Distances of Galactic PN from the Population Segregation of the Peimbert Types

W. J. Maciel

Instituto Astronômico e Geofísico da USP, São Paulo, Brazil

Recent work on the PN classification scheme initially proposed by Peimbert has shown that objects of types I, II, and III have markedly different properties such as central star mass, height distribution relative to the galactic plane, and kinematic behaviour. This fact can be used in order to determine distances, especially for the younger disk objects.

In this work, two methods are considered in order to derive individual distances of disk PN. First, IUE spectra are used to estimate the H column density in the direction of some galactic PN. The results are compared with the expected density profiles derived from the 21 cm H surveys along the same directions, using our PN rotation curve. As a consequence, relatively accurate individual distances can be determined.

Second, the behaviour of PN of different types on the $\log g \times \log T_{\rm eff}$ plane is explored, in view of the fact that central stars of different masses have different paths on this diagram. As a result, average distances can be derived for some galactic PN. The possibility is discussed of establishing a statistical PN distance scale based on the population segregation of the Peimbert types. (FAPESP, CNPq)

https://doi.org/10.1017/S0074180900129808 Published online by Cambridge University Press