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High energy density Physics on LULI2000 facility MICHEL KOENIG, ALESSANDRA BENUZZI-MOUNAIX, ALESSANDRA RAVASIO, TOMMASO VINCI, NORIMASA OZAKI, SEBASTIEN LEPAPE, MARC RABEC, Ecole Polytechnique, CLAIRE MICHAUT, LAURENT BOIREAU, Observatoire de Meudon, SERGE BOUQUET, STEPHANIE BRYGOO, EMERIC HENRY, PAUL LOUBEYRE, CEA Bruyères le chatel, DAVID RILEY, University of Belfast, KAZUO TANAKA, University of Osaka, LULI TEAM, LUTH COLLABORATION, DPTA COLLABORATION, DEPARTMENT OF PHYSICS COLLABORATION, INSTITUTE OF LASER ENGINEERING COLLABORATION — We present here a summary of various experiments performed on the new facility LULI 2000. High Density Energy Physics situation have been investigated: a- Study on water EOS using laser driven shock into a diamond anvil cell pre-compressed target. b- A strongly coupled and degenerated Aluminum plasma has been probed by X-ray Thomson scattering. Compton shift from electrons has been observed. c- A radiative supercritical shock has been produced into a Xe filled gas cell. We determined electron density variation, precursor and shock velocities and electron temperature. Different flyer plate targets have been tested loading shock in fused-quartz plate.

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