

## CO(1-0) AND CO(2-1) OBSERVATIONS OF THE BARRED SPIRAL GALAXIES NGC1385, NGC6221, AND NGC7582 (\*)

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Intense star formation activity, in the absence of interactions, occurs nearly always in barred spiral systems, but many barred galaxies do not show especially enhanced activity. On the other hand bars provide an efficient mechanism of transport of gas from the disk into the active star forming circumnuclear region (Combes and Gerin, 1987). The type of activity in the circumnuclear regions would also depend on the characteristics of the bars (Arsenault, 1989). The dynamics of the gas inside the bars could also be related to outflows of gas into the halo detected in some barred galaxies with intense nuclear activity.

We mapped the  $^{12}\text{CO}(1-0)$  and the  $^{12}\text{CO}(2-1)$  lines in the three barred spirals: NGC1385, NGC6221 and NGC7582 with the 15m SEST radio telescope during three sessions of observations. These galaxies are part of a sample of southern barred spirals selected because of their size and inclination and because of their high FIR flux density. This last property is an indication of the high activity that we intend to correlate with the gas streaming in the bars and, on the other hand, it grants the detection of the lines, in view of the well established correlation between CO and FIR apparent luminosities.

In all the galaxies we find the profiles to be very broad (250 - 400 km/s) along the bars exhibiting multicomponent structures. As expected the emission in the bar of NGC7582 is very strong. We find the CO rotation curve in good agreement with the one obtained by Morris et al. (1985) from  $\text{H}\alpha$  data. The  $^{12}\text{CO}(2-1)$  spectra of NGC6221 shown in Fig. 1 are an example for the complex distribution of the CO-emission close to the bar. The relative strong profiles to the east correspond to locations of dust lanes of the galaxy.

### REFERENCES

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Combes, F., Gerin, M.: 1987, in 'Star Forming Regions', IAU Symp. 115, (eds. M. Peimbert and J. Jugaku), p. 632  
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(\*) Based on observations collected at the Swedish-ESO Submm. Telescope, La Silla, Chile.

**Figure 1:**  $^{12}\text{CO}(2-1)$  Spectra overlaid on a reproduction from the "ESO/Uppsala Survey of the ESO (B) Atlas". The offsets are in arcsec in R.A. and Dec.

