

The Origin of the Highest Energy Cosmic Rays: Do All Roads Lead Back to Virgo?

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Introducing a simple Galactic wind model patterned after the solar wind we show that back-tracing the orbits of the highest energy cosmic events suggests that they may all come from the Virgo cluster, and so probably from the active radio galaxy M87. This confirms a long standing prediction, as well as a theoretical model for the radio galaxy jet emission of M87. With this picture in hand, one clear expectation is that those powerful radio galaxies that have their relativistic jets stuck in the interstellar medium of the host galaxy, such as 3C147, will yield limits on the production of any new kind of particle, expected in some extensions of the standard model in particle physics.