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In our paper (Ch. Fehrenbach and C.C. Huang, 1981) we have described the details of our spectroscopic observations of CI Cyg in 1980. In that year, the star showed a fair presence of bright forbidden lines of [FeV] and very strong emission lines of high and low excitation, including forbidden [O III], [Ne III], [Fe II] and [S II] and permitted O III, N III as well as He I and Fe II ... etc ... The He II 4686 Å was very strong. The Balmer lines were the strongest emission features in the spectrum and H_{α} and H_{β} were double. There were two groups of velocities in 1980, one was positive for forbidden lines and the other was negative for the permitted lines. The displacements of Balmer lines showed a regression.

Continuing our spectroscopic observations of CI Cyg, during summer 1981, a number of spectra of the star were obtained at the Haute Provence Observatory, using the Marly spectrograph with a dispersion of 80 Å mm⁻¹.

In 1981, CI Cyg has clearly changed excitation and the spectral appearance is very different from that of 1980. The forbidden [Fe VII] which sometimes had been present in CI Cyg but was missing in 1980 have reappeared while the [Fe V] lines observed in 1980 have clearly weakened. In Fig. 1 a, b and c show the strength of [Fe VII] lines in ultraviolet region as well as in red region which our 1980 observations also covered. The [O III] lines are still intense but much weaker than that in 1980. There are great changes in the Balmer lines. The components shortward of the double lines of H_{α} and H_{β} which definitely had been seen during 1980 have disappeared. Fig. 1, c and d show the fading of H_{α} in 1981 and its structure changes between 1980 and 1981. In 1981, the regression of Balmer lines found in 1980 has disappeared. As to ionized helium, He 4686 Å is still strong, but the Pickering lines present in 1980 are missing. We detected also a trace at 3203 Å of He II (3-5) in 1981. It would be interesting to mention that the relative intensity of He II 4686 Å in CI Cyg is as strong as that in AG Dra in our observations, but the He II 3203 is much stronger in AG Dra (C.C. Huang, 1981). In ultraviolet, the strongest lines are due to high I.P. lines of [Ne V] and fluorescence O III.

The continuum of the spectrum of CI Cyg much enhanced in 1981. The TiO bands are clearly visible in the photographic region. Fig.1, a shows the spectral appearance of the star in 1981.

There was an eclipse of CI Cyg in the summer of 1980, our 1980 observations from July 12 th to October, covered just the end of the eclipse. Although there were great spectral variations in the star between 1980 and 1981, the changes in the spectrum were not radical in our observations.

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References

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