

MAINTENANCE AND TESTING OF ANODIZED ALUMINUM MIRRORS ON THE WHIPPLE 10 M WHIPPLE TELESCOPE

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Threshold energy sensitivity depends not only on the high reflectivity of the mirrors used in atmospheric Cherenkov telescopes but also on the maintenance of this reflectivity over months/years. The successful application of mirror maintenance technique depends on the type of mirror coating and the contamination that must be removed. The uncovered mirrors in use for the 10 m Whipple gamma-ray telescope are anodized aluminum mirrors. A standard cleaning technique for such mirrors is not available. With the aim of extending the life of the aluminum coating exposed to the Mt. Hopkins environment, several cleaning procedures were tested on mirrors that had been exposed for three years. Evaluation of the most effective cleaners will be presented. Preliminary results will also be presented from a long-term experiment using newly coated mirrors at the proposed VERITAS site and at the 10 m site. This experiment is designed to reveal the rates at which the reflectance degrades as a function of time, depth of anodization, storage direction, degree of covering, and maintenance procedures.