

Theory of High Energy Sources II: Supernova Remnants, Gamma-Ray Bursts and Blazars

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Galactic supernova remnants and the extragalactic jet sources in blazars and gamma-ray bursts provide sites for some of the most energetic X-ray and gamma-ray emission seen in the cosmos. All are thought to be probable sources of cosmic rays and neutrinos, and their bright light signals are intimately connected to non-thermal leptons and hadrons accelerated in their zones of activity. This review talk summarizes the physics of particle energization and radiative dissipation in these sources, and briefly discusses their central driving engines. It highlights recent developments in the understanding of their environs, spawned by gamma-ray detections by Fermi and various Atmospheric Cherenkov Telescopes, and a multitude of X-ray observatories including Chandra, XMM, Suzaku and Swift. Prospects that future X-ray polarimetry could offer are briefly addressed.

Primary author: Dr BARING, Matthew (Rice University)

Presenter: Dr BARING, Matthew (Rice University)

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