

Proposal Abstract:

Rotating radio transients, also known as RRATs, are an enigmatic class of neutron star which occasionally emits bright flashes of pulse. Due to their intermittent nature, it is difficult to place RRATs amongst the larger population of rotating neutron stars and pulsars. RRATs has numerous potential and conflicting explanations in the literature. Recent observations indicated a potential link between FRBs and RRATs. Understanding rotating radio transients (RRATs) has the potential to uproot our understanding of core-collapse supernovae and the overall evolution of neutron stars. With the world's largest radio telescope, FAST, this project will harness the power of the high sensitivity in order to study how pulses from these mysterious dead stars changes. We plan to observe a sample of RRATs with the FAST, in order to directly test many of the competing theories that exist around RRATs, explore the potential link between RRATs, FRBs, magnetars and normal pulsars and answer the question of where they fit amongst the overall population of neutron stars.