regions which do not contain even small GMC's like the Orion molecular cloud. I agree that the very large Giant Molecular Cloud Complexes in the spiral arms are probably formed by agglomeration of Orion-sized GMC's and smaller clouds.

GORDON: Is it still true that the newer, more sensitive CO surveys still do not show much material between 2 and 4 kpc from the nucleus? If so, cannot this be an effect due to the inability of a density wave to penetrate a resonance radius at 4 kpc?

STARK: Yes, it is still true that there are only a few molecular clouds between 2 and 4 kpc, and yes, there may be a large-scale dynamical reason, as you have suggested.

GIANT MOLECULAR CLOUDS IN THE GALAXY: THE MASSACHUSETTS-STONY BROOK CO GALACTIC PLANE SURVEY

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The CO Galactic Plane Survey consists of 40,572 spectral line observations in the region between l = 8° to 90° and b = -1°.05 to +1°.05 spaced every 3 arc minutes, carried out with the FCRAO 14-m antenna. The velocity coverage from -100 to +200 km/s includes emission from all galactic radii. This high resolution survey was designed to observe and identify essentially all molecular clouds or cloud components larger than 10 parsecs in the inner galaxy. There are two populations of molecular clouds which separate according to temperature. The warm clouds are closely associated with H II regions, exhibit a non-axisymmetric galactic distribution and are a spiral arm population. The cold clouds are a disk population, are not confined to any patterns in longitude-velocity space and must be widespread in the galaxy both in and out of spiral arms. The correlation between far infrared luminosities from IRAS, and molecular masses from CO is utilized to determine a luminosity to mass ratio for the clouds. A face-on picture of the galaxy locating the warm population is presented, showing ring like or spiral arm features at R $\sim$ 5, 7.5 and 9 kpc. The cloud size and mass spectrum will be discussed and evidence presented showing the presence of clusters of giant molecular clouds with masses of 10^6 to 10^7 $M_\odot$. The two populations of clouds probably have different star forming luminosity functions. The implication of the two populations for star formation mechanisms will be discussed.

https://doi.org/10.1017/S0074180900096297 Published online by Cambridge University Press