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Cold dark matter particles with an intrinsic matter-antimatter asymmetry do not annihilate after gravitational capture by the Sun and can affect its interior structure. The rate of capture is exponentially enhanced when such particles have self-interactions of the right order to explain structure formation on galactic scales. A dark baryon of mass 5 GeV is a natural candidate and has the required relic abundance if its asymmetry is similar to that of ordinary baryons. We show that such particles can solve the solar composition problem. The predicted small decrease in the low energy neutrino fluxes may be measurable by the Borexino and SNO+ experiments.

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