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Abstract:

High-B pulsars (HBPs) are considered as transition objects between magnetars and classic pulsars, since they share the high magnetic fields (B=1e13G—1e14 G) of magnetars and have some common characteristics among of radio pulsars. Magnetars have been confirmed as one channel to produce fast radio burst (FRBs), thanks to the discovery of FRBs from magnetar SGR 1935+2154 during its outburst state. Magnetar-like outbursts/bursts have also been found in HBPs, which may also produce FRBs according to theoretical studies. We propose a FAST target-of-opportunity (ToO) observation of the outbursts from HBPs in the northern sky (one HBP in Kes 75 and 10 high-B radio pulsars). Finding FRBs in any of these HBPs will bring a major impact in the fields of FRBs and pulsars. It will not only suggest that rotation-powered pulsars can also generate FRB sources, but also provide new evidence for the close relationship between HBPs and magnetars. We expect that not more than 1 outburst will occur in the next observing semester. If the ToO observation is not triggered in the first 9 months, the proposed 10 hr time will be used for a deep-integration observation of PSR J1846-0258 to search for its radio emission.