

Abstract Submitted
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Aiming lasers into the sky from the Pierre Auger Cosmic Ray Observatory at astrophysical objects of interest STEVEN HACKENBURG, LAWRENCE WEINCKE, Colorado School of Mines — Ultra High Energy Cosmic Rays are the highest energy particles known to exist, they are also some of the rarest with a flux less than 1 per century per square km. To study cosmic rays the worlds largest cosmic ray observatory, the Pierre Auger Observatory was built and completed in 2008. The data collected from the observatory hints at a correlation between cosmic ray arrival directories on earth and certain active galaxies. The Central Laser Facility (CLF) is located in the middle of the observatory, which recently had upgrades added on June 2013. The CLF has a UV pulsed laser. If the laser is fired into the atmosphere, a laser track is created that is similar to the signatures left behind by cosmic ray events in the atmosphere. Hence, the laser is used to calibrate the detectors at the observatory and create benchmark data. An example of benchmark data is artificial sky maps, consisting of reconstructed laser tracks, pointed toward Galaxies of interest. This presentation will describe the technique of using the lasers as a benchmarking tool to create artificial sky maps. Improvements to the timing and pointing accuracy of the method will also be discussed.

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