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The Next Steps (A4)
SETI 1: SETI Science and Technology (1)

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NEW CONSTRAINTS ON TECHNOSIGNATURES FROM BREAKTHROUGH LISTEN ON THE
GREEN BANK TELESCOPE

Abstract

Breakthrough Listen's program on the Green Bank Telescope (GBT), now in its eighth year, continues to acquire over 1000 hours of data per year, contributing petabytes of data to Listen's public archive. As the planet's largest steerable single-dish radio telescope, the GBT has unique capabilities for surveys of nearby stars, wider swaths of the Galactic Plane, and external galaxies. Observations of these primary samples are now at or near completion from 1 - 12 GHz, with extensions to higher frequencies in progress, and new targets are also being added to our observing database. Additionally, the BL backend instrument, a multi-billion-channel digital spectrometer, is a powerful tool for studying fast radio transients, searching for axion dark matter, and other astrophysics applications and is available in shared risk mode to the community.

I will present an update on technosignature science from GBT, including improvements to pipeline processing and data management, the development of novel machine learning algorithms that have the potential to improve signal detection in crowded regions of the spectrum, and new constraints on the presence of technologically-capable life in our Universe.