

Proposal Abstract:

Fast Radio Bursts (FRBs) are highly energetic radio signals that last only a few milliseconds and are detected from distant galaxies. Although magnetars is the leading model of FRBs, more and more evidences suggest multiple FRB progenitor classes, especially stellar-neutron star binaries. While binary models predicts periodicity and dependency of environment on the activity, it is very useful to study the parameter such as rotation measure (RM), dispersion measure (DM) as a function of activity. FRB 20220529 was nearly restless after 20 month observation in FAST. Up to May 2024, it experienced two very active bursting phase and one abrupt increase and drop of Faraday rotation measure (“RM flare”), which is very likely from the coronal mass ejection associated with a stellar flare, indicating the existence of a companion star. It is unique to study the eruption environment of FRBs, as well as the relation between activity and other burst parameters. Here we propose to monitor it once every ten days with FAST, to enlarge “RM flare” sample and examine the possible periods. The total requested time is 25 hours.