

Abstract Submitted
for the SES08 Meeting of
The American Physical Society

Origin of the Ring Fingers in Supernova 1987A JOHN BLONDIN, CLINT GIBSON, North Carolina State University — We demonstrate that the fingers of dense gas protruding inwards from the equatorial ring of SN 1987A is a natural consequence of the interacting winds model invoked to explain the circumstellar rings. At early times in the formation of the circumstellar shell, the wind shocks must have been strongly radiative, leading to a thin, dense, shock-bounded shell. Such a shell is subject to the non-linear thin shell instability, albeit in a more complex geometry than the early planar studies of the NTSI. Using three-dimensional hydrodynamic simulations, we show that the observed characteristics of the “string of pearls” around SN 1987A are consistent with the canonical interacting winds model subject to the NTSI.

John Blondin
North Carolina State University

Date submitted: 15 Aug 2008

Electronic form version 1.4