

Proposal Abstract:

The search for extraterrestrial intelligence (SETI) is one of the five key science goals of FAST. We aim to search for two types of signals at L-band from 113 targets with a total 76 hours of observation. Along with commonly explored narrowband signals, we will explore broadband periodic signals. A narrow-band search can be conducted by turboSETI developed by the Breakthrough Listen group. The Fast-Folding Algorithm (FFA) provides one of the best possible ways to search for broadband periodic signals. In order to conduct most sensitive survey of nearby Gaia stars, we selected 90 stars within 10 parsec from Gaia DR2 and DR3, Furthermore, we have selected 23 most metal-rich globular clusters in the milky way because they are some of the densest regions in the universe. We will use multi-beam coincidence matching (MBCM) instead of On-Off observations to discriminate radio frequency interference (RFI). With FAST' s L-band Array of 19-beams, our survey will be able to detect signals from a transmitter with minimum EIRP of 1.23×10^9 W, which is similar to output power of long-range aircraft radars here on Earth. Thus, sensitivity of our survey is sufficient even for detecting possible leakage radiation from ETIs.