

ABSTRACT

Dust and other phases of ISM in early-type galaxies

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We have an ongoing research program on detailed investigations of dust properties in extragalactic environment with focus on nearby dusty early-type galaxies. Here we report the results based on CCD broad band as well as narrow band optical observations on a sample of dusty E/SO galaxies carried out at Indian observatories. Prime objective was to investigate properties of dust and ionized gas in the sample galaxies. The archival data at X-ray and FIR wavelengths were also used to further examine relationship between dust, ionized gas as well as hot gas present in them. Dust extinction studies were used to obtain extinction curves and compare them with that of the Milky Way. It turns out that the extinction curves run parallel to that of the Milky Way implying that properties of dust in nearby galaxies are similar to our galaxy. Further, the ratio of total-to-selective extinction R_v for sample galaxies varies from 2.1 to 3.8 with an average of 2.95 fairly close to the canonical value of 3.1 for the Milky Way. The morphology and extent of ionized gas match with those of dust as well as diffuse X-ray emission maps for several galaxies in our sample, pointing to their possible physical coexistence.