

Special Issue on  
**Theory and Observation of Magnetars**

# CALL FOR PAPERS

Magnetars are young and highly magnetized neutron stars with a population detected as about 30 objects. They manifest a great variety of X-ray activity including the soft X-ray emission in quiescence, bursts, giant flares, and quasi-periodic oscillations (QPO), often accompanied with rotational instability including timing noise and glitches. The bulk of this activity is supposed to be fueled by the rearrangement and decay of superhigh internal magnetic fields, and the breaking of the neutron star crust. The last two decades have witnessed an explosion in magnetar research, which has led the discovery of narrow distribution of spin period values, radio emission, anti-glitches, transient and “low-field” magnetars, and so on. Magnetars could be a potential source of Gamma-ray bursts and gravitation wave and have become an important research hotspot in astronomy. Despite strong timing noise, a lack of persistent emission, and relatively low statistics of samples, the state-of-the-art measurements already shed some light on the origin of superhigh magnetic fields and the properties of magnetars. In order to better understand the nature of superhigh magnetic fields and relevant physical processes and guide the direction of future efforts, a more comprehensive and in-depth study based on the current multi-wavelength observations of magnetars is necessary.

This special issue is dedicated to fully explore the origin of superhigh magnetic fields, observational properties of these sources, and theoretical interpretation in the magnetar model. We also hope to attract original research articles as well as review articles which describe the up-to-date observational and/or theoretical research in the field of magnetars.

Potential topics include but are not limited to the following:

- ▶ Generic study of outbursts and giant flares from magnetars
- ▶ Origin and evolution of superhigh magnetic fields
- ▶ Relationship between magnetars and other compact objects
- ▶ Soft X-ray emission and hard X-ray spectrum of magnetars
- ▶ Study of torque variation and timing irregularity
- ▶ Emission mechanisms for neutrino and high-energy photons

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/aa/toma/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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