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Time-domain astronomy with the Fermi GBM

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The Fermi Gamma-ray Burst Monitor (GBM) is an all-sky monitoring instrument sensitive to energies from 8 keV to 40 MeV. Over the past 8 years of operation, the GBM has detected over 240 gamma-ray bursts per year and provided timely GCN notices with localization to few-degree accuracy for follow-up observations. In addition to GRBs, Galactic transients, solar flares, and terrestrial gamma-ray flashes have also been observed. In recent years we have also been searching the continuous GBM data for electromagnetic counterparts to astrophysical neutrinos and gravitational wave events, as these are believed to be associated with gamma-ray bursts. With continuous data downlink every few hours and a temporal resolution of 2 microseconds, GBM is well suited for observing transients and supporting EM followup in the era of multi-messenger astronomy. I will discuss the details of our searches and summarize their current status.

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