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SANTA BARBARA • SANTA CRUZ

DIVISION OF PHYSICAL SCIENCES

IRVINE, CALIFORNIA 92664

November 7, 1967

Professor J. W. Keuffel  
Department of Physics  
University of Utah  
Salt Lake City, Utah 84112

Dear Jack,

Thanks for the preprint of your exciting results. To put it mildly, you've really got something there. I was particularly interested because we are engaged in designing a muon detector to study on the earth's surface the interaction of cosmic ray muons in the  $10^{12-13}$  Gev range and your experiment greatly bolsters our interest.

Our eventual approach, now nearing a little prototype, is to use horizontally travelling muons and a several thousand ton lead target interlaced with many detectors and terminated by a bending magnet. We propose to label the energies of the particles by the fluctuations in energy loss, having first matched the fluctuations to the energy via the small percentage of catastrophic events which permit measurement of the residual energy with the magnet.

There is undoubtedly much to be learned in all this, as you and your boys have definitely shown. Congratulations!

Sincerely,

A handwritten signature in cursive script that reads "Fred".

F. Reines  
Professor of Physics

FR:jw