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X-ray pulsation searches from neutron stars with NICER

The Neutron Star Interior Composition Explorer (NICER) has been in operation from the International Space Station since June 2017. One of its key science goals is the search for X-ray modulations from a variety of neutron star classes. To achieve this, NICER offers new capabilities in the soft X-ray band, namely, high effective area, precise timing (~ 100 nsec), and flexible scheduling. The working group on Pulsation Searches and Multiwavelength Coordination had prepared a list of a few tens of sources to observe, for a total of 2.5 Ms. Among them were known neutron stars (e.g., radio pulsars) or potential neutron stars (e.g., Fermi sources). On behalf of this working group, I will present the results of these pulsation searches among millisecond pulsars with suspected surface thermal emission, isolated neutron stars, low-mass X-ray binaries, ultra-luminous X-ray sources, accretion-powered pulsars, and other types of X-ray sources.

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