## [초IM-01] Outer Shock Interaction with Progenitor Winds in Young Core-Collapse SNRs

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Studying the environments in which core-collapse supernovae (SNe) explode and evolve is essential to establish the nature of the mass loss and the explosion of the progenitor star. The spatial structure of the outer shock in young core-collapse SNR provides an excellent opportunity to study the nature of the medium into which the remnant has been expanding. I will review studies of the outer shocks in young Galactic SNRs using Chandra X-ray observations and discuss the nature of the winds and the progenitor stars.

## [구IM-02] AN OLD SUPERNOVA REMNANT WITHIN AN HII COMPLEX AT l≈ 173°: FVW172.8+1.5

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We present the results of HI 21 cm line observations to explore the nature of the high-velocity (HV) HI gas at ~ 173°, which appears as faint, wing-like, Hi emission that extends to velocities beyond those allowed by Galactic rotation in the low-resolution surveys. We designate this feature as Forbidden Velocity Wing (FVW) 172.8+1.5. Our high-resolution Arecibo HI observations show that FVW 172.8+1.5 is composed of knots, filaments, and ring-like structures distributed over an area of a few degrees in extent. These HV HI emission features are well correlated with the HII complex G173+1.5, which is composed of five Sharpless HII regions distributed along a radio continuum loop of size 4.4x3.4, or ~138 pc x 107 pc, at a distance of 1.8 kpc. G173+1.5 is one of the largest star-forming regions in the outer Galaxy. The HV HI gas and the radio continuum loop seem to trace an expanding shell. Its derived HI parameters including large expansion velocity (55 km/s) imply the SNR interpretation. Hot xray emission is detected within the HII complex, which also supports its SNR origin. The FVW172.8+1.5 is most likely the products of a supernova explosion(s) within the HII complex, possibly in a cluster that triggered the formation of these HII regions.