

The Obscured High- z Universe As Seen By Spitzer Surveys

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Abstract

Spitzer 24 micron observations provide an unprecedented view of dust enshrouded star-formation and AGN activity over 85% of cosmic time. By virtue of being relatively unaffected by confusion noise, these observations can detect the redshifted warm dust, hot dust and polycyclic aromatic hydrocarbon emission in typical galaxies when the Universe was merely 2 Gyr old. Disentangling the AGN and starburst contribution in these sources however requires knowledge about the multiwavelength properties, particularly in the X-ray and rest-frame 2–5 micron range. Furthermore, in order to estimate the bolometric luminosity of dusty sources, assumptions about the intrinsic SED and thereby the bolometric corrections need to be made. Typically, this relies on the spectral energy distribution of dusty sources in the local Universe. Modulo these uncertainties, I will review progress in our understanding of galaxy evolution at $z < 3$ from a variety of MIPS surveys, with particular emphasis on GOODS. I will discuss the LIRG and ULIRG contribution to the co-moving luminosity density, the AGN contribution to the energy budget and the physical properties of galaxies that dominate the star-formation and stellar mass budget at these redshifts.