X-RAY OBSERVATIONS OF THE SUPERNOVA REMNANTS G349.7+0.2 and CTA 1

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The NASA ADP Grant NAG5-8354 supports analysis of ASCA X-ray data from the supernova remnant (SNR) G349.7+0.2. This compact, high luminosity SNR is known to be interacting with a molecular cloud, based on the observation of OH masers. The maser lines provide velocity measurements which place the remnant at a distance of 22 kpc. The analysis of our ASCA data is now complete. We find that the X-ray emission from this remnant is dominated by material of solar abundances, consistent with the picture of a molecular cloud interaction. At the very large distance indicated by the masers, the observed flux makes G349.7+0.2 one of the most luminous SNRs in our galaxy. We show that the X-ray emitting plasma is not in ionization equilibrium, and that while the remnant has swept up large amounts of material, it is actually relatively young, holding some promise for identification of stellar ejecta in future high resolution studies.

A paper detailing our analysis and results has been completed and is in the final stages of circulation amongst co-authors prior to submission to ApJ.