

# FAST Proposal Coverpage

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## **Project Name:**

*A deep FAST search for pulsations to unveil the nature of the Magnificent Seven isolated neutron stars*

## **Project Summary:**

*The Magnificent Seven (M7) are a small class of nearby, thermally-emitting isolated neutron stars (INSs) that have never been firmly detected as radio pulsars. The properties of the M7 have not been understood, but point to possible links with other phenomenological classes of INSs. We propose here a deep search for pulsations of three of M7 observable by FAST. The unprecedented sensitivity of FAST will allow us to detect them, or to put very stringent upper limits, assessing a relationship of the M7 either with “standard” rotation-powered pulsars or with magnetars. This will have a crucial impact for our overall understanding of INSs and of their evolution.*