

Title: The ASTRI-Horn telescope: comparison with the auxiliary UVscope measurements as calibration tool.

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ASTRI-Horn is an Image Atmospheric Cherenkov Telescope located at the INAF “M.C. Fracastoro” observing station (Mt. Etna, Italy) characterized by a dual-mirror optical system and a curved focal plane equipped with SiPM sensors read by an innovative fast front-end electronics based on the peak detector technique.

ASTRI-Horn represents the prototype of nine similar telescopes developed for the ASTRI-MiniArray that will be installed at the Teide Astronomical Observatory, in Tenerife (Canary Islands, Spain).

The ASTRI-Horn camera is almost blind to the diffuse night sky background (NSB) but is able to detect the (Poissonian) fluctuations produced by the NSB. The noise generated by this effect is proportional to the level of the NSB.

In this contribution, we present the analysis of the background data collected with the ASTRI-Horn camera during the period December 2018 March 2019. Moreover we report the comparison of the absolute night sky background measured by the ASTRI-Horn camera and the UVscope instrument, which is capable of counting individual photons in the range 300-650nm, with a time resolution of 10ns.

The main result of this work is a strong correlation between the absolute NSB flux measured by UVscope and the fluctuations measured by the ASTRI-Horn camera that can be used as diagnostic tool to ensure the right behavior of the camera in view of the ASTRI-MiniArray implementation.