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Ultra-high-energy cosmic-ray hot spots?

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There is tentative evidence for an ultra-high-energy cosmic-ray (UHECR) “hot spot” coming from the direction of Centaurus A and also evidence for another hot spot that might be associated with the M81 group. Although the evidence is not firmly established, it is not all unreasonable, given the energetics and the physical conditions in Cen A and in various galaxies in the M81 group, that these signals might be real. In this talk I will discuss how additional evidence to establish or disprove the existence of a hot spot can be obtained with some simple modeling of the energy and angular distribution expected from an UHECR source. I discuss the improvements that can potentially be done with current data and also forecast how well parameters of a hot-spot model may be constrained with future measurements.

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