

OBSERVATION OF GAMMA-RAY EMISSION FROM THE GALAXIES M 87 AND 3C 264 ABOVE 1 TeV WITH LHAASO

The giant radio galaxy M 87 with its proximity (16 Mpc), famous jet, and very massive black hole ($(3 - 6) \times 10^9 M_{\odot}$) provides a unique opportunity to investigate the origin of very high energy (VHE; $E > 0.1$ TeV) gamma-ray emission. It has been established as a VHE gamma-ray emitter since 2004. But the origin of the gamma-ray emission from M 87 is currently a matter of debate. Here we report the detection of gamma-ray emission above 1 TeV from M 87 with LHAASO. The gamma-ray emission is measured to be point-like with $TS=28.45$. The differential energy spectrum is fitted well by a power-law function with a photon index $\alpha = -2.77 \pm 0.21$. We find that a lepto-hadronic model is able to explain the VHE emission detected by LHAASO of M 87. Also, we report a radio galaxy 3C 264 with a marginal detection ($TS=23.34$) by LHAASO.

Primary author: ZHANG, Hai-Ming (Nanjing University)

Co-authors: Mr WANG, Kai; HU, Shicong (IHEP); LIU, Ruoyu (Nanjing University); Prof. WANG, Xi-angyu

Presenter: ZHANG, Hai-Ming (Nanjing University)