

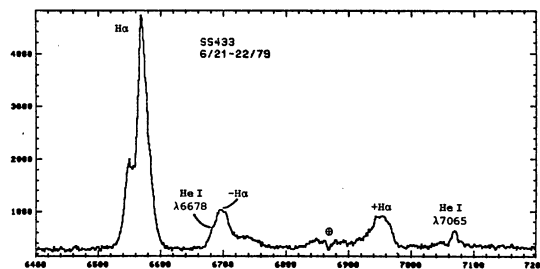
fairly completely described in the catalog. Linear statistical models based on major observables of these stars can predict emission line intensities with a standard deviation in the error of less than $\frac{1}{2}$ of an emission-line intensity class. The correlation coefficients for these models, adjusted for the number of independent observables used, are as high as 0.88 (unadjusted $r=0.94$). Observational effects are clearly an important part of these models. These models suggest that the majority of the star-to-star variation in emission line strengths is the result of the fundamental condition of the stars and not the result of ephemeral phenomena.

4C.17.06 Discovery of a 5.5 Hour Modulation in the Optical Counterpart of 2S 1822-371. K. O. MASON, U. C. Berkeley, SSL, J. MIDDLEDITCH, J. E. NELSON, Lawrence Berkeley Lab., N. E. WHITE, Goddard Space Flight Ctr., and P. SEITZER, I. R. TUOHY, M. S. S. S. O. - Photometry of the 16th mag optical counterpart of the X-ray source 2S 1822-371 at C.T.I.O. and Mt. Stromlo has revealed a periodic, color dependant modulation of the light from the star. The light curve shows a V shaped minimum with a full width at half light of approximately 1 hour, a B magnitude at maximum of ~ 15.6 and a range of ~ 1 magnitude. The minimum is more pronounced at shorter wavelengths. The best fit modulation period of the star is found to be $0^d23210 \pm 0^d00001$ with minimum occurring on J.D. 2444044.867 \pm 0.006. The light curve of 2S 1822-371 is compared with that of 4U 2129+47, which has a similar period, but a significantly different shape. In particular the narrowness of the minimum in 2S 1822-371 argues against X-ray heating of the companion star as the source of the modulation in this system; rather, it may be the result of partial eclipse of an accretion disk surrounding the X-ray source. We also report on a search for a corresponding modulation in the X-ray flux.

in radial velocity) show a continuum source of 176 mJy centered on the star and $\sim 20 M_{\odot}$ of atomic hydrogen in a cloud ~ 3.5 pc across at the assumed distance of 800 pc. Although the highest column densities of HI are near the star, there is a low-brightness extension to the N-W. The gas is distributed over radial velocities -4 to $+6$ km s $^{-1}$ (1sr). There is a distinct lacuna of emission near the star and its compact HII envelope. The relation of the HI to CO emission and the obscuration is considered.

41.02.09 Optical Observations of SS 433. W. LILLER, R. NOYES, M. DAVIS, S. BALIUNAS, A. STERNBERG, S. TOKARZ, CFA - We have monitored the spectrum of SS 433 since April 1979 with the CFA Reticon spectrograph and among our findings we note that (1) the high-velocity components of H α are extremely variable in intensity from night to night; (2) the radial velocities of the stationary lines of H and He I clearly show a 13-day orbital motion; (3) the central intensity of H α , H β and He I lines appears to vary with a 13-day period. A typical spectrogram is shown below.

Archival photographs in the Harvard collection do not show any clear periodicity near either the 13-day or the 164-day periods reported by others. The B-magnitude does vary, however, and with a range of 2.0 magnitudes.



Session 41:1400-1700 (Nevada-Oregon Room)

Poster Session

41.01.07 The HI Cloud Surrounding the Emission-line Star LkH α 101, P.E. Dewdney & R.S. Roger, DRAO, Herzberg Institute of Astrophysics, Penticton, B.C. The reflection nebula NGC1579 is illuminated by the highly obscured emission-line star LkH α 101. New synthesis observations at 21cm (resolution 2'x3.5' by 0.7 km s $^{-1}$

41.03.03 KPNO FTS Measurements of the Fundamental and First Overtone Bands of Solar Carbon Monoxide,* THOMAS R. AYRES,† JILA, U. of Colo. and L. TESTERMAN, Kitt Peak National Observatory†† - We have obtained extensive measurements of the 4.7 μ m fundamental and 2.4 μ m first overtone bands of carbon monoxide using the 1 m Fourier Transform Spectrometer of the McMath Solar Telescope at Kitt Peak. We observed the strong fundamental bands at