ASTROPHYSICS SEMINAR SERIES

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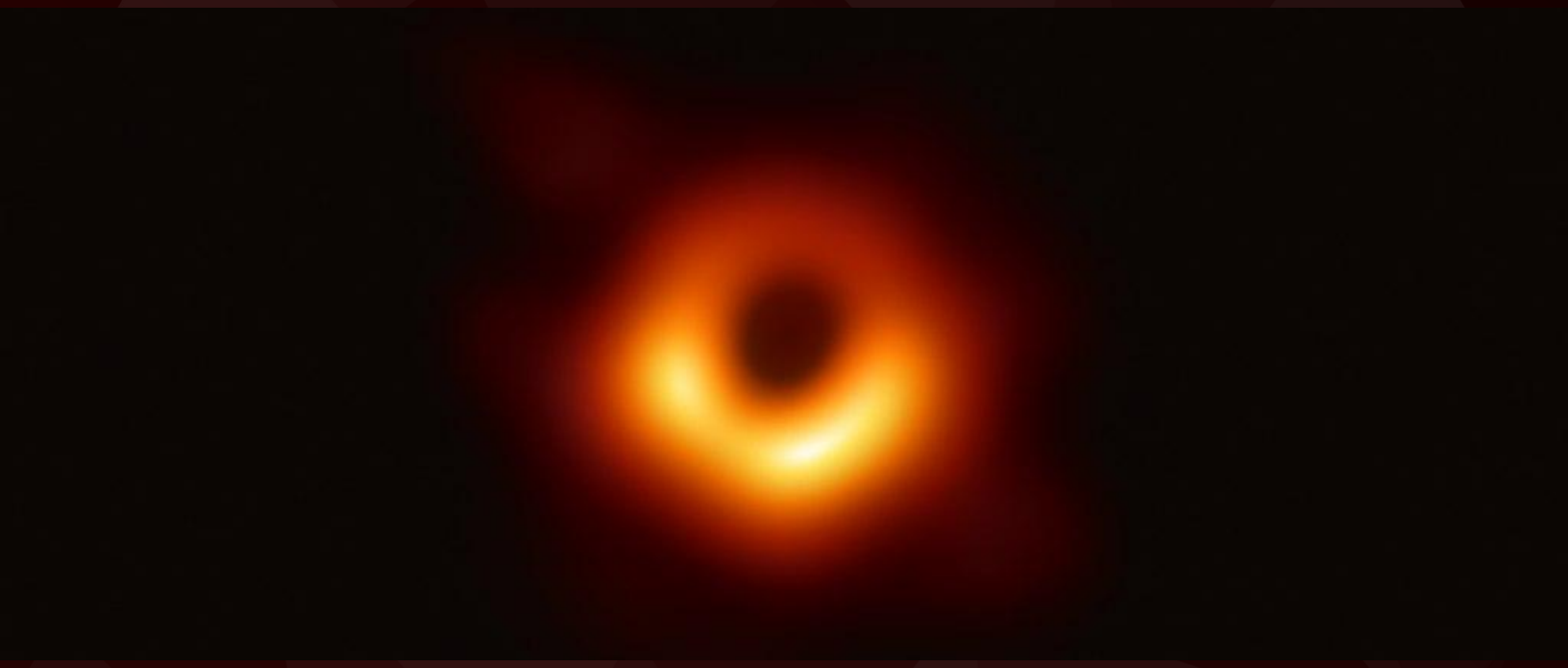

The Size, Shape, and Scattering of the Black Hole Sagittarius A*

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The Galactic Center supermassive black hole, Sagittarius A* (Sgr A*), is the most promising target to study the dynamics of black hole accretion and outflow via direct imaging. In April 2017, the Atacama Large Millimeter/submillimeter Array (ALMA) operated as a phased array in its first science run with very long baseline interferometry (VLBI). As part of the extensive multi-wavelength campaign for the Event Horizon Telescope, we observed Sgr A* at 3.5-mm with the Global Millimeter VLBI Array (GMVA) and ALMA, reaching an angular resolution of 87 micro-arcseconds, double that of previous experiments at the same wavelength. In this talk, I will present the observations that enabled the first imaging of the intrinsic structure in Sgr A* at 3.5-mm, revealing a nearly isotropic source. I will also discuss the constraints on source size, shape and interstellar scattering that these observations have provided and how these inform horizon-scale expectations for the Event Horizon Telescope.

15 SEP 2020 **2:30 PM** **YouTube LIVE**