THE ORIGINS OF ETHYL CYANIDE AND DIMETHYL ETHER IN THE INTERSTELLAR MEDIUM

DOUGLAS N. FRIEDEL, *Department of Astronomy, University of Illinois, 1002 W. Green St., Urbana, IL 61801*; SUSANNA L. WIDICUS WEAVER, *Department of Chemistry, Emory University, 1515 Dickey Drive, Atlanta, GA 30322*.

Orion-KL displays the most well-defined case of chemical differentiation, where the emission signatures for oxygen- and nitrogen-bearing organic molecules are spatially distinct. We have been conducting millimeter imaging studies of Orion at various beam sizes in order to investigate the distributions of several large molecular species. Such observations reveal the relative location of these molecules within the region, and also indicate whether their emission is coincident with continuum sources, shocks, or other energy sources within the Orion-KL complex. We will present the results of our recent sub-arcsecond resolution CARMA observations of the shock tracer SiO, the dust continuum, and two of the most abundant molecules in the region, ethyl cyanide and dimethyl ether. We will discuss the implications of these observations on the formation and destruction mechanisms for large organic molecules in star forming regions.