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Multimessenger studies with the VERITAS Atmospheric Cherenkov Telescope RESHMI MUKHERJEE, Barnard College, Columbia University, VERITAS COLLABORATION COLLABORATION — Synergy between ground-based gamma-ray experiments (imaging Cherenkov telescopes, HAWC), Fermi space telescope, multimessenger facilities such as IceCube, Auger, and the LIGO gravitational wave observatory appear promising in the future. Multimessenger astronomy is an emerging area of study, using different cosmic messengers such as neutrinos, photons, cosmic rays, and gravitational waves to obtain complementary information. The VERITAS observatory has an active multimessenger program, which currently includes studying the connection between very high energy gamma-rays and the astrophysical neutrino flux recently discovered by IceCube. As both gamma-rays and neutrinos are produced in hadronic interactions, a joint study of both messenger channels has the potential for revealing powerful cosmic accelerators. VERITAS will also perform rapid tiling of the sky within the error contours of LIGO/Virgo events, searching for possible electromagnetic counterparts. VERITAS carries out a broad observation program at energies above 0.1 TeV, including the study of Galactic and extragalactic sources, the search for dark matter, and joint studies with HAWC. We present recent results from the VERITAS multimessenger program and discuss the prospects and goals for the future in a CTA era.

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