

ASTROPHYSICS SEMINAR

Wednesday, 4 February 2009 at 14:00

Thermal and non-thermal X-ray emission from SN 1006

Dmytro Iakubovskyi
BITP, Kiev, Ukraine

Abstract. A number of important processes taking place around strong shocks in supernova remnants (SNRs) depend on the shock obliquity - the angle between the shock normal and the interstellar magnetic field (ISMF). To study these processes, we select SN 1006 - the first SNR with recognized non-thermal emission. Its rather simple morphology, the exact knowledge of its age, and its evolution in low interstellar medium densities (due to high galactic latitude) make it an ideal laboratory to study these processes. We investigate the spatial distribution of X-ray and radio emission, observed with XMM-Newton and VLA/Parkes, respectively. Analyzing the radio map we conclude about the possible direction of ISMF depending on shock acceleration (aspect angle). When combining X-ray and radio data together, we model the emission from regions close to the shock as the sum of thermal and non-thermal components. By subtracting the properly scaled non-thermal emission, we produce the "purely thermal" image which indicates the separation between purely thermal and non-thermal emission. The possible implications of these results are discussed.

Additional Information

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