

Abstract Submitted
for the NEF14 Meeting of
The American Physical Society

The Great Circle Test of Large Scale Alignment RICHARD SHURTLEFF, Wentworth Inst of Tech — Vectors shoot out tangent to the Celestial sphere from many astronomical objects, polarization directions, jets and other structures. It is natural to ask if the vectors of a sample of such sources are aligned, trending toward or away from some common patch of sky. Directly comparing objects over large scales invites the subtle mathematical problem of parallel transport - how do we know which directions are the same at different locations on the curved sky? By indirect comparison, employing an intermediary point and comparing a vector with that point on the sky, such problems can be avoided. In the Great Circle Test of alignment, all vectors in a sample are compared to the same point on the sky, not to each other. Points of the sky favored by the vectors and points in disfavor can be deduced by mapping all points on the sky to the sample. The significance of the level of alignment for any sample can be found by considering random-directed samples.

Richard Shurtleff
Wentworth Inst of Tech

Date submitted: 22 Sep 2014

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