

José A. Flores Velázquez | Curriculum Vitae

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Education

- University of California, Irvine** Fall 2018 — Present
Graduate Student, Physics and Astronomy
- California State Polytechnic University, Pomona** Fall 2013 — Spring 2018
B.S. Physics, Cum Laude, GPA: 3.55

Poster and Oral Presentations

- Galaxy Formation and Evolution in Southern California (Gal FRESKA 2018) (Oral)**—
Quantifying the Timescales probed by Standard SFR Indicators on Realistic SFHs from the FIRE
Simulations, — California Institute of Technology, Pasadena CA August 2018
- 2018 Summer Research Symposium (Oral)** — Quantifying the Timescales probed by Standard SFR
Indicators on Realistic SFHs from the FIRE Simulations, — University of California, Irvine August 2018
- 2018 Santa Cruz Galaxy Workshop (Oral)** — Quantifying the Timescales probed by Standard SFR
Indicators on Realistic SFHs from the FIRE Simulations, — University of California, Santa Cruz August 2018
- Undergraduate Senior Seminar (Oral)** — SFR Indicators in the FIRE Galaxy Formation Simulations
Proposal, — California State Polytechnic University, Pomona CA May 2018
- 22nd Annual Posters on the Hill Conference (Poster)** — SFR Indicators in the FIRE Galaxy
Formation Simulations, Capitol Hill Washington, DC April 2018
- 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
- 231st 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 FRESKA 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 3rd Annual Student Research Conference (Oral) — California State Polytechnic University, Pomona CA	May 2017
5th Annual Research Scholarship, & Creative, Activities (RSCA) Conference (Oral) — California State Polytechnic University, Pomona CA	March 2017
229th 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
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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
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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_s. 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
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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

Regents' Fellowship Selection is based on a comprehensive review of the admissions application, including, but not limited to test scores and grades. — University of California, Irvine	September 2018 - Present
NSF Graduate Research Fellowship National Science Foundation Fellowship. Awarded to high potential early scientist to support their graduate research for three years.	September 2018 - Present

Competitive Edge Research Program Program designed to support entering graduate students from diverse backgrounds who plan to pursue a doctoral or M.F.A. degree and prepare for an academic career. — University of California, Irvine	June 2018 – August 2018
Poly Cup Award given to the top 3 graduating physics seniors who present an original research proposal. California State Polytechnic University, Pomona CA	May 2018
22nd Annual Posters on the Hill Conference Presenter Organized by the Council of Undergraduate Research. A competitive event where only 60 out of 400 undergraduates has the honor to present their research. Capitol Hill Washington, DC	April 2018
Best 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 Competitive REU program who selected 7 out of 470 applicants to conduct astronomical research. Northwestern University, Evanston IL	June 2017 — August 2017
Cal-Bridge Scholarship, Competitive California Scholarship which funds up to \$10,000 per year California State Polytechnic University, Pomona CA	September 2016 — Present
CAMPARE Scholar Competitive Program which aligns undergraduate students in a summer REU. California State Polytechnic University, Pomona CA	March 2016
President's List Students who take part on the Dean's List for 3 out 4 academic quarters.	Spring 2014
Dean's List Students who have at least 12 units in the quarter and have a GPA of 3.5 or higher. <i>Fall</i> 2013, 2014, 2015, 2017, <i>Winter</i> 2014, <i>Spring</i> 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 have also used the SAOImage DS9 software.

Work Experience

Student Grader — Department of Physics & Astronomy, California State Polytechnic University, Pomona CA	January 2018 — June 2018 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