# Ryan Díaz-Pérez

## Personal Data


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## Education

**Present** | Graduate Student in Astrophysics, **University of Colorado Boulder**

**May 2016** | Bachelor of Science in Physics, **University of Massachusetts Boston**
Minor: Mathematics
Senior Thesis: The Search for Sodium (Na) in the Atmosphere of WASP-43b
Thesis Adviser: Dr. Mercedes Lopez-Morales

## Research Experience

**Feb 2015 - May 2016** | *The Search for Sodium (Na) in the Atmosphere of WASP-43b*
Adviser: Dr. Mercedes Lopez-Morales
Institution: Harvard–Smithsonian Center for Astrophysics
Searching for sodium in the atmospheres of the exoplanet WASP-43b by looking at the changes in the flux of the exoplanet's light curves as a function of wavelength. This was done by using known absorption lines of sodium, and looking for an increase in depth in the light curve of WASP-43b at those particular wavelengths of absorption.

**Summer 2015** | *A Habitability Test of the Exoplanetary System K2-3*
Adviser: Dr. David Kipping
Institution: The Harvard Banneker Institute
Calculated the physical parameters of the exoplanetary system K2-3. By fitting the light curves of the planets, with a special focus on the eccentricity of the planets, and the range of the habitable zone of the system. The eccentricity was used to determine whether or not any of the planets reside within the system's habitable zone.

**Summer 2014** | *Modeling Radial Velocity and Light Curves of the M-dwarf Eclipsing Binary NSVS01031772*
Adviser: Dr. Mercedes Lopez-Morales
Institution: Harvard–Smithsonian Center for Astrophysics
Used the PHOBE software to fit the radial and light curves of the detached eclipsing binary star system NSVS01031772. Calculated the radius velocity and the mass of the stars, and with those numbers tested stellar models of M-dwarfs.

## Positions

**Fall 2016** | *TA of Undergraduate Courses*
Professors: Dr. Dave Brain, and Dr. Nick Schneider
Institution: University of Colorado Boulder
Lecture TA for the courses "Planets, Moons, and Rings" and "Formation and Dynamics of Planetary Systems". This includes holding office hours for the students and assisting the professor during lectures.

**Summer 2016** | *Program Assistant and Mentor*
Institution: The Harvard Banneker Institute and The Aztlan Institute
I helped guide the students through there course work and research. This includes helping the students think about the concepts thought in the courses and helped them prepare their final presentations.

**Summer 2016** | *Research Adviser for a High School Student*
Institution: Harvard–Smithsonian Center for Astrophysics
Advised a High School student on a project with the purpose of teaching the student the basic skills that scientists need. The project mainly focus on having the student start learning the programing language Python and its applications to scientific research and outside of science.

## Fellowships and Awards

**Fall 2016** | *Diversity Fellowship Award*
Institution: University of Colorado Boulder

## Presentations and Conferences

**January 4-8, 2016** | *Title: A Habitability Test of the Exoplanetary System K2-3*
AAS 227th Meeting Poster Presentation
Location: AAS 227th Meeting, Kissimmee, Florida

**November 6, 2015** | *Title: A Habitability Test of the Exoplanetary System K2-3*
Summer Research Presentation
Location: UMass Boston, Boston, Massachusetts

**August 14, 2015** | *Title: A Habitability Test of the Exoplanetary System K2-3*
Banneker Institute Research Presentation
Location: Harvard–Smithsonian Center for Astrophysics, Cambridge, Massachusetts

**October 10, 2014** | *Title: Modeling Radial Velocity and Light Curves of NSVS0103*
Summer Research Presentation
Location: UMass Boston, Boston, Massachusetts

## Languages

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| Spanish: | Native Language |
| English: | Fluent |
| Italian: | Proficient: intermediate (speaking, reading, writing) |
| French: | Proficient: intermediate (speaking, reading); basic (writing) |
| German: | Basic Knowledge: basic (speaking, reading, writing) |

## Computer Skills

Python, Linux, LaTeX, Excel, Word, PowerPoint

## Interests and Activities

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|---|---|
| Society of Physics Students | *President: Fall 2015 - Spring 2016*<br>*Vice-President: Fall 2014 - Spring 2015*<br>*Chairman: Fall 2013 - Spring 2014*<br>*Member: Fall 2012 - Present*<br>Location: UMass Boston, Boston, Massachusetts |
| Math Club | *Member: Fall 2012 - Present*<br>Location: UMass Boston, Boston, Massachusetts |
| Computer Science Club | *Member: Fall 2014 - Present*<br>Location: UMass Boston, Boston, Massachusetts |
| Other | *Martial arts, Gymnastics, Tennis, Philosophy, Geography* |