

CLOUD DETECTION AT THE HIGH RESOLUTION FLY'S EYE

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The presence of cloud can adversely affect many ground-based astrophysics observations. In the HiRes experiment, where fluorescence light is detected from distant air showers, cloud must be monitored over a large part of the night sky. Solid layers of cloud reduce the fiducial volume available to the detector, while broken cloud can block light from part of a shower track, giving structure to the light signal that may be misinterpreted. To tackle these problems we have developed two versions of infra-red cloud detectors, both based on an inexpensive commercial sensor. First, we employ a number of fixed devices that each monitor a rather large field of view (30° diameter) around the horizon, searching for cloud in the directions viewed by our fluorescence mirrors. The other type is a small field of view (3°) detector mounted on a pan-and-tilt platform that continuously scans the entire night sky. Details of the construction of these detectors will be presented, together with examples of data collected at the experimental site showing their sensitivity.