

IUE OBSERVATIONS OF CI CYGNI DURING 1979-1981

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High and low resolution IUE spectra of CI Cyg were obtained at VILSPA during 1979-81 allowing for an analysis of the spectral variations related to the decreasing activity of the star, and to the eclipse (June 1980).

In the high resolution spectra the emission lines have a width slightly larger than the instrumental one. This fact is particularly evident in the HeII 1640 Å line and could be related to the peculiar behaviour of this line at low resolution as reported by Michalitsianos et al. (this volume). A systematic radial velocity difference between permitted and intercombination lines was found; this difference should be connected with the structure of the emitting region(s). "Secular" and eclipse variation was found in particular in the intercombination line intensities (Viotti et al. 1980). An electron density of $\sim 0.3-1.5 \times 10^{10} \text{ cm}^{-3}$ was evaluated from the intensity ratios of the NIII] emission lines. No significant difference in these ratios and in the CIII]/NIII] ratio as well was found during 1979, 1980 (eclipse) and 1981 suggesting no large N_e variation with both the activity phase and eclipse of the star. This result should imply a low density gradient in the partially eclipsed NIII] and CIII] regions. A more detailed analysis of the high resolution data is in course to better clarify these points, and their implications on the possible models for CI Cyg.

An interstellar extinction of $E(B-V) = 0.40$ was derived from the low resolution IUE spectra. The dereddened spectra during June 1979 - August 1980 are shown in figure 1. Differently from other symbiotic stars like Z And, V1016 Cyg, AG Dra and RR Tel, the continuum of CI Cyg does not show in the far ultraviolet the steep increase due to the presence of a hot black-body component. On the contrary the continuum appears flat and almost constant until January 1980. In March 1980, during ingress of eclipse the continuum found by us was eclipsed at 2500-2800 Å, but almost unaffected in the far UV. At mid eclipse the whole continuum was lower by

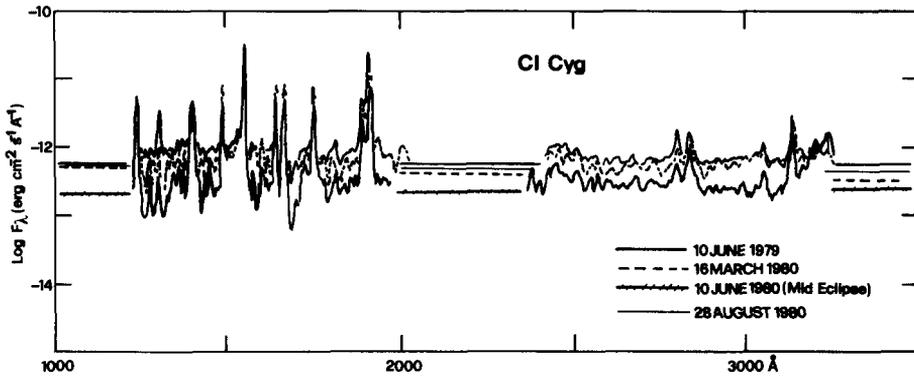


Figure 1. The low resolution spectra of CI Cyg between 1240 and 3200 Å, during 1979–80. The mean slope of the continuum in different epochs is indicated.

a factor of about 2.5 with respect to the level before and after eclipse, when it nearly recovered the previous level.

REFERENCE

Viotti, R., Altamore, A., Baratta, G.B., Cassatella, A., Ponz, D., Friedjung, M., Muratorio, G.: 1980, IAU Circular No. 3518.