

# José Flores Velazquez | Curriculum Vitae

Emails: joseflores@cpp.edu, josef94@gmail.com

Website: <https://jaf12.github.io/joseflores.github.io/>

## Education

**Bachelor of Science in Physics** — California State Polytechnic University, Pomona CA

Fall 2013 — Spring 2018

Overall GPA: 3.54

## Poster and Oral Presentations

**Bringing the Universe into LA Districts (BUILD) Event (Oral)** — General Astronomy Talk in English & Spanish at Sierra Vista High School, Baldwin Park, CA

March 2018

**Bringing the Universe into LA Districts (BUILD) Event (Oral)** — General Astronomy Talk in English & Spanish at Holland Middle School, Baldwin Park, CA

February 2018

**231<sup>st</sup> American Astronomical Society (AAS) Meeting (Poster)** — Washington, DC

January 2018

**Southern California Conferences for Undergraduate Research (SCCUR) (Oral)** — California State Polytechnic University, Pomona CA

November 2017

**The Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) (Poster)** Salt Lake City, Utah

October 2017

**CAMPARE, Cal-Bridge, & CHAMP Summer Research Symposium (Oral)** — California State Polytechnic University, Pomona CA

August 2017

**Galaxy Formation and Evolution in Southern California (Gal FRESCA 2017) (Oral)** — California Institute of Technology, Pasadena CA

August 2017

**Adler Planetarium CIERA REU Poster Presentation** — Adler Planetarium, Chicago IL

August 2017

**Center for Interdisciplinary Exploration & Research in Astrophysics Research Experience for Undergraduates (CIERA REU) Poster Presentation** — Department of Physics & Astronomy and CIERA, Northwestern University, Evanston IL

August 2017

**Northwestern University Galaxy Formation Group + University of Chicago Galaxy Formation Group Joint Meeting (Oral)** — Chicago, IL

July 2017

**Physics and Astronomy Annual Senior Poster Session 2017 (Poster)** — California State Polytechnic University, Pomona CA

June 2017

**Society for Industrial and Applied Mathematics (SIAM) Cal Poly Pomona Chapter 3<sup>rd</sup> Annual Student Research Conference (Oral)** — California State Polytechnic University, Pomona CA

May 2017

**5<sup>th</sup> Annual Research Scholarship, & Creative, Activities (RSCA) Conference (Oral)** — California State Polytechnic University, Pomona CA

March 2017

**229<sup>th</sup> American Astronomical Society (AAS) Meeting (Poster)** — Grapevine, Texas

January 2017

**Galaxy Formation and Evolution in Southern California (Gal FRESCA 2016) (Oral)** — California Institute of Technology, Pasadena CA

September 2016

**CAMPARE & Cal-Bridge Research Symposium (Oral)** — California State Polytechnic University, Pomona CA

August 2016

**Banneker & Aztlán Institute Symposium (Oral)** — Harvard-Smithsonian Center for Astrophysics, Cambridge MA

August 2016

## Research Experience

### **Star Formation Rate Indicators in Galaxy Formation Simulations Simulation: Feedback In Realistic Environments Simulation (FIRE)**

Summer 2017

We use the self-consistent star formation histories realized in the FIRE simulation to quantify differences between observationally-inferred star formation rates (SFRs). We use different indicators and true SFRs, as a function of galaxy mass and redshift to also predict time scales that specific SFR indicators are averaged over.

**Supervisor: Prof. Claude-André Faucher-Giguère**

### **Observational Astronomy & Data Reduction of W3(OH) Maser Images Physics 499A on Transcript**

Spring 2017

We carried data reduction procedures, astrometry and photometry calibrations for the W3(OH) cluster. The images were taken using the WIYN High-resolution InfraRed Camera (WHIRC) with broadband filters: J, H, and K<sub>s</sub>. We removed the sky noise, visual artifacts and aligned the dither patterns of our observations performing a variety of arithmetic functions on PYRAF and IDL. Astrometric and photometric calibrations were performed by comparing the stars in our WHIRC images to the 2 Micron All Sky Survey (2MASS) point-source catalogue.

**Supervisor: Prof. Matthew Povich**

### **Kinematic Characteristics of Galaxy Mergers using Galaxy Formation Simulations Simulation: Feedback In Realistic Environments Simulations (FIRE)**

Summer 2016

Using a suite of galaxy merger simulations with FIRE to analyze the effect of interactions on galactic kinematics. This includes kinematic decoupling of the stellar and gas components, kinematically decoupled cores, and other features. Importance of this work is highlighted by recent observations by the CALIFA (Barrera-Ballesteros et al. 2015) and SAMI surveys (Bloom et al. 2016).

**Supervisor: Prof. Jorge Moreno**

## Accomplishments

### **22<sup>nd</sup> Annual Posters on the Hill Presenter Capitol Hill Washington, DC**

April 2018

### **Poster Presentation Award The Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Salt Lake City, Utah**

October 2017

### **Center for Interdisciplinary Exploration & Research in Astrophysics Research Experience for Undergraduates (CIERA REU) Scholar, Northwestern University, Evanston IL**

June 2017 — August 2017

### **Cal-Bridge Scholarship, up to \$10,000 per year California State Polytechnic University, Pomona CA**

September 2016 — Present

### **CAMPARE Scholar, California State Polytechnic University, Pomona CA**

March 2016

### **President's List**

Spring 2014

### **Dean's List — Fall 2013, 2014, 2015, Winter 2014, Spring 2014, 2016, 2017**

# Computational Skills

**Languages** — Python, C++, HTML, IDL, PYRAF

**Supercomputers Used in Research**— Harvard's Odyssey supercomputer, University of Texas STAMPEDE Supercomputer

In image reduction I also used the SAOImage DS9 software.

# Work Experience

**Student Grader**

— Department of Physics & Astronomy, California State Polytechnic University, Pomona CA

January 2018 — Present

**Student Grader**

— Department of Physics & Astronomy, California State Polytechnic University, Pomona CA

September 2016 — January 2017

**Physics Learning Assistant (Tutor)**

— Department of Physics & Astronomy, California State Polytechnic University, Pomona CA

April 2015 — June 2015

**Floor Supervisor, McDonald's Restaurant**

— 2303 East Florence Ave, Huntington Park, CA 90255

February 2014 — September 2016

**Crew Member, McDonald's Restaurant**

— 2303 East Florence Ave, Huntington Park, CA 90255

— 14317 Valley View Ave, Santa Fe Springs, CA 90670

February 2013 — February 2014

August 2012 — February 2013