

Abstract Submitted  
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**The Composition of Ultra High Energy Cosmic Rays at Telescope Array**<sup>1</sup> ELLIOTT BARCIKOWSKI, University of Utah, TELESCOPE ARRAY COLLABORATION — Telescope Array (TA) is the largest cosmic ray observatory in the Northern Hemisphere and is sensitive to Ultra High Energy Cosmic Rays (UHECR) with energies above  $10^{18}$  eV. UHECR observatories rely on the extensive air shower (EAS) produced when cosmic rays interact in the atmosphere. The point in an EAS that has the largest number of particles is called shower maximum,  $X_{max}$ , and is sensitive to cosmic ray composition. TA uses surface detector (SD) as well as fluorescence detector (FD) observation methods and may observe  $X_{max}$  in monocular mode, using single FD station, stereo mode, using a pair of FD stations, or hybrid mode, using one FD station combined with the SD. Hybrid and stereo observation allow for accurate reconstruction of cosmic ray arrival directions and  $X_{max}$ . Both hybrid and stereo modes provide resolutions better than  $1^\circ$  in arrival direction and  $30 \text{ g/cm}^2$  in  $X_{max}$ . Both of these observation methods are sufficiently accurate for composition analysis using  $X_{max}$ . In this talk, the most recent TA composition analysis is presented. The results are compatible with the predictions of QGSJet01/II proton Monte Carlo and incompatible with QGSJet01/II iron for energies between  $10^{18.2}$  and  $10^{19.3}$  eV.

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