

## **Giant Molecular Filaments in the Milky Way**

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Throughout the Milky Way, molecular clouds typically appear filamentary, and mounting evidence indicates that this morphology plays an important role in star formation. What is not known is to what extent the dense filaments most closely associated with star formation are connected to the surrounding diffuse clouds to arbitrarily large scales. How are these cradles of star formation linked to the Milky Way's spiral structure? We have combined multiple Galactic plane surveys in search of large-scale, coherent filaments in the Galactic plane. We present our methods employed to identify long filamentary structures in the first quadrant -- first in extinction and then confirmed using Galactic Ring Survey data. We present a sample of seven Giant Molecular Filaments (GMFs) that have lengths of order 100pc, total masses of  $10^4 - 10^5 M_{\odot}$ , and exhibit coherent centroid velocities over their full length. The typical fraction of dense gas to the total is 10%. We present their fundamental physical properties and place them in the larger context of the structure of the galaxy. GMFs appear to be inter-arm clouds, on the trailing side of the Scutum-Centaurus arm and may be the Milky Way counterparts to the star-forming spurs observed in nearby spiral galaxies.