

[7AK-07] **AKARI observations of young core-collapse supernova remnants**

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We present the results of AKARI infrared observations of young core-collapse supernova remnants (SNRs). The explosion of their progenitors is the engine for the evolution of the interstellar medium as an input source of enormous energy and heavy elements. The young core-collapse SNRs provide an unique chance to study the ejected materials as well as swept-up circumstellar materials that are not completely mixed yet. Using the infrared imaging and spectroscopic detectors on AKARI, we have observed four core-collapse SNRs: G292.0+1.8, G15.9+0.3, G11.2-0.3 and Kes 17. In this talk, we will introduce the infrared properties of observed SNRs and discuss about the ejected matter, swept-up material, and newly synthesized dust in G292.0+1.8.

[7AK-08] **AKARI observations on the Shock-Cloud Interactions in the Supernova Remnant HB 21**

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HB 21 (G89.0+4.7) is a nearby (~ 1 kpc), large ($\sim 120^\circ \times 90^\circ$), middle-aged (~ 7000 yr) supernova remnant, which interacts with surrounding molecular clouds. We observed two specific regions ($\sim 10^\circ \times 10^\circ$), where the shock-cloud interactions are thought to be under way, with the Japanese infrared satellite AKARI. InfraRed Camera (IRC) onboard AKARI obtained several images at near- and mid-infrared wavebands (3, 4, 7, 11, 15, and 24 μm). Those images show diffuse filamentary features, together with some clumpy features, mainly in the 7, 11, and 15 μm bands. These features are generally consistent with those seen in H2 $v = 1 \rightarrow 0$ S(1) 2.122 μm image. We analyzed the color ratios of the features in the IRC images using theoretically calculated emission lines from shocked H2 gas in local thermodynamic equilibrium and statistical equilibrium. The results show that the observed color-ratios are well explained by power-law mixtures of H2 gas temperature, and that the degree of mixture does not severely vary over the observed diffuse features.

Based on observations with AKARI, a JAXA project with the participation of ESA.