

Abstract Submitted  
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**The High Altitude Water Cherenkov (HAWC) observatory, Early results and future potential** MICHAEL NEWBOLD, Univ of Utah, HAWC COLLABORATION — The High Altitude Water Cherenkov (HAWC) observatory measures the flux of gamma and cosmic rays impinging on the Earth's atmosphere. The observatory is located on Sierra Negra Mountain in Mexico at an elevation of 4100 m, enabling the measurement of extensive air showers initiated by gamma and cosmic rays with energies in the range from several hundred GeV to several hundred TeV. The completed detector will consist of 300 closely spaced water tanks, each instrumented with four photomultiplier tubes to provide timing and charge information. HAWC, with a wide field of view and a high duty cycle, is optimal to survey a large fraction of the sky and study transient and steady emission from both galactic and extragalactic sources of gamma rays. This high discovery potential of HAWC will provide the large data set necessary for studies of basic physics. In particular, a sufficient quantity of blazars, will allow for constraints on the opacity due to pair-production and in turn, an upper limit on the Extra-Galactic Background Light (EBL) population. Early results from the observatory will be presented along with plans for future analysis.

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