

## The Nature of the extremely Fe-poor star HE0107-5240

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HE0107-5240, a chemically ancient star.

In Nov 2001, a low dispersion spectrum taken on the 2.3m telescopes at SSO of HE0107-5240 a weak-line candidate star selected from the Hamburg ESO survey, revealed it to have an extremely weak CaK line and very strong lines of CH. Follow-up high resolution spectra taken with UVES on the VLT have now been analysed and indicate HE0107-5240 to be a giant star with a temperature of about 5100K and to have the lowest Fe abundance ever measured for a normal star but with very high C/Fe, N/Fe and O/Fe overabundances. However, the distribution of elemental abundances gives no support for dust depletion as the cause of the extremely low Fe abundance and its constant radial velocity over a year suggests that it is unlikely to be a binary.

We believe that HE0107-5240 is an extremely ancient low mass star whose surface composition reflects that of its nacent cloud. Recent papers by Japanese theoreticians have suggested that the measured abundances are precisely the abundance patterns that they would expect as the ejecta from a first generation supernovae of about 20-30 solar masses.