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High-speed photographs have been obtained of the fracture of glass produced by the detonation of a high explosive charge. Using photoelastic methods, the shock waves set up in the glass can also be photographed.

_____ Fringe patterns
not shown in data obtained.

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A proposal is made to use celluloid to represent an elastoplastic material such as a non-strain-hardening metal, and to determine stress and strain patterns in the plastic range by photoelastic techniques. The few simple examples tested indicate that not only can the plastic stress and strain distribution be determined but also the residual stress pattern after unloading can

be found. Although the time for a complete test is relatively long, the method shows considerable promise for at least qualitative studies of elasto-plastic materials in the plastic range.

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