FIR-Characteristics of the Supershell GS235-02

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We have analyzed DIRBE data of COBE at 60, 100, 140 and 240 micrometer in the region of supershell GS235-02 which is located near galactic plane, After flat background corection, we derived temperature, optical depth, column density and total gas mass of the supershell. The far-IR emission has flux maximum at 240 micrometer, and the shell structure seems to get less discernable from ambient as the wavelengths, is about 22K, and the optical depth ranges from 3.1×10^{-3} to 2.0×10^{-4}. The estimated total gas mass is about 10^6 Mo, with gas-to-dust mass ratio of 100.

Rosat Observations of the Supernova Remnant W51C

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We have carried out ROSAT X-ray observations of the W51C supernova remnant (SNR). The snr appears as an elongated(50' × 38') structure along the east-west direction. In contrast to its shell-type morphology in radio continuum, the snr has both center-filled and shell-type morphology in X-ray. The boundary of the radio structure matches well with that of the X-ray in the southeast. to the west, the X-ray structure appears to extend beyond the radio continuum shell. High-resolution (40") interferometeric 21-cm continuum to surround the central X-ray bright resion.

The X-ray spectrum of the snr becomes systematically harder toward the west. By comparing with the distribution of molecular gas in this region, we have found that the spectral hardening is due to the selective absorption by intervening interstekkar gas. The w51c snr is considered to be behind the so-called 'high-velocity molecular stream' at a mean distance of 5.6 kpc. The average X-ray spectrum of the snr can be fitted well by the Raymond-Smith thermal model with Te=3.4×10^6 K. We apply the Sedov and also an evaporative(White & Long 1991) models to derive the snr parameters. Both models yield an age of $\sim 3 \times 10^4$ yr and an explosion energy of 3.6×10^{51} ergs, which is larger than dthe canonical value of the a single sn explosion. We discuss the implications of the large energy requirement and the complex X-ray and radio morphologies.