offset when the high pressure data are extrapolated to zero pressure.

Comparison of hydrostatic and shock compression curves for both sapphire and quartz show differences in volume at a given pressure of about 1 per cent. The reason for this is not understood.

The present theoretical and experimental descriptions of yield mechanisms in solids and shear strength effects at high pressure are inadequate to characterize solids other than metals. Brittle material classifications under static conditions do not adequately characterize those materials which are known to respond as elastic–plastic or elastic–isotropic. There is evidence for different shear-failure mechanisms and different shear strength effects between single crystals and polycrystals and for crystals shocked in various crystallographic directions.

When the shear strengths of solids approach the theoretical shear strength values under shock loading, elastic–isotropic response and changes in shear sensitive properties should be anticipated. It is central to our understanding of the compressional behavior of solids under large anisotropic compressions to accomplish further detailed investigations of HEL values and compression curves for stresses immediately above the Hugoniot elastic limit.

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The reviewer called our attention to static compression measurements of C_{111} and C_{333} reported by R. E. Hankey and D. E. Schuele, *J. Acoust. Soc. Am.* **48**, 190 (1970). These authors also report values obtained by J. H. Gieske in a Ph.D. thesis at Penna. State University. The various values are shown below.

Comparison of third-order constants[a]

	Gieske	Hankey *et al.*	Present Work
C_{111}	−3·92	−3·87	−3·6
C_{333}	−3·10	−3·34	−3·6

[a] All units are 10^{13} dyne cm^{-2}.

Differences between the static and shock compression may involve fourth-order constant contributions.