

ON THE PLANETARY NEBULA NGC 3918

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ABSTRACT. We have obtained a series of high dispersion IUE observations in the short and long wavelength ranges, with different exposure times in order to measure both intense and weak emission line fluxes. Several density dependent line ratios of different ions (S II, C III, N III, Si III, N IV and O IV) have been measured and the results confirm that the nebula has no systematic density variations. The collisionally excited lines of [Mg V] $\lambda\lambda 2783, 2928$ are present but no measurable Mg II $\lambda\lambda 2795, 2803$ appear in emission. The derived ionic abundances show a depletion of a factor of ~ 3 of the gaseous magnesium in the external part of the nebula. Expansion velocities for different ions have been obtained and we find an increasing expansion velocity with decreasing ionization degree. We have derived a v_{exp} vs radius relation which is compatible with the predictions of models of isothermal expansion into vacuum. The kinematical age of the nebula is 3150 years which is indicative of a mean mass loss ratio of $4.8 \cdot 10^{-5} M_{\odot} \text{ year}^{-1}$. A slight asymmetry has been found between the blue shifted and the red shifted component of the lines, which is wavelength dependent. From this dependence we find a dust optical depth of $\tau(\text{H}\beta) = 0.08 \pm 0.04$, within the ionized zone. The complete description of this work will appear in the *Revista Mexicana de Astronomía y Astrofísica*, Volumen 11, 1985.

1. IUE guest observer.

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