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ON THE BREAKTHROUGH LISTEN'S RADIO TECHNOSIGNATURE SEARCHES

01 December 2020 • 3:30 pm EST • *Virtual Panel Discussion*

The discovery of the ubiquity of habitable extrasolar planets, combined with revolutionary advances in instrumentation and observational capabilities, have ushered in a renaissance in the millennia-old quest to answer our most profound question about the universe and our place within it - Are we alone? The Breakthrough Listen (BL) Initiative announced in July 2015 as a 10-year 100M USD program is the most comprehensive effort in history to quantify the distribution of advanced, technologically capable life in the universe. We will outline the status of the ongoing observing campaign with our primary observing facilities, as well as planned activities with these instruments over the next few years. In this seminar, we will outline one of a recent survey to search for signs of intelligent life near the Galactic center as a case study to elaborate on the different types of potential signals being searched with the BL program; such as narrowband beacons with <1 Hz spectral occupancy and transient signals with artificial dispersion. We will outline some of the novel search strategies including some of our state-of-the-art Machine learning (ML) based methods, which help us effectively sort through these signals and help us identify their true origins. Although we have just explored a small fraction of the parameter space, we will review how these efforts will likely help us in our quest to seek evidence of other advanced extraterrestrial life in the universe.