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Update on ASTRI: Technology and science using wide-field aplanatic IACT telescopes

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The ASTRI program was launched 10 years ago with the goal of developing small-sized dual-mirror aplanatic wide-field IACT telescopes as a precursor to the array of small-sized telescopes (SSTs) for the Cherenkov Telescope Array (CTA) observatory's southern site. The program initially received support from INAF and MUR (the Italian Ministry for Universities and Research), but it later gained support from other international partners such as the University of Sao Paulo/FAPESP, Nort-West University/South Africa, IAC, FGG, and Université de Geneve at different stages of the project. The program's first significant achievement was the development of the end-to-end ASTRI-Horn prototype and its installation at the INAF site of Serra La Nave. The prototype featured an innovative compact camera based on SiPM sensors and proved the dual-mirror Schwarzschild-Couder optical configuration as an aplanatic system while detecting the Crab Nebula in gamma rays. The telescope underwent major refurbishment and is now used to observe the volcano's bright gamma-ray sources, cosmic rays, and muon radiography studies. Meanwhile, the ASTRI mini-array is being implemented in Tenerife to study the gamma-ray sky in the 1-100 TeV energy band with unprecedented angular resolution (3 arcmin), which complements LHAAZO perfectly. This talk discusses the project's current status, scientific goals, and expectations.

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