ULTRAVIOLET STUDIES OF NOVAE

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High dispersion spectra of WZ Sagittae and Nova Cygni 1978, taken by IUE, have been studied by us.

Of the two spectra of WZ Sagittae in our possession, the long wave region one shows little besides the interstellar Mg II doublet. The more interesting short wavelength region has relatively wide (130-250 km/s) resonance absorption lines sometimes at the center of wider emission. No clear sign of ejection is seen. The study of the profiles of the CIV, NV, OI, and SiIV resonance lines and of HeII 1640 Å indicates:

a) The absorption lines are probably not interstellar (widths, depths).
b) A standard accretion disk model can be used. The high ionization lines are probably formed in a region ionized by the boundary layer. The line width indicates that they are formed near the edge of the disk (top of raised edge?), illuminated by radiation from a radius a factor of 10 smaller.

A long wave region high dispersion spectrum of Nova Cygni 1978 has also been studied. Equivalent widths of the lines of multiplets 1, 2, and 3 of FeII and of multiplet I of MnII were measured. These lines are in the same velocity system as that of the strong MgII lines described by Cassatella et al. (A and A, 74, L18) blue shifted about 80 km/s from a narrow interstellar line, and attributed by them to gas existing before the outburst. A study of the curve of growth indicates conditions similar to those of interstellar gas, the excited FeII lines at 385 cm^{-1} having a lower level population/g of $\geq$ 1.5 dex less than that for the unexcited lines. Interpreted as an excitation temperature this would correspond to $\leq$ 160°. The MnII/FeII column density ratio of 1/6 is exceptionally high. It is still not certain whether the gas is interstellar or circumstellar.

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