

Carbon-enhanced metal-poor stars as a consequence of inhomogeneous metal mixing

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I will present a novel scenario for the formation of carbon-enhanced metal-poor (CEMP) stars. Carbon enhancement at low stellar metallicities is usually considered a consequence of faint or other exotic supernovae. A simple analytical estimate of cooling times in low-metallicity gas demonstrates a natural bias to the formation of CEMP stars as a consequence of inhomogeneous metal mixing: carbon-enhanced gas has a shorter cooling time and can form stars prior to a possible nearby pocket of carbon-normal gas, in which star formation is then suppressed due to energetic photons from the carbon-enhanced protostars. I will demonstrate that this is a natural formation mechanism for CEMP stars from carbon-normal supernovae, if inhomogeneous metal mixing provides carbonicity differences of at least one order of magnitude separated by >10 pc.

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Talk/Poster

Talk

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