

大型超高能伽马源立体跟踪装置 (LACT) 项目进展

LHAASO has found more than 40 UHE cosmic accelerators within the Milky Way, with the highest energy photon reaching 1.4 quadrillion electron-volts, the highest energy photon ever observed. Most of these sources are extended sources that require telescopes with higher angular resolution and sensitivity to observe and study their morphology. Therefore, we propose a new project: Large Array of imaging atmospheric Cherenkov Telescopes (LACT). LACT is designed to have 32 telescopes and achieve the angular resolution better than 0.05° above 10 TeV. 32 telescopes will be placed in the LHAASO detector array, the LHAASO muon detector array can provide huge gamma proton discrimination power, increasing the gamma ray observation sensitivity above 10 TeV. Above 100TeV, the sensitivity, with a 500-hour exposure on a single gamma-ray source, is designed to match the sensitivity of LHAASO for one year. This allows us to identify the gamma ray sources in PeVatrons and measure their morphology in detail, which can help us to reveal the mechanism of the gamma ray emission and then deeply explore the origin of the high energy cosmic rays. Each LACT telescope has a FoV of 8° with pixel size of 0.2° . This talk will introduce the design and properties of the LACT, construction plan, as well as the information of prototypes.

Primary author: ZHANG, Shoushan (Institute of High Energy Physics)

Presenter: ZHANG, Shoushan (Institute of High Energy Physics)

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