Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Laboratory astrophysics experiments relating to ionising and weakly radiative shocks JOSEPH CROSS, University of Oxford, JOHN FOSTER, PETER GRAHAM, AWE, CLOTILDE BUSSCHAERT, LUTH Observatoire de Paris, NICOLAS CHARPENTIER, CEA-DAM-DIF, COLIN DANSON, AWE, HUGO DOYLE, University of Oxford, R. PAUL DRAKE, University of Michigan, EMERIC FALIZE, CEA-DAM-DIF, JIM FYRTH, EDWARD GUMBRELL, AWE, MICHEL KOENIG, LULI, Ecole Polytechnique, CAROLYN KURANZ, University of Michigan, BERENICE LOUPIAS, CEA-DAM-DIF, CLAIRE MICHAUT, LUTH Observatoire de Paris, SID PATANKAR, JONATHAN SKIDMORE, AWE, CHRISTOPHER SPINDLOE, STFC, Rutherford Appleton Laboratory, ELLIE TUBMAN, NIGEL WOOLSEY, University of York, ROMAN YURCHAK, LULI, Ecole Polytechnique, GIANLUCA GREGORI, University of Oxford — The aim of the POLAR project[1] is to simulate, in the laboratory, the accretion shock region of a magnetic cataclysmic variable binary star system. Scaling laws have shown that laser experiments can be related to astrophysical phenomena by matching relevant dimensionless parameters[2,3]. As well as forming a reverse shock, relevant to the POLAR project, the experimental system is also likely formed of a weakly radiating shock and an ionisation front. Results from our experiment at the Orion Laser are presented here, alongside comparisons to simulation and the astrophysical case (of relevance to triggered star formation[4,5].) References : 1. Busschaert et al., NJP, 15, 3, 035020 (2013), 2. Falize et al., ApJ. 730, 96 (2011), 3. Ryutov et al., ApJ. 518, 821 (1999), 4. Dale et al., MNRAS 377, 535 (2007), 5. Tremblin et al., A&A 564, A106 (2014)

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Date submitted: 11 Jul 2014 Electronic form version 1.4