

Expected Launch:  
Fall 2002

# CHIPS

<http://chips.ssl.berkeley.edu/index.html>

## Cosmic Hot Interstellar Plasma Spectrometer

### ***Kit Item***

Local Bubble Boundary Activity

### ***Mission***

The Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) will carry out all-sky spectroscopy of the diffuse sky background which glows in ultraviolet light. CHIPS data will help scientists determine the electron temperature, ionization conditions, and cooling mechanisms of the million-degree plasma believed to fill the local interstellar bubble. The majority of the luminosity from diffuse million-degree plasma is expected to emerge in the poorly-explored extreme ultraviolet band, making CHIPS data of relevance in a wide variety of Galactic and extragalactic astrophysical environments.

### ***Education and Public Outreach Program***

The idea of investigating our cosmic neighborhood, its past and future, is a very interesting topic that engages the curiosity of students, educators and the general public, going beyond the details of measuring particular physical parameters in the interstellar medium. The CHIPS Education and Public Outreach Program has been developed for middle and high school grades to promote the inquiry-based exploration of matter, with concepts such as density, temperature and heat. It also contributes to science education research in student's conceptual understanding of the particulate nature of matter.

EPO site: [http://cse.ssl.berkeley.edu/chips\\_epo/](http://cse.ssl.berkeley.edu/chips_epo/)

### ***Seeing and Exploring the Universe***

Our Solar System is located in an unusual region of space called the Local Bubble (LB). The LB is a bubble of hot gas about 300 light years in radius, surrounded by colder, denser gas in our Galaxy. The CHIPS Mission is dedicated to understanding how hot, million-degree gas in the Sun's local neighborhood (the local interstellar medium) cools. Astronomers believe that our bubble may have been created by a supernova explosion ten million years ago: the explosion blew most of the gas and dust from the interstellar medium outward. It is the extremely hot, diffuse gas inside the Local Bubble that the CHIPS mission will be studying. Studying how this gas cools will lead to a greater understanding of the nature of hot gas in our own and other galaxies.

