TEMPERATURES AND LUMINOSITIES OF PLANETARY NEBULAE NUCLEI.

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ABSTRACT. The location of Planetary Nebulae Nuclei (PNNi) on the H-R diagram is a very important clue to understand the evolution of these objects.
Several methods exist to determine the temperature of PNNi, e.g. the Zanstra method, the energy-balance method and the comparison of the stellar continuum flux with black-body or model atmospheres. For a large sample of PNNi we determined the Teff value with the last method, using IUE low resolution spectra and data from the literature at other wavelengths, and model atmospheres by Kurucz(1979), Wesemael (1981), Wesemael et al.(1980) and by van der Hucht(1987).
We have so far collected, from the IUE archive and with several observing runs, data on 44 of the 54 PNNi classified as WR-type in the catalog of central stars of Acker et al.(1982).We are also collecting data of the O-type nuclei which we analyze in the same way.
To determine the luminosity, distances were taken from the literature or re-derived by us, and the value of the stellar radius was obtained from the model fit to the absolute UV flux.
In the Table below we give results for some bright WR-type PN nuclei, where the observed spectrum is purely of stellar origin, or the nebular continuum can be unambigously subtracted from the stellar flux due to the extension of the objects. For NGC40, NGC6543, IC418 we already published detailed studies (Bianchi and Grewing,1987; Bianchi et al., 1986; Cerrato et al.1987). For the compact nebulae, the nebular flux is computed by taking into account the atomic processes, and deriving the emitting volume from the H-β flux, and it is then subtracted from the observed flux to obtain the pure stellar emission. Results for these objects, and for the O-type nuclei, will be published elsewhere.

References
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Name	PK number	Sp.type	E(B-V)	Teff(K)	R*/D (*)	D(Kpc)	logL/Lo
NGC40	120 +9 1	WC8	0.50	90000	0.67	0.98	4.4
IC418	215 -24 1	WC7,Of7	0.25	32500	2.8	1.40	3.7
NGC2371	189 +19 1	WC8,OVI	0.05	70000	0.145	0.5-1.2	2.4-3.1
IC3568	123 +34 1	WNC,O5	0.25	40000:	0.292	.48-2.1	2.0-3.3
NGC5189	307 -3 1	WC7-8,WC2	0.25	50000	0.275	.49-1.6	2.4-3.4
NGC6543	96 +29 1	WCN,Of	0.08	80000	0.460	1.39	4.2
NGC6826	83 +12 1	WN6,OVI	0.05	35000	1.66	.69-1.1	3.6-4.0
NGC6905	61 -9 1	OW8,WC,OVI	0.15	50000	0.23	1.8	3.3

(*)R in solar radii, D in Kpc

S. Torres-Peimbert (ed.), Planetary Nebulae, 307.