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Discovery of Very-High-Energy gamma-ray emission from SNR G108.2-0.6 by LHAASO

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An extended Very-High-Energy (VHE) gamma-ray source coincident with the location of the large radio shell-type SNR G108.2-0.6 is newly discovered by LHAASO. With no excess gamma-ray emission above 100 TeV, the source energy spectrum is well fitted by a power-law function, implying no obvious cutoff. The VHE gamma-ray observation of this extended source has revealed a large shell-type structure with similar position and extension as SNR G108.2-0.6, thereby confirming their association. CO observations by MWISP indicate little spatial correspondence between MCs and SNR G108.2-0.6. A detailed analysis of Fermi-LAT observations is also carried out. Based on preliminary results from LHAASO and multi-wavelength observations, SNR G108.2-0.6 may belong to a class of TeV SNRs, where three prototypes are RX J1713.7-3946, RX J0852.0-4622 and SN 1006. Fermi-LAT data are used together with LHAASO data to discuss the possible origin of the gamma-ray emission, either via leptonic or hadronic scenarios.

Collaboration(s)

LHAASO

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