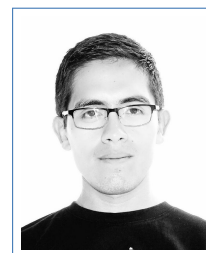


Anibal Sierra

Curriculum Vitae

Departamento de Astronomía
Facultad de Ciencias
Físicas y Matemáticas
Universidad de Chile
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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 protoplanetary disks (dust and gas properties) from a theoretical point of view (analytical models, simulations) and from observations (millimeter interferometric data with ALMA and VLA). I am specially interested in disks with vortices, spiral arms, and/or rings structures, where dust grains can be trapped and grow. My work has focused on the study of dust opacity properties and dust continuum emission, in particular, for radiative transfer models where scattering is taken into account. From these analysis, the dust surface density, temperature, and the size of the dust grains can be determined from multi-wavelength observations. Once the dust properties are determined, I have used simple analytical models and simulations in order to explain the inferred structures.

See full list of refereed publications: [ADS NASA](#)

Positions

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

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, Michoacán.
Distributed computing.
- 2018 **Teaching assistant**, UNIVERSIDAD AUTÓNOMA DE MÉXICO, Morelia, Michoacán.
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.

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

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

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