

Dr. Néstor Espinoza

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Appointments

Mission Scientist for Exoplanet Science Space Telescope Science Institute Baltimore, USA	2023A — present
Associate Astronomer Space Telescope Science Institute Baltimore, USA	2024A — present
Associate Research Scientist Johns Hopkins University Baltimore, USA	2020B — present
Assistant Astronomer Space Telescope Science Institute Baltimore, USA	2019B — 2024A
Bernoulli Postdoctoral Fellow Max-Planck Institut für Astronomie Heidelberg, Germany	2017B — 2019A

Education

Pontificia Universidad Católica de Chile (PUC) Ph. D. in Astrophysics (<i>summa cum laude</i>) Advisor: Dr. Andrés Jordán	2012 — 2017
Pontificia Universidad Católica de Chile (PUC) Licenciate in Astronomy (<i>summa cum laude</i>) Advisor: Dr. Andrés Jordán	2007 — 2012

Fellowships & Awards

2023 AURA Science Award Institute-wide recognition for “ <i>outstanding contributions to the characterization of exoplanet atmospheres through transit spectroscopy</i> ”.	2024
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NASA Silver Group Achievement Award	2024
Administration-wide recognition to the JWST Instrument Commissioning Team for “ <i>outstanding expertise and tireless dedication to commission the world-class instruments and subsystems of JWST, producing never-before-seen images of the universe</i> ”.	
IAU-Gruber Fellowship	2018
Fellowship awarded by The Gruber Foundation, selected by the International Astronomical Union (IAU, 25,000 USD prize for research).	
Bernoulli Fellowship	2017— 2019
Joint position between the Max-Planck-Institut für Astronomie (MPIA) and the University of Bern.	
100 Young Chilean Leaders	2017
Selected as one of the 100 leaders under 35 by El Mercurio newspaper.	
Adelina Gutiérrez Travel Grant	2017
Research stipend awarded by the Chilean Astronomical Society.	
PUC Young Student Leader	2016
Yearly recognition given to 20 students from the university.	
Kavli Summer Program in Astrophysics Fellowship	2016
Granted to 17 PhD students around the world.	
People’s Choice Award	2014
Awarded at the Three Minute Thesis® Competition at PUC.	
Distinguished Graduate Student Award	2014
Yearly award granted by the Chilean Astronomical Society.	
CONICYT Graduate Research Fellowship	2013—2017
Fellowship awarded by the Chilean Ministry of Education.	

Grants

As PI or co-PI (total: 800,000+ USD):

JWST Cycle 3 General Observers (GO) Program	2024B — present
90,000+ USD awarded to the project “Using stellar contamination proxy TRAPPIST-1 b to search for an atmosphere on TRAPPIST-1 e” (co-PIs: Allen & Espinoza; GO 6456)	
JWST Cycle 2 General Observers (GO) Program	2023B — present
260,000+ USD awarded to the project “Hot Jupiter Atmospheric Forecast: Are mornings cloudier than evenings in other worlds?” (co-PIs: Espinoza & Powell; GO 3969)	

