

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

The Cosmic Ray Energy Spectrum above 0.1 EeV measured by the Telescope Array and TALE Fluorescence Telescopes JIHEE KIM, High Energy Astrophysics Institute and Department of Physics and Astronomy, University of Utah, Salt Lake City, Utah, USA, THE TELESCOPE ARRAY COLLABORATION COLLABORATION — The Telescope Array (TA) is the largest cosmic ray detector in the Northern hemisphere. It is deployed in the desert of central Utah. Initially designed to study ultra high energy cosmic rays with energies $> 10^{18}$ eV, TA has added an extension to lower the experiment's energy threshold. Known as the Telescope Array Low-energy Extension (TALE), high elevation angle telescopes and a denser graded array of scintillation detectors were added to the main array, allowing us to lower the energy threshold to $\sim 10^{15.5}$ eV. The observatory now consists of 48 telescopes and a graded array of 610 scintillators spread over ~ 750 km². The telescopes observe the longitudinal development of a cosmic ray induced extensive air shower by detecting the scintillation light emitted as the shower develops in the atmosphere. Meanwhile, the array of scintillator detectors samples the lateral distribution of particles reaching the Earth's surface. The northern telescope station has the greatest field of view and is closest to the most densely packed portion of the scintillator detector array, making it more sensitive to the low energy range of the spectrum. I will present the energy spectrum made by combining data from the main TA and TALE extension fluorescence telescopes.

Jihee Kim
Univ of Utah

Date submitted: 12 Jan 2018

Electronic form version 1.4