Néstor Espinoza

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Education

Pontificia Universidad Católica de Chile (PUC)

2012 — present

Ph. D. in Astrophysics

(expected graduation: June, 2017)

Pontificia Universidad Católica de Chile (PUC)

2007 - 2012

Licenciate in Astronomy (summa cum laude)

Advisor: Dr. Andrés Jordán

Fellowships & Awards

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-present

Granted by the Chilean Ministry of Education

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., 2016, submitted to ApJL (eprint arXiv:1611.08616).
- 2. "EPIC 220504338b: A dense hot-Jupiter transiting a solar analogue" Espinoza, N., Rabus, M., Brahm, R., et al., 2016, submmited to MNRAS (eprint arXiv:1611.07614).
- 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 (30 refereed publications in total, 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, Accepted for Publication in ApJ.
- 2. "CERES: A Set of Automated Reduction Routines for Echelle Spectra" Brahm, R., Jordán, A., Espinoza, N., 2016, Accepted for Publication in PASP.
- 3. "HATS-11b AND HATS-12b: Two Transiting Hot Jupiters Orbiting Subsolar Metallicity Stars Selected for the K2 Campaign 7"

 Polyno M. Landin A. Hartman I. et al. (including Emigran N.) 2006. All 100 88
 - 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" Fraine, 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. "Exploring the broadband atmospheric features of the extreme exoplanet KELT-11b" 4 nights | Swope 1m | 2016A
- 2. "ACCESS The Arizona-CfA-Catolica Exoplanet Spectroscopy Survey" 8 nights | Baade 6.5m | 2014-2016
- 3. "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	2014-2016
Magellan/MMIRS, 1 night	2014A
DuPont 2.5m, 1 night	2013B
SMARTS o.9m, 8 nights	2014B
Swope 1m, 10 nights	2014-2016
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

Stars and Planets Seminar, Harvard-Smithsonian CfA, USA Disks and Planets Seminar, Universidad Diego Portales, Chile Kavli Summer Program Seminar, UCSC, USA Planet and Star Formation Coffee Talk, MPIA, Germany Instituto de Astrofísica de Canarias Seminar, Spain Joint OSU-PUC Workshop, Ohio State University, USA ORIGINS Seminar, Center for Astrobiology, University of Arizona, USA XI Chilean Astronomical Society Annual Science Meeting, Chile	11/2016 08/2016 07/2016 07/2015 07/2015 05/2014 03/2014
First International Meeting in Astrostatistics in Valparaiso, Chile	05/2013
Outreach	
Weekly astronomy show on chilean national radio station "Futuro FM" Audience: +30k/week (source: Iberoamericana Radio Chile)	2015—present
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—present
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

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

$Student\ mentorship:$

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

2015B