$T_1) > \simeq$ 1.35 mag, equivalent to metallicities of $< [Fe/H] > \simeq -0.39$ and $< [Fe/H] > \simeq -1.35$ dex. (iv) The spatial distribution of the red clusters is more strongly concentrated than that of the blue clusters. Taken in bulk, the globular cluster population shows a color gradient with $\Delta(C - T_1) \simeq 0.2$ mag in the range between 40″ to 180″ of galactocentric radius. This gradient is produced by the radially variable contribution of each of the two populations to the total sample. Taken individually, the mean colors of each of the two populations do not depend on the galactocentric projected radius. (v) The results of this work strongly support the occurrence of two well defined globular cluster formation events against a continuous process.

A SURVEY OF THE ISM IN ELLIPTICAL GALAXIES: THE IONIZED GAS

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We present results of a CCD optical imaging survey of the ionized gas in 74 luminous elliptical and lenticular galaxies, selected from the RC3 catalog. For each galaxy we have obtained broad-band V and R images and narrow-band images centered at the Hα+[N II] emisson lines to derive the luminosity and amount of ionized gas. We found that a large fraction of E (67%) and SO (76%) galaxies in our sample contain ionized gas. The ionized gas morphology looks very regular for most galaxies, but for some of them ($\sim$ 8%), a very extended filamentary structure is observed. According to the gas morphology and size, the galaxies can be classified into three broad groups, named small disk (SD), regular extended (RE) and filamentary structure (F). The emitting region mean diameter ranges between 2 kpc and 12 kpc. The mass values range between 10^3 and 10^5 solar masses. A significant correlation between Hα+[N II] and X-ray luminosities is found for those galaxies (38% of the sample) for which we have detected ionized gas and are listed as X-ray sources. However, there are relatively strong X-ray emitting galaxies for which we have not detected Hα+[N II] emission and objects which show emission-lines but are not listed either in the EINSTEIN or in the ROSAT databases. Weak correlation between the infrared luminosity in the 12 μm band and L(Hα+[N II]) was found. A strong correlation was found between the Hα+[N II] flux and the flux in the B band inside the region occupied by the line-emitting gas. We use these correlations to explore the possible mechanisms responsible for the gas ionization and excitation, and analyze in particular the role of the post-AGB stars and the thermal conduction from the X-ray halo in providing the necessary source of ionization.

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HOST GALAXIES OF SEYFERT 1 AND 2

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We are carrying out a program to study the optical morphology of the galaxies in the CfA sample of Seyfert galaxies.

The aim of the project is to study in detail the morphological properties of the galaxies that host the AGN, and to look for differences between the Seyfert types 1 and 2 in a complete and statistically well defined sample of Seyfert galaxies.

All the objects (but a few of them) have already been observed in BVRI and Hα. The observations have been carried out at the Nordic Optical 2.5-m Telescope. Some objects though have been observed with the Spanish 1.5-m telescope in Calar Alto.

Most data have been collected under excellent seeing conditions (0.6–0.7 arcsec) and very good signal to noise ratios. Data reduction is in progress.

An extra feature of this program is to produce a uniform optical data base to be used in conjunction with the IR data of this same sample of objects that will be acquired by ISO in our guaranteed time.

1. Brightness Profiles. To analyse the contributions to the total flux of different regions, we are characterizing the brightness profiles of the sample objects. To obtain a better signal/noise ratio each profile is obtained taking an average of the flux contained in an elliptical angular sector centered in the nucleus along the major (and minor) axis of the galaxy. With this fit we create two-dimensional models for each component: nucleus, bulge and disc. Then, we can compare the contributions of the non-nuclear components to the total flux and their colors, to study the differences between host galaxies of Seyfert 1 and 2.
2. Colors. We have done B-V and R-I color maps of 16 galaxies of the sample. In the small subsample studied so far we observe that, as expected, the colors of the Seyfert 1 nuclei are usually bluer than those of the Seyfert 2 nuclei. However, NGC 3079, NGC 4388, NGC 5674 and

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