

PID:PT2022\_0113

Abstract:

Fast radio bursts (FRBs) are bright millisecond-duration radio transients with unknown origin. Most repeating FRBs are supposed to reside in complex environments, such as a supernova remnant (SNR) or a pulsar wind nebula, through polarization measurements. However, no repeating FRBs have been confirmed to be co-located with SNRs. Among all kinds of supernovae, superluminous supernovae are proposed to be the most probable site of repeating FRBs. We propose monthly monitoring of five superluminous supernovae with FAST to search for repeating FRBs. Any detection will directly link repeating FRBs and supernovae, and thus provide critical clues to the progenitors of repeating FRBs. Non-detections will place meaningful constraints on burst rates of the potential repeating FRBs.