

SES19-2019-000207

Abstract for an Invited Paper
for the SES19 Meeting of
the American Physical Society

The Fermi Gamma-ray Space Telescope: Getting Better with Age

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The Fermi Gamma-ray Space Telescope (Fermi) has been observing the gamma-ray sky for over 10 years and is an important tool in multiwavelength astronomy and the growing field of multimessenger astronomy. This space-based observatory has two instruments on board, the Large Area Telescope (LAT) and the Gamma-ray Burst Monitor (GBM). The LAT observes $\sim 20\%$ of the sky, while GBM consists of 12 NaI detectors and 2 BGO detectors strategically placed to provide nearly full-sky coverage in search of gamma-ray bursts (GRBs). Fermi covers an unprecedented energy range from 8 keV-300 GeV and provides localizations for gamma-ray sources to an error of a few degrees for GBM, and an error of a few arcminutes for the LAT, allowing for multiwavelength instruments to follow-up these observations. Over the past 10 years of operation, Fermi has worked with many multiwavelength telescopes to provide numerous contributions to the astronomy community. A recent example of these contributions is GRB 190114C, which was an extremely bright GRB that was observed by Fermi and had a near- TeV detection in MAGIC. Another example is the joint observations of Fermi and NICER of the detection of the first galactic ultraluminous X-ray Pulsar, Swift J0243.6+6124. The most notable recent multimessenger detections both involving Fermi are the joint detection of GW170817 and GRB 170817A and the IceCube neutrino coincident with flaring emission from TXS 0506+056. These observations have motivated further follow-up campaigns in search for more multiwavelength and multimessenger counterparts in Fermi data to help provide insight into the processes occurring in these extreme events.