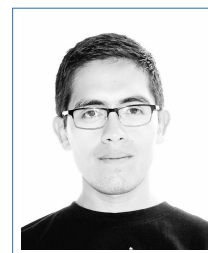


# Anibal Sierra

## Curriculum Vitae

Departamento de Astronomía  
Facultad de Ciencias  
Físicas y Matemáticas  
Universidad de Chile  
✉ [asierra@das.uchile.cl](mailto:asierra@das.uchile.cl)  
📄 [anibalsierram.github.io](https://anibalsierram.github.io)



### Personal Information

Name: Anibal Estuardo Sierra Morales

Birth: September 16, 1989; Guatemala City, Guatemala

### Education

2020–to date **Postdoctoral researcher in Astrophysics**, FACULTAD DE CIENCIAS FÍSICAS Y MATEMÁTICAS, DEPARTAMENTO DE ASTRONOMÍA, UNIVERSIDAD DE CHILE, Santiago, Chile.

Advisor: Dr. Laura Pérez

2016–2019 **PhD in Astrophysics**, INSTITUTO DE RADIOASTRONOMÍA Y ASTROFÍSICA (IRYA), UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO, Morelia, Michoacán, México, Thesis: Dust dynamics and emission in protoplanetary disks.

Advisor: Dr. Susana Lizano

2014–2015 **Master in Astrophysics**, INSTITUTO DE RADIOASTRONOMÍA Y ASTROFÍSICA (IRYA), UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO, Morelia, Michoacán, México, Thesis: Dust dynamics in protoplanetary disks.

Advisor: Dr. Susana Lizano

2008–2013 **Bachelor in Physics**, UNIVERSIDAD DE SAN CARLOS DE GUATEMALA, Guatemala City, Guatemala, Thesis: Group representation in physics.

Advisor: Ing. Rodolfo Samayoa

### Interests and Research

I study the dust and gas properties in protoplanetary disks from a theoretical point of view in order to explain interferometric observations. I am specially interested in disks with vortex and/or rings structures where dust grains can be trapped and grow. My work has focused on the analysis of continuum dust emission at millimeter wavelengths (ALMA, VLA) taking into account the scattering effects. From these analysis, the dust surface density, temperature, and the size of the dust grains can be determined from the multi-wavelength observations. Once the dust properties are determined, I have used simple analytical models including dust trapping in vortices and rings in order to explain the inferred structures.

### Positions

2020-2024 **Secretary**, ASTROFÍSICA CENTROAMERICANA Y DEL CARIBE (*Alpha-Cen*), Central America and Caribbean.

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## Teaching Experience

- 2020 **Professor**, UNIVERSIDAD DE CHILE, Faculty of Physics and Mathematics, Santiago de Chile.  
General astronomy.
- 2019 **Teaching assistant**, UNIVERSIDAD AUTÓNOMA DE MÉXICO, Morelia, Michoachán.  
Distributed computing.
- 2018 **Teaching assistant**, UNIVERSIDAD AUTÓNOMA DE MÉXICO, Morelia, Michoachán.  
Image analysis using Python.
- 2013 **Teaching assistant**, UNIVERSIDAD FRANCISCO MARROQUÍN, Guatemala city.  
Calculus, linear algebra.
- 2011–2013 **Physics laboratory teacher**, UNIVERSIDAD DE SAN CARLOS DE GUATEMALA, Guatemala city.  
Classical mechanics, electromagnetism, optics, and quantum mechanics.

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## Awards and Recognitions

- 2020 **Honorific mention** – PhD in Astrophysics – IRyA UNAM
- 2019 **Alfonso Caso Medal** – Best student of the generation, Master in Astrophysics – Universidad Nacional Autónoma de México
- 2015 **Honorific mention** – Master in Astrophysics – IRyA UNAM
- 2013 **Cum Laude** – Bachelor in Physics – Universidad de San Carlos de Guatemala
- 2012 **University student excellence award** – Best student of the generation – Universidad de San Carlos de Guatemala
- 2009–2012 **Student excellence award** – Best physics student of the year – Universidad de San Carlos de Guatemala
- 2010 **IV Basic sciences olympiad** – First place – Physics
- 2009 **III Basic sciences olympiad** – Fourth place – Mathematics
- 2007 **High school excellence award** – Best student of the generation – Colegio San José de los Infantes

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## Grants

- 2016 **CONACYT - OEI**: Grant from the Organization of Ibero-American States
- 2016 **CONACYT - OEA - AMEXCID**: Grant from the Organization of the American States (PhD)
- 2016 **CONACYT**: Scholarship for PhD's studies
- 2014 **CONACYT - OEA - AMEXCID**: Grant from the Organization of the American States (Master)
- 2014 **CONACYT**: Scholarship for Master's studies
- 2012 **USAC**: Grant for bachelor studies

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## References

1. Dra. Laura Pérez Muñoz. Departamento de Astronomía, Universidad de Chile. e-mail: lperez@das.uchile.cl

2. Dra. Estela Susana Lizano Soberón (Master and PhD advisor). Instituto de Radioastronomía y Astrofísica, UNAM Campus Morelia. e-mail: s.lizano@irya.unam.mx
3. Dr. Carlos Carrasco González. Instituto de Radioastronomía y Astrofísica, UNAM Campus Morelia. e-mail: c.carrasco@irya.unam.mx

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## Refereed Publications

Follow the link to [ADS NASA](#)

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## Servicios

- 2013 **Delegación evaluadora** – Olimpiada nacional de ciencias, XXVI edición  
2012 **Delegación evaluadora** – Olimpiada nacional de ciencias, XXV edición  
2011 **Auxiliar de cátedra Ad Honorem** – Facultad de Ingeniería