Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Measurement of Conical Second Harmonic Generation in Intense Laser Interaction with Plasma[1] MICHAEL HELLE, Georgetown University, DMITRI KAGANOVICH, Icarus Research Inc., DANIEL GORDON, ANTONIO TING, Naval Research Laboratory — Recent theoretical work [1] on electro-optic shock produced from the interaction of intense laser radiation with high density plasma suggests that second harmonic radiation will be emitted at the Cherenkov angle. This angle is related to the ratio of the second harmonic phase velocity to the fundamental phase velocity. Experimental observation of this electro-optic shock radiation is currently underway at the U.S. Naval Research Laboratory. Initial results show the existence of a second harmonic ring. Spectrographic diagnostics are currently being developed and will soon be online. Preliminary results and analysis will be presented.
[1] D. F. Gordon, et al, PRL, accepted for publication (2008).

[1]This work is supported by the Department of Energy and Office of Naval Research.

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Date submitted: 21 Jul 2008 Electronic form version 1.4