THE IONISATION STRUCTURE OF IC 418

P.D. Atherton, T.R. Hicks*, N.K. Reay, S.P. Worswick
Imperial College, London, England
*Present Address: McDonnel Center for Space Science
Washington University, St. Louis,
Missouri 63130, USA

Isophotal contour maps produced from monochromatic electronographic exposures of the low excitation planetary nebula IC 418 are interpreted in terms of a three-dimensional non-spherical gas distribution.

Comparisons are made with the ionisation structure models proposed by Flower (1969, Mon.Not.R.Astr.Soc., 146, 243) and Buerger (1973, Astrophys.J., 180, 817) and with the ionic distributions of Wilson and Aller which were derived assuming spherical symmetry (1951, Astrophys. J., 114, 421).

There is evidence from both contour maps and emission line profiles that the OIII distribution extends well towards the central star while the Hα contour map indicates that there is a central hole in the gas distribution or a dip in the emission measure for hydrogen in the inner regions of the envelope. (Paper to be submitted to Mon.Not.R.Astr.Soc.)

ELECTRON TEMPERATURE AND DENSITY MAPPING IN PLANETARY NEBULAE

N.K. Reay and S.P. Worswick
Imperial College, London, England

The linear response of the electronographic process provides a simple method for producing relative intensity ratios of emission lines across a complete nebula. Using narrow-band filters to isolate those lines which are sensitive to electron temperature and density changes, it is possible to map the gross variation of these quantities across the object.

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