A14a Early Results on the Red Galaxies in North Ecliptic Pole obtained by Near and Mid Infrared Deep Surveys with AKARI

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We introduce early results on the red and dusty galaxies obtained by deep near- and mid-infrared (IR) extragalactic surveys with a space IR telescope AKARI toward the north ecliptic pole (NEP), where AKARI has the highest visibility. We have successfully performed two imaging surveys designed to have different area and depth; i.e. the NEP-Deep and the NEP-Wide surveys (Matsuhara et al. 2006). In the NEP-Deep (NEP-Wide) survey, we covered $\sim$0.4 (6.2) deg^2 with nine filter bands (covering 2.5-24 μm). This unique IR surveys, together with the optical (Subaru, CFHT), near-IR (KPNO), and radio (WSRT) data, allow us to make systematic and reliable measurements of the properties of red, IR luminous galaxies at high redshifts (see posters by Matsuhara et al. and Takagi et al. for examples).

We have also performed an unbiased mid-infrared spectroscopic survey within the NEP-Deep field over 1000 arcmin^2 (Slit-less sPectroscopIC surveY : SPICY project) and obtained more than 100 mid-IR spectra, including IR luminous galaxies with strong Polycyclic Aromatic Hydrocarbon (PAH) emission at $z = 0.3 - 0.5$. Details of the SPICY and spectral characteristics of the detected sources are shown in the Ohyama et al. poster.