ACOUSTIC MEASUREMENTS ON APOLLO 14, 15, AND 16 RETURNED ROCK SAMPLES, Orson L. Anderson and Nick Warren, Institute of Geophysics and Planetary Physics, University of California, Los Angeles, California 90024.

Velocities V_p and V_s are reported on a suite of Apollo 14, 15, and 16 returned rock samples to 5 Kb hydrostatic pressure. Sound-velocity measurements are made using 3 mHz transducers. For some samples, length change (linear strain) corrections to sound velocities are made. Measured samples include breccias or clastics (60335, 15498, 14305, and 14306) and crystalline sample 14310.

Low-pressure rock velocities, velocity anisotropy, and velocity pressure dependence (from 0 to 20 bars uniaxial pressure) are given and are compared to terrestrial rock behavior.

The effects of clean cracks on attenuation are being explored by generating microfractures in artificial rocks in high vacuum and measuring both elastic moduli and attenuation of the samples while they are still in the vacuum.