spacecraft and it would appear that this data would be of little use. However, we have developed a technique that will both detect previously unknown sources and measure their spectral signatures during this self-sustaining phase. By assuming a series of photon wavelengths, a three-dimensional map of the ecliptic is generated with every position bin having a result spectrum. We present simulations of this technique and discuss the ultimate sensitivity achievable during the ecliptic survey of EUVE. Differences between continuum point sources (such as hot white dwarfs) and emission line sources (such as stellar coronae) will also be shown.

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67.03

EUVE Observations of the Interstellar Medium
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The Extreme Ultraviolet Explorer (EUVE) satellite will yield critical information on the characteristics of the local interstellar medium (ISM) within 400 pc of the Sun. EUVE will be able to measure the abundance of hydrogen in the ISM towards objects discovered by the all-sky and deep surveys, particularly hot white dwarfs. The sensitivity of EUVE is such that this type of measurement will be possible toward up to a few hundred lines of sight. Thus, EUVE has the potential of studying in detail the distribution of neutral hydrogen in the ISM and answering questions regarding the temperature, density, and ionization state in the interstellar material. EUVE also will help us determine whether the characteristics found in the local gas are representative of the general ISM.

The unique spectroscopic capability of EUVE will enable us to measure several other important quantities in the ISM. We present results of a simulation in which a realistic white dwarf spectrum, attenuated by the absorption of intervening interstellar material with the ratio of hydrogen to helium (H/He) varying from 5 to 20, has been folded with a model of EUVE instrumentation. By computing the strength of the modeled absorption edge at 504 Å with real data from EUVE, the H/He ratio can be obtained. In addition, we present simulated detections of diffuse line emission (in the form of highly ionized iron, sulfur, and oxygen) arising from the hot plasma (log T = 6.0) in the local bubble. We expect this emission to be detected by the long and medium wavelength channels of the EUVE spectrometer with a resolution of ~25. The temperature and the abundance of the diffuse hot gas can be determined from these spectra. We will discuss the details of the possible EUVE ISM observations outlined above.

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67.04

EUVE Observations of Late-Type Stars

We present extreme ultraviolet (EUV) photometric fluxes and model EUV spectra for several late-type stars that are potentially observable with instrumentation on the Extreme Ultraviolet Explorer (EUVE) satellite. These have been derived using models for the EUV emission from the coronae, chromospheres, and transition regions of late-type stars, and have been used to compute luminosity functions for late-type stars in the EUV. We estimate that 500-1000 stellar coronal sources will be detected in the shorter wavelength bandpasses of the all-sky survey. Emission from the chromospheres and transition regions of numerous late-type stars will be detectable in the two longer wavelength bands. We demonstrate that estimates of stellar coronal temperatures will be possible using ratios of the measured count rates in different filter bandpasses for given hydrogen column densities. Estimates can also be made of the amounts of lower temperature material in the chromospheres and transition regions. These simulations also predict that EUVE will detect ~3 stellar flares from DMe stars during the six month all-sky survey. This will provide the first estimate of stellar flare rates in the EUV band.

We have folded our late-type star models through the response of the EUVE spectrometers. These results show that accurate measurements of the temperature and emission measure for the coronae, chromospheres, and transition regions of numerous late-type stars will be possible. We present examples of several stellar spectra with a discussion of useful line diagnostics. These simulations also show that pointed observations will permit "time-resolved" EUV spectroscopy of flares on nearby DMe stars and of time-variable phenomenon on other late-type stellar systems.

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67.05

EUVE Observations of Cataclysmic Variables

Cataclysmic variables (CVs) are expected to be an important class of extreme ultraviolet (EUV) sources. We have considered two simple models: magnetic and nonmagnetic. The former is applicable to AM Her type systems, in which the accretion occurs in the form of a magnetically collimated column. At its base, a standing shock forms which heats up the surface of the white dwarf, creating a strong soft X-ray/EUV component (~10^32 erg s^-1), characterized roughly as a blackbody. The nonmagnetic model, which applies to dwarf novae in outburst and novallike systems, consists of an inner accretion disk and an optically thick boundary layer (approximated by a blackbody).

We have folded both of these models through the Extreme Ultraviolet Explorer (EUV) instrument responses. Taken in conjunction with our (limited) knowledge of space density of CVs and the distribution of the interstellar medium (ISM), our simulation suggests that several dozens each of AM Herers and dwarf novae in outburst will be detected in the EUVE all-sky survey. Many of these detected CVs will be previously uncataloged, because of their optical faintness (17th magnitude in quiescence); our list is expected to be significantly different from the ROSAT all-sky survey detections as a result of the intrinsic variability of CVs. Furthermore, the unique spectroscopic capability of EUVE will enable us to improve significantly our understanding of the EUV-emitting region in CVs. We can independently determine temperature and the absorbing column and thus the accurate luminosity of the EUV component for many CVs; for the brightest systems, we can hope to detect any departures from the blackbody, such as a multi-temperature blackbody, emission lines, and absorption edges.

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67.06

EUVE Observations of Hot DA White Dwarfs
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Extreme ultraviolet (EUV, 70-900 Å) observations of a number of hot white dwarfs will be performed during 1992-1994 with the Extreme Ultraviolet Explorer (EUVE) satellite. Of the order of 1000 hot white dwarfs are expected to be detected during the six-month all-sky survey. White dwarfs should also comprise a significant number of the objects which will be observed spectroscopically during the following three years of pointed observations. The determination of the trace element abundances in the photospheres of these objects is expected to be one of the significant contributions from the EUV spectroscopy. Observational evidence, coupled with our current theoretical understanding, indicates that EUV spectra of hot white dwarfs will display a variety of characteristics. The white dwarfs can range from the extremes of pure hydrogen (DA) to pure helium (DO-DB), with a number of intermediate conditions. Some DA are seen