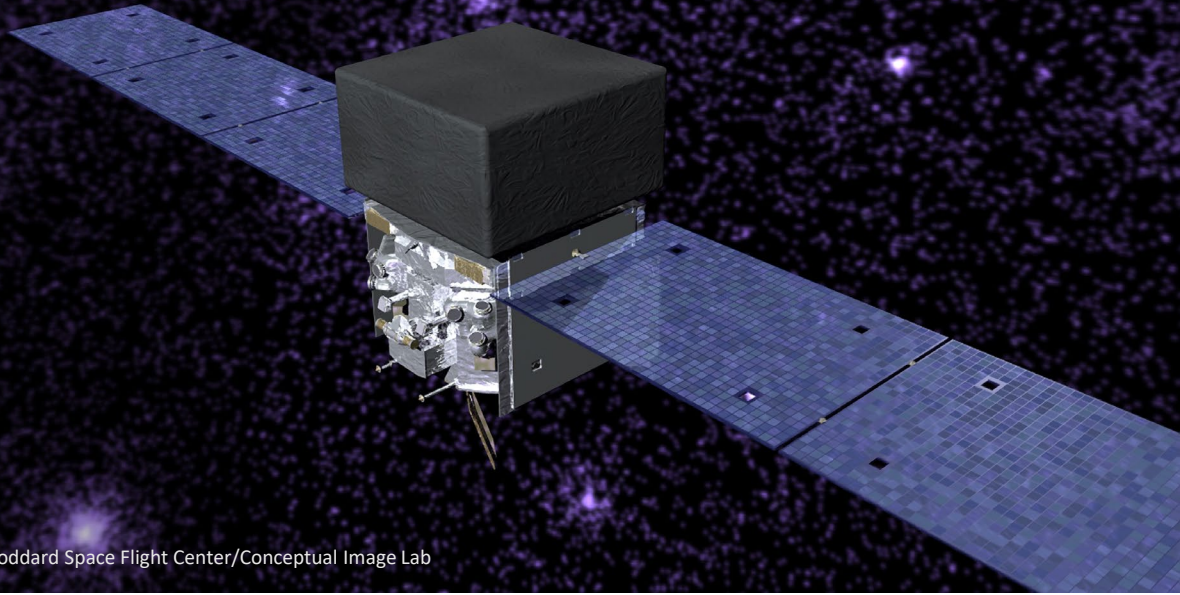


# Galaxy evolution and cosmology using gamma rays observed with Fermi-LAT



Credit: NASA's Goddard Space Flight Center/Conceptual Image Lab

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**Abstract:** The light emitted by all galaxies across the history of the Universe is encoded in the intensity of the extragalactic background light (EBL), the diffuse cosmic radiation field at ultraviolet, optical, and infrared wavelengths. The EBL is a source of opacity for very high energy gamma rays via pair production, leaving a characteristic attenuation imprint in the spectra of distant gamma-ray sources. In this seminar, I will report on new measurements of the EBL using gamma-ray data from both the Large Area Telescope on board the Fermi Gamma-ray Space Telescope and ground-based Imaging Atmospheric Cherenkov Telescopes. These unprecedented measurements have allowed us to derive the cosmic star-formation history, the number density of faint galaxies during the re-ionization epoch, and also the expansion rate of the Universe and its matter content. These results demonstrate that gamma-ray astrophysics has matured to the point of providing competitive measurements of cosmic properties previously restricted to techniques used by more traditional astronomy.

Jueves 16 de noviembre, 12 horas, seminario de Física Nuclear

On-  
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