Abstract Submitted for the APR21 Meeting of The American Physical Society

Stellar Solutions for the Cosmological Lithium Problem¹ CHARLES MARRDER, GRANT MATHEWS, LUCA BOCCIOLI, IN-SAENG SUH, University of Notre Dame — The cosmological lithium problem is a shortcoming in the successful theory of Big Bang nucleosynthesis (BBN). While BBN accurately predicts the primordial abundance of light elements such as H and He, BBN over-predicts primordial ⁷Li by about a factor of 3. Possible explanations of this deficit include stellar diffusion, convection, and magnetic fields by which ⁷Li could be gradually depleted. Among other things, we are exploring convective overshoot and micro-turbulence in the evolution of metal-poor halo stars as possible means of explaining a uniform depletion by a factor of 3 in primordial ⁷Li abundance.

¹Work at the University of Notre Dame is supported by the U.S. Department of Energy under Nuclear Theory Grant DE-FG02-95-ER40934.

Charles Marrder University of Notre Dame

Date submitted: 08 Jan 2021

Electronic form version 1.4