

Launched:
December 2, 1998

SWAS

<http://sunland.gsfc.nasa.gov/smex/swas/>

Submillimeter Wave Astronomy Satellite

Mission

The Submillimeter Wave Astronomy Satellite (SWAS) is the first space-based radio satellite sensitive to electromagnetic radiation at submillimeter wavelengths. The overall goal of the mission is to gain a greater understanding of star formation by determining the composition of interstellar clouds and establishing the means by which these clouds cool as they collapse to form stars and planets. It observes these clouds in the radio region of the electromagnetic spectrum, where the atoms and molecules within these clouds strongly emit radiation.

Education and Public Outreach

Over a three year period, the SWAS EPO program collaborated with the Cooperative Satellite Learning Project to teach high school students the basics of radio astronomy, star formation and independent scientific research. SWAS EPO also had a successful partnership with the Keystone Oaks High School in Pittsburgh, PA. SWAS data were given directly to the students, which resulted in numerous awards and two scientific publications. Self-contained high school level classroom materials related to SWAS have been created by scientists and are available at the SWAS EPO website.

EPO site: <http://cfa-www.harvard.edu/swas/>

Seeing and Exploring the Universe

Stars form when a giant cloud of dust and gas collapses. As it shrinks, the interior heat up. That heat escapes the cloud as infrared, submillimeter and radio waves, and as it cools it can collapse further to form stars. By observing these star-forming clouds in radio wavelengths, SWAS can determine the chemical content of the clouds and the detailed mechanisms by which they cool. As a complete radio observatory in space, SWAS has a front-row seat to phenomena invisible from the ground.