JWST Cycle 1 General Observers (GO) Program 160,000+ USD awarded to the project “The First Near-infrared Spectroscopic Phase-curve of a Super-Earth” (PI: Espinoza; GO 2159)	2021B — present
JWST Cycle 1 General Observers (GO) Program 150,000+ USD awarded to the project “Exploring the Morning and Evening Limbs of a Transiting Exoplanet” (PI: Espinoza; GO 2113)	2021B — present
STScI Director’s Discretionary Funds (DDRF) 45,000+ USD awarded to the project “Supporting Early Career Scientists & the JWST Workshop for 2023 Spring Symposium” (PI: Espinoza).	2022B — present
STScI Director’s Discretionary Funds (DDRF) 60,000+ USD awarded as seed funding for the project “Towards an Exoplanet Census in the Cloud” (PI: Espinoza).	2020B — present
TESS Cycle 3 Guest Investigator Program 40,000 USD allocated to the project “Towards Constraints On Morning And Evening Terminators Of Distant Worlds With TESS” (PI: Espinoza).	2020B — present
As co-I (total: 500,000+ USD):	
NASA ROSES “Nancy Grace Roman Space Telescope Research and Support Participation Opportunities” 300,000+ USD awarded to co-I Espinoza to lead the Roman Transiting Exoplanet Atmospheric Characterization WG (PI: Quintana; Science PI: Wilson)	2023B — present
JWST Cycle 3 General Observers (GO) Program 40,000+ USD awarded to the project “TUNES: The Unintentional NIRISS Escape Survey” (PI: Vissapragada; GO 5916)	2024B — present
JWST Cycle 2 General Observers (GO) Program 41,000+ USD awarded to the project “Constraining the Oxidation State of the Super-Earth TOI-1685 b” (PI: Fisher; US Admin-PI: Espinoza; GO 4195)	2023B — present
JWST Cycle 2 General Observers (GO) Program 67,000+ USD awarded to the project “Problem Planets: Understanding the Formation of Giant Planets around Low Mass Stars” (PI: Jordán; US Admin-PI: Espinoza; GO 3731)	2023B — present
JWST Cycle 2 General Observers (GO) Program 31,000+ USD awarded to the project “Calibrating NIRISS order 3 for very bright time-series observations with JWST.” (PI: Hoeijmakers; US Admin-PI: Espinoza; GO 3279)	2023B — present
JWST Cycle 1 General Observers (GO) Program 80,000+ USD awarded to the project “TOI-178: the best laboratory for testing planetary formation theories” (PI: Hooton; US Admin-PI: Espinoza; GO 2319)	2021B — present

Software

Selected software under active development:

juliet — a versatile tool for transiting and non-transiting exoplanetary systems Lead developer juliet.readthedocs.io	2019—present
ExoCTK — the Exoplanet Characterization ToolKit Science lead exoctk.readthedocs.io	2020—present
Transit Spectroscopy Lead Developer github.com/nespinoza/transitspectroscopy	2021—present
tepspec — a pipeline for multi-object transit spectroscopy Lead developer github.com/nespinoza/tepspec	2016—present
abeec — an Approximate Bayesian Computation sampler Lead developer github.com/nespinoza/abeec	2021—present
limbdarkening — software to compute stellar limb-darkening from model stellar atmospheres Lead developer github.com/nespinoza/limbdarkening	2015—present

Telescope time allocation

Selected programs as PI:

Using stellar contamination proxy TRAPPIST-1 b to search for an atmosphere on TRAPPIST-1 e 130 hours of telescope time (over Cycles 3 and 4; co-PI with Allen). James Webb Space Telescope (JWST). Program ID: GO 3969.	2024—present
Hot Jupiter Atmospheric Forecast: are mornings cloudier than evenings in other worlds? 61.6 hours of telescope time (co-PI with Powell). James Webb Space Telescope (JWST). Program ID: GO 3969.	2022—present
Exploring the Morning and Evening Limbs of a Transiting Exoplanet 15.6 hours of telescope time. James Webb Space Telescope (JWST). Program ID: GO 2113.	2021—present
The First Near-Infrared Spectroscopic Phase-curve of a Super-Earth 14.9 hours of telescope time. James Webb Space Telescope (JWST). Program ID: GO 2159.	2021—present

Unveiling exoplanet atmospheres with “twin” (exo)planets 12 hours of telescope time. 8.4m Large Binocular Telescope, Mount Graham, AZ, USA. Proposal ID: DE-2018B-13.	2018—2019
Radial-velocity confirmation of K2 low-mass planet candidates 6 nights of telescope time. ESO 3.6m Telescope, La Silla Observatory, Chile. Proposal ID: 099.C-0526.	1/2017—9/2017
Variability monitoring of ACCESS Targets 50 hours of telescope time. Las Cumbres Observatory GTN (1m telescopes). Proposal ID: CN2016A-41.	1/2016—6/2016
ACCESS – The Arizona-CfA Catolica Exoplanet Spectroscopy Survey 8 nights of telescope time. Magellan 6.5m Telescope, Las Campanas Observatory, Chile. Proposal IDs: CN2015B-27, 2015A-78, 2014B-41, 2014A-68.	6/2015—1/2016

Publication List

First and second author (postdoc/student/mentee-led marked in **blue**) publications follow below. Full list of 190+ refereed co-authored publications can be found in **ADS**; h-index: 49):

