

# Rodrigo E. L. Córdoba Rosado

Department of Astrophysical Sciences, Princeton University, 4 Ivy Lane, Princeton, NJ, 08540  
rodrigoc@princeton.edu  rodelcr.github.io  
Osage Nation Tribal Enrollment No. 025118

<b>KEYWORDS</b>	Active Galactic Nuclei (16), Large-scale structure of the universe (902), Observational cosmology (1146)	
<b>EDUCATION</b>	<b>Princeton University</b> , Princeton, New Jersey, USA	
	Ph.D. in Astrophysical Sciences (Expected May 2025)	Aug 2020 – Present
	Dissertation: “Understanding the quasar-dark matter halo connection in wide-field surveys”	
	M.A. in Astrophysical Sciences	2022
	<b>University of Cambridge</b> , Cambridge, Cambridgeshire, UK	
	MPhil in Archaeology of the Americas	2019 – 2020
	Dissertation: “New Approaches to the Archaeoastronomy of Chaco Canyon”	
	<b>Harvard University</b> , Cambridge, Massachusetts, USA	
	Cum Laude Joint A.B. in Astrophysics-Physics	2015 – 2019
	Secondary in Archaeology	
<b>PROFESSIONAL APPOINTMENTS</b>	<b>Graduate Fellow</b>	
	Liechtenstein Institute on Self Determination (LISD), Princeton University	2023 – Present
	Working with Prof. Danspeckgruber	
	<b>Non Resident Tutor</b>	
	Currier House, Harvard University	2022 – Present
	<b>Graduate Assistant in Instruction</b>	
	Department of Astrophysical Sciences, Princeton University	
	AST 203 - The Universe (Spring 2022)   AST 205 - Planets of the Universe (Fall 2021)	
	<b>Resident Graduate Student</b>	
	Forbes College, Princeton University	2021 – Present
	<b>Graduate Researcher</b>	
	Department of Astrophysical Sciences, Princeton University	2020 – Present
	<b>Graduate Teaching Fellow</b>	
	Princeton University Preparatory Program ( <a href="#">PUPP</a> )	2020 – 2023
	<b>Gates Cambridge Scholar</b>	
	University of Cambridge	2019 – 2020
	<b>NASA/JPL Intern</b>	
	Caltech SURF Program, Jet Propulsion Laboratory, California Institute of Technology	2018
	<b>SAO Intern</b>	
	Event Horizon Telescope, Smithsonian Astrophysical Observatory, Harvard University	2017 – 2018
	<b>Clay Telescope Observer - Group Leader</b>	
	Center for Astrophysics   Harvard & Smithsonian	2016 – 2019
	<b>Affiliated Student - Banneker Institute</b>	
	Center for Astrophysics   Harvard & Smithsonian	2016 – 2017
	<b>Tutor - Bureau of Study Counsel</b>	
	Harvard University	2016 – 2019
<b>HONORS &amp; AWARDS</b>	Mentorship Award, Best of Access, Diversity and Inclusion Awards - Princeton University	
		2023
	Group Programming Award, Best of Access, Diversity and Inclusion Awards - Princeton University	
		2023
	Equity Award, Department of Astrophysical Sciences, Princeton University	
		2023
	Ford Foundation Pre-Doctoral Fellowship, National Academies of Sciences, Engineering & Medicine	
		2022
	Princeton Graduate Scholars Program (GSP)	
		2020

President's Fellowship - Princeton University Graduate School	2020
2020 Breakthrough Prize in Fundamental Physics Co-Recipient (EHT)	2019
Gates Cambridge Scholarship	2019
Caltech Summer Undergraduate Research Fellowship	2018
Harvard College Research Program Summer Research Fellowship	2017 & 2016
Eagle Scout	2012

## SELECTED PUBLICATIONS

A full list of publications can be found [here](#).

### PAPERS

**Córdova Rosado, R.**, Goulding, A., Greene, J., et al. “Cross-correlation of Luminous Red Galaxies with ML-selected AGN in HSC-SSP II: AGN classification and clustering with DESI spectroscopy”, *Submitted to The Astrophysical Journal*, Oct 2024. DOI: [10.48550/arXiv.2410.24020](https://doi.org/10.48550/arXiv.2410.24020)

Danieli, S., **et al.** “Merian: A Wide-Field Imaging Survey of Dwarf Galaxies at  $z$  0.06-0.10”, *Submitted to The Astrophysical Journal*, Oct 2024. DOI: [10.48550/arXiv.2410.01884](https://doi.org/10.48550/arXiv.2410.01884)

**Córdova Rosado, R.**, Goulding, A., Greene, J., et al. “Cross-correlation of Luminous Red Galaxies with ML-selected AGN in HSC-SSP: Unobscured AGN residing in more massive halos”, *Accepted in The Astrophysical Journal*, Oct 2024. DOI: [10.48550/arXiv.2409.08314](https://doi.org/10.48550/arXiv.2409.08314)

**Córdova Rosado, R.**, Santini, L. M., “The Solstitial Axis: Solar Alignments in Ancient Mesoamerica”, *Submitted to Latin American Antiquity*. Sep 2024.

