SPECTROSCOPIC SURVEY OF PLANETARY NEBULAE

A. Acker and J. Köppen
Observatoire de Strasbourg, France
B. Stenholm
Lund Observatory, Sweden

ABSTRACT. Since 1984, we have undertaken a spectroscopic survey of planetary nebulae, both at La Silla (E.S.O.)., and at the Observatoire de Haute Provence (France). Up to now, the spectra of about 900 PN have been obtained; all 723 spectra observed at La Silla have been reduced and the line intensities have been measured for 250 of them; about one fourth of the 182 OHP spectra have been reduced.

1. Misclassified Planetary Nebulae

Through our survey and IRAS data, and following comments in the literature, we have shown that 202 objects are surely (and 60 others possibly) misclassified planetary nebulae.

About one third of these objects are in fact symbiotic or late-type stars; others are galaxies (19), H II regions (22), plate faults (10),...

2. Determination of Physical Properties of the Nebulae

A computer code has been developed which automatically analyses emission line spectra, using a single zone, constant temperature and density (model). For the measured spectrum, we deduced: interstellar extinction, electronic temperature and density, the abundances of all observed ions and elements, and Zanstra temperatures and luminosities of the central star. At each stage of the analysis the quality is assessed, as measured against the ideal case if all relevant lines were observed.

From the first sample of about 200 spectra, it seems that for 27 objects the abundances are well determined; for 46, the data could be better, and for other spectra, the parameters are poorly determined. Say, one third of all observed objects can be used for further work.

This very homogeneous and reliable material will thus be treated statistically, with the collaboration of G. Jasniewicz, regarding galactic gradients and problems of stellar evolution.

S. Torres-Peimbert (ed.), Planetary Nebulae, 52.