1. Gressier, **Espinoza**, Allen et al.: *Hints of a Sulfur-rich Atmosphere around the 1.6 REarth Super-Earth L98-59 d from JWST NIRSpec G395H Transmission Spectroscopy*, *Astrophysical Journal Letters* (2024), vol. 975, 10.
2. Baines, **Espinoza**, Filippazzo et al.: *JWST NIRISS/SOSS: advancements in calibration and observational tools for exoplanetary science*, *SPIE* (2024), vol. 1309, 12.
3. **Espinoza**, Steinrueck, Kirk et al.: *Inhomogeneous terminators on the exoplanet WASP-39 b*, *Nature* (2024), vol. 632, 1017.
4. Deal & **Espinoza**: *Spelunker: A quick-look Python pipeline for JWST NIRISS FGS Guide Star Data*, *Journal of Open Source Software* (2024), vol. 9, 6202.
5. Wang & **Espinoza**: *A Blind Search for Transit Depth Variability with TESS*, *The Astronomical Journal* (2024), vol. 167, 1.
6. **Espinoza**, Ubeda, Birkmann et al.: *Spectroscopic Time-series Performance of JWST/NIRSpec from Commissioning Observations*, *Publications of the Astronomical Society of the Pacific* (2023), vol. 135, 018002.
7. Fu, **Espinoza**, Sing, et al.: *Water and an escaping helium tail detected in the hazy and methane-depleted atmosphere of HAT-P-18b from JWST NIRISS/SOSS*, *The Astronomical Journal* (2022), vol. 940, 2, L35.
8. Allen, **Espinoza**, Jordán: *ACCESS: Tentative Detection of H₂O in the Ground-based Optical Transmission Spectrum of the Low-density Hot Saturn HATS-5b*, *The Astronomical Journal* (2022), vol. 164, 153.

9. Patel & Espinoza: *Empirical Limb-darkening Coefficients and Transit Parameters of Known Exoplanets from TESS*, The Astronomical Journal (2022), vol. 163, 5.
10. Rackham, Espinoza, Berdyugina et al.: *Final Report for SAG 21: The Effect of Stellar Contamination on Space-based Transmission Spectroscopy*, Report Submitted to NASA on January 2022; arXiv:2201.09905.
11. Espinoza, Pallé, Kemmer et al.: *A transiting, temperate mini-Neptune orbiting the M dwarf TOI-1759 unveiled by TESS*, The Astronomical Journal (2022), vol. 163, 3.
12. Espinoza & Jones: *Constraining Mornings and Evenings on Distant Worlds: A new Semianalytical Approach and Prospects with Transmission Spectroscopy*, The Astronomical Journal (2021), vol. 162, 4.
13. Jones & Espinoza: *catwoman: A transit modelling Python package for asymmetric light curves*, Journal of Open Source Software (2020), 5, 2382.
14. Yan, Espinoza, Molaverdikhani, et al.: *LBT transmission spectroscopy of HAT-P-12b. Confirmation of a cloudy atmosphere with no significant alkali features*, Astronomy & Astrophysics (2020), 642, 98.
15. Espinoza, Brahm, Henning, et al.: *HD 213885b: A transiting 1-day-period super-Earth with an Earth-like composition around a bright ($V = 7.9$) star unveiled by TESS*, Monthly Notices of the Royal Astronomical Society (2020), 491, 2, 2982.
16. Espinoza: *On the Transit Probability of the Habitable-zone Exoplanet GJ 357d*, Research Notes of the American Astronomical Society (2019), vol. 3, 8.
17. Espinoza, Kossakowski & Brahm: *Juliet: a versatile modelling tool for transiting and non-transiting exoplanetary systems*, Monthly Notices of the Royal Astronomical Society (2019), vol. 490, 2262.
18. Sandford, Espinoza, Brahm, et al.: *Estimation of singly transiting K2 planet periods with Gaia parallaxes*, Monthly Notices of the Royal Astronomical Society (2019), vol. 489, 3149.
19. Kossakowski, Espinoza, Brahm, et al.: *TOI-150b and TOI-163b: two transiting hot Jupiters, one eccentric and one inflated, revealed by TESS near and at the edge of the JWST CVZ*, Monthly Notices of the Royal Astronomical Society (2019), vol. 490, 1094.
20. Espinoza, Hartman, Bakos, et al.: *HATS-54b-HATS-58Ab: five new transiting hot Jupiters including one with a possible temperate companion*, The Astronomical Journal (2019), vol. 158, 2, 63.
21. Brahm, Espinoza, Jordán, et al.: *HD 1397b: A Transiting Warm Giant Planet Orbiting A $V = 7.8$ mag Subgiant Star Discovered by TESS*, The Astronomical Journal (2019), vol. 158, 45.
22. Brahm, Espinoza, Rabus, et al.: *K2-161b: a low-density super-Neptune on an eccentric orbit*, Monthly Notices of the Royal Astronomical Society (2019), vol. 483, 2.
23. Espinoza, Rackham, Jordán, et al.: *ACCESS: A featureless optical transmission spectrum for WASP-19b from Magellan/IMACS*, Monthly Notices of the Royal Astronomical Society (2019), vol. 482, 2.
24. Espinoza: *Efficient Joint Sampling of Impact Parameters and Transit Depths in Transiting Exoplanet Light Curves*, Research Notes of the American Astronomical Society (2018), vol. 2, 4, 209.

