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X-ray approach to the magnetar-FRB connections using NICER

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The NICER (Neutron star Interior Composition Explorer) X-ray telescope on the International Space Station can provide a powerful approach to the magnetar and FRB connections using its large effective area and prompt follow-up observation of transients. Our NICER magnetar and magnetosphere (M&M) science collaboration has observed several transient magnetars and FRB-related phenomena. We detected X-ray enhancement associated with giant radio pulses, a phenomenon similar to FRBs, from the Crab pulsar, performed follow-up observations of the Galactic magnetar SGR 1935+2154 after it produced an FRB burst in 2020, and in 2022, and discovered twin glitches before and after the FRB from the same source, SGR 1935+2154. Here, we review these NICER observations and related X-ray observations.

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Session Classification: Galactic and extragalactic magnetars: recent observations and theoretical progress

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