

Re: Elements heavier than Fe; supernovae and particle accelerators

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On Sep 13, 4:18 pm, icannotfor...@xxxxxxxxxx wrote:

I hope someone can answer this simple question for me, a layman:

If a star can only produce elements up to the periodic number of Fe, and those heavier than Fe are produced in supernovae, how can WE produce even HEAVIER elements in particle accelerators? It would seem that the energy required must be equal to a supernova.

It's not hard if the atoms don't even add up to a kilogram, or gram, or even a nanogram. Accelerators' beams regularly get hotter than a supernova, at 10 GK. The binding energy between iron and uranium atoms is 182×1.5 MeV, which is not very much—1.5 MeV is 11.6 GK at the most.

—Aut