25. Jordán & Espinoza: *An Alternative Derivation of the Analytic Expression of Transmission Spectra*, Research Notes of the American Astronomical Society (2018), vol. 2, 149.
26. Brahm, Espinoza, Jordán, et al.: *K2-232 b: a transiting warm Saturn on an eccentric $P = 11.2$ d orbit around a $V = 9.9$ star*, Monthly Notices of the Royal Astronomical Society (2018), vol. 477, 2572.
27. Espinoza, Fortney, Miguel, et al.: *Metal enrichment leads to low atmospheric C/O ratios in transiting giant exoplanets*, Astrophysical Journal Letters (2017), vol. 838, L9.
28. Rackham, Espinoza, Apai, et al.: *ACCESS I: An Optical Transmission Spectrum of GJ 1214b Reveals a Heterogeneous Stellar Photosphere*, The Astrophysical Journal (2017), vol. 834, 151.
29. Espinoza, Rabus, Brahm, et al.: *EPIC 220504338b: A dense hot-Jupiter transiting a solar analogue*, Monthly Notices of the Royal Astronomical Society (2017), vol. 471, 4374.
30. Espinoza, Brahm, Jordán et al.: *Discovery and Validation of a High-Density sub-Neptune from the K2 Mission*, The Astrophysical Journal (2016), vol. 830, 43.
31. Espinoza, Bayliss, Hartman et al.: *HATS-25b through HATS-30b: A Half-dozen New Inflated Transiting Hot Jupiters from the HATSouth Survey*, The Astronomical Journal (2016), vol. 152, 108.
32. Espinoza & Jordán: *Limb darkening and exoplanets - II. Choosing the best law for optimal retrieval of transit parameters*, Monthly Notices of the Royal Astronomical Society (2016), vol. 457, 3573.
33. Espinoza & Jordán: *Limb darkening and exoplanets: testing stellar model atmospheres and identifying biases in transit parameters*, Monthly Notices of the Royal Astronomical Society (2015), vol. 450, 1879.
34. Jordán, Espinoza, Rabus et al.: *A Ground-based Optical Transmission Spectrum of WASP-6b*, The Astrophysical Journal (2013), vol. 778, 184.

Invited Talks & Panels

Colloquia & Conference plenaries/reviews:

Joint JHU/STScI Colloquium, Baltimore, USA.	02/2025
Colloquium at the Instituto de Astrofísica, Pontificia Universidad Católica de Chile, Santiago, Chile.	08/2024
MIT Astrophysics Colloquium (MKI), MIT, Boston, USA.	03/2024
Invited Review at Open Problems in the Astrophysics of Gas Giants Conference, Puerto Natales, Chile.	12/2023
Institute of Astrophysics Colloquium, Pontificia Universidad Católica de Chile, Santiago, Chile.	12/2022

