

APERTURE SYNTHESIS CO OBSERVATIONS OF IR LUMINOUS GALAXIES
WITH $L_{\text{IR}} > 10^{11} L_{\odot}$

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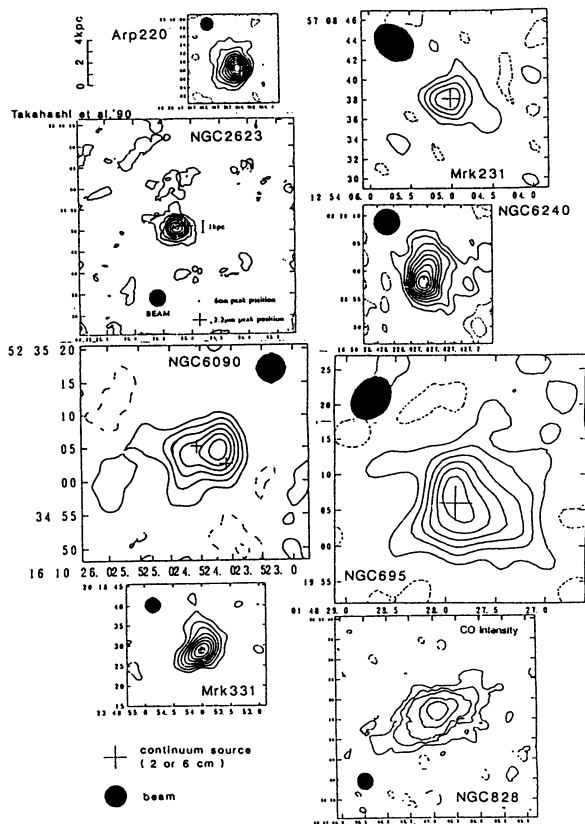


FIGURE 1 CO Intensity Distribution

We have made high resolution (2-5") CO observations of seven IR luminous ($L_{IR} > 10^{11} L_{\odot}$) galaxies. They are Arp220, Mrk231, NGC6240, NGC6090, NGC695, Mrk331 and NGC828. We can resolve CO emission from all the galaxies but Mrk231 (figure 1).

The extent of the emission ranges from 2kpc (Arp220) to 12kpc (NGC828). Most of the observed galaxies have systematic velocity fields. The gas distribution and the velocity structure suggest that they have dense molecular gas disks rotating around their nuclei. Derived gas surface density $\sigma(H_2)$ correlates with the far-infrared luminosity to molecular gas mass ratio $L_{FIR}/M(H_2)$ (figure 2). It implies that a large amount of FIR luminosity is generated in highly efficient star formation in the dense molecular gas disk.

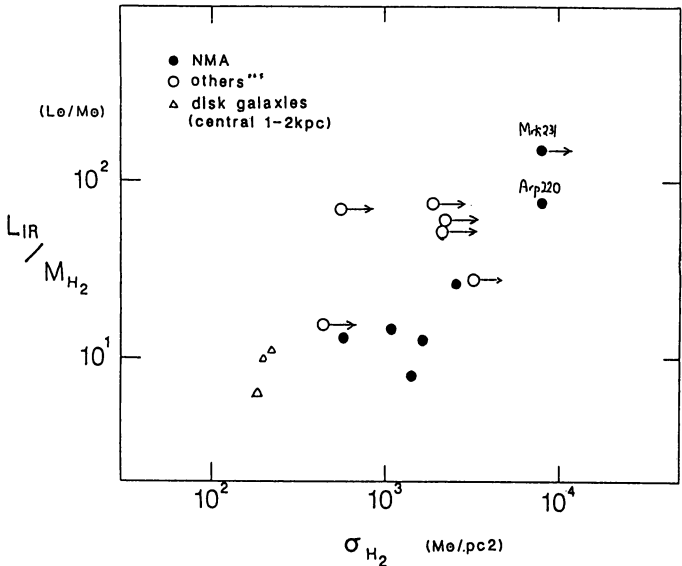


FIGURE 2