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## The Telescope Array Low Energy Extension (TALE)

*Thursday, 1 July 2010 11:35 (15 minutes)*

The Telescope Array (TA) experiment is the largest cosmic ray detector in the northern hemisphere. It also operates the largest scintillation counter array in the world. Together with the three fluorescence detectors (FDs), it is optimized to study cosmic rays as independent detectors and in hybrid mode at energies above the ankle structure. The TA low energy extension will add two additional fluorescence detectors along with an infill array. The first of these will operate in stereoscopic view with an existing TA FD to study in detail the 0.3-30 EeV range around the ankle, with more than a factor of five improvement in aperture at 1 EeV over HiRes. The Tower fluorescence detector, using larger mirrors, will operate in hybrid mode with the infill surface array to measure the spectrum, composition, and anisotropy of cosmic rays down to 30 PeV, well below the “second knee”. Together, TA and TALE will be able to measure simultaneously all three known spectral features in the ultra high energy (UHE) regime. TALE will also study the transition from galactic to extragalactic cosmic ray flux, with fluorescence Xmax capabilities for the first time.

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O

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