

# Néstor Espinoza

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## Education

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

## Fellowships & Awards

<b>PUC Young Student Leader</b> Yearly recognition given to 20 students from the university	2016
<b>Kavli Summer Program in Astrophysics Fellowship</b> Granted to 17 PhD students around the world	2016
<b>People's Choice Award</b> Awarded at the Three Minute Thesis® Competition at PUC	2014
<b>Distinguished Graduate Student Award</b> Yearly award granted by the Chilean Astronomical Society	2014
<b>CONICYT Graduate Research Fellowship</b> Granted by the Chilean Ministry of Education	2013—2016

## Publications

### First author:

1. “*Metal enrichment leads to low atmospheric C/O ratios in transiting giant exoplanets*”  
Espinoza, N., Fortney, J., Miguel, Y., et al., 2017, ApJL, 834, 151.
2. “*K2-113: a dense hot-Jupiter transiting a solar analogue*”  
Espinoza, N., Rabus, M., Brahm, R., et al., 2017, MNRAS, 471, 4374.
3. “*Discovery and Validation of a High-Density sub-Neptune from the K2 Mission*”  
Espinoza, N., Brahm, R., Jordán, A., et al., 2016, ApJ, 830, 43.
4. “*HATS-25b through HATS-30b: A Half-dozen New Inflated Transiting Hot Jupiters from the HATSouth Survey*”  
Espinoza, N., Bayliss, D., Hartman, J., et al., 2016, AJ, 152, 108.
5. “*Limb-darkening and exoplanets II: Choosing the Best Law for Optimal Retrieval of Transit Parameters*”  
Espinoza, N. & Jordán, A., 2016, MNRAS, 457, 3573.
6. “*Limb-darkening and exoplanets: testing stellar model atmospheres and identifying biases in transit parameters*”  
Espinoza, N. & Jordán, A., 2015, MNRAS, 450, 1879.

**Co-authored** (40+ refereed publications, selected publications follow):

1. “ACCESS I: An Optical Transmission Spectrum of GJ 1214b Suggesting a Heterogeneous Stellar Photosphere”  
Rackham, B., **Espinoza**, N., Apai, D., et al., 2016, ApJ, 834, 151.
2. “CERES: A Set of Automated Reduction Routines for Echelle Spectra”  
Brahm, R., Jordán, A., **Espinoza**, N., 2017, PASP, 129, 973.
3. “HATS-11b AND HATS-12b: Two Transiting Hot Jupiters Orbiting Subsolar Metallicity Stars Selected for the K2 Campaign 7”  
Rabus, M., Jordán, A., Hartman, J., et al. (including **Espinoza**, N.), 2016, AJ, 152, 88.
4. “HATS-18 b: An Extreme Short-Period Massive Transiting Planet Spinning Up Its Star”  
Penev, K., Hartman, J., Bakos, G., et al. (including **Espinoza**, N.), 2016, ApJ, 152, 127.
5. “HATS-17b: A Transiting Compact Warm Jupiter in a 16.3 Day Circular Orbit”  
Brahm, R., Jordán, A., Bakos, G., et al. (including **Espinoza**, N.), 2016, AJ, 151, 89.
6. “An independent discovery of two hot Jupiters from the K2 mission”  
Brahm, R., Jones, M., **Espinoza**, N., et al., 2016, PASP, 128, 970.
7. “HATS-7b: A Hot Super Neptune Transiting a Quiet K Dwarf Star”  
Bakos, G., Penev, K., Bayliss, D., et al. (including **Espinoza**, N.), 2015, ApJ, 813, 111.
8. “Water vapour absorption in the clear atmosphere of a Neptune-sized exoplanet”  
Fraigne, J., Deming, D., Benneke, B., et al. (including **Espinoza**, N.), 2014, Nature, 513, 526.
9. “A Ground-based Optical Transmission Spectrum of WASP-6b”  
Jordán, A., **Espinoza**, N., Rabus, M., et al., 2013, ApJ, 778, 184.

## Observing proposals & experience

### Accepted observing proposals (as PI):

1. “Radial-velocity confirmation of K2 low-mass planet candidates”  
9 nights | ESO 3.6m | 2017A
2. “Exploring the broadband atmospheric features of the extreme exoplanet KELT-11b”  
4 nights | Swope 1m | 2016A+2017A
3. “ACCESS – The Arizona-CfA-Catolica Exoplanet Spectroscopy Survey”  
8 nights | Baade 6.5m | 2014-2016
4. “Variability monitoring of ACCESS targets: towards a precise and accurate view of exoplanetary atmospheres”  
50 hours | LCOGTN 1m | 2015B

### Observing experience:

Magellan/IMACS, 23 nights	2014-2017
Magellan/MMIRS, 1 night	2014A
DuPont 2.5m, 1 night	2013B
SMARTS 0.9m, 8 nights	2014B
Swope 1m, 16 nights	2014-2017
Euler 1.2m/CORALIE, 20 nights	2013-2016
MPG-ESO 2.2m/FEROS, 2 nights	2012A
ESO 3.2m/HARPS, 10 nights	2014-2016

## Invited Talks

Atmospheres of Disks and Planets Workshop, Ringberg Castle, Germany	04/2017
Stars and Planets Seminar, Harvard-Smithsonian CfA, USA	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, MPA, Germany	07/2015
Instituto de Astrofísica de Canarias Seminar, Spain	07/2015
Joint OSU-PUC Workshop, 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 Valparaíso, Chile	05/2013

## Outreach

Weekly astronomy show on Chilean national radio station “Futuro FM” Audience: +30k/week (source: Iberoamericana Radio Chile)	2015—2017
Monthly astronomy blog at the “Telescopios Chile” web portal	2015—present
Public lecture: “Planetary transits: 400 years discovering new worlds” 2016 Transit of Mercury day, PUC, Chile	05/2016
Public lecture: “Light: an electric and magnetic relationship” EXPLORA-CONICYT National Science Week, Chile	10/2015
Lecture for school teachers: “Hands-on spectroscopy with the SDSS” Given yearly at the National Astronomy Olympiads, Chile	2012—2015
Invited jury at the VI National Astronomy Olympiads, Chile	07/2014
Several (~ 2 per semester) talks at Chilean schools	2012—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

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

Roy Van der Westhuizen (Undergraduate Thesis), PUC  
Title: “An interactive virtual exoplanet laboratory: APIastro”

2015B