

PHOTOMETRIC AND SPECTROSCOPY OBSERVATIONS OF PECULIAR NUCLEI OF
PLANETARY NEBULAE

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ABSTRACT. Photometric and spectroscopic observations of some bright central stars of planetary nebulae (PN) have been conducted between 1984 and 1987 with the following tools: differential photometer P7 (70-cm swiss telescope, La Silla c/o ESO); radial velocity scanner CORAVEL (1-m swiss telescope, Observatoire de Haute-Provence = OHP); spectrograph CARELEC with CCD detector (193-cm telescope, OHP).

Within the first kind of selected objects: PN with late-type central stars, LoTr 5 and Abell 35 deserve special attention. The nucleus of LoTr 5 presents some similarities with the FK Comae stars; the photometric variations are periodic with a variable amplitude, and should be caused by migrating star-spots. A triple system in the nucleus has been tentatively suggested from the shape and the behaviour with time of the CORAVEL correlation-dip (Jasiewicz *et al.*, 1987).

The nucleus of A35 also presents an H α line in emission, and photometric variations with a period of a few hours and a variable amplitude, but their origin remains still uncertain (brightness inhomogeneities or binary effects?).

Both objects share in common a very large nebula; we have undertaken the study of other PN of this type (in particular, the possible cold nucleus of DHW2).

The second kind of selected PN are those with an O-type nucleus which is suspected to be a binary. Photometric observations are done for NGC 1360, Abell 36 and IC 418 (Jasiewicz, 1987), with the following results: no eclipses nor reflection effects were found for NGC 1360; the V-magnitude of A 36 remains constant; we have observed very important variations for IC 418, but we failed to obtain any period.

REFERENCES

- Jasiewicz, G. 1987, Ph. D. Université de Strasbourg I.
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