
[FIM-15] Far-infrared Study of Supernova Remnants in the Large Magellanic Cloud

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We present preliminary results of far-infrared(FIR) study of the supernova remnant(SNR)s in the Large Magellanic Cloud using the Herschel HERITAGE (HERschel Inventory of The Agents of Galaxy Evolution) data set. HERITAGE provides FIR data covering the entire LMC at 100,160, 250, 350, and 500 μm . In order to confirm FIR emission associated with SNRs, we refer to Magellanic Cloud Emission-Line Survey (MCELS) H-alpha & SII data, Spitzer surveying the Agents of a Galaxy's Evolution (SAGE) Multiband Imaging Photometer (MIPS) 24 μm & 70 μm data, Chandra Supernova Remnants Catalog, and ATCA 4.8GHz continuum images of Dickel et al. (2005). Among 47 SNRs in the LMC, 7 SNRs show associated FIR emission. We present multi-wavelength view of 5 SNRs; DEM L249, N49, N63A, N132D, and the SNR in N4. N49 and N132D show morphological correlation in FIR and X-ray, suggesting that the FIR emission is from dust grains collisionally heated by X-ray emitting plasma. The FIR emission of N63A resembles H-alpha emission, which implies that the FIR line radiation could be dominant. The FIR images of the rest two objects, DEM L249 and SNR in N4, show no correlation to the other-waveband images.
