

INFRARED PROPERTIES OF GALAXIES IN CLUSTERS: ABELL 194, ABELL 426 (PERSEUS) AND ABELL 2151 (HERCULES).

E. Recillas-Cruz^(1,2) A. Serrano P.-G.^(1,2) L. Carrasco^(1,3) V. Ortega⁽¹⁾

⁽¹⁾ Instituto de Astronomía, UNAM Apartado Postal 70-264, 0451 México, D.F.

⁽²⁾ Programa Universitario de Investigación y Desarrollo Espacial, UNAM Apartado Postal 70-372, 04510 México, D.F.

⁽³⁾ Observatorio Astronómico Nacional P.O. Box 439027, San Ysidro CA 92143-9027

ABSTRACT. We report here an observational study on the IR properties of members of the rich clusters of galaxies: Abell 194, Perseus and Hercules. Following the precepts described in previous papers concerning the manifold of the early-type galaxies from IR photometry for the Coma (Recillas-Cruz et al. 1990) and Virgo (Recillas-Cruz et al. 1991) cluster members; interstellar reddening and redshift corrections for Abell 194, Perseus and Hercules were estimated. Interstellar reddening corrections for Abell 194 and Hercules galaxy members were found to be small, except for Perseus cluster galaxies where extinction values are somewhat larger. IR redshift K-corrections were estimated from linear relations with z for (J-H), (H-K) and K (Persson et al. 1979). Corrected magnitudes and colors were then used to construct (J-H) vs. (H-K) diagrams for elliptical and S0 galaxies and color-magnitude diagrams (J-H), (H-K), (J-K), (B-K) and (V-K) vs. K.

Our main results are: (i) (J-H) vs. (H-K) color-color diagrams for early-type galaxies do indeed have colors typical of red giant bulge stars, (ii) In Abell 194, (J-H) vs. (H-K) diagram shows a larger dispersion in the (H-K) colors, as compared to similar diagrams for Perseus and Hercules clusters. (iii) Color-magnitude relations exists in the (B-K) and (V-K) colors vs. K for all morphological types, in the sense of luminous spheroidal components being redder in the IR. This result may reflect dynamically related differences amongst galaxies, or differences in the stellar luminosity function and/or environmental effects (Recillas-Cruz & Serrano 1991).

Based on observations obtained at Observatorio Astronómico Nacional (OAN), San Pedro Mártir, B.C., México.

REFERENCES

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