

of the two kinds of observations yields a direct measure of the distance and the three dimensional structure of the envelope.

THE MASER STRENGTH OF OH/IR STARS, THE EVOLUTION OF MASS LOSS AND THE FORMATION OF A PLANETARY NEBULA

B. Baud
Laboratorium voor Ruimteonderzoek, Groningen

H.J. Habing
Sterrewacht, Leiden

From observations we find that the OH luminosity L_{OH} of an OH/IR star increases with R^2 , where R is the size of the masing region. From this correlation we deduce that the mass loss rate M , the expansion velocity v_e and L_{OH} are related by $L_{\text{OH}} \sim (M/v_e)^2$. Next we consider the large range that is observed in L_{OH} and the steep OH luminosity distribution for OH/IR stars. Both facts can be explained by the postulate that these objects undergo accelerated mass loss, and thus steadily increase their OH luminosity. We propose that OH/IR stars are at the extreme end of the Asymptotic Giant Branch and that many of them are in the process of blowing off their entire envelope in a superwind phase. Their mass loss rate during this superwind, as deduced from OH observations of the circumstellar shell, is given by a simple modification of the Reimers equation. This modification connects the superwind continuously to the Reimers wind and it provides observational evidence for the formation of a planetary nebula.

CATALOGUE OF CENTRAL STARS OF PLANETARY NEBULAE

A. Acker
Observatoire de Strasbourg, France

The catalogue contains 460 nuclei of 393 true and 67 possible planetary nebulae; 87 of these were discovered after the publication in 1967 of the catalogue of planetary nebulae of Perek and Kohoutek.

Produced by A. Acker (Strasbourg), M. Chopinet (Bordeaux), F. Gleizes (Montpellier), J. Marcout (Strasbourg), F. Ochsenbein (Centre de Données Stellaires de Strasbourg) and J.M. Roques (Montpellier), with the collaboration of the Observatoire de Haute Provence.

1. The data of observation, as well as bibliographical sources, are presented:

(a)-Denominations: the names HD, BD, CPD, ... of 90 stars are given; for all 460 objects the PK designation and the "usual name" of the nebula are indicated.

-Coordinates: the values α and δ are given for 1950, 1985, and 2000; annual precession refers to 1950. The XY coordinates measured on the Palomar or ESO charts are indicated, with the mean diameter of the nebula.

-Magnitude: the available photometric values or estimates are indicated for about 400 stars.

-Spectrum: for about 160 stars, a spectral study has been made.

-Velocity: the radial velocity is given for 249 objects, as well as the velocities of expansion and of the stellar wind if available. The proper motion has been given for 75 objects.

(b)-Distances have been listed for 265 objects; bibliographic references are given for the calculation of temperatures, luminosities, radii,... of the nuclei.

(c)-Notes: the possible nature of the object, the data concerning the binarity, variability, and other peculiarities are indicated.

2. Bibliographic references are listed. We give authors, year, name of the journal, volume and page numbers, and title of the article (682 papers).

3. Finding charts are provided for every object:

-BD or Cordoba map - field: $2^{\circ} \times 2^{\circ}$

-map from Palomar or ESO - field: $19' \times 25'$

This catalogue determines the direction of future observations, and brings out certain general properties of the planetary nebulae and their nuclei.