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Laser-shock compression of liquid hydrogen and the interior structure of gas giant planets TAKAYOSHI SANO, Osaka University, MASAHIRO IKOMA, KEISUKE SHIGEMORI, NORIMASA OZAKI, TAKASHI ENDO, YOICHIRO HIRONAKA, YASUNORI HORI, AKIFUMI IWAMOTO, TOSHIHIKO KADONO, TOMOAKI KIMURA, RYOSUKE KODAMA, KOHEI MIYANISHI, MITSUO NAKAI, TAKUO OKUCHI, KAZUTO OTANI, TATSUHIRO SAKAIYA, KATSUYA SHIMIZU, AKIYUKI SHIROSHITA, HIDEKI TAKAHASHI — Equation of state for hydrogen under high pressure is a key to understand the interior structure of gas giant planets like Jupiter. Uncertainty in the hydrogen EOS makes it difficult to estimate the mass of a central core in Jupiter, which can be an important clue to determine the formation scenario of our solar system. To obtain a more accurate EOS model, we have started to investigate the primary Hugoniot of liquid hydrogen by using the GEKKO XII laser. We adopt α-quartz as a standard material. Shock velocities in quartz and a sample are measured by VISAR. In this paper, we show the current status of our experiment and future plan.

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