Kevin N. Ortiz Ceballos ***(He/Him/Él)*** ***Curriculum Vitae (Short)***

CONTACT INFORMATION

Planetary Habitability Laboratory
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EDUCATION

Bachelor of Science in Physics with a second concentration in Philosophy *In Progress*
University of Puerto Rico Río Piedras Campus, San Juan, Puerto Rico
- Visiting student at Brown University for the academic year of 2017-2018

High School Diploma (with High Honors) 2016
Escuela Secundaria de la Universidad de Puerto Rico (UHS), San Juan, Puerto Rico

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RESEARCH POSITIONS

Astronomy Researcher May 2018 to *present*
Planetary Habitability Laboratory, University of Puerto Rico at Arecibo
- In charge of preparing observing proposals, running observations, analyzing data (IDL & Python), incorporating students into observations and communicating PHL research.
- Leading the project investigating OH emission in interstellar comet 2I/Borisov with the Arecibo Observatory. Collaborating in Arecibo REDS, a campaign studying radio flares from stars with habitable planets. Also contributing to theory projects studying objects in open orbits and habitability models.

Astronomy Research Intern Jun 2020 to Jul 2020
Space Telescope Science Institute
- Worked with Hubble Space Telescope and TESS data to develop pixel-level decorrelation techniques for improving detections of exoplanet atmospheres using Python.

Astrophysics Undergraduate Researcher Jun 2019 to Aug 2019
Banneker Institute, Center for Astrophysics | Harvard & Smithsonian
- Programmed dynamical simulations of exoplanetary systems using Python and REBOUND. Identified origin of transit timing variations from simulation results.

PROFESSIONAL EXPERIENCE

Submillimeter Array 2020 Interferometry School Member Jan 2020
Submillimeter Array, Smithsonian Astrophysical Observatory

Student Computer Engineer & Team Scientist Aug 2019 to May 2020
RockSat-X Project, University of Puerto Rico

NASA Proposal Writing and Evaluation Experience Student Aug 2019 to Dec 2019
Lucy Student Pipeline Accelerator and Competency Enabler (L'SPACE), NASA

Team Scientist & Operations Officer, Mission Concept Academy Jan 2019 to May 2019
Lucy Student Pipeline Accelerator and Competency Enabler (L'SPACE), NASA

HONORS & AWARDS (SELECTED)

Barry Goldwater Scholarship	2020
USRA Distinguished Undergraduate Scholarship	2019
Mellon-Mays Undergraduate Fellowship	2019-2021
Puerto Rico Louis Stokes Alliance for Minority Participation Award	2019-2021
Puerto Rico Space Grant Consortium NASA Fellowship	2018-2019

RESEARCH INTERESTS

Planetary, Exoplanetary, and Observational Astrophysics. Exoplanet characterization and transmission spectroscopy, radio observations of Solar System bodies and exoplanetary systems; and multiwavelength observational astrophysics.

AWARDED TELESCOPE TIME

PI Arecibo Observatory, Fall 2019 DDT, "Observing the 18 cm OH radical line in interstellar comet C/2019 Q4 (Borisov)" Project A3390, 12 hours.
Co-I Arecibo Observatory, Fall 2020, "Radio Emissions from Dwarf Stars with Planets VI" Project A3123, 40 hours, PI: A. Méndez.
Co-I Arecibo Observatory, Spring 2020, "Radio Emissions from Dwarf Stars with Planets V" Project A3123, 12.75 hours, PI: A. Méndez.
Co-I Arecibo Observatory, Spring 2019, "Radio Emissions from Dwarf Stars with Planets IV" Project A3123, 16 hours, PI: A. Méndez.

TELESCOPE EXPERIENCE

Hubble Space Telescope
Experience with data reduction and analysis of exoplanet transit data using WFC3 and STIS.
Transiting Exoplanet Survey Satellite (TESS)
Experience with data reduction and analysis of exoplanet transits from raw datasets.
Submillimeter Array
Substantial experience scripting observations, calibrating with MIR and imaging with CASA.
Arecibo Observatory
Extensive experience successfully proposing and planning for focused and large programs. Skilled in remote and on-site telescope operation, data reduction, analysis and visualization.

TECHNICAL SKILLS

Programming & Analysis: Skilled with analysis software such as DS9, Astropy, NumPy, SciPy, MIR, CASA, and Arecibo Mock Spectrometer software.

- **Python:** Intermediate, advanced for astronomy applications.
- **IDL:** Beginner to intermediate

Other Software Programs & Skills: Autodesk Inventor, JMARS, LaTeX, Adobe Photoshop, Premiere & Lightroom. macOS, Unix, Linux, Windows.

SCIENCE POLICY LEADERSHIP & OUTREACH

Science Policy Ambassador Feb 2019 to *Present*
Puerto Rico Science Policy Action Network (PR-SPAN)

AAS Congressional Visit Day Volunteer 2020 Sep 2020
American Astronomical Society

EDUCATION & OUTREACH (SELECTED)

Circle of University Astrobiology - UPR Río Piedras, Vice President 2019 to *present*
Organization for students interested in astrobiology. As Vice President, have helped organize events and a historical restoration project with Puerto Rico's first observatory.

