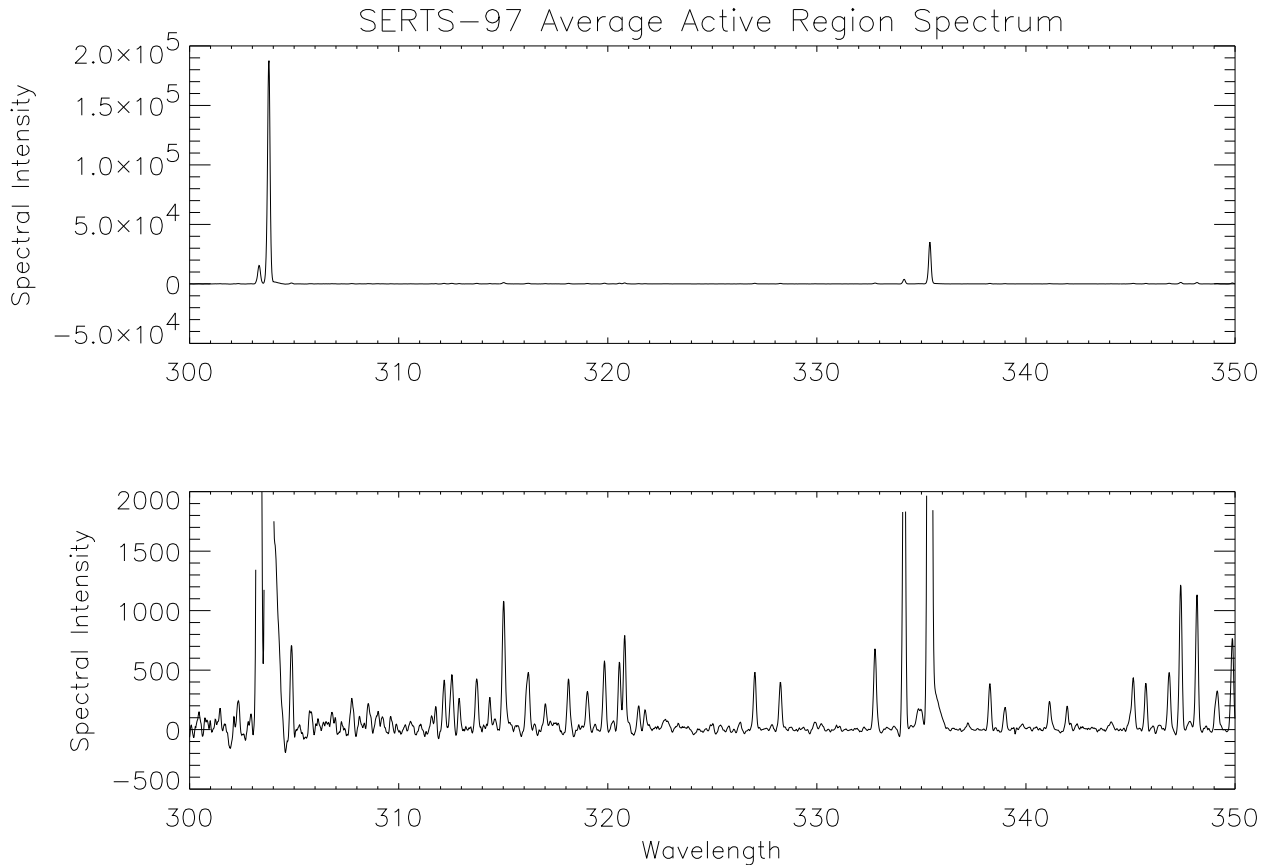


Active Region Extreme-UltraViolet Spectrum From SERTS



Goddard Space Flight Center's Solar EUV Research Telescope and Spectrograph was flown on 1997 Nov 18 (SERTS-97), carrying an intensified CCD-detector and a multilayer-coated toroidal diffraction grating with enhanced sensitivity over that of a standard gold-coated grating throughout the instrument's 299 – 353 Å spectral bandpass. Spectra and spectroheliograms of Active Region 8108 were obtained with a spectral resolution (instrumental FWHM) of 115 mÅ. Nearly 100 emission lines are observed in the spatially averaged active region spectrum, displayed above on two different vertical scales. The x-axis is the wavelength in Å, and the y-axis is the spectral intensity in $\text{ergs cm}^{-2} \text{s}^{-1} \text{sr}^{-1} \text{Å}^{-1}$. Only the strongest emission lines (of Si XI, He II, Fe XIV, and Fe XVI) are visible in the top frame, but numerous weaker lines are evident in the bottom. The accuracy of the rocket instrument's calibration is confirmed by the excellent agreement between measured and theoretical values of density- and temperature-insensitive line intensity ratios. Calibrated, high resolution spectra like this can be used to measure properties of the emitting source, and assess the accuracy of atomic physics parameters. [From J. W. Brosius, R. J. Thomas, J. M. Davila, & E. Landi, *The Astrophysical Journal*, vol. 543, p. 1016 (2000 Nov. 10).]