THE MOLECULAR COMPLEXITY OF G34.3+0.2

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Recent observations of the Orion-KL region[1,2,3] have shown that the chemical distribution in the region is much more complex than originally thought. There are not just one nitrogen rich core and one diffuse oxygen rich region. But rather, at higher resolution, each of these regions breaks up into smaller more compact components associated with individual heating/energy sources. Additionally, one molecular species, acetone [$(CH_3)_2CO$], has a distinctly different distribution from any other large molecular species. These results cannot be explained by current chemical models. In order to expand our understanding of the chemistry in complex regions like Orion-KL, we have observed four additional high mass star forming regions: W3, G34.3+0.2, W75N, and W51 e1/e2 at several spatial resolutions (1" - 5"). The results of these multi-resolution observations (with an emphasis on G34.3), a comparison to the results from Orion-KL, and their implications for astrochemical models, will be presented.

[1] Friedel, D. N. & Snyder, L. E. "High-Resolution λ=1 mm CARMA Observations of Large Molecules in Orion-KL." Astrophysical Journal, 2008, 673, 962

[2] Widicus Weaver, S. L. & Friedel, D. N. "Complex Organic Molecules at High Spatial Resolution toward ORION-KL. I. Spatial Scales." Astrophysical Journal Supplements, 2012, 201, 16

[3] Friedel, D. N. & Widicus Weaver, S. L. "Complex Organic Molecules at High Spatial Resolution toward ORION-KL. II. Kinematics." Astrophysical Journal Supplements, 2012, 201, 17