- **Media Appearance:** "Long-lost astronomy observatory in Puerto Rico rediscovered by university students", article by Doris Elin Urrutia for Space.com.

PHL Outreach Program, Observer and Presenter 2018 to *present*
Have helped bring over 50 students and community members to on-site observations at the Arecibo Observatory, as well as take part in the Lab's outreach and media efforts.

- **Media Appearance:** "Ciencia y Meteorología: Reconocen a jóvenes por sus investigaciones", outreach interview for Noticentro morning news segment in December 2019.

Swearer Tutoring Enrichment in Math and Science (STEMS) Program, Tutor 2018
Algebra tutor for 9th graders as part of the STEMS Program at Brown University.

Volunteer Calculus I, II & III Tutor at UPRRP 2017

LEADERSHIP & UNIVERSITY SERVICE

Academic Senator for the Faculty of Natural Sciences Sep 2018 to Sep 2019
Natural Sciences Student Council Representative Sep 2018 to Sep 2019
General Student Council Representative Sep 2018 to Sep 2019
Representative, National Student Confederation of Puerto Rico Sep 2018 to Apr 2019

Conference Abstracts

Oral session indicated by *. *Long-form abstract indicated by* †*, PDF accessible with link.*

[9] 2021. **Ortiz Ceballos, K.N.***†, Colón Cesaní, A.H., Howell, E.S., et al., Constraints on the Water-Production Rates of Interstellar Comet 2I/Borisov from Arecibo Radio OH Observations. LPSC LII, 2582.

[8] 2021. **Ortiz Ceballos, K.N.***, Espinoza, N., Detecting Exoplanet Atmospheres Through Spectroscopic Pixel-Level Decorrelation (sPLD). AAS 237, Abs. #428.05.

[7] 2020. **Ortiz Ceballos, K.N.**, Espinoza, N., Improving The Precision Of Exoplanet Atmospheric Detections Through Pixel-Level Decorrelation (PLD). SACNAS 2020, #67530.

[6] 2020. **Ortiz Ceballos, K.N.**†, Howell, E.S., Méndez, A., et al., Observing Interstellar Comet 2I/Borisov for Radio OH Lines with the Arecibo Observatory. LPSC LI, #3078.

[5] 2020. **Ortiz Ceballos, K.N.***, Pérez, J., Rediscovering the First Astronomical Observatory of Puerto Rico. AAS 235, Abs. #139.05.

[4] 2020. **Ortiz Ceballos, K.N.**, Quinn, S., Hadden, S., Yahalomi, D., Montet, B., N-body simulations of a warm Jupiter near resonance with a sub-Neptune. AAS 235, Abs. #174.26.

[3] 2020. Yahalomi, D.A., et al. including **Ortiz Ceballos, K.N.**, Discovery of a Warm Jupiter near Resonance with an Exterior sub-Neptune. AAS 235, Abs. #174.23.

[2] 2019. **Ortiz Ceballos, K.N.**†, Méndez, A., Zuluaga, J., et al., Arecibo REDS: The Stellar Activity of Stars with Potentially Habitable Planets. First Billion Years: Hab., #1038.

[1] 2019. **Ortiz Ceballos, K.N.**†, Méndez, A., Zuluaga, J., et al., Arecibo REDS: The Stellar Activity of Stars with Potentially Habitable Planets. LPSC L, #3161.

Manuscripts & Publications

[3] 2020. **Ortiz Ceballos, K.N.**, Colón Cesaní, A.H., Howell, E.S., Méndez, A., et al., Radio OH Observations of Interstellar Comet 2I/Borisov. In preparation for a focus issue of *PSJ*.

[2] 2020. Méndez et al. incl. **Ortiz Ceballos, K.N.**, Habitability Models for Astrobiology. Accepted to *Astrobiology*.

[1] 2020. Méndez et al. incl. **Ortiz Ceballos, K.N.**, Habitability Models for Planetary Sciences. White Paper for the Planetary Science Decadal Survey 2023-2033. arXiv:2007.05491.

Invited Talks

2020 Seminar Series, Arecibo Observatory.
2020 Planetary Sciences Seminar Series, University of Central Florida.

Selected Professional Talks

2020 Space Telescope Science Institute, online due to COVID-19.
2019 XVIII Physics & Chemistry Forum, UPR Arecibo, Puerto Rico.
2019 Arecibo Observatory, Puerto Rico.
2019 MMUF Southeastern Regional Conference. Houston, Texas.
2019 12th Knowledge Cities World Summit. Florianópolis, Brasil.
2019 Harvard-Smithsonian CfA, Cambridge, Massachusetts. (Video recording).
2019 Puerto Rico Astronomy Society. San Juan, Puerto Rico.
2018 XVII Physics & Chemistry Forum, UPR Arecibo, Puerto Rico.
2018 1st Philosophy Symposium, PCUPR, Ponce, Puerto Rico.

Biographical Information

Citizenship: United States of America
Languages: Fluent in English and Spanish. Experienced as Spanish-English interpreter.

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