

The Search for Extra-Galactic Magnetar Giant Flares in Fermi GBM Data

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Magnetars are a type of neutron star characterized by strong ($10^{14} - 10^{15}$ G), short-lived ($\sim 10^4$ yr) magnetic fields. They display a range of high energy electromagnetic activity. The brightest and most energetic of these events, with $E_{\text{iso}} \approx 10^{44} - 10^{46}$ erg, is the magnetar giant flare (MGF). To date only 7 such events have been discovered, 3 of which occurred in our galactic neighborhood. The detections for the 3 local events suffered from instrument saturation. This means the best chance for studying MGFs resides in building a population of extra-galactic events. Given inferred volumetric event rates for galaxies with star formation rates similar to the Milky Way, it stands to reason that there may be more such events recorded in archival data. Therefore, a search of Fermi GBM data was conducted. We will detail the status of our search of these data for more MGFs.

Track

GRBs

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