

## EVIDENCE FOR TEV GAMMA RAY EMISSION FROM CASSIOPEIA A

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With the HEGRA stereoscopic system of imaging atmospheric Cherenkov telescopes, TeV  $\gamma$ -ray emission was detected from the Supernova remnant Cassiopeia A for the first time. The detection has a statistical significance of  $5\sigma$ . A flux of  $(5.8 \pm 1.2_{\text{stat}} \pm 1.2_{\text{syst}}) \times 10^{-9} \text{ph m}^{-2} \text{s}^{-1}$  above 1 TeV is derived. The spectral distribution is consistent with a power law with a differential spectral index  $-2.5 \pm 0.4_{\text{stat}} \pm 0.1_{\text{syst}}$  between 1 and 10 TeV. The signal has a Crab-like spectrum, but only 3% of its flux. With this detection, the HEGRA system has demonstrated its currently unique ability to detect TeV  $\gamma$ -ray emission at the “centi-Crab” scale.

The detection of TeV  $\gamma$ -rays indicates that Cassiopeia A is a site of CR acceleration for particles – either nucleons or electrons – with multi-TeV energies. However, the assignment of the  $\gamma$ -ray emission to either or both particle populations relies on modeling. We discuss some important aspects in this paper.