

**PLANETARY AND PROTO-PLANETARY NEBULAE WHICH ARE
STRONG 25 μ m EMITTERS**

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The IRAS Point Source Catalogue containing about 250,000 sources has yielded a large number of previously unknown planetary nebulae (PNe) and a smaller number of proto-planetary nebulae (PPNe). The spectral energy distributions for many of these objects peak at or close to 25 μ m. A program to optically identify sources in the complete IRAS Faint Source Database, which comprises about 750,000 sources, is currently under way (Wolstencroft et al. 1991), and in a related study Wolstencroft, Parker & Lonsdale are carrying out a spectroscopic survey of a small sample of the approximately 106,000 sources which either peak or are detected only at 25 μ m. So far spectra of 150 sources have been obtained: 3 of these sources are PNe and 1 is a PPNe. This suggests that this sample of 25 μ m emitters may be a rich source of new PNe and PPNe. In this note we discuss two of these four sources.

IRAS 08355-4027: this source is identified as a PNe based on its spectrum. It lies in the galactic plane and based on the observed H(α)/H(β) is very heavily reddened with an extinction factor $c=7.3$ compared to the range cited by Osterbrock (1989) of 0.02 to 2.3 for published PNe values. A CCD image of the nebula shows a ring much brighter on one side with a funnel of emission connecting the star and the bright section of the ring. The nebula, which we have labelled the Stealth Bomber, is similar in shape to the PNe A35: Jacoby (1981) has suggested that the shape of A35 is due to the motion of the system relative to the local ISM. The HeII 4686A line strength of IRAS 08355-4027 is comparable with that of H(β) implying a high excitation ($E=88$).

IRAS 07131-0147: this is a PNe with a classical bipolar structure. This object is described in detail by Scarrott et al. (1990).

References

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