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16 years of Gamma Ray Discoveries with Fermi

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In the year 2024, the Fermi Gamma-ray Space Telescope is celebrating its 16th year of operation. The Large Area Telescope (LAT) is the main instrument onboard the Fermi satellite and is designed to be sensitive to gamma rays in the energy range from about 20 MeV up to the TeV regime. From its launch, the LAT has collected more than 4.53 billion photon events, providing crucial information to improve our understanding of particle acceleration and gamma-ray production phenomena in astrophysical sources. The Gamma-ray Burst Monitor (GBM), the secondary intrument onboard Fermi, has a field of view several times larger than the LAT and provides spectral coverage of gamma-ray bursts (GRBs) and other transients phenomena that extends from the lower limit of the LAT down to 10 keV. GBM has detected more than 3800 bursts to date, including the famous short GRB 170817A jointly detected in gravitational waves, thus providing the first direct evidence that colliding neutron stars can produce GRBs. In this talk, some of the main results obtained by the Fermi LAT and GBM collaborations will be reviewed, with a particular focus on GRB science.

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