Hubble Space Telescope

Cycle 15 AR Proposal

Chemical Abundances in Young Supernova Remnants: Connecting Observations with Hydrodynamics

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Scientific Category: ISM AND CIRCUMSTELLAR MATTER

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Theory: Yes

Abstract

HST has provided high quality images and spectra of many oxygen-rich supernova remnants. However, the theoretical framework for interpreting this data has lagged behind. We are developing a new code that integrates nebular non-equilibrium ionization and cooling with multi-dimensional hydrodynamics and radiative transfer in order to model the spectra and morphology of young supernova remnants. Our models will provide the best abundances to date for this important class of object, and will serve as a primary diagnostic of massive star evolution and supernova hydrodynamics. This proposal will partially support the Ph.D. dissertation of the PI.

Investigators:

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