Luo, Y., **et al.**, “The Merian survey: design, construction, and characterization of a filter set optimized to find dwarf galaxies and measure their dark matter halo properties with weak lensing”, *Monthly Notices of the Royal Astronomical Society*, Mar 2024. DOI: [10.1093/mnras/stae925](https://doi.org/10.1093/mnras/stae925)

**Córdova Rosado, R.**, Hensley, B., Clark, S., Duivenvoorden, A., et al. “The Atacama Cosmology Telescope: Galactic Dust Structure and the Cosmic PAH Background in Cross-correlation with WISE”, *The Astrophysical Journal*, Jan 2024. DOI: [10.3847/1538-4357/ad05cd](https://doi.org/10.3847/1538-4357/ad05cd)

Raymond, A.; Palumbo, D.; Paine, S.; Blackburn, L. **Córdova Rosado, R.**; Doeleman, S; et al., “Evaluation of New Submillimeter VLBI Sites for the Event Horizon Telescope,” *The Astrophysical Journal, Supplemental Series* Feb 2021. DOI: [10.3847/1538-3881/abc3c3](https://doi.org/10.3847/1538-3881/abc3c3)

Event Horizon Telescope Collaboration **et al.**, “First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole,” *The Astrophysical Journal Letters* Apr 2019. DOI: [10.3847/2041-8213/ab0ec7](https://doi.org/10.3847/2041-8213/ab0ec7)

Event Horizon Telescope Collaboration **et al.**, “First M87 Event Horizon Telescope Results. II. Array and Instrumentation,” *The Astrophysical Journal Letters* Apr 2019. DOI: [10.3847/2041-8213/ab0c96](https://doi.org/10.3847/2041-8213/ab0c96)

### CONFERENCE POSTERS

**Córdova Rosado, R.**, Goulding, A., Greene, J., et al.; “Stronger Clustering in Unobscured AGN with an HSC  $\times$  WISE Selection” at the 2024 Ford Fellows Conference, Washington, D.C., USA, Jun 2024.

**Córdova Rosado, R.**, Masters, D., Rhodes, J., “Constraints on the Dark Energy Survey’s Photometric Galaxy Redshifts,” at the 233rd American Astronomical Society Meeting, Seattle, Washington, USA, Jan 2019. Online Poster: <https://goo.gl/1ZosGD>

**Córdova Rosado, R.**, et al., “Joint Meteorological Statistics of Observing Sites for the Event Horizon Telescope,” at the 231st American Astronomical Society Meeting, Washington, D.C., USA, Jan 2018. Press Discussion: <https://goo.gl/awSb7S>

### DATA RELEASES

Bieryla, A.; Carmichael, T; Challis, P.; **Cordova, R.**; Finkbeiner, D.; Gilchrist, R.; Komorowski, E.; Alonso-Monsalve, E. “spectral ID of supernova AT2017cfc ” 2017. <http://www.astronomersteletgram.org/?read=10178>

**Cordova, R.**; Cummins, K. “Transit Observation of HAT-P-37-b ” 2016. <http://var2.astro.cz/tresca/transit-detail.php?id=1461173881>

## PUBLIC-FACING WRITING

See translations and full text [here](#).

**Córdova Rosado, R.** “Huye Luna, Luna, Luna”, Jul 2023, [Article link](#).

**Córdova Rosado, R.** “Homo naledi, seres de la estrella creciente”, Jun 2023, [Article link](#).

**Córdova Rosado, R.** “Cuatro minutos: Starship y el inicio de una nueva era de exploración espacial”, *El Nuevo Día*, Apr 2023, [Article link](#).

**Córdova Rosado, R.** “Universos paralelos de dos telescopios boricuas”, *El Nuevo Día*, Oct 2022, [Article link](#).

**Córdova Rosado, R.** “El telescopio espacial James Webb y el futuro de la astronomía puertorriqueña”, *El Nuevo Día*, Jul 2022, [Article link](#).

