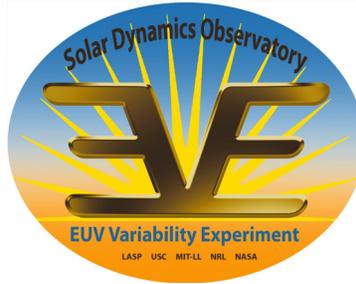


# The Extreme Ultraviolet Variability Experiment



## What is EVE?

EVE is the Extreme Ultraviolet Variability Experiment, which is one of three instruments aboard the Solar Dynamics Observatory (SDO). EVE was built at the University of Colorado, Boulder in the Laboratory for Atmospheric and Space Physics (LASP), the University of Southern California (USC) and the Massachusetts Institute of Technology, Lincoln Laboratory (MIT-LL). EVE has a counterpart, a similar instrument that will launch aboard a sounding rocket in May 2010. This sounding rocket mission will be used to calibrate EVE's systems onboard SDO.

## What is Extreme Ultraviolet Radiation?

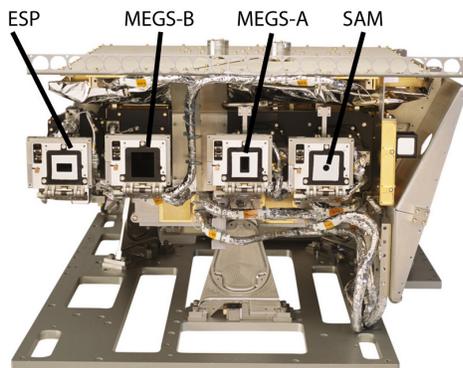
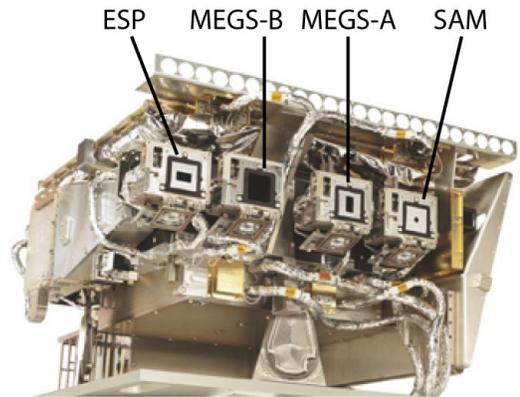
Extreme UV, or EUV, are very short wavelengths of ultraviolet light ranging from 10 to 120 nanometers in length. All of the EUV light from the Sun is absorbed in the upper atmospheric layers of the Earth. In fact, extreme ultraviolet photons are a primary source of heating in the Earth's upper atmosphere.

## Why Are We Studying EUV?

When the Sun is active, extreme ultraviolet emissions rise and fall dramatically, over short periods of time. These surges heat up the Earth's upper atmosphere and lead to significant drag on spacecraft. Extreme ultraviolet emissions can also create a layer of ions that can interrupt radio communications and global positioning system navigation.

## How Does EVE Work?

EVE will collect data 24 hours a day, 7 days a week, offering the first complete picture of the dynamic fluctuations in extreme ultraviolet emissions from our Sun. Using these data, scientists will be better able to model the Sun's variability and better predict when extreme ultraviolet emissions might impact Earth and technologies that rely on satellites.



### Fast Facts

- EVE has three main subsystems:
  1. Multiple EUV Grating Spectrometer (MEGS)
  2. EUV SpectroPhotometer (ESP)
  3. EVE Electronics Box (EEB)
- Dimensions: 99 cm L x 61 cm W x 36 cm H (39 inches L x 24 inches W x 14 inches H)
- Weight: 61 kg (134.48 pounds)
- Data Rate: 2 Kbps (Engineering), 7 Mbps (Science)
- Field of View: 2°

For More Information: <http://lasp.colorado.edu/eve/>

