

The full-scale prototype for the Fluorescence detector Array of Single-pixel Telescopes

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The Fluorescence detector Array of Single-pixel Telescopes (FAST) is a design concept for the next generation of ultra-high energy cosmic ray (UHECR) observatories, addressing the requirements for a large-area, low-cost detector suitable for measuring the properties of the low flux of cosmic rays at the highest energies. In the FAST design, a large field of view is covered by a few pixels at the focal plane of a mirror or Fresnel lens. Motivated by the successful detection of UHECRs using a prototype comprised of a single 200 mm photomultiplier-tube and a 1 m² Fresnel lens system, we have developed a new “full-scale” prototype consisting of four 200 mm photomultiplier-tubes at the focus of a segmented mirror of 1.6 m in diameter. We report on the status of the full-scale prototype, including test measurements made during first light operation at the Telescope Array site.

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