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Observation of cosmic-ray acceleration and escape from SNR W44 by LHAASO

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We present the analysis of 4 year LHAASO data of the middle-aged SNR W44 and the massive molecular gas complex that surrounds it. We confirm the presence of the extended gamma-ray structure located near the remnant. Based on the high-resolution gas maps, we demonstrate that gamma-ray structures are caused by the interaction of escaped relativistic particles with Molecular Clouds. We argue that the revealed cosmic-ray “clouds” suggest an anisotropic character of the escape of high energy particles from the shell.

Collaboration(s)

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