

Physics and Space Sciences Colloquium

Florida Cameras for All-Sky Meteor Surveillance

Meteors are produced when interplanetary debris mostly from comets impacts the earth's atmosphere at the edge of space. Ranging in size from sesame seeds to pebbles and even larger, these pieces of debris called "meteoroids" are small cousins of earth-crossing asteroids that pose a collision risk with earth. The purpose of Florida Cameras for All-Sky Meteor Surveillance (FL-CAMS) is to produce useful data of meteors that burn up in the skies over Florida.

Using a two-camera network of low-light level video cameras, my colleague Dr. Barbara Harris and I have observed and determined the orbits of nearly 3,000 meteoroids since the middle of last year. 90 miles separate the two cameras, which continuously monitor a 5,000 square kilometer patch of atmosphere over Florida's east coast. Using freely available software, our camera network detects meteors as faint as visual magnitude +5. Using triangulation, our observations enable calculation of meteoroid trajectories and orbits.

Our project contributes to a larger NASA project led by the SETI Institute in California whose purpose is to verify and validate the working list of meteor showers maintained by the International Astronomical Union. Currently, there are 95 established meteor showers, but an additional 462 showers on the working list require validation. It is important to understand meteor showers, as each one leads to better understanding of comets, the orbital evolution of meteor streams, and collision hazards with earth.

I will describe how to set up a meteor-observing station at Florida Institute of Technology. I will explain the technology, which consists of off-the-shelf hardware and freely available software. Joining Florida Cameras for All-Sky Meteor Surveillance is an excellent way to add to our understanding of meteor showers and to provide essential surveillance of the skies over Florida.

Friday March 27, 2015

4:00-5:00

OPS, Room 140

Light Refreshments to be served



Dr. Andy Howell

Florida Tech University Online