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Multiphase Interstellar Matter in Early Type Galaxies

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In order to understand the relationship between different phases of interstellar matter and their roles in fueling radio continuum sources and star formation, we have compared observational data from a wide range of wavelengths. About 30% of early type galaxies in our sample follow a relation between non-thermal radio continuum and infrared emission which is likely due to star formation as in spiral galaxies. About half of the galaxies have excess radio emission over the relationship and these galaxies also tend to contain large amount of X-ray emitting hot gas, indicating that the presence of hot gas is important for the fueling of nuclear radio sources.

A Surface Photometry of NGC4419

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We have conducted a surface photometry of barred spiral galaxy NGC4419, by making use of 6 Kiso plates in U,B,V,R-band. We have used the IRAF/SPIRAL for the reduction of the observational data. In order to make a quantitative analysis, we have decomposed the observed luminosity profile into bulge a component following $r^{1/4}$ -law and an exponential disk. The fitting was found to be rather poor, especially near the boundary between bulge and disk. The inclination may be partly responsible for such poor fitting, but we believe that the disk of this galaxy does not follow exponential law at small radii. The disk of this galaxy may be an example of Freedman's type II disk. The b-v color does not show any significant variation over the radius while v-r color tends to be larger near the center. The effect of atmospheric and instrumental point spread function on observed luminosity distributions is also discussed.

Structure of the Blue Compact Galaxy ESO 338-IG04

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CCD images and PCA spectra of the blue compact galaxy ESO 338-IG04 were obtained. 3 color contour images (V, R and I) show the similar smooth distribution with a single concentration. PCA spectra show the similarity to the emission spectrum of highly excited H II region.