

# Burst Properties of Two Magnetars: SGR J1818.0-1607 and PSR J1846.4-0258

Tuesday 11 October 2022 10:52 (1 minute)

Magnetars are isolated, young ( $< 10^5$  years), highly magnetic ( $> 10^{14}$  G) neutron stars with long spin periods (2-12 s). All magnetars emit short repeated bursts in soft gamma rays; however, only a handful of magnetars show radio pulsations. After the detection of magnetar-like bursts from highly magnetic ( $> 10^{13}$  G) Rotation Powered Pulsars (RPPs), the question of whether magnetar-like bursts from high-B RPPs have similar characteristics with other magnetars arose. To answer this question, we studied bursts from two magnetars, SGR J1818.0-1607 (a radio-loud magnetar) and PSR J1846.4-0258, both of which entered an active bursting episode in 2020, using *Fermi* Gamma-ray Burst Monitor (GBM) data. *Fermi* GBM triggered on December 13 in 2020, and January 6 & 24 in 2021 due to short bursts originating from SGR J1818.0-1607; and on August 1, 2020 due to a single burst coming from the direction of PSR J1846.4-0248. We searched for untriggered bursts and performed time-integrated spectral analysis for all identified bursts from both objects using three spectral models: Comptonized, black body, and sum of two black bodies with different  $kT$  values. Here, we present the results of our comprehensive burst search, identification and spectral analyses for both sources, and discuss their characteristics with each other, as well as burst properties from other magnetars.

## Track

Pulsars

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**Session Classification:** Poster session