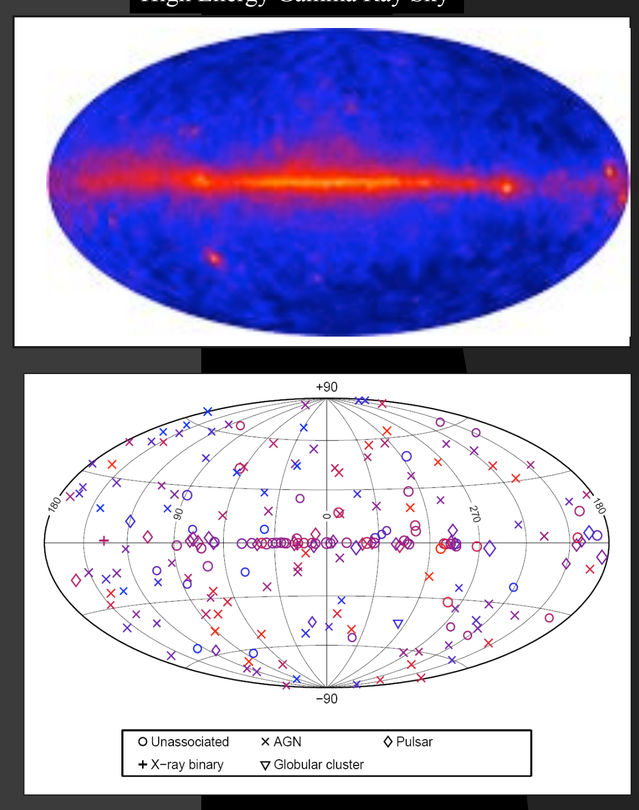
Astroparticle Physics Laboratory

Neil Gehrels, Lab Chief

Fermi Mission

- Launched in June 2008
- Observing the dynamic high energy gamma ray universe

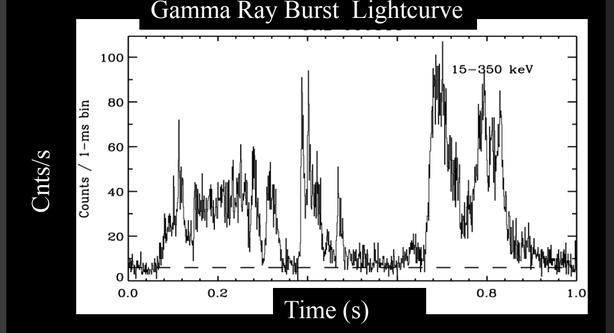
High Energy Gamma Ray Sky



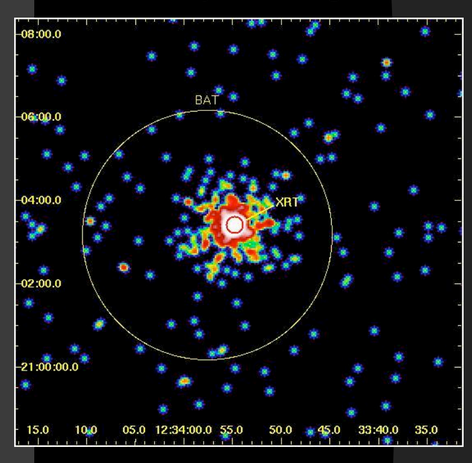
Swift Mission

- Launched in November 2004
- Observing gamma ray bursts, the most powerful explosions in the universe

Gamma Ray Burst Lightcurve



Gamma Ray Burst Image



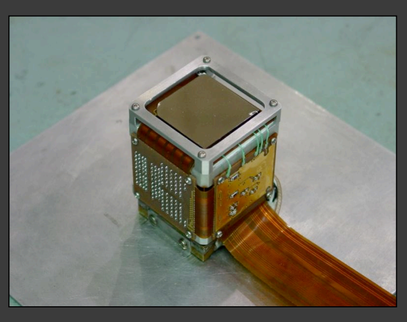
BESS Flight in Antarctica December 2007

BESS Balloon Instrument

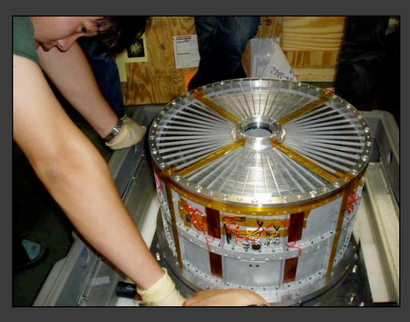
- Flown in 2003, 2004 & 2007
- Observing antimatter particles to determine the basic physical processes of the universe

Instrument R&D

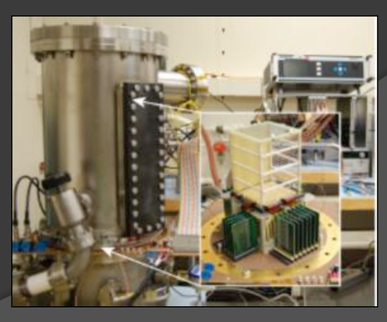
Cadmium Zinc Telluride Gamma Ray Detector



Multilayer Hard X-ray Mirror



Micro-well Gamma Ray Detector



Fresnel Lens for Gamma Rays

Astrophysics Science Division