

SPECTROSCOPIC CHARACTERIZATION OF ULIRG CIRRUS

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The Cosmic Infrared Background (CIB) has shown that half of the light generated in the history of the universe has been absorbed and reprocessed by dust in far-IR luminous objects. Spitzer, and especially the SWIRE survey, the largest legacy project performed with Spitzer, provide our best census of such far-IR luminous objects currently available. Among these objects lie two intriguing populations of ultra-luminous infrared galaxies (ULIRG): (1) cool luminous infrared galaxies which appear to require an extended optically thick interstellar medium, (2) luminous infrared 'ellipticals', galaxies with elliptical-like spectral energy distributions (SEDs) in the optical and high infrared luminosities, probably very dusty starbursts. We have carried out a systematic spectroscopic survey of the 50 brightest SWIRE examples (in the optical) of these sources using EFOSC-2 in multi-object mode on the 3.6m ESO telescope in order to characterize and fully model these powerful sources. We will present broadband SEDs and optical emission line diagnostics for all sources with available spectra. These sources represent the brightest far-IR examples of a much larger population that future more sensitive far-IR surveys will unveil (e.g. HerMES, ATLAS).