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Telescope Array Experiment

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Telescope Array (TA) is the largest cosmic ray detector in the Norther hemisphere, which measures primary particles in 4 PeV to 100 EeV range. TA is a hybrid detector. The main TA detector consists of 507 plastic scintillation counters on a 1.2km square grid, overlooked by 3 fluorescence detector stations. By May 2017, TA will have collected 9 years of data above 1 EeV. Results of this contribution are based on the first 7 years of TA data. Recently built TA low energy extension detector, which consists of an additional fluorescence detector and an infill array, has now collected 2 years of data. TALE broadens the energy range of TA to 4 PeV.

The following results of TA are presented: (1) Cosmic ray energy spectrum above 4 PeV, which extends over 4 orders of magnitude in energy and shows 4 features (2) Measurements of cosmic ray mass composition in 1 to 100 EeV range, which is found to be light, most likely protonic (3) Search for gamma rays and neutrinos above 1 EeV, and (4) Cosmic ray anisotropy studies above 10 EeV. We have seen an evidence of a dependence of the flux on the arrival direction, and a concentration of events above 57 EeV, called the 'hotspot', centered in the Ursa Major.

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