MID-INFRARED SPECTROSCOPY OF FOUR 21μm EMISSION BAND SOURCES

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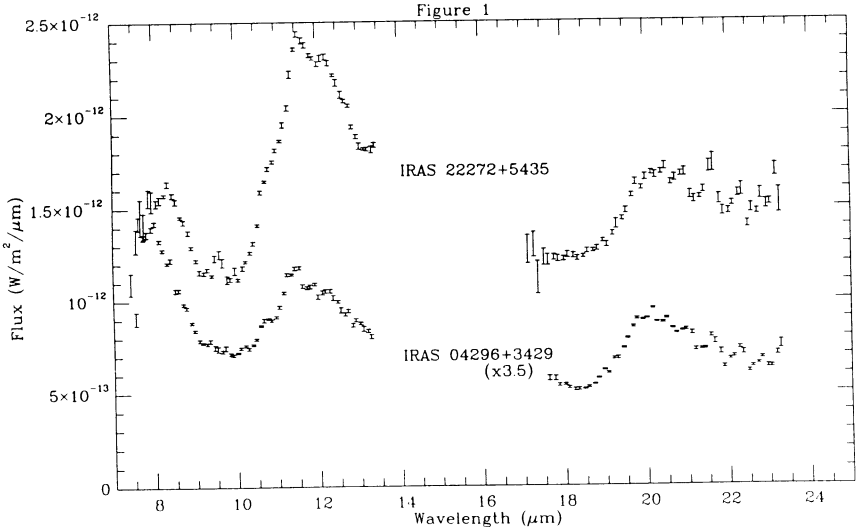
We report 10 and 20μm spectroscopic observations of four C-rich post-AGB objects which exhibit the unidentified emission feature at 21μm. The observations were carried out in October 1990 and May 1991 using CGS3 on UKIRT. The spectral resolutions were 70 for the wavelength range of 7.4–13.3μm and 80 for the region between 15.4–24.1μm. Three of the sources reported here are from the list of Kwok, Volk & Hrivnak (1989), i.e., IRAS 04296+3429; IRAS 07134+1005 and IRAS 22272+5435. Figure 1 shows the full spectrum of IRAS 04296+3429 and IRAS 22272+5435. The 10μm spectra of these objects exhibit UIR bands whose peaks all fall longwards of the usual peak wavelengths associated with such features. This may be related to the fact that they are the lowest excitation objects so far found to exhibit UIR emission bands. We also found narrow emission features superimposed on the long wavelength wing of the 21μm emission bands of IRAS 04296+3429 and IRAS 22272+5435. The fourth object we observed, SAO 163075, was found to also exhibit a (weak) 21μm emission feature. However, there is no PAH features in the 10μm region, apart from the plateau at 12μm.

Reference

Kwok, S., Volk, K.M., Hrivnak, B.J., 1989, ApJ, 345, L51

Figure 1



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