Abstract Submitted
for the SHOCK09 Meeting of
The American Physical Society

Time-resolved Raman spectroscopy of shock compressed single crystal HMX R.J. SCHARFF, V.H. WHITLEY, D.B. STAHL, D.M. DATTELBAUM, Los Alamos National Laboratory — Shock initiation of an energetic organic solid is generally considered to proceed via a mechanism through which low frequency acoustic phonons are upconverted to higher frequency bond stretching vibrations in the crystal. To elucidate changes in molecular structure under shock loading, a series of well defined gas gun driven plate impact experiments coupled to time-resolved Raman spectroscopy were performed on single crystal β-HMX. We will also present progress in obtaining temperature measurements in the shocked material using a Stokes/anti-Stokes intensity ratio method.

R. Jason Scharff
Los Alamos National Laboratory

Date submitted: 25 Feb 2009 Electronic form version 1.4