

## CO IN NGC 5055

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The flocculent spiral galaxy NGC 5055 has been mapped along the major axis in the  $^{12}\text{CO}$  ( $J = 1-0$ ) line using the Onsala 20-m telescope (HPBW =  $33''$ ). Figure 1, which gives the spatial velocity diagram of CO emission on the major axis with observed  $\text{H}\alpha$  velocities (Kruit and Bosma, 1978) superimposed, seems to imply higher velocities of the regions responsible for the optical emission. Taking into account the cruder spatial resolution of the CO observations, this effect is expected in a region where the rotation curve rises rapidly provided that the CO emission increases toward the centre. Figure 2 shows the rotation velocities for the eastern and western parts of the galaxy separately, as observed in  $\text{H}\alpha$  and CO. For CO we only give the portion of the rotation curve which is accurately determined, i.e. where it is relatively flat. The CO velocities in this region agree closely with those observed in HI (Bosma, 1978). These data suggest a difference of  $10\text{--}20\text{ km s}^{-1}$  between the  $\text{H}\alpha$  and CO velocities at a distance of  $\sim 60''$  from the centre. The radial distribution of the CO emission, also indicated in Fig. 2, is defined by an iterative fitting procedure to the observed line profiles (see Scoville *et al.* 1983). This procedure requests an *a priori* knowledge of the velocity field, here assumed to be defined by the  $\text{H}\alpha$  data inside a radius of  $60''$ . However, the shapes of the observed spectra and "best fit" model profiles differ significantly in some cases, again indicating that

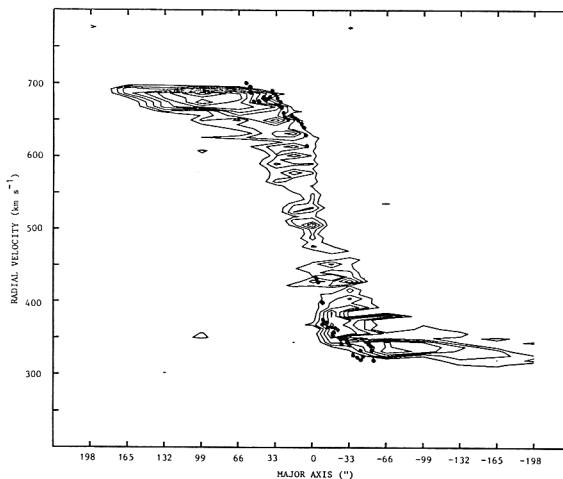
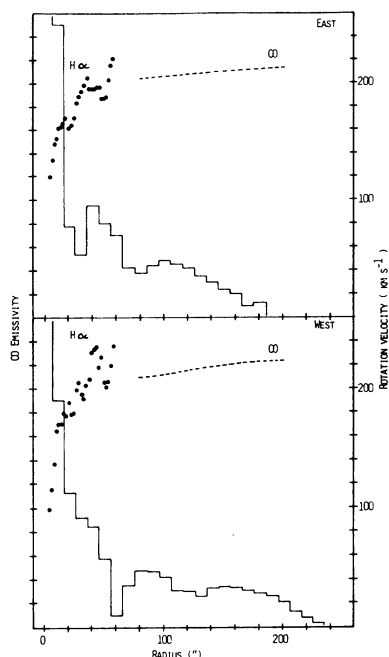


Fig. 1. Spatial velocity diagram of CO emission on the major axis. The observed  $\text{H}\alpha$  velocities are indicated by dots.

Fig. 2. Deconvolved radial distribution of the CO emission, determined separately from the data on the eastern and western side of the nucleus. The rotation velocities discussed in the text are also shown.



the  $H\alpha$  velocities do not apply to the molecular gas. The derived radial distribution of the CO emission is dependent on the assumed velocity field; however, the gross characteristics are retained for more feasible rotation curves (i.e. rotation curves giving better fits to the observed profiles).

#### REFERENCES

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#### CO OBSERVATIONS OF THE SPIRAL GALAXY IC 342

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We present observations of the Scd galaxy IC 342 in the  $J = 1-0$  transition of CO, performed with the Onsala 20-m antenna. The spectra