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# U.S. Participation in the next-generation gamma-ray facility, the Cherenkov Telescope Array Observatory

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The Cherenkov Telescope Array Observatory (CTAO) will be the major next-generation facility for observations of very high-energy (VHE) gamma-ray sources, having sensitivity for energies 20 GeV - 300 TeV. Funding has now been secured and construction is beginning for the "Alpha Configuration," consisting of observatories in the Atacama Desert (Chile) in the southern hemisphere and at La Palma (Spain) in the north. The Alpha Configuration will achieve sensitivity as much as an order of magnitude better than existing instruments. The Astro2020 Decadal Survey has recommended U.S. participation in CTAO as part of the Multi-Messenger Program for the 2020s, and in particular recommends support for the addition of ten Schwarzschild-Couder Telescopes (SCTs), which would be an enhancement to the southern array. An international consortium of CTA members, led by the U.S., has developed and prototyped the 9.7-m-aperture SCT, which uses a novel design incorporating a secondary mirror to achieve superior performance over the core 100 GeV - 10 TeV energy region of CTAO. CTAO will be the first open observatory in the VHE band, accepting proposals from and executing observations for any scientist from a country contributing financially to its construction and operation; U.S. participation in CTAO would unlock this access for all scientists based in the U.S. This presentation will survey the design and science capabilities of CTAO, as well as how these would be augmented with the addition of Schwarzschild-Couder Telescopes to the array.

## In-person or Virtual?

In-person

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