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Observational constraints on the origin of the elements: from First stars to Neutron-Star mergers

Thursday, 24 May 2018 09:00 (30 minutes)

Long-lived low-mass stars hold the key to understand how the Universe evolved chemically from hydrogen and helium to the myriad of abundance patterns we observe in stars today. In particular, extremely metal-poor stars (EMP - $[Fe/H] < -3$) are believed to be the only survivors of a time when the Universe was still in its early stages of chemical evolution. In this talk I will review some of the observational evidence that connects EMP stars observed today to very specific astrophysical events (such as faint Supernovae explosions and Neutron-star mergers) that occurred more than 12 billions years in the past. I will also introduce current (and future) observational efforts aiming to increase the inventory of known low-metallicity stars, which will help constrain theoretical models of the evolution of our Galaxy and the Universe.

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