Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

End-On Laser Interferometry of Wire Array Z-Pinch Implosions on the MAGPIE Generator GEORGE SWADLING, SERGEY LEBEDEV, JEREMY CHITTENDEN, GARETH HALL, FRANCISCO SUZUKI-VIDAL, ADAM HARVEY-THOMPSON, NICOLAS NIASSE, GUY BURDIAK, ESSA KHOORY, LOUISA PICKWORTH, PHILIP DE GROUCHI, LEE SUTTLE, Imperial College London, MAGPIE PROJECT TEAM — New end-on measurements have taken of the areal electron density distribution of wire array z-pinches during the ablation phase. These measurements have been used to investigate the differences in dynamics between aluminium and tungsten arrays. The experiments were carried out on the 1.4 MA peak current, 240ns rise-time MAGPIE generator at Imperial College, London. The measurements were taken using a two colour Mach-Zender style imaging interferometer. Probing is provided by the 2nd and 3rd harmonics (532nm and 355nm) of a pulsed Nd:YAG laser with a pulse duration of 500ps. Analysis of the results is presented and comparisons made to both the rocket model and simulations produced using the GORGON MHD code.

George Swadling
Imperial College London

Date submitted: 22 Jul 2011 Electronic form version 1.4