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Abstract:

What cause the observed diversity of neutron stars(NSs) has been an unsolved question that raises broad interests in the past few decades. Central Compact Objects(CCOs) and magnetars are the most extreme subgroups of NSs, showing the lowest and highest magnetic fields, respectively. No pulsations were detected during their quiescent state in former researches, which raises whether they are intrinsic radio-quiet as an unsolved question. Any pulse detection will be the first radio detection of CCOs and magnetars during quiescent state and will also reveal the relation between magnetars and normal radio pulsars. The Superb sensitivity of FAST allowed us to obtain the most stringent upper limit with the first epoch observation(see our proposal). However, interstellar scintillation effect can not be excluded through a single observation, which is caused by variation of electron density of ISM during propagation. Based on above result, we propose second epoch observation of a CCO and four magnetars to pin-down whether they are indeed radio-quiet, making sure that interstellar scintillation will be excluded.