Further analysis of 9 months of data (much of which has been graciously provided by colleagues within the University of California system) now allows us to conclude that the line motions recur with period 160 ± 3 days, or an integer multiple thereof. The two systems reached maximum positive and negative velocities of +50,000 and −30,000 km/sec, respectively, with the maximum persisting for about one week. Minimum velocities of +10,000 and 0 km/sec have been observed in the red and blue systems thus far, but gaps in the data permit the minima to be deeper, and the two systems may conceivably reverse places in 1979 June, with the redshifted lines acquiring a blueshift and vice-versa. Our latest observations of this bizarre system will be presented, together with constraints that they place on interpretation of this unprecedented behavior.

This work has been supported by the National Science Foundation.

12.22.09 Location of H1743-32 and H0632-18 determined with the Scanning Modulation Collimator on HEAO-1. M. Garcia, M. Conroy, R. Griffiths, E. Ralph, W. Roberts, and D.A. Schwartz. Harvard-Smithsonian Center for Astrophysics. * — HEAO-1 pointed at the transient H1743-32 near the galactic center on 1978 March 30. The source was still quite intense, at 120 UFU. This is 1/6 the peak intensity of 1978 Aug 22 and Sept 5. Our multiple scanning modulation collimator positions select the eastern of our two previously reported boxes as the most probable location. The X-ray spectrum appears very soft, kT ~1-2 keV, with N_H ~5 x 10^{22} H atom cm^{-2}. This X-ray cutoff implies an absorption A_v ~23 mag and therefore R and IR observations are necessary to identify the optical counterpart. H0632-18 is a new source of strength 0.9 UFU reported by HEAO A-2 to be near the γ ray source CG 195-4. In a pointed observation on 1978 April 4 we detect a 3.5σ signal equivalent to 1 UFU, in the 2 arcmin collimator only. If interpreted to be the same source detected by HEAO A-2, we reduce their location uncertainty by a factor of 15. However, alternate locations are possible if the source is assumed to be CG 195-4, or a weak Uhuru source suggested by Julien and Helmken. We will report on a search for a 59 sec periodicity.

* Supported by NASA contracts NAS8-30543 and NAS8-27972.

Session 23: 1400–1600 (Room 278)

Stellar Chromospheres

01.23.01 Pre-Flight Calibration of the Solar Maximum Mission Ultraviolet Spectrometer and Polarimeter I.

Instrumentation & Spectrometer Performance.

A.G. Michalski, R.J. Kenny, R.A. Shine, B.E. Woodgate, NASA/GSFC, E.C. Bruner, Jr., Lockheed Palo Alto Research Laboratory, W. Henze, E. Tandberg-Hansen, NASA/MSTC. A calibration instrument has been developed to determine the absolute flux sensitivity and polarization capabilities of the Ultraviolet Spectrometer and Polarimeter to be flown on the Solar Maximum Mission. The principle features of the instrument include a vacuum UV monochromator, collimator telescope with MgF2 optics and rotating four mirror polarizers that provide a known source of linear polarization at a given wavelength to the flight instrument in the 1150–3600Å range. The entire system is software controlled with a digital computer. The UV flux sensitivity is determined by interposing a calibrated photodiode in the exit beam of the monochromator for which the UV light source is provided by a platinum hallow-cathode lamp. An alternate configuration of the calibration system provides circularly polarized light by using an electro-solomoid magnet in conjunction with the platinum lamp. Results of the throughput efficiency, and scattered light level, spectral and spatial resolution are presented for the flight instrument.

02.23.01 Pre-Flight Calibrations of Solar Maximum Missions Ultraviolet Spectrometer and Polarimeter II: Polarimeter Performance. R.A. Shine, P.J. Kenny, A.G. Michalski, B.E. Woodgate, NASA/GSFC, E.C. Bruner, R.A. Rehse, Lockheed Palo Alto Research Laboratory, W. Henze, E. Tandberg-Hansen, NASA/MSTC. The Ultraviolet Spectrometer and Polarimeter to be flown on the Solar Maximum Mission has a polarimetry system which in principle can determine all the Stokes parameters of the UV radiation selected by the telescope and spectrometer. Two methods are available. In the first a rotating waveplate is inserted and the polarization of the grazing serves to modulate the signal. In the second a different waveplate plus a four mirror polarizer is inserted. Because the polarization and retardation properties of the optics vary strongly over the 1150 to 3600Å range of the instrument they must be carefully calibrated. We describe here the results of our measurements of the polarization properties of the integrated instrument using a source of linear polarization. This is one of the features of the calibration system described in the previous paper. We have also succeeded in measuring circular polarization from a source in a magnetic field using our magnetograph mode.

03.23.09 Applications of Solar Coronal Loop Models to Stellar Coronae. F. Walter, W. Cash, P. Charles, and S. Bowyer Space Sciences Lab., Univ. of Cal., Berkeley