

## CO OBSERVATIONS OF THE NUCLEAR BAR OF IC 342

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We have mapped the nuclear region of an Scd galaxy IC 342 in the CO ( $J = 1-0$ ) emission with an angular resolution of  $15''$ . This galaxy has a bright optical nucleus with a dark lane elongated in the north-south direction. A prominent molecular bar which has been discovered by Lo *et al.* (1984) using the Owens Valley Interferometer lies just on the dark lane. Their CO map was spatially limited by the primary beam pattern and the velocity coverage of their spectrometer was not sufficient. It is not known, therefore, whether the molecular bar is connected to the outer spiral arms or not. We made the highest resolution CO map accessible by a single-dish telescope with a sufficient velocity coverage.

The observations were made on 1985 March using the 45-m telescope of the Nobeyama Radio Observatory. The half power beam width was  $15''$  and the overall pointing accuracy was better than  $5''$ . The velocity coverage of the wideband acousto-optic radiospectrometer was  $600 \text{ km s}^{-1}$  with a resolution of  $0.65 \text{ km s}^{-1}$ .

Figure 1 shows a gray scale representation of the integrated intensity of the CO ( $J = 1-0$ ) emission. The cross sign near the center is the position of the  $2.2 \mu\text{m}$  continuum emission measured by Becklin *et al.* (1980). The CO emission is concentrated in the central bar whose size is  $1.3 \text{ kpc} \times 0.6 \text{ kpc}$  after beam deconvolution. Little CO emission is seen outside the bar; the molecular bar is localized within the optical bulge and is not connected to the outer spiral arms.

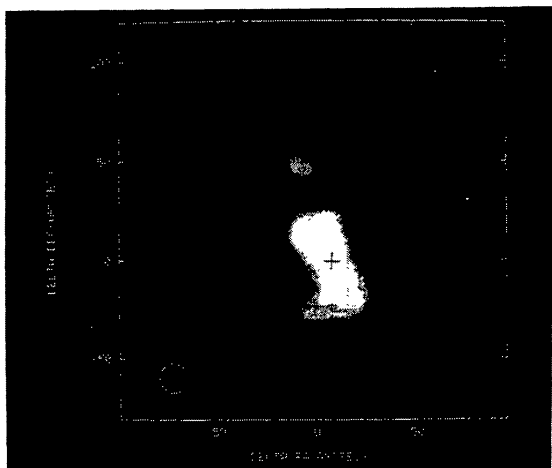


Fig. 1. Gray scale representation of the integrated CO intensity. The cross sign near the map centre is the peak position of the  $2.2 \mu\text{m}$  continuum emission measured by Becklin *et al.* (1980):  $\alpha$  (1950) =  $3^{\text{h}}41^{\text{m}}57^{\text{s}}.15$  and  $\delta$  (1950) =  $67^{\circ}56'27''.2$ .