Is “THE FORCE” with Us?
Search for Correlated Fluctuations in Nuclear Decay
(...and what it may teach us about the stock market)

Mark Silverman
Trinity College

Claims for a “cosmogenic” force that correlates otherwise independent stochastic events have been made for at least 10 years, based largely on visual inspection of time series of histograms. To test these claims, a search was made for correlations in the time-series of coincident gamma rays from positron-electron annihilations deriving from beta+ decay of Na-22. Disintegrations were counted within a narrow time window over a period of time leading to more than 1 million samples of data. The time series and frequencies of events were then examined in a variety of ways for evidence of correlations indicative of quantum-mechanical violating deviations from Poisson statistics. Correlations in fluctuations signify information and therefore the potential for forecasting future events. In this seminar I will discuss the rigorous statistical tests applied to the time series of nuclear decays—and what, if anything, they may teach us in regard to the forecast of stock-market price fluctuations.

Friday, April 3rd 2009, McCook Auditorium, 3:00 pm, Refreshments 2:45 pm