

FAST Proposal Coverpage

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Project Name:

A Sensitive Follow-up Study of Fast Radio Bursts detected by ASKAP

Project Summary:

Fast Radio Bursts (FRBs) are millisecond-duration radio transients with large dispersion measures (DMs), that are now known to be extragalactic sources. Among the ~65 published FRBs, only 2 FRBs are observed to repeat (<http://www.frbcat.org/>). One week before this proposal deadline, the CHIME project announced hundreds of FRBs, of which six show repeated bursts. Recent analysis of published surveys suggests that it is possible that all FRB sources will repeat after sufficient observing time, while plenty of models (<http://frbtheorycat.org/>) produce non-repeating (catastrophic) FRBs. It is thus crucial to observe as-yet non-repeating FRBs to much lower flux density limits to better establish whether they repeat. We propose to track 3 bright FRBs recently discovered with the ASKAP telescope in a pilot study of FRBs with FAST. It would be a major discovery if FAST detects any repeating bursts. Non-detections will provide a much more stringent limit than before on the population of repeating bursts.