## SERVICE

### APPOINTMENTS

<b>Responsible Siting Working Group</b> , Black Hole Initiative, Harvard University	2024 – Present
Member	
<b>Honors Committee</b> , Society of Indigenous Physicists	
Committee Member	2024 – Present
<b>Princeton American Indian &amp; Indigenous Studies Working Group</b> , Princeton University	
Organizing Board	2023 – Present
President	2024 – Present
<b>Native Graduate Students of Princeton</b> , Princeton University	
Organizing Board	2022 – Present
President	2024 – Present
<b>The Peoples’ Sky Conference</b> , Council of Science and Technology, Princeton University	
Co-Lead Organizer	2023 – Present
<b>Public Observing Program</b> , Princeton Department of Astrophysical Sciences	
Telescope Trainer	2022 – Present
Co-Coordinator	2022
<b>National Program Subcommittee</b> , Order of the Arrow, Boy Scouts of America	
Board Member	2021 – Present
<b>National Scholarship Committee</b> , 2023 National Jamboree, Boy Scouts of America	
Director	2022 – 2023
<b>Climate Committee</b> , Princeton Department of Astrophysical Sciences	
Graduate Student Representative	2021 – 2023
<b>Graduate Student Committee</b> , Princeton Department of Astrophysical Sciences	
Graduate Student Representative	2020 – 2022
<b>Advisory Group to the Diversity and Inclusion National Committee</b> , Boy Scouts of America	
Founding Member	2020 – 2023
<b>Camp Guajataka Summer Program</b> , San Sebastián, Puerto Rico	
Archaeology Instructor	2020
<b>Gates Scholars’ Sustainability Working Group</b> , University of Cambridge	
External Action Group Leader	2019 – 2020
<b>Student Astronomers of Harvard-Radcliffe (STahr)</b> , Harvard University	
President & Observatory Director	2018 – 2019
<b>Harvard College Astrophysical Society</b> , Harvard University	
Co-President	2017 – 2018
<b>Harvard Archery Team</b> , Harvard University	
President/ USA Archery Level 2 Instructor	2016 – 2018

## PRESENTATIONS INVITED TALKS

### Friday Lunch Seminar

*Department of Astrophysical & Planetary Sciences, CU Boulder*

Nov 2024

<b>Galaxy Group Lunch</b> <i>Steward Observatory – University of Arizona Astronomy Department</i>	Nov 2024
<b>KIPAC Tea Talk</b> <i>Kavli Center for Astrophysics and Cosmology, Stanford University</i>	Nov 2024
<b>Friday Lunch Seminar</b> <i>Black Hole Initiative, Harvard University</i>	Oct 2024
<b>ITC Luncheon</b> <i>Center for Astrophysics   Harvard &amp; Smithsonian</i>	Oct 2024
<b>Galaxy Lunch</b> <i>Astronomy Department, Yale University</i>	Oct 2024
<b>Monday Afternoon Talk</b> <i>MIT Kavli Institute for Astrophysics and Space Research</i>	Oct 2024
<b>Oral Presentation</b> <i>Seminar in honor of HSH, The Hereditary Prince Alois of Liechtenstein &amp; HRH, The Hereditary Princess Sophie of Liechtenstein, LISD, Princeton University</i>	Sep 2023
<b>Gravity Group Presentation</b> <i>Department of Physics, Princeton University</i>	Oct 2023

#### CONTRIBUTED TALKS AND OTHER ACADEMIC ENGAGEMENTS

<b>Oral Presentation</b> <i>The Origin and Evolution of Supermassive Black Holes Conference, Sexten Center for Astrophysics, Sexten, Italy</i>	Jul 2024
<b>Oral Presentation</b> <i>Asterisms: The Relations among their Verbal, Numerical, and Visual Representations Across Cultures in Research and Public Outreach, Institute for Advanced Study, Princeton</i>	Feb 2024
<b>Panel Discussion after screening of <i>Killers of the Flower Moon</i></b> <i>Princeton University</i>	Nov 2023
<b>CMB Group Meeting Presentation</b> <i>Astronomy Department, Harvard University</i>	Jul 2023
<b>Oral Presentation</b> <i>From the Galaxy to the Big Bang Conference, Bayuls Sur Mer, France</i>	Jun 2023
<b>Oral Presentation</b> <i>CMB Foregrounds and Galactic Science Workshop, Tenerife, Spain</i>	Dec 2022
<b>Panel Discussion with Osage Nation Principal Chief, Geoffrey Standing Bear</b> <i>Department of Anthropology, Princeton University</i>	Nov 2022
<b>Collaboration Meeting Presentation</b> <i>Atacama Cosmology Telescope Collaboration</i>	Oct 2022
<b>Collaboration Meeting Presentation</b> <i>Atacama Cosmology Telescope Collaboration</i>	Jul 2021
<b>Dissertation Presentation</b> <i>Department of Archaeology, University of Cambridge</i>	Mar 2020
<b>Senior Thesis Presentation</b> <i>Center for Astrophysics   Harvard &amp; Smithsonian</i>	Apr 2019
<b>JPL Astrophysics Summer Intern Colloquium</b> <i>Jet Propulsion Laboratory, California Institute of Technology</i>	Aug 2018
<b>Astrophysics Laboratory Research Presentation</b> <i>Center for Astrophysics   Harvard &amp; Smithsonian</i>	Apr 2018
<b>Junior Thesis Presentation</b> <i>Center for Astrophysics   Harvard &amp; Smithsonian</i>	Dec 2017

