

# An Alignment System for Imaging Atmospheric Cherenkov Telescopes

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The reflector used by an imaging atmospheric Cherenkov telescope (IACT) consists of a tessellated array of mirrors mounted on a large frame. This arrangement allows for a very large reflecting surface with sufficient optical quality for the implementation of the IACT technique at a moderate price. The main challenge presented by such a reflector is maintaining the optical quality, which depends on the individual alignment of several hundred mirror facets. We describe a method of measuring and correcting the alignment of the mirror facets of the reflectors used by the VERITAS telescopes. This method employs a CCD camera, placed at the focal point of the reflector, which acquires a series of images of the reflector while the telescope performs a raster scan about a star. Well-aligned facets appear bright when the telescope points directly at the star while misaligned facets appear bright when the angle between the telescope pointing direction and the star is twice the misalignment angle of the mirror. Data from these scans can therefore be used to produce a set of corrections which can be applied to the facets. In this contribution we report on initial experience with an alignment system based on this principle.