Spitzer/IRAC Observations of the Ophiuchus molecular cloud

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Ophiuchus Surveys

Imaging surveys with both IRAC and MIPS have already been conducted. **Above left**, the IRAC fields included in the IRAC Guaranteed Time Observations program (Allen et al. 2004b), and **above right**, the IRAC fields of the c2d Legacy program (Evans et al. 2003). The GTO fields are approximately 30x30' in area, and cover the cores of L1688 and L1689, as well as part of L1709, the “streamer” to the NE of L1688. The c2d survey area is ~8 sq. deg.

Lynds 1688

**Above left**: IRAC color composite of Lynds1688, using all four bands. The dense cores are conspicuous by their lack of diffuse emission. Using the IRAC colors, we classified sources as Class I (star+disk+envelope) and Class II (star+disk). **Above right**: spatial distributions of Class I and II sources are shown on the 4.5 micron mosaic: Class II sources as □, reddened Class II as □, Class I as O. **Left**: J-H, H-Ks and J-H, H-[4.5] diagrams for the sources we were able to match with 2MASS. Those objects below and to the right of the lower reddening vectors have circumstellar disks. Note how many more disks are detected using the IRAC data.

**Bright-rimmed Cloud Lynds 1634 (not Ophiuchus)**

The HH flows 240/241 in the Lynds dark cloud L1634 were imaged with IRAC and MIPS. At left, the combined IRAC [3.6] (blue), [4.5] (green) and [8] (red) bands. At right, individual bands are shown. At 4.5 microns, the two driving sources are seen only in scattered light. Their spectral energy distributions are plotted at right (including 2MASS JHK for IRS7). The dip at 8 microns in both SEDs could be due to silicate absorption in the disk or envelope structures surrounding the stars. Can you spot both outflows in the image at left? See also Hodapp and Ladd (1995) or Davis et al. (1997).

References:

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