The Pulsar Wind Nebula in G11.2-0.3

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Abstract

We present high resolution X-ray and radio studies of the X-ray pulsar PSR J1811−1925 and its surrounding nebula. These are at the center of the shell supernova remnant SNR G11.2−0.3, the probable remains of the historical event of 386 AD. The Chandra observations reveal, for the first time, the morphology of the X-ray nebula at the center of the blast wave. The nebula has a bright, highly non-spherical hard X-ray component, a faint, broad hard component, and a larger, soft component. We compare this structure with high-resolution, dual-frequency VLA radio data in order to establish the nature of the various components. We suggest that we may be detecting evidence of both forward and both reverse shocks in this pulsar/SNR system. We also present possible evidence for spatial variability in the inner, hard component on time scales of months.

CATEGORY: SUPERNOVAE, SUPERNOVA REMNANTS AND ISOLATED NEUTRON STARS