

Mid-IR images of methanol masers and ultracompact HII regions

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Methanol masers and UCHII regions trace massive star formation sites. We have undertaken a mid-IR survey of 17 regions containing methanol masers and UCHII regions in order to locate the young stellar sources associated with them. The images were obtained from 8.7 to 18.8 μm with the mid-IR camera CID (Salas *et al.* 2003) on the 2.1m telescope of the Observatorio Astronomico Nacional at San Pedro Martir (Baja California, Mexico). The images were taken with a scale 0.55"/pix and the mean PSF was 1.5-2.0" (FWHM) close to the diffraction limit. We report as an example in Fig. 1 (left panel) our 18.8 μm

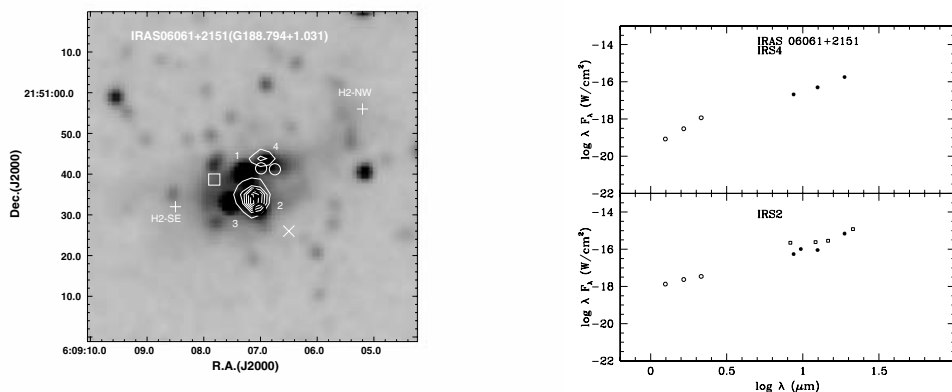


Figure 1. *Left:* K_s image of IRAS 06061+2151 with the 18.8 μm contours. *Right:* SED of the source #2 and #4 associated with the UCHII regions.

contours of IRAS 06061+2151 superimposed to the 2MASS K_s image. A young cluster of at least 4 sources has been found centered on the IRAS source (Anandarao *et al.* 2004). We have found two mid-IR sources coinciding with the source #2 and #4 of Anandarao *et al.*(2004). The source #4 is at the center of two H2 knots and a high velocity molecular outflow. The mid-IR emission from #2 is extended and coincides with the UCHII and MSX source. The methanol maser is approximately 10" south of the source #2. The SEDs of both sources are illustrated in Fig. 1 (right panel). The IR spectral indices of source #2 and #4 are $\alpha(\text{IR})=1.9$ and 2.2 respectively.

References

- Anandarao, B.G., Chakraborty, A., Ojha, D.K., & Testi, L. 2004, *A&A* 421, 1045
Salas, L., Gutierrez, L., Tapia, M., *et al.* 2003, in: Instrument Design and Performance for Optical/Infrared Telescopes , *SPIE Proc.* 4941, 594