



Department of Physics Colloquium

Friday, October 15, 2010 • 4:00 P.M. • 2241 Chamberlin Hall

cookies & coffee served at 3:30 p.m

Our Changing View of the TeV Sky



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The advent of ground-based atmospheric and water Cherenkov gamma-ray detectors, as well as, the Compton and Fermi satellites has revolutionized our view of the TeV sky. Twenty years ago there was only one known TeV gamma-ray source, the Crab. Today there are well over 100 detected sources - steady and variable, point-like and diffuse. We have also made great strides studying Gamma Ray Bursts, the most energetic processes in the Universe. Most recently, we have even discovered that charged TeV cosmic rays have unexpected anisotropies in their arrival directions suggesting the existence of local cosmic ray sources. The next generation detectors, CTA, HAWC and, IceCube will undoubtedly give us a better understanding of these exciting phenomena and almost certainly reveal more surprises. In this

talk, I will review some of these results and show results from the Milagro gamma ray observatory. In addition I describe our next generation HAWC observatory currently under construction at high-altitude in Mexico.



The High Altitude Water Cherenkov (HAWC) Observatory