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**Recent energy transport experiments on the VULCAN Petawatt laser** KATE LANCASTER, STFC Rutherford Appleton Laboratory — VULCAN Petawatt experiments have been performed to investigate aspects of energy transport in solid targets. A range of targets were used to study the transport in insulating ( $\text{SiO}_2$ ) and conducting (Al) materials of similar Z, and low Z materials. Thick  $\text{SiO}_2$ , Al, and CH targets with copper coated on the rear surface were designed to yield information about energy transport in larger targets of different material properties. Data were obtained from x-ray and optical imaging systems. Unusual patterns in the expansion profiles were observed consistently for the Al case compared with the other target materials. Buried Nickel layers were sandwiched between the thin (2-5 $\mu\text{m}$ ) target materials (Al,  $\text{SiO}_2$ , CH) to enable measurement of the Ni Lyman Alpha thermal emission using a spherical crystal imaging system. Data were also obtained from the other x-ray and optical imaging systems. Modeling using hybrid, radiation hydrodynamic, and atomic codes is presented to assist interpretation of the data.

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