

Q10a **High Resolution HI Images of the ‘Carina Flare’ Supershell: The Formation of Molecular Clouds and Structure**

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Supershells, formed by the stellar feedback from OB clusters, have long been thought to trigger the formation of molecular clouds. However, the mechanisms of this process are still poorly understood, with few observational constraints. We present new high-resolution HI 21 cm line images of the ‘Carina Flare’ - a rare example of a supershell with a large mass of associated molecular gas. The data were taken with the Australia Telescope Compact Array (ATCA) and combined with Galactic All Sky Survey (GASS) data from the Parkes 64m telescope, resulting in a final spatial resolution of  $\sim 2.5'$  ( $\sim 2$  pc at  $D \approx 2.6$  kpc). These observations are some of the highest resolution images of any Galactic supershell, and represent a six-fold improvement over previously available data. In conjunction with matched resolution NANTEN  $^{12}\text{CO}(1-0)$  data, these observations reveal a wealth of new parsec scale structure in the atomic and molecular gas. This includes remarkable features such as sharp, ‘scalped’ HI shell walls, an Hsc i-CO cometary cloud, and molecular ‘drips’ located in atomic protrusions into the shell interior. We discuss possible formation mechanisms for these features, and consider the implications for the role of supershells in the production, distribution and evolution of the molecular ISM.