

Detections of ^{44}Ti signals in young supernova remnants

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^{44}Ti is the short-live radioactive isotope with a half lifetime of 58 years. It can be only produced in the central regions of supernova explosions, so that its production will sensitively depend on supernova progenitors and explosion models. We have detected ^{44}Ti emission line signals from some young supernova remnants (SNRs), including the core-collapse SNRs Cas A and SNR 1987A, the type Ia SNR Tycho. The studies suggest that Cas A and SNR 1987A should be produced by the asymmetrical supernova explosions. The ^{44}Ti yield in Tycho provides the strong constraint on the progenitor of the type Ia supernova. It has been proposed that the Chinese X-ray telescope HXMT/Insight will carry out the hard X-ray surveys in the Galaxy. We expect that HXMT/Insight can provide new information on ^{44}Ti signals in more young SNRs.