

**Dr Gary Gillanders – College Lecturer**

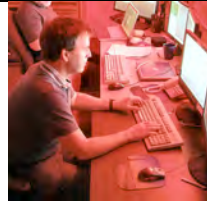
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**Research Cluster and Interests:** Gamma-ray Astronomy Group, VERITAS Collaboration  
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The Gamma-ray Astronomy Group includes staff members Gary Gillanders and Mark Lang. We are members of the international VERITAS Collaboration which operates an array of four 12-m gamma-ray telescopes based at the F.L. Whipple Observatory in Arizona. We search for Very High Energy (VHE  $E > 100$  GeV) gamma radiation from exotic celestial objects such as supernova remnants (massive stars which have blown themselves apart) and Active Galaxies (galaxies with enormous beamed energy sources at the cores). The aim is to explain how Nature can produce radiation at such enormous energies. Our graduate students generally spend extended periods at the observatory site. We are also interested in instrumentation, having been responsible for the optical alignment of the VERITAS telescopes.



The study of VHE gamma-ray emission from active galaxies is a VERITAS key science project and a research interest of Gillanders. Multi-wavelength campaigns, with coordinated observations covering different wavelength ranges, are important in understanding VHE emission. Students co-supervised by Gillanders and Lang have used satellite and ground-based telescopes to search for correlations between VHE and ultraviolet/optical emission. Gillanders has a specific interest in monitoring near IR emission from active galaxies that emit VHE gamma rays.

**Selected Recent Publications:**

Horan, D. et al, Multiwavelength Observations of Markarian 421 in 2005 – 2006, Accepted for publication in *Astrophysical Journal*, arXiv:0901.1225 [astro-ph] (2009)

Acciari, V.A. et al, Discovery of Very High Energy Gamma-ray Radiation from the BL Lac 1ES 0806+524, *Astrophysical Journal*, 690 (2), L126-L129 (2009)

Fossati, G. et al, Multiwavelength Observations of Markarian 421 in 2001 March: An Unprecedented View on the X-Ray/TeV Correlated Variability, *Astrophysical Journal*, 677 (2), 906-925 (2008)

Kildea, J. et al, The Whipple Observatory 10m gamma-ray telescope 1997-2006, *Astroparticle Physics*, 28 (2), 182-195 (2007)