

MAGNESIUM ABUNDANCES IN PLANETARY NEBULAE AND INTERSTELLAR ABSORPTION
OF Mg II λ 2800 A

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SUMMARY: High-resolution *IUE* images have provided line profiles of emission cut by interstellar absorption in the magnesium II lines $\lambda\lambda$ 2795, 2802 A in nine objects. The underlying emission has been reconstructed in seven of these by fitting Gaussian profiles to the remaining line wings. Estimates of the ratio of intrinsic to observed emission ranging from 1.5 to 23 have been obtained. Photo-ionization models of IC 418, IC 4997 and NGC 2440 have been used to obtain Mg/H ratios from the corrected Mg II line strengths. The logarithmic magnesium abundances obtained were 7.6 ± 0.12 , 6.96 ± 0.3 and 6.5 ± 0.3 respectively. These results indicate that depletion of Mg into grains is less than previously thought and reduce the observed gradient in the magnesium abundance. The Mg depletion may be related to the C/O ratio within the nebula; carbon-rich planetary nebulae may have less magnesium depletion than those with $C/O < 1$.