



- RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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10 years of the Fermi/GBM Pulsar Project

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We review 10 years of continuous monitoring of accretion-powered X-ray pulsars with the Gamma-ray Burst Monitor (GBM), the softer-energy all-sky monitoring instrument aboard the Fermi Gamma-ray Space Telescope. The excellent combination of timing, spectral and full-sky coverage capabilities of GBM make it a unique instrument for the study of those objects. After discussing our analysis approach we present the most interesting results for individual sources.

Over 10 years of operation, GBM helped to characterize spin histories, outbursts and torque behaviors of transient and persistent sources, deriving ephemeris and orbital solutions for a variety of sources with high precision. This, in turn, makes possible the study of binary systems, as well as the long term pulsars spin histories, two elements that are crucial to understanding the accretion processes onto magnetized neutron stars. Recently, GBM played a fundamental role in discovering and characterizing the first Galactic Ultraluminous X-ray Pulsar, Swift J0243.6+6124. Today, after an outburst that took ~150 days, this unique source is still active and GBM keeps revealing more and more of its behavior.

This is emblematic of GBM capabilities and its exclusive scientific return.

Topic

Compact and diffuse sources in galaxies and in the Galactic Center

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