Astrophysical and Planetary Sciences Colloquium, CU Boulder, Colorado, USA.	11/2022
Physics & Astronomy Colloquium, George Mason University, Virginia, USA.	11/2022
Physics and Astronomy Colloquium, Wayne State University, Michigan, USA (Virtual Colloquium).	10/2022
Ole Rømer Colloquium, Institute of Physics and Astronomy, Aarhus Universitet, Denmark (Virtual Colloquium).	03/2022
Atmospheres, Atmospheres! Do I look like I care about atmospheres? (Atmo 2021; Virtual Conference).	08/2021
Chesapeake Bay Area Exoplanet Meeting Invited Talk, Carnegie DTM, Washington DC, USA.	01/2020
Colloquium Talk, Instituto de Física, Facultad de Ciencias, Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile.	05/2019
Königstuhl Colloquium, MPA, Heidelberg, Germany.	05/2018
Atmospheres of Disks and Planets Workshop Invited Talk, Ringberg Castle, Germany.	04/2017
XI Chilean Astronomical Society Annual Science Meeting, San Esteban, Chile.	01/2014
Invited panels:	
First EMAC Workshop on Open-Access Exoplanet Modeling & Analysis Tools: “Best Development Practices for Open-Access Resources” invited panelist	02/2023
Celebrating JWST’s first six months of exoplanet data: “JWST Instrument Performance” invited panelist	11/2022
Emerging Researchers in Exoplanet Science VII: “Careers outside academia” invited panelist	08/2022
Seminars (selected):	
Université de Montréal Astrophysics Seminar, Université de Montréal, Montréal, Canada.	02/2024
ExoVAST Virtual Astronomy Software Talk	11/2023
Astronomy Departmental Seminar, Stockholm University, Sweden.	09/2023

ExoGuide Virtual Talk	04/2023
Thirty Minute Talk, ESO-Chile, Santiago, Chile.	12/2022
Astronomy Seminar, University of Sao Paulo, Brazil (Virtual Seminar).	04/2022
Astronomy and Space Physics Seminar, Uppsala University, Sweden (Virtual Seminar).	10/2021
Talk/Tutorial on JWST Data Analysis at the JWST ERS Hackaton (Virtual Workshop).	06/2021
Physics & Astronomy Seminar, Universidad Adolfo Ibañez, Santiago, Chile (Virtual Seminar).	04/2020
Carnegie DTM Astro Seminar, Carnegie DTM, Washington DC, USA.	01/2020
Planetary and exoplanetary Astronomy Lunch Seminar, University of Maryland, College Park, USA.	11/2019
Talk/Tutorial on JWST Proposal Planning tools at “Rocky Exoplanets in the era of JWST”, NASA Goddard, Greenbelt, USA.	11/2019
Seminar Talk, Departamento de Ciencias Físicas, Facultad de Ciencias Exactas, Universidad Andrés Bello, Santiago, Chile.	05/2019
Seminar Talk, Departamento de Astronomía, U. de Chile, Santiago, Chile.	05/2019
Seminar Talk, Space Telescope Science Institute (STScI), Baltimore, USA.	01/2019
CSH Seminar, Center for Space and Habitability, Bern, Switzerland.	01/2017
Stars and Planets Seminar, Harvard-Smithsonian CfA, Boston, USA.	11/2016
Disks and Planets Seminar, Universidad Diego Portales, Santiago, Chile.	08/2016
Kavli Summer Program Seminar, UCSC, Santa Cruz, USA.	07/2016
Planet and Star Formation Coffee Talk, MPA, Heidelberg, Germany.	07/2015
Instituto de Astrofísica de Canarias Seminar, Tenerife, Spain.	07/2015
Joint OSU-PUC Workshop Talk, Ohio State University, Columbus, USA.	05/2014

ORIGINS Seminar, Center for Astrobiology, University of Arizona, Tucson, USA.	03/2014
First International Meeting in Astrostatistics in Valparaiso, Valparaiso, Chile.	05/2013

