

## GALACTIC STAR-GAS COMPLEXES AS A CONSEQUENCE OF A SPIRAL DENSITY WAVE

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Seventeen giant (170 - 700 pc) star-gas complexes (SGCs) have been detected within 3 kpc from the Sun. These SGCs include stellar groupings younger than  $(2-3) \times 10^7$  yrs and molecular clouds with masses  $10^5 - 10^6 M_{\odot}$ , embedded into HI superclouds. An investigation of seven large-scale SGCs has shown, within them, an age gradient of stellar groups, equal to  $(0.3-1.2) \times 10^7$  yrs for distances 270 - 500 pc. The sequential changing of stellar groupings' ages across the Sgr-Car arm (with the youngest stellar groups, all the young  $H_2O$  masers and CO clouds located at the inner boundary of the arm) evidences for formation of this arm by a spiral density wave. This wave, propagating in individual HI superclouds with molecular clouds inside, stimulates star formation therein. Crude estimates of the spiral pattern angular velocity yield  $\Omega_p \approx 17 - 25 \text{ km s}^{-1} \text{ kpc}^{-1}$  and the corotation radius  $\approx 8.8 - 13 \text{ kpc}$ . Perhaps the Cygnus arm is lying near the corotation radius, since there is no age gradient across this arm. The direction of the age's changing is different in all the Cas - Per arm's SGCs. It cannot be excluded that in one of these SGCs a "reverse" age gradient is observed.