SOME RESULTS FROM AN HI SURVEY OF THE CENTRAL REGION OF THE GALAXY

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A complete, high-sensitivity survey of HI (Sinha 1978, in preparation) has been examined for model-independent morphological properties of the distribution of HI in the central region of the Galaxy. The dominant symmetry of the kinematics of HI is evident in Figure 1, where equivelocity contours of the permitted velocity edge (corresponding to 1 K antenna temperature) have been plotted on the longitude-latitude plane. The axis of symmetry is coincident with the Kerr-Sinclair ridge of 20-cm continuum radiation from this region. The positions of the maxima of the absolute velocity in the first and the fourth quadrants are aligned along a line inclined to the line of symmetry indicated in Figure 1. The HI gas, therefore, must have noncircular motion. A similar but not identical symmetry is evident in the distribution of the forbidden velocity edge of the profiles. The absolute magnitude of the velocity peaks and the area under the profiles differ in the two quadrants. The nuclear disk appears to be symmetrical in an angle-velocity diagram in which the angle is measured along the line of symmetry in Figure 1.

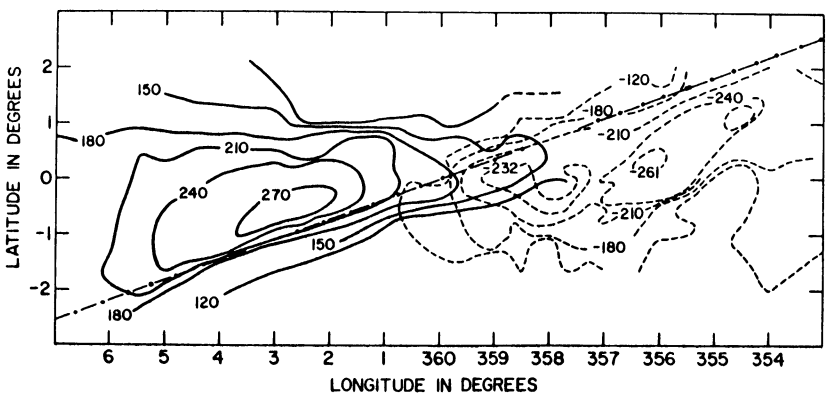

Figure 1

W. B. Burton (ed.), The Large-Scale Characteristics of the Galaxy, 341–342.

DISCUSSION

Baker: You showed a tilted line that reproduced well a tilt in the HI, but you said the tilt was derived from continuum measurements. Which measurements were you using?

Sinha: The tilted structure is visible in the 20-cm continuum map of Kerr and Sinclair (1966) and in the 327 MHz lunar occultation maps of Gopal-Krishna et al. (1974).

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