

S16a **Dust Obscured Type-1 AGN in AKARI North Ecliptic Pole Deep Field**

H. Matsuhara, T. Wada, T. Takagi, S. Oyabu, T. Nakagawa (ISAS/JAXA), T. Goto (UH), Y. Ohyama (ASIAA), H. Hanami (Iwate U.), H.M. Lee, M. Im (SNU), M. Malkan (UCLA), C.P. Pearson, G. White (RAL), M. Negrello, S. Serjeant (Open U.), D. Burgarella (LAM) AKARI NEP Team

We describe observational characteristics of the Extremely Red MIR-bright Objects (ERMOS, satisfying $R - L15 \geq 6.5$ AB mag) in the AKARI North Ecliptic Pole (NEP) deep field (0.38 sq. deg. Wada et al.2008). Among more than 1000 sources with $S_{15\mu\text{m}} \geq 100\mu\text{Jy}$, and optical counterparts in the Subaru/Suprime-cam image, we selected ~ 80 ERMOS through careful image checking by eyes. Judging from their optical and infrared colours, most of them are interpreted as either star-forming galaxies obscured by dust at $z > 0.5$, and fraction of the power-law sources, candidates of AGN, is as much as 40 percent of the entire ERMO sample. From the optical follow-up spectroscopy of eight ERMOS with sufficient brightness at optical wavelength, we discuss the nature of three ERMOS with successful redshift determination ($z = 1.3 - 2.2$). One ERMO shows the signature of type-2 AGN, while the other two ERMOS show very broad [Mg II] emission ($5000-6000 \text{ km sec}^{-1}$). Since their optical - mid-infrared spectral energy distribution cannot be explained solely by any AGN dust torus templates, we propose that the stellar population co-exists with the AGN dust torus. The interstellar dust clouds associated with the stellar population may be responsible for the extinction of the broad-line regions in two ERMOS showing broad [Mg II] feature. The importance of such “type-1 obscured AGN” are also discussed in the context of the relation between the star-formation and AGN activities at $z \sim 1$ and beyond.