

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Generation of heralded Dicke state CHERN HUI LEE, KYLE
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We study experimentally the efficient creation of heralded Dicke states in an atomic
ensemble trapped in a high finesse optical cavity. Weak resonant light in free-space
mode transverse to the cavity is efficiently absorbed by the optically dense sample.
Subsequent stimulated Raman scattering into the cavity mode dominates over free
space scattering because of the high single atom cooperativity of the cavity. This
result paves the way towards a high efficiency heralded quantum memory which will
be practically useful for storing the polarization state of a single photon.

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Date submitted: 28 Jan 2015

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