

Dr. Néstor Espinoza

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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

IAU-Gruber Fellowship Fellowship awarded by The Gruber Foundation, selected by the International Astronomical Union (IAU, 25,000 USD prize for research).	2018 — present
Bernoulli Fellowship Joint position between the Max-Planck-Institut für Astronomie (MPIA) and the University of Bern.	2017—present
100 Young Chilean Leaders Selected as one of the 100 leaders under 35 by El Mercurio newspaper.	2017
Strittmatter Fellowship University of Arizona.	2017 (Declined)
Adelina Gutiérrez Travel Grant Research stipend awarded by the Chilean Astronomical Society.	2017
PUC Young Student Leader Yearly recognition given to 20 students from the university.	2016
Kavli Summer Program in Astrophysics Fellowship Granted to 17 PhD students around the world.	2016
People's Choice Award Awarded at the Three Minute Thesis® Competition at PUC.	2014
Distinguished Graduate Student Award Yearly award granted by the Chilean Astronomical Society.	2014
CONICYT Graduate Research Fellowship Fellowship awarded by the Chilean Ministry of Education.	2013—2017

Publication List

First and second author:

1. **Espinoza**, Rackham, Jordán, et al.: *ACCESS: A featureless optical transmission spectrum for WASP-19b from Magellan/IMACS*, Monthly Notices of the Royal Astronomical Society (2018), in press.

2. Jordán & Espinoza: *An Alternative Derivation of the Analytic Expression of Transmission Spectra*, Research Notes of the American Astronomical Society (2018), vol. 2, 149.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. Jordán, Espinoza, Rabus et al.: *A Ground-based Optical Transmission Spectrum of WASP-6b*, The Astrophysical Journal (2013), vol. 778, 184.

Co-authored:

1. Colón, Zhou, Shporer et al. (including Espinoza): *A Large Ground-Based Observing Campaign of the Disintegrating Planet K2-22b*, The Astronomical Journal (2018), in press.
2. Bean, Stevenson, Batalha et al. (including Espinoza): *The Transiting Exoplanet Community Early Release Science Program for JWST*, Publications of the Astronomical Society of the Pacific (2018), vol. 130, 114402.
3. Soto, Díaz, Jenkins et al. (including Espinoza): *K2-237 b and K2-238 b: discovery and characterization of two new transiting hot Jupiters from K2*, Monthly Notices of the Royal Astronomical Society (2018), vol. 478, 5356.
4. Vanzi, Zapata, Flores et al. (including Espinoza): *Precision stellar radial velocity measurements with FIDEOS at the ESO 1-m telescope of La Silla*, Monthly Notices of the Royal Astronomical Society (2018), vol. 477, 5041.
5. Bento, Hartman, Bakos et al. (including Espinoza): *HATS-39b, HATS-40b, HATS-41b, and HATS-42b: three inflated hot Jupiters and a super-Jupiter transiting F stars*, Monthly Notices of the Royal Astronomical Society (2018), vol. 477, 3406.
6. Jones, Brahm, Espinoza et al.: *A hot Saturn on an eccentric orbit around the giant star EPIC228754001*, Astronomy & Astrophysics (2018), vol. 613, A76.
7. Giles, Bayliss, Espinoza et al.: *K2-140b - an eccentric 6.57 d transiting hot Jupiter in Virgo*, Monthly Notices of the Royal Astronomical Society (2018), vol. 475, 1809.
8. Brahm, Hartman, Jordán et al. (including Espinoza): *HATS-43b, HATS-44b, HATS-45b, and HATS-46b: Four Short-period Transiting Giant Planets in the Neptune-Jupiter Mass Range*, The Astronomical Journal (2018), vol. 155, 112.

