

ANTONIO J. PORRAS

6301 Stevenson Science Center \diamond Nashville, TN 37212
antonio.j.porras@vanderbilt.edu \diamond <https://aporrasval.github.io/>

RESEARCH INTERESTS

Investigate role of stellar and dark matter halo spin in formation and evolution of galaxy morphology using cosmological simulations

EDUCATION

Fisk Univeristy August 2016 - Present
Dept. of Physics. Master of Science in Physics Nashville, TN

- Fisk-Vanderbilt Master's-to-Ph.D. Bridge Program

University of North Carolina August 2012 - May 2015
Dept. of Mathematics. Bachelor of Arts in Mathematics Chapel Hill, NC

- Member of National Society of Collegiate Scholars

Northern Virginia Community College August 2010 - May 2012
English as a Second Language and college courses Annandale, VA

- Dean's list: 2011, 2012

RESEARCH EXPERIENCE

Vanderbilt University August 2016 - Present
Research Assistant Nashville, TN

- Research assistant under the direction of Dr. Kelly Holley-Bockelmann and Andreas Berlind. Use semi-analytic models to understand what drives the morphology of galaxies

National Radio Astronomy Observatory Summer 2015 and 2016
Research assistant

- Summer 2015: Research assistant under the direction of Dr. Sarah Burke-Spolaor. Performed radio imaging using data from the Very Long Baseline Array (VLBA) to find evidence of binary black holes
- Summer 2016: Research assistant under the direction of Dr. Aaron Evans. Investigated galaxy NGC 6240 to understand extreme star forming environments in space

University of North Carolina, Chapel Hill August 2013 - May 2015
Research assistant Chapel Hill, NC

- Applied mathematics research assistant under the direction of Dr. Laura Miller. Developed fluid dynamical simulations to investigate the role of flexibility in jellyfish propulsion

University of Toledo May 2012 - August 2012
Research assistant Toledo, OH

- Research assistant under the direction of Dr. Steven Federman. Analyzed spectral data to understand OH and OH⁺ production in diffuse molecular clouds

AWARDS AND FELLOWSHIPS

National Science Foundation Graduate Research Fellowship Program

April 2016

- Honorable Mention

National Radio Astronomy Observatory

Summer 2015 - 2016

- Awarded National Science Foundation REU Fellowship
- Submitted proposal and was awarded two hours of observational time using the Very Long Baseline Array to look at a millihalo on 3C 84 galaxy. Summer 2015

University of North Carolina, Chapel Hill

Summer 2014

- Awarded Office for Undergraduate Research SURF grant

University of Toledo

Summer 2012

- Awarded National Science Foundation REU Fellowship

PUBLICATIONS

Antonio J. Porras, Aaron Evans, Loreto Barcos-Muoz, Sean Linden. High Resolution 33 GHz Observations of Embedded Star Formation in NGC 6240. 2017. American Astronomical Society Meeting 229.

Antonio J. Porras, Sarah Burke-Spolaor, et al. CSS Object Found in Galaxy Merger 1015+364 at 2.3 and 8.5 Hz. 2016. American Astronomical Society Meeting 227.

L. Miller, A. Hoover, and **A. J. Porras**. A Numerical Resonance and Margin Flexibility study upon a 3D Oblate Jellyfish Model. In preparation for submission to Journal of Fluid Mechanics.

A. J. Porras, S. R. Federman, D. E. Welty, and A. M. Ritchey. OH⁺ in Diffuse Molecular Clouds. 2014. ApJ, 781, L8.

CONFERENCES

American Astronomical Society

January 2017

- 229th Meeting American Astronomical Society Conference. Poster, "High Resolution 33 GHz Observations of Embedded Star Formation in NGC 6240"

American Astronomical Society

January 2016

- 227th Meeting American Astronomical Society Conference. Poster, Observing Recently Merged Galaxy 1015+364 at 2.3 and 8.5 GHz

Howard University

August 2015

- National Astronomy Consortium conference. Talk, In Search for Binary Supermassive Black Holes

University of California, Los Angeles

April 2015

- Latinos in the Mathematical Sciences Conference. Poster, Scaling Effects in Oblate Jellyfish Propulsion

University of North Carolina, Greensboro

November 2014

- The 10th Annual UNCG Regional Mathematics and Statistics Conference. Talk, Scaling Effects in Oblate Jellyfish Propulsion

University of North Carolina, Chapel Hill

October 2014

- Southeast Regional Society for Integrative and Comparative Biology. Talk, Scaling Effects in Oblate Jellyfish Propulsion

ACADEMIC/OUTREACH PRESENTATIONS

- | | |
|---|--------------|
| Universidad de Costa Rica
<i>Colloquium</i> | August 2017 |
| · High Resolution Radio Observations of Recently Merged Galaxies | |
| Overton Highschool
<i>Conexion Americas - Escalera program</i> | April 2017 |
| · Public outreach. Talk, "What does a scientist look like?" | |
| Colegio Saint Benedicto | June 2016 |
| · Public outreach. Talk, Costa Rica-U.S. Bridge Project | |
| Princeton University | October 2015 |
| · Invited Visitor. Talk, Observing Recently Merged Galaxy 1015+364 at 2.3 and 8.5 GHz | |
| University of North Carolina, Chapel Hill | August 2012 |
| · Physics and Astronomy Colloquium. Talk, Cosmic Rays in Diffuse Molecular Clouds | |

MENTORSHIP EXPERIENCE

- | | |
|--|---------------------|
| Costa Rica - U.S. Bridge Project
<i>Mentoring Undergraduates</i> | June 2016 - present |
| · Created this program to help develop astronomy research opportunities in Costa Rica. | |
| · Hold monthly web workshops for seven undergraduate students from Universidad de Costa Rica to expand information about astronomy, international research opportunities, and programming. | |
| · Highest achievement: Natalia Ramirez, first Costa Rican awarded a summer fellowship at Space Telescope Institute of Science, Baltimore, Maryland, U.S. | |

COMMUNITY SERVICE

- | | |
|--|---|
| Very Large Array
<i>Tour guide</i> | August 2015
<i>Socorro, NM</i> |
| · Provided tours of the Very Large Array (VLA) to general audience | |
| Mathematics Help Center
<i>Tutor</i> | August 2014 - May 2015
<i>Chapel Hill, NC</i> |
| · Tutored undergraduate students from algebra to Calculus III | |
| Orange County Council
<i>Tutor</i> | August 2013 - December 2014
<i>Chapel Hill, NC</i> |
| · Tutored English and Mathematics three hours per week to UNC Housing staff to help them get their GED certificate | |