

A16a **AKARI Far-Infrared deep galaxy survey**

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Far-infrared galaxy surveys provide us with a powerful tool to investigate the evolution of luminous infrared galaxies and the star-formation history in the Universe, since they measure thermal emission from dust heated by the UV light from massive stars. They also play an important role in tracing the large-scale structure and the cosmic infrared background measuring the clustering of luminous infrared galaxies.

For these purposes, we have carried out a deep survey at 65, 90, 140 and 160 microns with the FIS instrument onboard the AKARI satellite. In order to minimize the contamination from the Galactic cirrus emission, we selected the region near the South Ecliptic Pole where the cirrus density is the lowest in the whole sky. The area of the survey is  $\sim 12 \text{ deg}^2$ . We have successfully detected almost 1700 galaxies down to  $\sim 20 \text{ mJy}$  at  $90 \mu\text{m}$ , and almost 300 galaxies down to  $\sim 180 \text{ mJy}$  at  $140 \mu\text{m}$ .

We present the details of the AKARI Deep Field South (ADF-S) and show the galaxy number counts in this field. Galaxy counts are useful to constrain the evolution scenario of galaxies. Our counts suggest that currently accepted galaxy evolution models should be modified. We also present the current status of multi-band follow-up observations (Matsuura et al., in this session), and discuss the properties of these galaxies such as optical IDs, infrared colors, and SEDs, referring to the additional surveys in the NEP deep field (Oyabu et al., in this session).