HJALMARSON: This has not yet been done, but clearly is an important way to proceed. This could be a way to find out whether star formation is triggered by the density wave.

A 10-GHZ RADIO CONTINUUM SURVEY OF THE GALACTIC PLANE

T. Handa[1,2], Y. Sofue[2], N. Nakai[2], H. Hirabayashi[2],
K. Akabane[2], M. Inoue[2]
[1] Department of Astronomy, University of Tokyo, Japan
[2] Nobeyama Radio Observatory, Tokyo Astronomical Observatory, University of Tokyo, Japan

A radio continuum survey of the galactic plane has been made with the 45-m telescope of the Nobeyama Radio Observatory at 10.55 GHz, which is the highest frequency among such surveys. The sensitivity of the telescope was T_b/S = 0.47 K/Jy and the HPBW was 2!6, which was a great advantage because of the same beam size of the Bonn 5-GHz survey (Altenhoff *et al.* 1978). The receiver was a cooled parametric amplifier. The instantaneous bandwidth was 500 MHz, and the system noise temperature was about 100 K. The calibration source was NGC 7027, which was assumed to be 6.6 Jy. One circular polarization component was observed. The observational parameters are summarized in Table I.

TABLE I. Observational Parameters**

Telescope	the NRO 45-m telescope
Observing date	April 1983 - June 1985
Frequency	10.55 GHz
Bandwidth	500 MHz
Half Power Beam Width	2!6
System noise temperature	$\sim$ 100 K
Sensitivity of the telescope	0.47 K/Jy (T_b/S)
Observing mode	Scan along galactic latitude
Scan speed and interval	3!8/sec. and 1!2 interval
Polarization	One circular polarization
Reduction system	"CONDUCT" system at NRO*
(Scan effect removed by "press" method#)	
Coverage	Once or twice

* "CONDUCT" system is a radio astronomical reduction system at NRO, a part of which uses the NOD2 reduction package (Haslam 1974).
\# See Sofue and Reich 1979.
** See Sofue *et al.* 1984.

https://doi.org/10.1017/S0074180900096339 Published online by Cambridge University Press

The region of $358° \leqq \ell \leqq 55°$, $-1°.5 \leqq b \leqq +1°.5$ was observed. Scans were taken in the direction almost perpendicular to the galactic plane at a rate of 3!8/sec. The scan length was 3° and the interval between scan passages was 1!2.

The data reduction was made using "CONDUCT", the radio astronomical reduction system at NRO, a part of which uses the NOD2 reduction package (Haslam 1974). Scanning effects, which are mainly caused by weather conditions, were removed by using the "pressing" method (Sofue and Reich 1979).

The survey revealed a large number of new interesting features associated with the galactic structure and star forming regions; many discrete compact and extended sources, complex regions composed of small thermal and nonthermal sources, several new supernova remnants, and a prominent off-plane Ω-shaped radio lobe near the galactic center (Sofue and Handa 1984). A complex region at $\ell = 21° - 26°$ in the survey was reported by Sofue *et al.* (1985) and Sofue *et al.* (1985).

REFERENCES

Altenhoff, W.J.,Downes, D., Pauls, T., and Schraml, J.: 1978, Astron. Astrophys J. Suppl. 35, 23.
Haslam, C.G.T.: 1974, Astron. Astrophys. Suppl. 15, 333.
Sofue, Y., and Reich, W.: 1979, Astron. Astrophys. Suppl. 38, 251.
Sofue, Y., Hirabayashi, H., Akabane, K., Inoue, M., Handa, T., and Nakai, N.: 1985, IAU Symp. No. 106 *The Milky Way Galaxy*, eds. van Woerden *et al.* , p. 323.
Sofue, Y., Hirabayashi, H., Akabane, K., Inoue, M., Handa, T., and Nakai, N.: 1984, Publ. Astron. Soc. Japan 36, 287.
Sofue, Y., and Handa, T.: 1984, Nature 310, 568.

DYNAMICS OF GIANT MOLECULAR CLOUDS IN THE DENSITY WAVE POTENTIAL

Masataka Fukunaga, Makoto Tosa
Astronomical Institute, Faculty of Science, Tohoku University, Sendai, Japan

We performed an N-body simulation of a system of gravitating particles modeling the system of stable Giant Molecular Clouds (GMCs) in the background density wave potential. The system of gravitating GMCs forms shocks in the spiral potential well, and shows a prominent spiral structure.

Since most of the interstellar mass is contained in GMCs, the dynamical behavior of the interstellar gas is governed by that of GMCs. We refer to the aggregation of GMCs as the GMC gas hereafter. In the

https://doi.org/10.1017/S0074180900096339 Published online by Cambridge University Press