 2020

Panelist for *The Martian* Monthly Movie Nights - Science Fiction vs Science Fact

Q&A webinar, Astronomy Department, OSU

August 2020

Invited speaker for the Planetary Habitability Lab’s “AstroChat” series event

University of Puerto Rico Arecibo campus

December 2019

Invited speaker at elementary school Myrna M. Fuentes

Caguas, Puerto Rico

December 2019

Creator and co-organizer of symposium: “The Hunt for Alien Habitable Worlds”

Speakers: Sarah Ballard, Noemí Pinilla-Alonso, Abel Méndez

University of Puerto Rico, Río Piedras

March, 2017

PRESS COVERAGE

¿Qué Pasa, Ohio State? magazine, “Reaching for the Starts: Interview with Romy Rodríguez Martínez”

AAS Journal Author Series: Presentation of my Research on “Analytic Estimates of the Achievable Precision on the Physical Properties of Transiting Planets using Purely Empirical Measurements”

Media appearance: “Puerto Rican scientists mourn loss of Arecibo Observatory’s iconic telescope” Article by Meghan Bartels for Space.com

ASAS-SN-18di (Articles on this paper were published in phys.org, medium.com, renfrewshireastro.co.uk, and others.)

April 2018

POSTER PRESENTATIONS

“Is K2-106b truly a Super-Mercury?” (Exoplanets IV Conference)

May 2022

“Finding Flares with ASAS-SN”, (National Society of Black Physicists Meeting), won Beth Brown Award for Best Graduate Poster

November 2018

“Finding Flares with ASAS-SN”, Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) Conference

October 2018

“Characterization of Low-mass K2 planet hosts using Near-Infrared Spectroscopy”

229th American Astronomical Society Meeting

January 2017

“Characterization of Low-mass K2 planet hosts using Near-Infrared Spectroscopy”

Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) Conference

October 2016

CONFERENCES ATTENDED

Exoplanets IV (Las Vegas, NV)

May 2022

Habitable Worlds 2021 (Virtual)

February 2021

Exoplanet Demographics Conference (Virtual)

November 2020

National Society of Black Physicists (Virtual)

November 2020

233rd American Astronomical Society Meeting, (Seattle, WA)

January 2019

National Society of Black Physicists, (Columbus, OH)

November 2018

SACNAS - National Diversity in STEM Conference, (San Antonio, TX)

October 2018

Planets around Hot Stars Meeting, (Nashville, TN)

June 2018

2nd Earth-Like Worlds Workshop, (Manati, PR)

February 2017

229th American Astronomical Society Meeting (Grapevine, TX)

January 2017

SACNAS - National Diversity in STEM Conference (Long Beach, CA)

October 2016

Astrobiology Science Conference (Chicago, Il)

June 2015