Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Progress of Rugby Hohlraum Experiments on Omega FRANCK PHILIPPE, VERONIQUE TASSIN, ALEXIS CASNER, PASCAL GAUTHIER, PATRICIA SEYTOR, MARIE-CHRISTINE MONTEIL, CEA, DAM, DIF, F-91297 Arpajon, France, HYE-SOOK PARK, HARRY ROBEY, STEVEN ROSS, PETER AMENDT, Lawrence Livermore National Laboratory, CA 94550, USA, FREDERIC GIRARD, BRUNO VILLETTE, CHARLES REVERDIN, PASCAL LOISEAU, TONY CAILLAUD, OLIVIER LANDOAS, CEA, DAM, DIF, F-91297 Arpajon, France, CHI KANG LI, RICHARD PETRASSO, FREDRICK SEGUIN, MARKUS ROSENBERG, Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA 02139, USA — The rugby hohlraum concept is predicted to enable better coupling and higher gains in the indirect drive approach to ignition [1-2]. A collaborative experimental program is currently pursued on OMEGA to test this concept in preparation for future megajoule-scale ignition designs [3]. A direct comparison of gas-filled rugby hohlraums with classical cylinders was recently performed, showing a significant (up to ∼40%) observed x-ray drive enhancement and neutron yields that are consistently higher in the rugby case. This work extends and confirms our previous findings in empty rugby hohlraums [4-6]. [1] M. Vanden-Boomgaerde et al., Phys. Rev. Letters 99, 065004 (2007) [2] P. Amendt et al., Phys. Plasmas 14, 056312 (2007). [3] S. Laffite and P. Loiseau, Phys. Plasmas 17, 102704 (2010). [4] F. Philippe et al., Phys. Rev. Lett. 104, 035004 (2010). [5] H. Robey et al., Phys. Plasmas 17, 056313 (2010). [6] C.K. Li et al., Science 327, 1231 (2010).

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Date submitted: 25 Aug 2011 Electronic form version 1.4