

# The VERITAS Dark Matter Program: Status and Prospects

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In the cosmological paradigm, cold dark matter (DM) dominates the mass content of the Universe and is present at every scale. Candidates for DM include many extensions of the standard model, with a weakly interacting massive particle (WIMP) in the mass range from 50 GeV to greater than 10 TeV. The self-annihilation of WIMPs in astrophysical regions of high DM density can produce secondary particles including very high energy (VHE) gamma rays with energies up to the DM particle mass. VERITAS, an array of atmospheric Cherenkov telescopes, designed for the detection of VHE gamma rays in the 100 GeV-10 TeV energy range, is an appropriate instrument for the indirect detection of DM. Among the possible astrophysical objects considered to be candidates for indirect DM detection, VERITAS has focused on observations of dwarf spheroidal galaxies (dSphs) of the Local Group, the Galactic Center, Fermi-LAT unidentified GeV sources and the Local Group galaxy M31. This presentation reports on our extensive observations of these targets and our present exclusion regions obtained on the thermally averaged annihilation cross section of the WIMP derived from these observations.

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**Primary author:** Dr SMITH, Andrew (University of Utah Physics and Astronomy)

**Presenter:** Dr SMITH, Andrew (University of Utah Physics and Astronomy)

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