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An abundance of very metal-poor stars in the Solar Neighborhood

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The number of well-studied very and extremely metal-poor stars is gradually increasing, but still remains limited by the large search volumes necessary to identify them. Here, I will present evidence for a cornucopia of metal-poor dwarf stars (well) within 1 kpc, the so-called dwarf carbon (dC) stars, with order of 1000 already known from the Sloan Digital Sky Survey. The prototype and only well-studied member is a halo star with [Fe/H] = - 4.0 at only 78 pc. Even in the absence of full modeling of their carbon molecular-dominated spectra, their space motions have a distinct halo component, and which may dominate the population. Furthermore, their locus in an HR diagram makes it clear they are Population II stars. I will present ongoing work to identify additional stars, study their kinematical and spatial properties, and understand their fundamental nature. It is plausible the dC stars are the most abundant carbon-enhanced metal-poor stars in the Galaxy and hence a clear focus for stellar archaeology.

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