



RESEARCH

GAMMA RAY BURSTS: CATALOGUE OF THE MOST ENERGETIC OBSERVED BY FERMI

186 high energy gamma ray bursts recorded by the Fermi satellite telescope for gamma rays in ten years of observation: these are the protagonists of [*"The Second GRB Catalog"*](#), published on 13 June in

The Astrophysical Journal. These Gamma Ray Bursts (GRBs) were detected by the Large Area Telescope (LAT), a Fermi instrument designed and implemented with a decisive contribution from Italy, thanks to the Italian Space Agency ASI, the National Institute for Nuclear Physics INFN and the National Institute of Astrophysics INAF. The catalogue, which provides new indications on the origin and evolution of gamma ray bursts, is the result of the work of 120 scientists and Fermi collaboration scientists, coordinated by Elisabetta Bissaldi, researcher at INFN and the Polytechnic University of Bari, by Magnus Axelsson of the University of Stockholm and by Nicola Omodei and Giacomo Vianello of Stanford University.

Both the collapse of a star and the collision of two neutron stars can give rise to relativistic jets of particles that move at a speed close to that of light. When the particles in the jets collide with each other or interact with the environment around the stars they give rise to gamma rays. The Fermi Large Area Telescope (LAT) records gamma rays with energies between 20 MeV and 300 GeV (millions of times more energetic than visible light) and works in close collaboration with the Gamma-ray Burst Monitor (GBM) which, on the other hand, observes less energetic gamma rays (between 8 keV and 40 MeV) coming from the entire sky.

Among the GRBs presented in this catalogue are also GRB 081102B, GRB 160623A, GRB 130427A and GRB 080916C, which are the shortest, longest, most energetic and farthest bursts, respectively, ever observed by the Fermi LAT. ■