

The Astroparticle Physics Conference

34th International Cosmic Ray Conference

34th International Cosmic Ray Conference July 30 - August 6, 2015 The Hague, The Netherlands

Contribution ID: 747

Type: Oral contribution

The Possible Extragalactic Source of Ultra-High-Energy Cosmic Rays at the Telescope Array Hotspot

Thursday 30 July 2015 15:15 (15 minutes)

The Telescope Array (TA) collaboration has reported a hotspot, a cluster of 19 cosmic ray events with energies above $57~{\rm EeV}$

in a circle of 20° radius centered at R.A.(α) = 146.°7, Dec.(δ) = 43.°2.

We explore the hypothesis that the hotspot could originate from a single source. By considering the energy dependent

deflections that are expected to affect arrival directions of cosmic rays propagating in cosmic magnetic fields, we identify the nearby starburst galaxy M82 and the bright nearby blazar Mrk 180 as two likely candidates. We discuss prospects of discriminating between the candidate sources with current and future spectral data.

Collaboration

- not specified -

Registration number following "ICRC2015-I/"

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Session Classification: Parallel CR03 Aniso

Track Classification: CR-EX