

The Expected Color Segregations with ASTRO-F Deep Observations

C. P. Pearson (1), W.-S. Jeong (1), H. M. Lee (2), T. Nakagawa (1)

(1) Institute of Space and Astronautical Science, JAXA, Japan, (2) Seoul National University, South Korea (cpp@ir.isas.jaxa.jp / Phone: +81-42-759-8519)

The Far-Infrared Surveyor (FIS) is one of the focal-plane instruments on the ASTRO-F satellite, which will be launched in early 2006. Using the deepest observations with ASTRO-F combined with our galaxy evolution scenarios and a detailed spectral library of galaxies, we will produce a new catalogue which will incorporate segregation of the extragalactic population into component types (Normal, star-forming, AGN) via color cuts utilizing the ASTRO-F wavebands. In addition, MIR imaging and spectroscopy will provide us with detailed information on each population type. From our simulation by using the type dependent luminosity functions and various templates of SED (Spectral Energy Distribution), we test the efficiency of determining the cosmological evolution of sources as a function of type as defined by galaxy colors. Based upon this study, we will constrain the evolutionary history for the well-studied galaxy populations as well as other (rarer) galaxy populations.