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Galactic Archeology with the AEGIS survey : the Evolution of Carbon and Iron in the Galactic Halo

Wednesday, 23 May 2018 11:45 (15 minutes)

I report on the spatial distributions of carbonicity, [C/Fe], and metallicity, [Fe/H], of the halo system of the Milky Way, based on medium-resolution spectroscopy of ~58,000 stars in the Southern Hemisphere from the AAOmega Evolution of Galactic Structure (AEGIS) survey. I also consider the populations of carbon-enhanced metal-poor (CEMP) stars present in the AEGIS sample and confirm that the cumulative frequency of CEMP stars strongly increases with decreasing metallicity, as seen previously. The differential frequency of CEMP-no stars (as classified by their characteristically lower levels of absolute carbon abundance) increases with decreasing metallicity, and is substantially higher than previous determinations for CEMP stars as a whole. In contrast, that of CEMP-s stars remains almost flat, at a value ~10%, in the range -4.0 < [Fe/H] < -2.0.

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