



Contribution ID: 212

Type: **Presentation**

Very High Energy Blazars and the Potential for Cosmological Insight

Tuesday, June 24, 2014 4:50 PM (20 minutes)

Gamma-ray blazars are among the most extreme astrophysical sources, harboring phenomena far more energetic than those attainable by terrestrial accelerators. These galaxies are understood to be active galactic nuclei that are powered by accretion onto supermassive black holes and have relativistic jets pointed along the Earth line of sight. The emission displayed is variable at all wavelengths and timescales probed thus far, necessitating contemporaneous broadband observations to disentangle the details of the emission processes within the relativistic jets. The very high energy (VHE; $E > 100$ GeV) photons emitted by these sources are detectable with ground based imaging atmospheric Cherenkov telescopes such as VERITAS. As these photons propagate extragalactic distances, the interaction with the diffuse starlight that pervades the entire Universe results in a distance and energy dependent gamma-ray opacity, offering a unique method for probing photon densities on cosmological scales. These galaxies have also been postulated to be potential sources of ultra-high-energy cosmic rays, a theory which can be examined through the deep gamma-ray observations of sources which probe moderate gamma-ray opacities. Within this talk, I will highlight ongoing research regarding the broadband emission from VERITAS-observed VHE blazars, as well as the potential to use them for cosmological insight.

Primary author: FURNISS, Amy

Presenter: FURNISS, Amy

Session Classification: Gamma-Ray Astrophysics

Track Classification: Gamma-Ray Astrophysics