

ELECTRON DENSITIES IN PLANETARY NEBULAE

Letizia Stanghellini and James B. Kaler
Dept. of Astronomy, University of Illinois

ABSTRACT. A large sample of forbidden lines —[O II], [S II], [Ar IV], and [N I]— have been analyzed to obtain electron densities for 134 planetary nebulae.

Inhomogeneities in the nebulae make comparisons among different data sets difficult. Although the values show considerable scatter, we still see that the [Cl III] densities are generally higher than those derived from either [O II] or [S II] by an average factor of 2.6.

Densities from [N I] are always the lowest. In the case that [Cl III] and [S II] densities are simultaneously obtained for a given position in the nebula, the two densities appear to be better correlated, and the average factor decreases to 2.01. [O II] and [S II] densities are, in both cases, well correlated.

LOW RESOLUTION SPECTROSCOPY OF 13 LOW SURFACE BRIGHTNESS PN's

A. Manchado¹, S.R. Pottasch², and A. Mampaso¹
1. Instituto de Astrofísica de Canarias, Tenerife, Spain
2. Kapteyn Astron. Institute, Groningen, The Netherlands

ABSTRACT. We have obtained long-slit low resolution spectra (7.5 Å resolution) of a sample of 13 low surface brightness planetary nebulae using the 2.5-m Isaac Newton Telescope (La Palma) with the Image Photon Counting System (IPCS) covering a spectral range from 3300 Å to 7300 Å. From those spectra we calculated the ionic and total abundances of O, N, Ne and Ar. Variations in the ionization structure between the inner and the outer part are found in some nebulae although the total abundances appear not to change significantly along the nebulae.

220

S. Torres-Peimbert (ed.), Planetary Nebulae, 220.
© 1989 by the IAU.