

**THE MORPHOLOGY OF MID-INFRARED UIR FEATURE
EMISSION IN THE PPN M 2-9 AND IRAS 21282+5050**

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Abstract. The carbon-rich PPN M 2-9 and IRAS 21282+5050 are known to exhibit UIR feature emission at 7.7, 8.6, and 11.22 μm . The two nebulae have been imaged in the mid-IR with the UA/SAO/NRL Mid-Infrared Array Camera (MIRAC) in bandpasses which include UIR feature emission (8.8 and 11.22 μm). Near-infrared images of the nebulae have also been taken with the NICMOS 3 Hg:Cd:Te array camera at *J*, *H*, and *K* for M 2-9 and at *K* for IRAS 21282+5050.

M 2-9. The mid-IR emission from M 2-9 comes from the nebula's optically bright center. At 8.8 and 9.8 μm , the images are slightly extended roughly perpendicular to the major axis of the nebula. The image at 8.8 μm is larger, suggesting that the UIR feature carriers are spatially distinct and more extended than the mid-IR continuum emission. This is consistent with observations of other more evolved PN such as BD +30°3639 and NGC 6572 (Hora *et al.* 1990, Deutsch 1990). The nebular images at 10.0, 11.22, and 11.7 μm are not resolved; further mid-IR observations of M 2-9 are planned.

The near-IR images of M 2-9 presented show the changing characteristics of the nebula with increasing wavelength. At *J*, bright knots of emission are clearly seen predominantly along the inner eastern edges and at the ends of each lobe. At *H*, the knots are somewhat fainter, while the band across the northern lobe has become more dominant. At *K*, the knots at the ends of the lobes are barely visible, while the northern band is quite distinct.

IRAS 21282+5050. In the images presented at 8.8 and 11.22 μm , the nebula appears similar in size and morphology at the two wavelengths, showing round extension and a roughly E-W elongation with a FWHM of 3.6'' at a P.A. of $\sim 70^\circ$ E of N. The nebular image at *K* with the central star subtracted shows two small symmetric lobes near the center of a more extended, round emission structure. A line drawn through the center of the lobes lies at a P.A. of $\sim 70^\circ$ E of N, the same as in the mid-IR images. The emission at *K* is less extended than in the mid-IR.

References

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