

FAST Proposal Coverpage

Last updated: 28/02/2019

Project Name: Observations of Rotating Radio Transients with FAST

(A 1-line title for your project)

Project Summary:

(A 1 paragraph summary of your project, including its scientific goals and how you will address them. This information will be potentially public.)

Understanding rotating radio transients (RRATs) has the potential to uproot our understanding of core-collapse supernovae and the overall evolution of neutron stars. Despite this, RRATs remain an enigma and have numerous potential and conflicting explanations in the literature. These observations will observe a sample of RRATs with the Five-hundred-meter Aperture Spherical Telescope (FAST), in tandem with the Ultra Wide-bandwidth Low (UWL) receiver on the CSIRO Parkes Radio Telescope. We will study the spectral shape of single pulses from RRATs and compare pulse frequency and pulse energy distributions. These observations have the unique potential to directly test many of the competing theories that exist around RRATs (e.g., directly answer if RRATs are pulsars that have “giant pulses”) and answer the question of where they fit amongst the overall population of neutron stars.