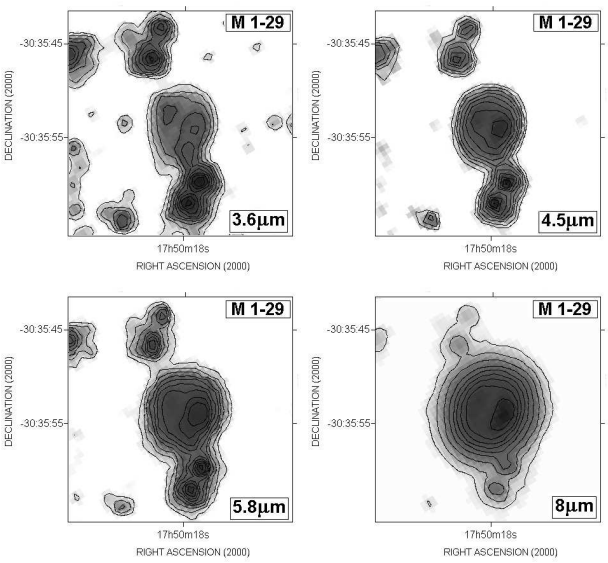

Fig. 16. Mapping of M 1-29 in the four IRAC channels, where the contour parameters [A, B, C] are given by [12, 5.12, 0.1502] at 3.6 μm, [12, 3.10, 0.1192] at 4.5 μm, [12, 6.55, 0.0950] at 5.8 μm, and [25, 17.32, 0.1242] at 8.0 μm. Note again how the dimensions of the source increase as the wavelength of observation becomes larger.

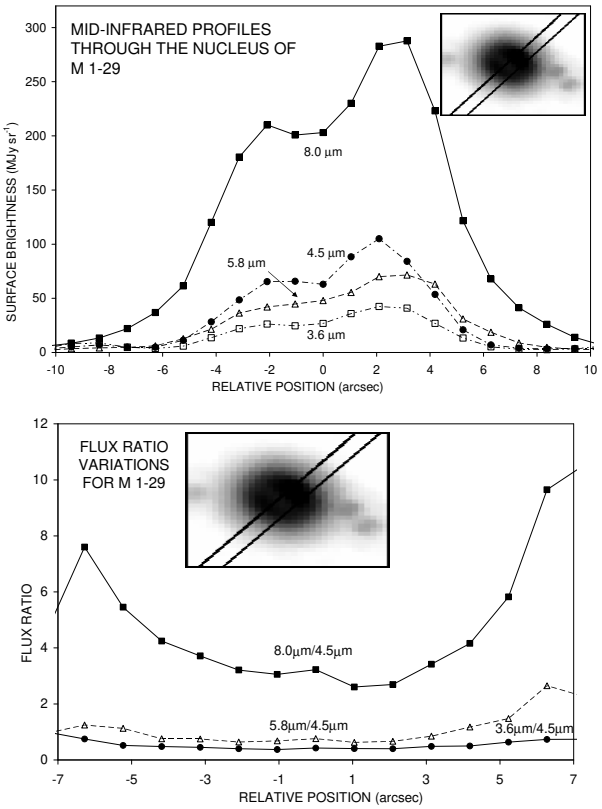

Fig. 17. As for Figure 3, but for the case of M 1-29, where it is seen that the longer wave profiles have a double-humped appearance. The 8.0 μm/4.5 μm ratio in the inner portions of the shell increases with increasing distance from the nucleus.

$\sim$13 arcsec; a value which is rather larger than is determined for the radio and optical regimes. This is confirmed through logarithmic profiles through the centre of the source, which show a $1/10^{\rm th}$ peak width of $\sim$11.3 arcsec at 3.6 μm, of 13.7 arcsec at 5.8 μm, and of $\sim$15 arcsec at 8.0 μm. The overall 8.0 μm dimensions at 0.6% peak height –the lowest level at which it appears possible to detect the envelope above background fluctuations and noise– are of the order of $\sim$39.7 arcsec.

The 8.0 μm/4.5 μm ratio also increases from a value $\sim$2.6 at the centre, to $\approx$8–10 at RP $\sim$7 arcsec (Figure 17), a tendency which is confirmed in the ratio maps illustrated in Figure 18. It is therefore likely that much of the longer wave emission arises from outside of the ionised shell.

3.8. *MeWe 1−6*

This is a recently discovered example of an old PN with extremely low levels of surface brightness in the visible (Melmer & Weinberger 1990). The structure seems to take the form of a thick-ringed shell with dimensions of order 16 arcsec. There have however, apart from this, been no other studies of this source.

Our IRAC contour maps are illustrated in Figure 19, whence it is again evident that surface brightnesses are low, and that the object is located in a region of high field star densities. This makes it difficult to discern the shell at 3.6 and 5.8 μm. Profiles through the envelope (Figure 20) reveal the expected double-humped structure, and suggest 8.0 μm dimensions $\sim$21.6 arcsec which are slightly larger than in the visible.

3.9. *PN G009.8−01.1 (PHR1811−2100)*

This source represents one of the many new PNe detected in the MASH I survey, where Hα images show the presence of a bright rectangular band surmounted by orthogonal fainter wing-like structures. The source is classified as a bipolar PN. The published spectrum appears to be extremely noisy, although Parker et al. (2006) suggest that [NII] > 4Hα, and [OIII] > Hα.

Our present contour maps (Figure 21) are dominated by the bright interior emission regime, with evidence for 8.0 μm extensions to $\sim$25 arcsec. The minor axis width is $\sim$12 arcsec. This compares to dimensions 32×12 arcsec^2 quoted for the Hα image.