Service

Member of the “Transits to Trends” conference SOC	2024—present
Appointed Member of AURA’s Equity and Inclusion Council	2023—2025
Chair of the STScI/JHU ExoJamboree SOC	2024
Member of the “Know Thy Star 2” conference SOC	2023—2025
Member of the Exoplanet Strategy WG	2023—2024
Member of the “Open Problems in the Astrophysics of Gas Giants” conference SOC	2023
Member of the AAS Weber Prize Committee	2023—present
Co-Organizer & Lecturer of the ExoLatam 2022 Workshop on JWST & exoplanet transit spectroscopy	2022
ExoGuide for NASA’s ExoPAG ExoExplorers Science Series	2022—2023A
Member of the “Towards Other Earths III: The Planet-Star connection” Conference SOC.	2022—2023
Member of the “Planetary Systems and the Origins of Life in the Era of JWST” STScI Spring Symposium Workshop Organizing Committee.	2022—2023
Member of the “Towards the Comprehensive Characterization of Exoplanets” STScI Spring Symposium SOC.	2020—2021
Co-chair of NASA’s ExoPAG Study Analysis Group 21.	2019—2022
Member of the “Eclipsing Exoplanets 2020” conference SOC	2019—2020
Member of the SOC for MPIA’s PSF 2018 Retreat	2018
Co-Lead (with E. Pallé) of the CARMENES-TESS Working Group	2018—2022
Reviewer for Nature Astronomy	2021—present
Reviewer for The Journal of Open Source Software	2018—present
Reviewer for The Astrophysical Journal	2018—present
Reviewer for The Astronomical Journal	2019—present
Reviewer for the Astronomy & Computing Journal	2018—present
Reviewer for Publications of the Astronomical Society of the Pacific	2017—present
Reviewer for NSF AAG AST grants	

Reviewer for the Argentinian Comission of Physical Sciences
 Co-Chair of STScI's Science Recruiting Committee
 Chair, TESS TAC
 Member of NASA's FINESST fellowship selection panel
 Member of STScI's fellowship selection committee
 Member of CSH's fellowship selection committee

Outreach (Selected talks, events & positions)

Featured in "Universo Curioso de la NASA" – NASA in Spanish podcast	10/2024
Featured in various National TV interviews (Live Shots) for NASA's JWST aniversary	06/2024
Featured in IMAX's "Deep Sky"	10/2023
Public Lecture: "Finding Life in the Universe: where are we – and where are we going?", STScI, Baltimore, USA	10/2023
Interview for "On the Record" hosted by Sheilah Kast in WYPR 88.1 FM [link]	09/2023
Public Lecture: "Our Place in the Universe: New Directions in Exploring and Understanding Exoplanets", Kozmetsky Center for Excellence, Texas, USA	03/2023
Public Lecture: "A New Eye in the Sky: exploring alien worlds with the James Webb Space Telescope", STScI, Baltimore, USA	03/2023
Featured in PBS NOVA's "New Eye on the Universe" [link]	02/2023
Public Lecture: "Explorando Nuevos Mundos con el Telescopio Espacial James Webb", Santiago, Chile	12/2022
Featured in PBS NOVA's "Ultimate Space Telescope" [link]	07/2022
Weekly astronomy show on chilean national radio station "Radio USACH" / Podcast "Razones Siderales" [link]	2020-2022
Universidad Nacional Autonoma de Mexico (UNAM)'s Public Keynote Lecture for the "Noche de Las Estrellas" (virtual) event [link]	11/2021
Briefing for Astronomy Educators as part of NASA's Universe of Learning [link]	8/2021
Public (virtual) lecture for the Universidad Católica del Maule, Chile [link]	6/2021
Public (virtual) lecture for the Sociedad de Astronomia del Caribe [link]	2/2021
Public (virtual) lecture for the Instituto de Astronomía of the Universidad Católica del Norte, Chile [link]	12/2020

Public lecture as part of STScI's Youth for Astronomy & Engineering Program, STScI, Baltimore, USA	10/2020
Public Lecture as part of the STScI "Public Lecture Series", STScI, Baltimore, USA [link]	03/2020
Scientist at the "Letters to a pre-scientist" Initiative	2019—2020
Scientist at the "Skype a Scientist" Initiative	2018—2021
Winner of the Heidelberg Max-Planck 2018 Science Slam, Heidelberg, Germany	09/2018
Public talk at Astronomy on Tap Heidelberg, Germany	02/2018
Weekly astronomy show on chilean national radio station "Futuro FM"	2015—2017
Monthly astronomy blog at the "Telescopios Chile" web portal	2015—2019
Public talk at Mosto Bar for "Beerstrophysics", Santiago, Chile	08/2017
Public talk for the "Asteroid Day", PUC, Santiago, Chile	06/2017
Talk at Google Chile, Santiago, Chile	05/2017
Public Talk at "Casa de la Cultura PAC", Santiago, Chile	05/2017
Public Talk at "Concierto Cielos", Santiago, Chile	03/2017
Founder and Coordinator of the "Bling Bling Universe" astronomy initiative	2009—2015
Director of the "Itinerant Physics" outreach program	2009—2013

