
Focal plane instrumentation of VERITAS

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VERITAS is a new atmospheric Cherenkov imaging telescope array to detect very high energy gamma rays above 100 GeV. The array is located in southern Arizona, USA, at an altitude of 1268m above sea level. The array consists of four 12-m telescopes of Davies-Cotton design and structurally resembling the Whipple 10-m telescope. The four focal plane instruments are equipped with high-resolution (499 pixels) fast photo-multiplier-tube (PMT) cameras covering a 3.5 degree field of view with 0.15 degree pixel separation. Light concentrators reduce the dead-space between PMTs to 25% and shield the PMTs from ambient light. The PMTs are connected to high-speed preamplifiers allowing operation at modest anode current and giving good single photoelectron peaks in situ. Electronics in the focus box provides real-time monitoring of the anode currents for each pixel and ambient environmental conditions. A charge injection subsystem installed in the focus box allows daytime testing of the trigger and data acquisition system by injecting pulses of variable amplitude and length directly into the photomultiplier preamplifiers. A brief description of the full VERITAS focal plane instrument is given in this paper.