

# A Dedicated Camera For Extragalactic Planetary Nebulae: The Planetary Nebula Spectrograph

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Photometry in [OIII] emission of Planetary Nebulae in external galaxies can be used to determine distances as great as that of the Virgo cluster and beyond, as forcefully argued elsewhere during this conference (G.H. Jacoby, invited talk). In addition, measurement of the radial velocities of the PN allows dynamical behaviour to be probed to much greater distance from the galaxian centre than integrated light techniques (e.g. Arnaboldi 1994).

We believe the Planetary Nebula Spectrograph to be the first instrument dedicated to measuring both the luminosity function and the radial velocities of PN in a single observation. The principle (Taylor 1995) is to take pairs of oppositely oriented images through a slitless spectrograph. We present an improved design in which the two images are obtained simultaneously. Simulations of an 8h observation at an 8m telescope demonstrate a flux limit of  $1.3 \cdot 10^{-18} \text{ erg.cm}^{-2}\text{s}^{-1}$  and a velocity resolution of  $29.2 \text{ km.s}^{-1}$ , enough to measure distances and dynamics at a distance of 30 Mpc.

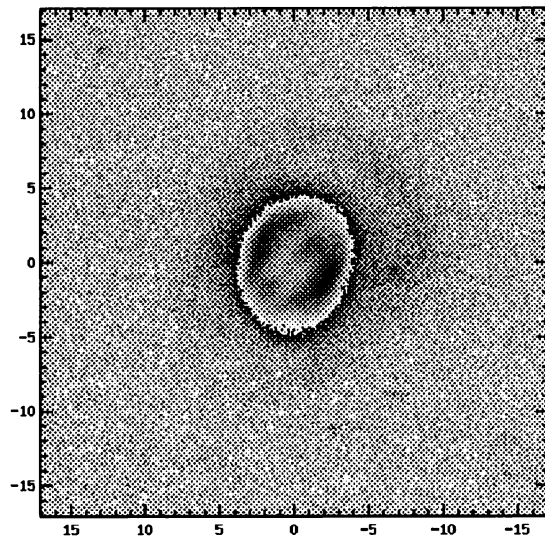
More information can be obtained by requesting an extended poster summary from [ndouglas@astro.rug.nl](mailto:ndouglas@astro.rug.nl) or by visiting our site at <http://www.aao.gov.au/local/www/pns/pns.html>

## REFERENCES

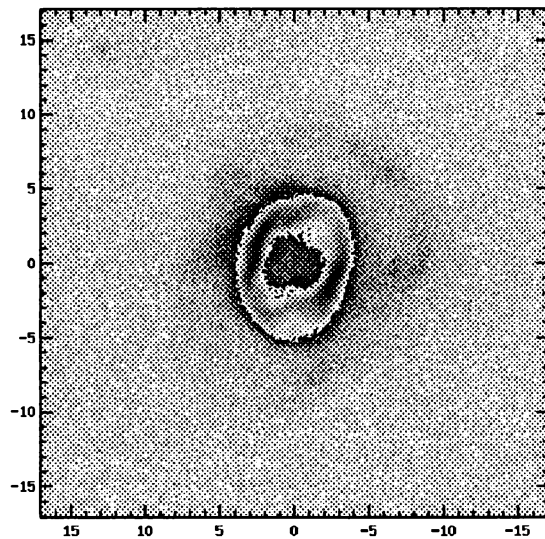
M. Arnaboldi, K.C. Freeman, X. Hui, M. Capaccioli & H. Ford ESO Messenger, No. 76, pp. 40–44 (1994)

Taylor, K. and Douglas, N.G., IAU 149 ASP Conference Series, Vol. 71, pp. 33–37 (1995)

$H\alpha$



[NII]



K 3-94 142.1+03.4

From: "The IAC Morphological Catalog of Northern Galactic Planetary Nebulae",  
A. Manchado, M.A. Guerrero, L. Stanghellini, M. Serre-Ricart.  
courtesy: A. Manchado