

Shawn Zhang

Arkansas State University

Electrical Engineering and Computer Science/Bachelors of Science/May 2013

E-mail: xiaobozhang@hotmail.com

Mentor(s): Jonathan Cirtain

Mentor Org: ZP13



Measuring Emissions from the Solar Chromosphere

Accurate measurements of solar emissions are crucial in understanding the behavior of magnetic fields in areas of the solar atmosphere above the photosphere. We have used a custom built Carbon lamp as well as an Extreme Ultraviolet source to calibrate detectors which will be sent to space to measure various types of emissions. If successful, the data collected will allow researchers to gain a better understanding of how solar activities such as flares and coronal mass ejections occur, and enable them to issue real-time alerts when these phenomena occur.

Research and Experience

- **Marshall Space Flight Center**, Summer Intern, Summer 2012
Set up the hardware for calibration (monochromator, cameras, vacuum pumps); managed software during data acquisition; graphed/tabulated data.
- **Arkansas State University**, Electrical Engineering Research Assistant, Jonesboro, AR (2011)
Created small solar cells through chemical and electro-deposition; fabricated Cadmium Telluride, Copper Sulfide, and Indium Sulfide films.
- **Arkansas Bioscience Institute**, Bioscience Research Assistant, Jonesboro, AR (2010)
Investigated the possibility of algae as a biofuel; responsible for mixing the nutrient base for the growth of algae; carried out experiments to promote the mutation of algae through UV radiation.
- **Syngenta Inc.**, Lab assistant, Truman, AR (2010)
Tested the disease resistance of certain species of bean plants; assisted in planting and maintaining the plants involved in the experiments; involved in collecting samples and recording relevant data.

Memberships and Activities

Electrical Engineering Student Ambassador, 2012

Honors, Awards

Dean's List, 2010, 2012