

Shane F. N. Frewen

CONTACT INFORMATION

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RESEARCH INTERESTS

Planetary dynamics, white dwarf pollution, exoplanet detection, stellar evolution, planets around stellar remnants

EDUCATION

University of California, Los Angeles, Los Angeles, CA

Ph.D., Astronomy

Expected: Spring 2015

- Advisor: Dr. Bradley M. S. Hansen
- Topic: *Eccentric Planets around Evolved Stars*

M.S., Astronomy

June 2012

- Advisor: Dr. Bradley M. S. Hansen
- Topic: *Effects of Stellar Evolution on Test Particle Stability in the Outer 55 Cancri System*

University of California, Berkeley, Berkeley, Ca

B.A., Physics & Astrophysics

May 2009

RESEARCH EXPERIENCE

University of California, Los Angeles

Graduate Student Researcher

June 2010 – present

N-body simulations of test particles in the presence of single- and multiple-planet systems, used to determine stellar accretion rates as a function of planetary parameters and stellar evolution. Stellar modeling and analytical orbit integration to characterize effect of stellar evolution on warm Jupiter population.

University of California, Berkeley

Undergraduate Researcher

June 2007 – June 2009

Used PMT data to determine the roll angle of RHESSI space mission. Modeled particle motion in the solar magnetosphere to examine potential for solar radiation belts

TECHNICAL SKILLS

python, bash, HTML, LaTeX, MESA package.

REFEREED PUBLICATIONS

Frewen, S. F. N., Hansen, M. S. B., 2014, MNRAS, 439, 2442, “Eccentric Planets and Stellar Evolution as a Cause of Polluted White Dwarfs”

Hudson, H. S.; MacKinnon, A. L.; De Rosa, M. L.; **Frewen, S. F. N.**, 2009, ApJ, 698, 86. “Coronal Radiation Belts”

CONFERENCE PROCEEDINGS & POSTERS

Effects of Stellar Evolution on Test Particle Stability, Extreme Solar Systems, Moran, Wy, Sep. 2011

Test Particle Stability in the Main Sequence and Post-MS 55-Cancri System, AAS Conference, Jan. 2011

Modeling of Solar Radiation Belts, AGU Conference, San Francisco, Ca, Dec. 2008

TALKS

Eccentric Planets and Stellar Evolution as a Source of Polluted White Dwarfs, AAS Special session talk, Long Beach, Ca. Jan. 2013

Eccentric Planets and Stellar Evolution as a Source of Polluted White Dwarfs, Planets Around Stellar Remnants, Arecibo, PR, Jan. 2012

Eccentric Planets and Stellar Evolution as a Source of Polluted White Dwarfs, Institute for Planets and Exoplanets lunch talk, Los Angeles, Ca, Jan. 2012

Eccentric Planets and Stellar Evolution as a Source of Polluted White Dwarfs, Theoretical Astrophysics in Southern California Meeting, Santa Barbara, Ca, Nov. 2011

Orbital Stability of Test Particles over the Course of Stellar Evolution, Theoretical Astrophysics in Southern California Meeting, Pasadena, Ca, Oct. 2010

TEACHING
EXPERIENCE**University of California, Los Angeles***Teaching Assistant*

- Astronomy 3: “The Nature of the Universe” Winter 2010, Spring 2012, Fall 2013
- Astronomy 4: “Black Holes and Cosmic Catastrophes” Fall 2009, Spring 2010
- Astronomy 5: “Life in the Universe” Fall 2012
- Astronomy 82: “Astrophysics II: Stellar Evolution, Galaxies,
and Cosmology” Spring 2012, Spring 2014
- Astronomy 127: “Stellar Astrophysics” Winter 2010, Winter 2013, Winter 2014

HONORS AND
AWARDS

UC Berkeley Pomerantz Scholarship April 2008

UCLA Physic and Astronomy Department TA Award December 2013

ORGANIZATIONS

American Astronomical Society

- Member September 2010 - Present
- AAS Astronomy Ambassador January 2013 - Present

Astronomy Live! - University of California, Los Angeles

- Member September 2009 - Present
- Lead Outreach Coordinator June 2011 - November 2013

Astronomy Society of the Pacific

- Member January 2013 - Present