IR OBSERVATIONS OF AGNs

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We present some preliminary results from medium resolution, spectroscopic observations of a selected sample of 16 AGNs and Starburst galaxies, ranging from 1.1 to 2.4 μm, taken with the UCLA Gemini Camera at Lick Observatory. H I, He I, H_2 and [Fe II] emission lines are strong in both Starburst and Seyfert galaxies in the J and H bands, while in the K band the emission lines are more prominent in Starburst galaxies. Stellar features such as the CO bandheads in both H- and K-band, Si I, Na I, Ca I are present in most of the spectra. In particular, we have identified the complete CO $\Delta v = 3$ band on the spectrum of several galaxies in the H-Band. A primary question about H_2 lines in AGNs is the source of their excitation. The main excitation mechanism in star formation regions is collisional excitation by shocks; however, AGNs also present the posibility of fluorescent UV excitation (Black & van Dishoeck 1987, ApJ, 322, 412). From the comparison of their shocks and fluorescent UV models with the relative fluxes of the stronger H_2 lines detected in the K band in some galaxies of our sample, we could say that the H_2 emission in UGC 2369 is shock driven, in MRK 551 and NGC 2992 "UV driven" and that in NGC 3079 there is a combination of both two mechanisms. Somewhat unexpectedly, we found that the measured equivalent widths of Na I and Ca I are in two galaxies (NGC 838 and M81) closer to those observed in late-type main sequence stars (Ali et al. 1995, AJ, 110, 2415) than to the ones corresponding to late-type giants or supergiants (Terndrup et al. 1991, ApJ, 378, 742). From this result it appears that a dwarf dominated stellar population can not be ruled out in some objects.

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H I OBSERVATIONS OF SPIRAL GALAXIES IN THE CLUSTER A 262

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Galaxies in dense cores of rich clusters are generally deficient in H I (Cayatte et al. 1990, 1994). To obtain more information on the H I spatial distribution in spirals, we made observations with the Westerbork Synthesis Radio Telescope in the cluster A262. Five fields were surveyed near the cluster center, and only 10 galaxies were detected because of limitations in sensitivity (Bravo Alfaro et al. 1996). We obtained H I maps with a resolution of $30'' \times 30''$. Asymmetric H I distributions and possible shifts between radio and optical positions (from DSS images) are found for some galaxies. In Figure 1, H I maps for UGC 1361 and CGCG 522-049 are shown. These spirals are the closest to the center from our sample. One remarkable feature in the UGC 1361 map, is the clear asymmetry in the NW region, where the maximum of the H I emission is seen without an optical counterpart. In the South, with Def = 0.33 (Giovanelli et al. 1985), CGCG 522-049 is a slightly deficient spiral. Its H I distribution is also asymmetric, with an extension in the opposite side of UGC 1361. The cluster center is placed towards the SW from these objects. The most interesting result in this figure. is a weak H I emission found towards the west of CGCG 522-049. It is a possible H I cloud with an uncertain optical counterpart. The total H I mass is 2.5×10^8 M$\odot$, typical of a dwarf galaxy. This might be related to the existence of H I rich dwarfs sur-

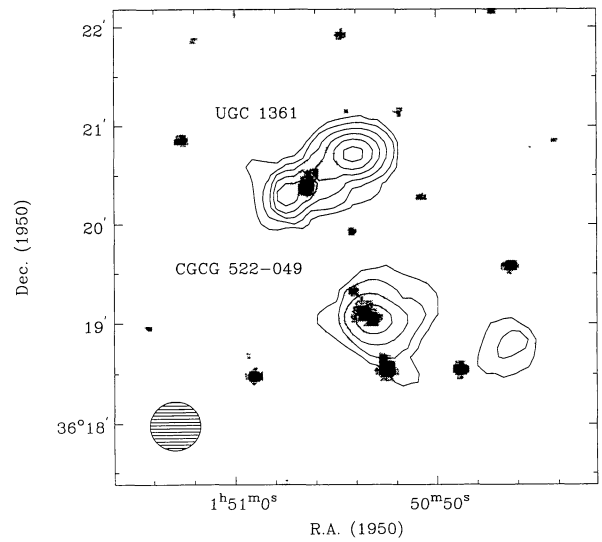

Figure 1: H I density distribution of UGC 1361 and CGCG 522-49, superposed on a B-band gray scale image (from the DSS Survey). For UGC 1361, contours are 2.2 (2.0 σ), 3.8, 5.4, 7.5, 8.6 and 10.2×10^{20} cm^{-2}. For CGCG 522-49 and the third object in this figure, the contours are 2.2 (2.5 σ), 3.8, 5.1 and 7.5×10^{20} cm^{-2}. Indicated by the hatched circle, the FWHM is $30' \times 30'$.