Abstract Submitted
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**The Eagle Nebula Science on NIF experiment**[1] JAVE KANE, ROBERT HEETER, DAVID MARTINEZ, Lawrence Livermore National Laboratory, MARC POUND, U. Maryland, BRUCE REMINGTON, DMITRI RYUTOV, VLADIMIR SMALYUK, Lawrence Livermore National Laboratory — The Eagle Nebula NIF experiment was one of nine selected for laser time through the Science on NIF program. The goal of this scale laboratory experiment is to study the dynamic evolution of distinctive structures in star forming regions of astrophysical molecular clouds such as the Pillars of the Eagle Nebula. That evolution is driven by photoionizing radiation from nearby stars. A critical aspect of the radiation is its very directional nature at the photoionization front. The long duration of the drive and its directionality can generate new classes of instabilities and dynamic flows at the front that may be responsible for the shapes of Pillars and other structures. The experiment will leverage and modify the existing NIF Radiation Transport platform, replacing the target at the back end of the halfraum with a collimating aperture, and extending the existing 20 ns drive to longer times, using a combination of gas fill and other new design features. The apertured, quasi-collimated drive will be used to drive a target placed 2 mm away from the aperture. The astrophysical background and the status of the experimental design will be presented.

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