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Ending the second cosmological Li problem

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Lithium is the heaviest element produced during Big Bang nucleosynthesis. The amount produced can be predicted through the cosmic microwave background and measured through old metal-poor stars. Li has two stable isotopes, with Li-7 being more abundant than Li-6. In particular, the detection of Li-6 in old metal-poor halo stars contradicts the Big Bang nucleosynthesis prediction by 5 orders of magnitude; this disagreement is known as the second cosmological lithium problem. We investigate the detections of Li-6 within three stars through the use of ESPRESSO@VLT observations and state-of-the-art synthetic spectra. We do not detect Li-6 in any star, indicating that there is no second cosmological lithium problem. This is consistent with Galactic modelling assuming Li destruction in old metal-poor stars.

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