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Massive Star Forming Regions in the Galactic Plane: A Comparative Study Using BGPS, Spitzer, & Optical/Near-IR Surveys

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Abstract. The Bolocam Galactic Plane Survey (BGPS) is a 1.1 mm continuum survey that has detected more than 8300 clumps over a 170 square degree survey area in the Galactic plane. The full power of these data is realised only when considering the full complement of data spanning millimetre through x-ray wavelengths.

Keywords. Galaxy: structure, ISM: jets and outflows, ISM: structure, stars: formation, surveys

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The search for highly obscured star forming regions has become possible through long-wavelength, large area, Galactic plane surveys using Spitzer and ground-based submillimeter (ATLASGAL; Schuller *et al.* 2009) and millimetre (Bolocam Galactic Plane Survey (BGPS); Aguirre *et al.* 2009 in press) surveys. BGPS is a 1.1 mm continuum survey that is contiguous over the range $-10.5^\circ \leqslant l \leqslant 90.5^\circ$ with $|b| \leqslant 0.5^\circ$ and $75.5^\circ \leqslant l \leqslant 87.5^\circ$ with $|b| \leqslant 1.5^\circ$. The BGPS survey has detected more than 8300 clumps over the entire 170 square degree survey area to a limiting non-uniform 5σ noise level in the range 30 to 60 mJy/beam (Rosolowsky *et al.* 2009). These clumps are believed to represent the earliest stages in the formation of massive stars.

For comparative analysis, Figure 1a shows a $\sim 32'$ field-of-view of the BGPS survey centred on the DR21 and W75 complexes. The 1.1 mm emission traces active regions of cold, dense gas being heated by embedded massive stars, and matches well with the IRS and ERO objects.

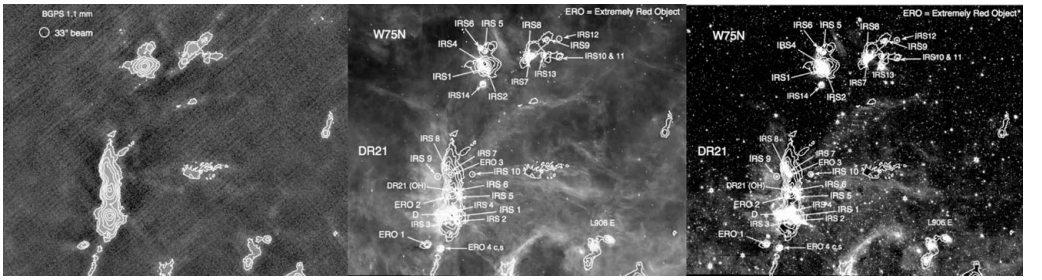

Figure 1. DR21/W75 massive star forming complexes: 1.1 mm dust continuum emission (*left*; contours: 0.2, 0.44, 0.96, 2.1, 4.6, 10 Jy/beam.), Spitzer 8 μm (*middle*) and 4.5 μm (*right*).

References

Aguirre, J. *et al.* 2009, *ApJ Suppl* in press
Rosolowsky, E. *et al.* 2009, *ApJ Suppl* in press
Schuller, F., Menten, K. M., Contreras, Y., *et al.* 2009, *A&A* in press