

8th Heidelberg International Symposium on High-Energy Gamma-Ray Astronomy

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ASTRI Updates

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ASTRI is an INAF (Italian National Institute for Astrophysics) project for the construction and operation of an array of innovative IACT telescopes for ground-based gamma-ray astronomy in the energy range ~ 1 TeV to ~ 200 TeV.

Such an array, called ASTRI Mini-Array, currently under construction at the Teide Observatory in Tenerife, Spain, consists of nine telescopes of small size (~ 4 m diameter) and wide field of view (> 10 deg), equipped with cameras based on SiPM photodetectors.

The first telescope has already been built and extensively tested, while the installation of the first camera is expected in autumn 2024 and the commissioning of two additional telescopes with their cameras by the end of 2024.

ASTRI Mini-Array will perform deep observations of astronomical objects in the northern sky with angular and energy resolutions of 3 arcmin and 10 percent at multi-TeV energies, respectively, providing excellent complementarity with the current generation of IACT telescope arrays and extended atmospheric shower detectors such as HAWC and LHAASO.

The feasibility and effectiveness of the Schwarzschild-Couder optical configuration adopted by ASTRI Mini-Array has been demonstrated by the prototype telescope, called ASTRI-Horn, installed at the INAF observatory at Serra La Nave (on Mount Etna, Italy), which detected the Crab Nebula in gamma rays.

ASTRI-Horn, after a major renovation, is currently carrying out extensive observing campaigns of bright gamma-ray sources, providing valuable information on the operation of the telescope and the data reduction and analysis chain.

In this talk we will report on the status of the ASTRI Project, describing the technological solutions adopted and discussing the scientific prospects.

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