9. Henning, Mancini, Sarkis et al. (including **Espinoza**): *HATS-50b through HATS-53b: four transiting hot Jupiters orbiting G-type stars discovered by the HATSouth survey*, *The Astronomical Journal* (2018), vol. 155, 79.
10. Xu, Rappaport, van Lieshout et al. (including **Espinoza**): *A dearth of small particles in the transiting material around the white dwarf WD 1145+017*, *Monthly Notices of the Royal Astronomical Society* (2018), vol. 474, 4795.
11. Barros, Gosselin, Lillo-Box et al. (including **Espinoza**): *Precise masses for the transiting planetary system HD 106315 with HARPS*, *Astronomy & Astrophysics* (2017), vol. 608, 25.
12. Shporer, Zhou, Fulton et al. (including **Espinoza**): *K2-114b and K2-115b: Two Transiting Warm Jupiters*, *The Astronomical Journal* (2017), vol. 154, 188.
13. Brahm, Hartman, Jordán et al. (including **Espinoza**): *HATS-43b, HATS-44b, HATS-45b, and HATS-46b: Four Short Period Transiting Giant Planets in the Neptune-Jupiter Mass Range*, *The Astronomical Journal* (2017), vol. 155, 112.
14. Bayliss, Hartman, Zhou et al. (including **Espinoza**): *HATS-36b and 24 Other Transiting/Eclipsing Systems from the HATSouth-K2 Campaign 7 Program*, *The Astronomical Journal* (2017), vol. 155, 119.
15. Brahm, Jordán & **Espinoza**: *CERES: A Set of Automated Routines for Echelle Spectra*, *Publications of the Astronomical Society of Pacific* (2017), vol. 129, 973.
16. Bento, Schmidt, Hartman et al. (including **Espinoza**): *HATS-22b, HATS-23b and HATS-24b: Three new transiting Super-Jupiters from the HATSouth Project*, *Monthly Notices of the Royal Astronomical Society* (2017), vol. 486, 835.
17. Brahm, Jones, **Espinoza** et al.: *An Independent Discovery of Two Hot Jupiters from the K2 Mission*, *Publications of the Astronomical Society of Pacific* (2016), vol. 128, 970.
18. de Val-Borro, Bakos, Brahm et al. (including **Espinoza**): *HATS-31b through HATS-35b: Five Transiting Hot Jupiters Discovered By the HATSouth Survey*, *The Astronomical Journal* (2016), vol. 152, 6.
19. Elorrieta, Eyheramendy, Jordán et al. (including **Espinoza**): *A machine learned classifier for RR Lyrae in the VVV survey*, *Astronomy & Astrophysics* (2016), vol. 595, 82.
20. Penev, Hartman, Bakos et al. (including **Espinoza**): *HATS-18b: An Extreme Short-period Massive Transiting Planet Spinning Up Its Star*, *The Astronomical Journal* (2016), vol. 152, 127.
21. Rabus, Jordán, Hartman et al. (including **Espinoza**): *HATS-11b AND HATS-12b: Two Transiting Hot Jupiters Orbiting Subsolar Metallicity Stars Selected for the K2 Campaign 7*, *The Astronomical Journal* (2016), vol. 152, 88.
22. Ratajczak, Helminiak, Konacki et al. (including **Espinoza**): *Orbital and physical parameters of eclipsing binaries from the ASAS catalogue - IX. Spotted pairs with red giants*, *Monthly Notices of the Royal Astronomical Society* (2016), vol. 461, 2234.
23. Ciceri, Mancini, Henning et al. (including **Espinoza**): *HATS-15b and HATS-16b: Two Massive Planets Transiting Old G Dwarf Stars*, *Publications of the Astronomical Society of the Pacific* (2016), vol. 128, 74401.
24. Brahm, Jordán, Bakos et al. (including **Espinoza**): *HATS-17b: A Transiting Compact Warm Jupiter in a 16.3 Day Circular Orbit*, *The Astronomical Journal* (2016), vol. 151, 89.
25. Bakos, Penev, Bayliss et al. (including **Espinoza**): *HATS-7b: A Hot Super Neptune Transiting a Quiet K Dwarf Star*, *The Astrophysical Journal* (2015), vol. 813, 111.

26. Zhou, Bayliss, Hartman et al. (including **Espinoza**): *A $0.24+0.18 M_{\odot}$ double-lined eclipsing binary from the HATSouth survey*, Monthly Notices of the Royal Astronomical Society (2015), vol. 451, 2263.
27. Bayliss, Hartman, Bakos et al. (including **Espinoza**): *HATS-8b: A Low-density Transiting Super-Neptune*, The Astronomical Journal (2015), vol. 150, 49.
28. Mancini, Hartman, Penev et al. (including **Espinoza**): *HATS-13b and HATS-14b: two transiting hot Jupiters from the HATSouth survey*, Astronomy and Astrophysics (2015), vol. 580, A63.
29. Izzo, Della Valle, Mason et al. (including **Espinoza**): *Early Optical Spectra of Nova V1369 Cen Show the Presence of Lithium*, The Astrophysical Journal (2015), vol. 808, L14.
30. Brahm, Jordán, Hartman et al. (including **Espinoza**): *HATS9-b and HATS10-b: Two Compact Hot Jupiters in Field 7 of the K2 Mission*, The Astronomical Journal (2015), vol. 150, 33.
31. Hartman, Bayliss, Brahm et al. (including **Espinoza**): *HATS-6b: A Warm Saturn Transiting an Early M Dwarf Star, and a Set of Empirical Relations for Characterizing K and M Dwarf Planet Hosts*, The Astronomical Journal (2015), vol. 149, 166.
32. Coronado, Helminiak, Vanzi et al. (including **Espinoza**): *Orbital and physical parameters of eclipsing binaries from the ASAS catalogue - VII. V1200 Centauri: a bright triple in the Hyades moving group*, Monthly Notices of the Royal Astronomical Society (2015), vol. 448, 1937.
33. Fraine, Deming, Benneke et al. (including **Espinoza**): *Water vapour absorption in the clear atmosphere of a Neptune-sized exoplanet*, Nature (2014), vol. 513, 526.
34. Jordán, Brahm, Bakos et al. (including **Espinoza**): *HATS-4b: A Dense Hot Jupiter Transiting a Super Metal-rich G star*, The Astronomical Journal (2014), vol. 148, 29.
35. Angeloni, Contreras Ramos, Catelan et al. (including **Espinoza**): *The VVV Templates Project Towards an automated classification of VVV light-curves. I. Building a database of stellar variability in the near-infrared*, Astronomy and Astrophysics (2014), vol. 567, A100.
36. Helminiak, Brahm, Ratajczak et al. (including **Espinoza**): *Orbital and physical parameters of eclipsing binaries from the All-Sky Automated Survey catalogue. VI. AK Fornacis: a rare, bright K-type eclipsing binary*, Astronomy and Astrophysics (2014), vol. 567, A64.
37. Zhou, Bayliss, Penev et al. (including **Espinoza**): *HATS-5b: A Transiting Hot Saturn from the HATSouth Survey*, The Astronomical Journal (2014), vol. 147, 144.
38. Zhou, Bayliss, Hartman et al. (including **Espinoza**): *The mass-radius relationship for very low mass stars: four new discoveries from the HATSouth Survey*, Monthly Notices of the Royal Astronomical Society (2014), vol. 437, 2831.
39. Bayliss, Zhou, Penev et al. (including **Espinoza**): *HATS-3b: An Inflated Hot Jupiter Transiting an F-type Star*, The Astronomical Journal (2013), vol. 146, 113.
40. Mohler-Fischer, Mancini, Hartman et al. (including **Espinoza**): *HATS-2b: A transiting extrasolar planet orbiting a K-type star showing starspot activity*, Astronomy and Astrophysics (2013), vol. 558, A55.
41. Penev, Bakos, Bayliss et al. (including **Espinoza**): *HATS-1b: The First Transiting Planet Discovered by the HATSouth Survey*, The Astronomical Journal (2013), vol. 145, 5.

