

A 350 microns Study of Massive Star Formation Regions

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Abstract: We will present 350 microns images of the dust continuum in massive star formation regions obtained with the Caltech Submillimeter Observatory equipped with the SHARC focal-plane bolometre array. Results will be shown for Galactic compact HII regions and for the giant HII region NGC604 in M33. For the Galactic regions, we have obtained maps for 24 regions and identified 28 separate 350 microns components. Ten of the 28 components do not have radio continuum counterparts and are postulated to be the precursors to ultracompact HII regions and should have the properties of accreting massive protostars. Further observational studies of these sources should be done. We will discuss the relevance of these findings for the Galactic surveys planned with FIRST as well as for their study with the spectral and spectro-imaging capabilities of FIRST. Finally, we will present a 350 microns map of NGC604 and compare the dust emission in this giant HII regions with other tracers such as HI, H α and CO.