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Construction of a medium-sized Schwarzschild-Couder telescope as a candidate for the Cherenkov Telescope Array: development of the optical alignment system

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The Cherenkov Telescope Array (CTA) is an international project for a next-generation ground-based gamma-ray observatory. CTA, conceived as an array of tens of imaging atmospheric Cherenkov telescopes, comprising small, medium and large-size telescopes, is aiming to improve on the sensitivity of current-generation experiments by an order of magnitude and provide energy coverage from 20 GeV to more than 300 TeV. The Schwarzschild-Couder (SC) medium-size candidate telescope model features a novel aplanatic two-mirror optical design capable of a wide field-of-view with significantly improved imaging resolution as compared to the traditional Davis-Cotton optics design. Achieving this imaging resolution imposes strict alignment requirements to be accomplished by a dedicated alignment system. In this contribution we present the status of the development of the SC optical alignment system, soon to be materialized in a full-scale prototype SC medium-size telescope at the Fred Lawrence Whipple Observatory in southern Arizona.

Collaboration

CTA

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