

The Chandra Supernova Remnant Catalog

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Abstract. We show some examples from a WWW-based catalog, containing *Chandra* archive data, that is now under construction. Many remnants show manifestations of internal neutron stars, which are of particular interest to this conference.

1. The Catalog

We have compiled a WWW-based catalog of *Chandra* supernova remnant observations. What started as a set of X-ray and radio images quickly became more extensive. The spatial and spectral resolution of the *Chandra* instruments make it possible to image remnants at different energies and to examine spectra from particular regions within the remnant. We found this irresistible and the catalog now shows several such images and spectra for each remnant. We also include images in the radio band and at other wavelengths. The catalog lists parameters of the *Chandra* observations and observed characteristics of the remnants such as size, X-ray flux, and luminosity. JPEG images, PS files, and FITS files can be downloaded. The catalog is still a work-in-progress and is located at <http://snrcat.cfa.harvard.edu>.

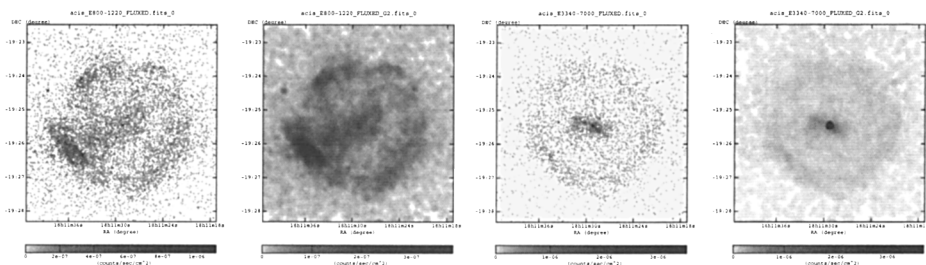


Figure 1. Raw data and smoothed images of the Galactic supernova remnant G11.2-0.3 in two energy bands; at left 0.8–1.2 keV; at right, 3.3–7.0 keV.

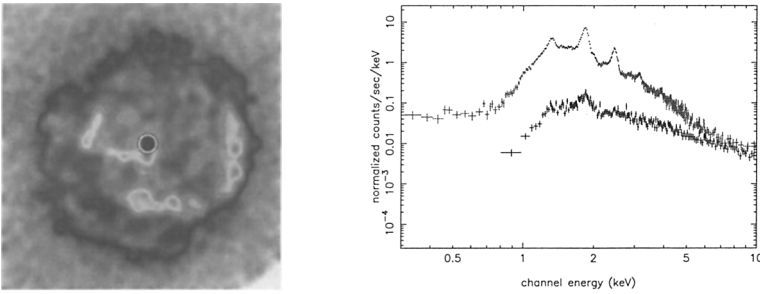


Figure 2. The Galactic remnant Kes 73 (left). Spectra (right) of the central source, enclosed by the white circle (lower curve), compared with that of the whole remnant (upper curve).

2. Magellanic Cloud Remnants

Remnants in the Magellanic Clouds make a nice set for study. Distances are known, interstellar absorption is low, and the *Chandra* images clearly resolve features within the remnants. *Chandra* has observed all the small bright Magellanic remnants and has started on the larger, fainter objects. There are 27 Magellanic remnants in the observing program, 22 have been observed, and 13 are now in the public archive. This is a representative sample of the population out to a diameter of about 4 arcminutes, or 60 pc. The detection of compact objects, or lack thereof, is of interest to this conference.

Two remnants contain bright isolated pulsars surrounded by bright pulsar wind nebulae; the Crab-like objects. There is a soft gamma-ray repeater (SGR) within one remnant, and to date no central compact objects (CCOs) such as those within Cas A and Kes 79 have been observed. One of these CCOs in the LMC would yield 30 counts in a typical 70 ks observation so they should be easily detectable.

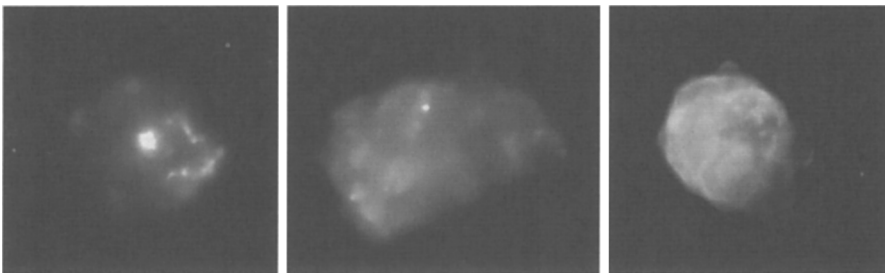


Figure 3. Some Magellanic Cloud remnants in the range 0.3-10 keV. From the left, 0540-69.3 with bright central PWN, N49 (imaged in part) with off-center point-like SGR, N63 with no evidence for internal pulsar.

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