SWS and LWS Observations of Cassiopeia A

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Abstract

Cas A is the youngest known SNR in our Galaxy. It is the prototype Oxygen rich shell-type SNR. LWS observations at several positions within the inner shell, which comprises O-rich fast-moving knots, reveals that the FIR line emission is not correlated with optical emission: strong FIR [O III] emission, comparable to that from the optically bright northern complex, is found at the centre which appears empty in the optical and corresponds to a minimum in both radio and X-ray pictures. This suggests that a new gas phase is being detected in SNRs. These broad lines are thought to be a signature of expanding, highly processed, possibly very cool, ejecta from supernovae. We also discuss the preliminary results from full grating SWS observations of a few key positions within the inner shell, coincident with our LWS observations.