Imad Pasha

Curriculum Vitae

Education

2009–2013 **Rancho Bernardo High School**, *GPA – 3.93*.

2013–2015 **University of California, Berkeley**, *GPA – 3.755*.
Major in Astrophysics, Physics | Minor in Creative Writing

Relevant classes

Fall 2013 Math 1B: Single Variable Calculus
Spring 2013 Astro C10: Introduction to Astronomy
Spring 2013 Math 53: Multivariable Calculus
Spring 2013 Physics 7A: Mechanics
Spring 2013 Astro 98: Scientific Computing in Python
Fall 2014 Astro 7A: Introduction to Astrophysics
Fall 2014 Math 54: Linear Algebra and Differential Equations
Fall 2014 Astro 120: Infrared and Optical Lab
Fall 2014 Physics H7B: Honors Electricity and Magnetism
Fall 2014 Astro 98: Scientific Computing in IDL
Spring 2015 Physics H7C: Honors Modern Physics
Spring 2015 Physics 110A: E&M and Optics
Spring 2015 Astro 7B: Intro to Astrophysics (*aud.*)
Fall 2015 Physics 137A: Quantum Mechanics (*conc.*)
Fall 2015 Physics 111A: Electronics Lab (*conc.*)

Research Experience

Astrophysics

2014 **REU in Computational Astrophysics**, North Carolina State University, Raleigh,NC | *Advisor* John Blondin.

Developed models of core-collapse supernovae remnant formation. In particular, I ran three-dimensional hydrodynamic simulations on the Stampede TACC supercomputer to model jet-structure formation in the galactic SNR Cassiopeia A.

Detailed experience:

- Worked in the programming language FORTRAN
- Worked with the hydrodynamics code VH1
- Gave weekly research progress presentations to the group
- Produced a research poster for presentation at various Symposia
  - Won first place at UNC Annual Research Symposium
- Wrote detailed research proposals and publication draft

2015 **Construction of Composite SED's of Mid-redshift Galaxies**, University of California, Berkeley, *Advisor* Mariska Kriek.

Extended the construction of galactic SED's (Spectral Energy Distributions) into and beyond MIR range using data from Herschel instruments, and fit SFR models to these composites to develop SFH's.

Detailed experience:

- Performed analysis of available data in PYTHON.
- Wrote routines to utilize FSPS code in FORTRAN.

Astronomy 120

2014 **Completed the upper division optical and infrared laboratory**.

In the optical/infrared lab we performed experiments involving spectroscopy as well as CCD astronomy and became familiar with the programming needed to analyze such data.

Detailed experience:

- Analyzed photon statistics, Poisson distributions
- Remotely operated Lick Observatory to take CCD images of asteroids and performed astrometric calculations using python.
- Calculated Doppler shifts in solar spectra to determine a rotational velocity for the sun

Non-Refereed Publications

2015 M.L. Graham, G. Halevi, I. Pasha, I. Shivvers, H. Yuk, A.V. Filippenko. **Classification of PSN J09254453+3416361 as a Type II Supernova.** *ATel #8169*

Computer skills

Basic HTML

Intermediate FORTRAN, LaTeX, OpenOffice, Excel, IDL

Advanced PYTHON, Microsoft Windows, Linux/UNIX

Teaching/Presentation Experience

2013 Taught the Rhetoric/Debate class at Rancho Bernardo High School

2014 Poster at the Annual UNC Research Symposium (first place award)

2014 Poster at the Annual NC State Undergraduate Research Symposium
2015 Teaching the Astro 98 course on programming in Python
2015 Poster at Biennial FOE Supernova Conference (third place award)

Misc. Interests

- Music
- Political Science
- Running
- Writing
- History