

Title: "Multi-Wavelength Observations of Supernova Remnants"

Abstract: Supernova remnants (SNRs) provide a laboratory for studying various astrophysical processes, including particle acceleration, thermal and nonthermal emission processes across the spectrum, distribution of heavy elements, the physics of strong shock waves, and the progenitor systems and environments of supernovae. Long studied in radio and X-rays, the past decade has seen a dramatic increase in the detection and subsequent study of SNRs in the infrared and gamma-ray regimes. Understanding the evolution of SNRs and their interaction with the interstellar medium requires a multi-wavelength approach. I will review the various physical processes observed in SNRs and how these processes are intertwined. In particular, I will focus on X-ray and infrared observations, which probe two very different but intrinsically connected phases of the ISM: gas and dust. I will discuss results from multi-wavelength studies of several SNRs at various stages of evolution, including Kepler, RCW 86, and the Cygnus Loop. -brian