

Abstract Submitted
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Quark-Gluon Plasma in the NDL Equation of State for Supernova Simulations J. POCAHONTAS OLSON, MATTHEW MEIXNER, GRANT MATHEWS, University of Notre Dame, L. NGUYEN, Hanoi National University of Education, H.E. DALHED, Lawrence Livermore National Laboratory — I will discuss the effects of a QCD restored chiral symmetry and deconfined phase in the new NDL Equation of State. The transition allows for the possibility of a coexistence mixed phase using a first-order phase transition with a Gibbs construction. I will describe the effects of temperature and pion creation on the onset density. I will also discuss the consequences of varying the QCD bag constant. The observation of a $1.97 \pm 0.04 M_{\odot}$ neutron star provides a stringent limit on the parameter space of a quark-gluon plasma phase in simulating supernovae collapse. The consequences of this experimental evidence on the existence and properties of a mixed phase QGP transition will be explored.

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