Teaching

Invited Lecturer, Department of Physics & Astronomy, Johns Hopkins University Course: "Planets, Life, and the Universe" (two lectures per semester)	2021B, 2022B, 2023B, 2024B
Teacher, ProCredit Academy, Fürth, Germany Course: "The Universe Around Us" (35 hours per course, 4 courses)	2019A
Teacher, Center of Study and Development of Talent, Penta UC, Santiago, Chile Course: "Orders of Magnitude" (50 hours per course)	2014A, 2014B, 2016A
Invited Lecturer, Faculty of Economics and Business, U. de Chile, Santiago, Chile Course: "Introduction to Science" (one lecture per semester)	2016A, 2016B, 2017A, 2020A
Teaching Assistant:	
ASP5408: Statistics for Astronomers (PUC)	2012—2016
AST0421: Experimental Astrophysics (PUC)	2014B
AST0212: Introduction to Data Analysis (PUC)	2014A
AST1525: Putting Numbers to the Earth and the Universe (PUC)	2014A
AST0311: General Astrophysics (PUC)	2013A

FIS101M: General Physics for the Military School (PUC)
FIS120: Electricity & Magnetism (UTFSM)

2011B
2010—2011

Postdoc Supervision

Dr. Mäns Holmberg (co-supervisor) 2024 — present
Space Telescope Science Institute

Dr. Amelie Gressier (co-supervisor) 2023 — present
Space Telescope Science Institute

Student Supervision & Mentoring

Natalie Allen (PhD co-advisor) 2020B — present
Project: “Constraining Stellar Contamination in Space Based Transit Spectroscopy” | Institution: Johns Hopkins University.

Yiwei Chai (PhD advisor) 2022B — present
Project: “Exoplanet atmospheres with the Roman Space Telescope” | Institution: Johns Hopkins University.

Zoe Ko (PhD advisor) 2024B — present
Project: “Data-driven exploration of Exoplanet Atmospheric Retrievals to beat Stellar Contamination ” | Institution: Johns Hopkins University.

Gavin Wang (PURA research advisor; Undergraduate Student) 2020B—present
Project: “Likelihood-based methods for 1/f detector noise” | Institution: Johns Hopkins University.

Ceiligh Cacho-Negrete (Mentor; Undergraduate Student) 2024B
Project: “A population study of exoplanet atmospheres with JWST” | Institution: STScI (STScI SASP Summer Program).

Patrick McCreery (First Year PhD student supervisor) 2022B — 2023
Project: “Improving transit spectroscopy simulations for JWST” | Institution: Johns Hopkins University.

Derod Deal (Mentor; Undergraduate Student) 2023B
Project: “A quick-look pipeline for the JWST NIRISS/FGS” | Institution: STScI/University of Florida (STScI SASP Summer Program).

Kevin Ortiz-Ceballos (Mentor; Undergraduate Student) 2020B
Project: “Improving the precision of exoplanet atmospheric detections through pixel-level decorrelation” | Institution: STScI/University of Puerto Rico Río Piedras (STScI SASP Summer Program).

Kathryn Jones (Mentor; Master Student) 2019B
Project: “Extracting (transit) depths from morning and evening terminators in transit lightcurves” | Institution: MPIA, Germany/Oxford, United Kingdom (Summer Program).

Diana Kossakowski (Mentor; PhD Student)

2018 — 2019

Project: “Gaussian Processes applied to transit lightcurves and radial velocities” | Institution: MPA, Germany.

Emily Sandford (Mentor; PhD Student)

2018 — 2019

Project: “Gaia & Singly Transiting Exoplanets” | Institution: PGIF Columbia/PUC Exchange Program, USA/Chile.

Jayshil Patel (Master Thesis Advisor)

2019A

Thesis title: “Study of the limb darkening effect using exoplanet transit light curves from TESS data” | Institution: S V National Institute of Technology, India.

Jennifer Fienko (Undergraduate Thesis Co-Advisor)

2019A

Thesis title: “Analytical Chemical Equilibrium for Exoplanetary Atmospheres” | Institution: Pontificia Universidad Católica de Chile, Chile.

Roy Van der Westhuizen (Undergraduate Thesis Co-Advisor)

2015B

Thesis title: “Virtual exoplanet laboratory: APIastro” | Institution: Pontificia Universidad Católica de Chile, Chile.