



Jennifer Fienco

Curriculum Vitae

Personal Data

Born

June 23, 1995 - Manta, Ecuador

Nationality

Ecuadorian

Adress

Sauce Chileno Sur 4831, La Florida, Santiago, Chile

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Website

jennadevida.github.io

Education

2013 - **Bachelor in Astronomy**, *Pontificia Universidad Católica de Chile (PUC)*,
Present Santiago, Chile.
Expected passing year-2019

Technical Skill

Programming PYTHON
Language

Softwares L^AT_EX, MS WORD, MS EXCEL, MS POWERPOINT

Editing ADOBE ILLUSTRATOR, INKSCAPE

GitHub github.com/jennadevida

Languages

Spanish	Fluent	<i>Native</i>
English	Intermediate ALTE 2 (B1)	<i>Posterior level certification in preparation</i>

Investigation Projects

[Analytical chemical equilibrium for the analysis of exoplanetary atmospheres in the presence of TiO](#)

Description Tesis project: Still working on this. It is a modification of the previous investigation made with the formalism by Heng et al. (2016b) with an implementation of Titanium Oxide (TiO) and Titanium Dioxide (TiO₂), which is being added to the equations of Heng et al. We will try to see what the TiO and the TiO₂ can tell us about the C/O ratio and how the abundances of these are related to those of other oxygen-carrying molecules.

Date July 2017 - Present

Programs Python

Advisors Dr. Andrés Jordán, Dr. Néstor Espinoza

[Abundances in Atmospheres of Giant Exoplanets Under Chemical Equilibrium: Towards a Better Understanding of the Composition of Exoplanets](#)

Description Summer investigation. Extension of the analytical formalism founded by Heng et al. (2016a) to produce abundances in atmospheres of giant exoplanets under chemical equilibrium considering the molecules: C, H, O. This work is finished and concluded with a code (available on GitHub), that simulates the abundance of molecules in a hot atmosphere dominated by molecular hydrogen, which creates graphs more precisely to those presented in the work of Heng et al. (2016b), and which can be used to generate chemical equilibrium abundances on hydrogen-dominated exoplanet atmospheres for, e.g., retrieval codes.

Date January 2017

Programs Python

Advisors Dr. Andrés Jordán, Dr. Néstor Espinoza

[Computational Astrochemistry: The Fundamental Role of Ab Initio Methods in Astrochemistry - The Mechanism of Hydrogenation Reactions of Amino Acids Precursors in the Interstellar Medium](#)

Description Summer investigation. We studied the hydrogenation of the molecule CH₃CN using minimization of energy to learn about the activation energy, which allows us to know if the reaction is spontaneous or not. The results obtained in this work were different using two types of methodologies, with which we determine that we need more precise methodologies to learn more about this reaction and the transition state of this reaction.

Date January 2015

Programs GAUSSIAN 09, cheMVP, Avogadro, Inkscape

Advisor Dr. María Soledad Gutiérrez

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Extra-Curricular Activities and Achievements

- 2016 PUC Young Student Leader, a yearly recognition given to 20 students from Pontificia Universidad Católica de Chile
- 2016 “Bling Bling Universe” Coordinator, an astronomy outreach project of Física Itinerante
- 2015 “Bling Bling Universe” Tutor at “Boston College” School, Huechuraba, Santiago, Chile
- 2015 Communications Coordinator of “Física Itinerante”
- 2014 Director of “Física Itinerante”, a physics outreach organization
- 2014 Talk “Itinerant Physics: Sharing science in Chilean schools”, at II Congreso Nacional de Estudiantes de Ciencias Físicas y Astronómicas, Valparaíso, Chile

Workshops and Seminars (Attendance)

- 2018 Chile Women in Computing (WIC) 2018. UTFSM, Valparaíso, Chile
- 2018 Inclusive Scientific Education Seminar: How to address the challenges of diversity in the learning of science?. Foundation “Ciencia Joven”. Santiago, Chile
- 2018 Diversis Mundi Workshop, ESO. Santiago, Chile
- 2017 IAU Astrobiology 2017 Workshop. Coyhaique, Chile
- 2016 III Congreso Nacional de Estudiantes de Ciencias Físicas y Astronómicas, La Serena, Chile
- 2015 Astrobio 2015 Workshop. ESO, Santiago, Chile
- 2014 II Congreso Nacional de Estudiantes de Ciencias Físicas y Astronómicas, Valparaíso, Chile
- 2013 Astrobio 2013 Workshop. UNAB, Santiago, Chile

Poster Presentations

Fienco, Espinoza & Jordán. “Analytical Formalism to Produce Abundances in Atmospheres of Giant Exoplanets Under Chemical Equilibrium”

Jan., 2018 Diversis Mundi Workshop, ESO. Santiago, Chile

Fienco & Espinoza. “Analytical Formalism to Produce Abundances in Atmospheres of Giant Exoplanets Under Chemical Equilibrium”

Dec., 2017 IAU Astrobiology 2017 Workshop. Coyhaique, Chile

Observing Experience

2017-2018 Las Campanas Observatory, La Serena, Chile
Telescope Magellan I: Baade
Instrument IMACS
Nights 4

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Laboratory Teaching Assistant

2017-1 FIS152: Thermodynamics (PUC)

2016-2 FIS152: Thermodynamics (PUC)

References

Dr. Andrés Jordán

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Institute of Astrophysics
Physics Faculty
Pontificia Universidad Católica de Chile
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