#### GUEST LECTURES

<b>Osage History, Literature, Past, Present, and Future</b> <i>Native American Literature: An Introduction (ETHN 0090D), Brown University</i>	Oct 2024
--	----------

**Solstices and Hilltops: A Brief Overview of Indigenous Astronomy**  
*Native American History (HIS 271 / AMS 271), Princeton University*

Sep 2023

## PUBLIC TALKS

### **Ongoing series on Astronomy, Physics, and Archaeoastronomy**

*Daposka Ahnkodapi (Our School), Osage Nation, Pawhuska, OK*

2022 – Present

See [here](#) for recent review article.

### **(Invited) Explore the Universe: Featuring Astrophysicist Rodrigo Córdova Rosado, a Native American Heritage Month Event**

*Museum of Science, Boston*

Nov 2024

### **The History of the Universe, as Told by Dark Matter**

*TEDxMahwah, Mahwah, New Jersey*

Aug 2024

Video accessible [here](#).

### **From Puerto Rico to the Study of Quasars**

*Hispanics Inspiring Students' Performance and Achievement (HISPA) Kick-off Event*

Sep 2023

### **Escuchando el vacío: La búsqueda de vida extraterrestre y Arecibo**

*Arecibo Observatory, Puerto Rico*

Oct 2022

### **Los agujeros negros: qué son y cómo los observamos**

*Arecibo Observatory, Puerto Rico*

May 2022

### **The History of the Universe**

*STEAM Teaching at Arecibo Academy, Arecibo Observatory, Puerto Rico*

Apr 2022

### **Astronomía y la Arqueoastronomía**

*STEAM Teaching at Arecibo Academy, Arecibo Observatory, Puerto Rico*

Mar 2021 & 2022, Oct 2022

### **Cosmología y Agujeros Negros**

*Colegio San Antonio & Colegio San Ignacio, San Juan, Puerto Rico*

Aug 2022

### **La Historia de Día de los Muertos**

*Day of the Dead Event, Office of Access, Diversity & Inclusion, Princeton University*

Nov 2021

### **Astronomía como Carrera Científica**

*Centro CRECE, San Juan, Puerto Rico*

Nov 2021

### **Student Observing Night and Presentation**

*Forbes College, Princeton University*

Sep 2021

### **Cosmología Moderna**

*STEAM Teaching at Arecibo (STAR) Academy, Arecibo Observatory, Puerto Rico*

May 2021

### **Archaeoastronomy of the American Southwest**

*Internal Symposium, Sidney Sussex College, Cambridge, UK*

Feb 2020

### **The Archaeoastronomy of Chaco Canyon**

*Internal Symposium, Gates Cambridge Scholars, University of Cambridge*

Feb 2020

### **La Primera Sombra de un Hoyo Negro**

*Colegio San Ignacio de Loyola, San Juan, Puerto Rico*

Sep 2019

### **Public Observing Night with PBHA Mission Hill Afterschool Program**

*Loomis-Michael Observatory, Harvard University*

Mar 2019

### **Eclipse Solar 2017**

*Colegio San Ignacio de Loyola, San Juan, Puerto Rico*

Aug 2017

## PROFESSIONAL ASSOCIATIONS

American Astronomical Society (AAS)

Society of Indigenous Physicists (SIP)

## LANGUAGES

Spanish & English: Bilingual.

Osage: Beginner-Intermediate.

Ancient Greek: Intermediate (reading); basic (speaking, writing).

## SKILLS

Python, Linux/Unix, L<sup>A</sup>T<sub>E</sub>X, MATLAB, Mathematica, C, Adobe Lightroom, American Mountain Guide Association (AMGA) Certified Climbing Instructor