Invited Talks

Königstuhl Colloquium, MPIA, Germany

05/2018

Atmospheres of Disks and Planets Workshop, Ringberg Castle, Germany

04/2017

CSH Seminar, Center for Space and Habitability, Bern, Switzerland	01/2017
Stars and Planets Seminar, Harvard-Smithsonian CfA	11/2016
Disks and Planets Seminar, Universidad Diego Portales, Chile	08/2016
Kavli Summer Program Seminar, UCSC, USA	07/2016
Planet and Star Formation Coffee Talk, MPIA, Germany	07/2015
Instituto de Astrofísica de Canarias Seminar, Spain	07/2015
Joint OSU-PUC Workshop Talk, Ohio State University, USA	05/2014
ORIGINS Seminar, Center for Astrobiology, University of Arizona, USA	03/2014
XI Chilean Astronomical Society Annual Science Meeting, Chile	01/2014
First International Meeting in Astrostatistics in Valparaiso, Chile	05/2013

Service

Member of the SOC for MPIA's PSF 2018 Retreat	2018
Co-Lead (with E. Pallé) of the CARMENES TESS Working Group	2018—present
Member of the CARMENES Exoplanet Atmospheres Working Group	2017—present
Reviewer for The Journal of Open Source Software	2018—present
Reviewer for The Astrophysical Journal	2018—present
Reviewer for Astronomy & Computing	2018—present
Reviewer for the Argentinian Commission of Physical Sciences (FONCyT)	2017—2018
Reviewer for the CSH fellowships at the University of Bern	2017
Reviewer for Publications of the Astronomical Society of the Pacific	2017—present

Outreach (Selected talks, events & positions)

Scientist at the “Skype a Scientist” Initiative	2018—present
Winner of HD Max-Planck 2018 Science Slam, Heidelberg, Germany	09/2018
Winner of MPIA's 2018 Science Slam, Heidelberg, Germany	08/2018
Talk at “Subercaseaux College” School, Santiago, Chile	03/2018
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—present
Talk at “Colegio Parroquial San Miguel” School, Santiago, Chile	09/2017
Public talk at Mosto Bar for “Beerstrophysics”, Santiago, Chile	08/2017
Talk at “Colegio Inglés de Talca” School, Talca, 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
Talk to High School Teachers at “Chile VA”, Picarquín, Chile	01/2017
Founder and Coordinator of the “Bling Bling Universe” astronomy initiative	2009—2015
Director of the “Itinerant Physics” outreach program	2009—2013

Teaching and Mentoring

Teacher, Center of Study and Development of Talent, Penta UC Course: “Orders of Magnitude” (50 hours per course)	2014A, 2014B, 2016A
Invited Lecturer, Faculty of Economics and Business, U. de Chile Course: “Introduction to Science” (one lecture per semester)	2016A, 2016B, 2017A

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)	2011B
FIS120: Electricity & Magnetism (Univ. Técnica Federico Santa María)	2010—2011

Student mentorship:

Jennifer Fienco (Undergraduate Thesis Co-Advisor) Title: “Analytic Eq. Chemistry in the presence of TiO” Institution: Pontificia Universidad Católica de Chile	2018—present
Emily Sandford (Columbia PhD Student; Advisor: Kipping) Title: “Gaia & Singly Transiting Exoplanets” Institution: PGIF Columbia/PUC Exchange Program	2018—present
Roy Van der Westhuizen (Undergraduate Thesis Co-Advisor) Title: “An interactive virtual exoplanet laboratory: APIastro” Institution: Pontificia Universidad Católica de Chile	2015B