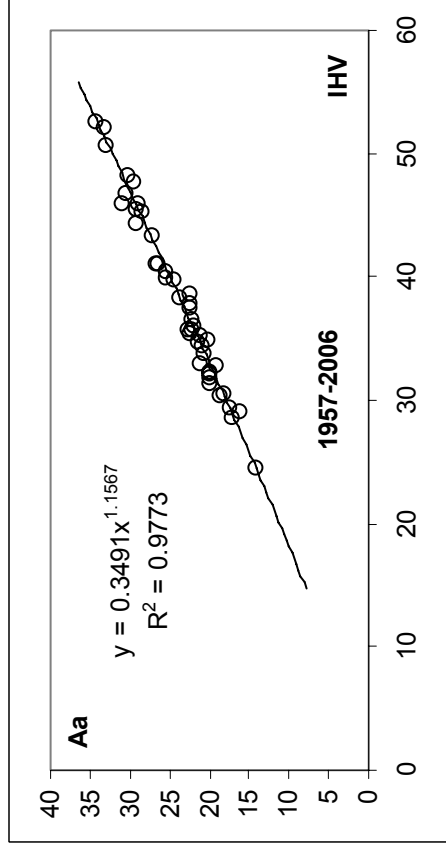
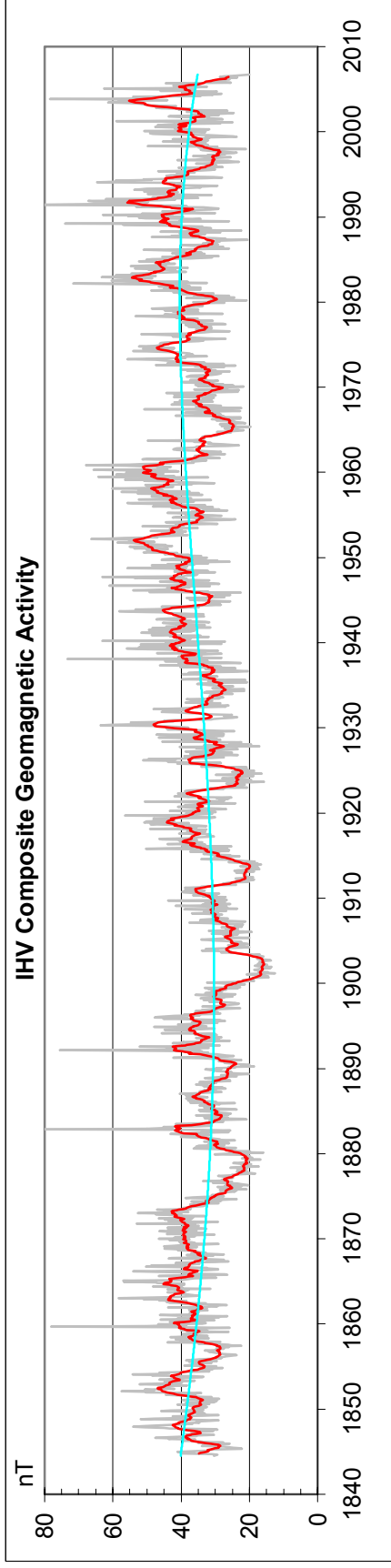
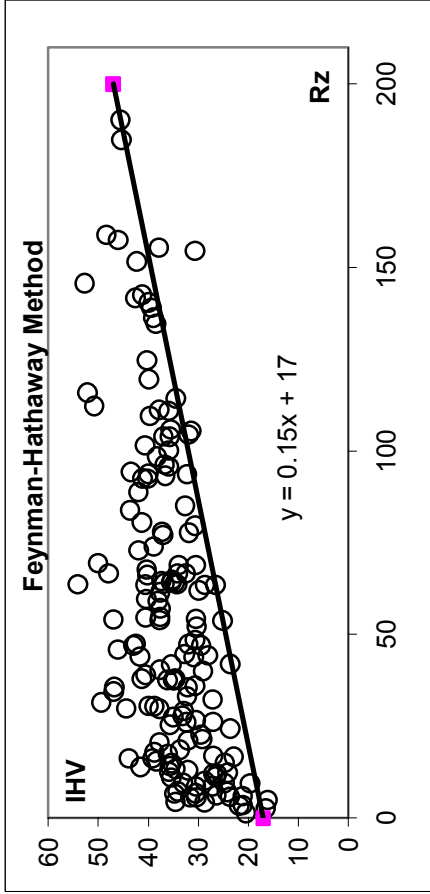
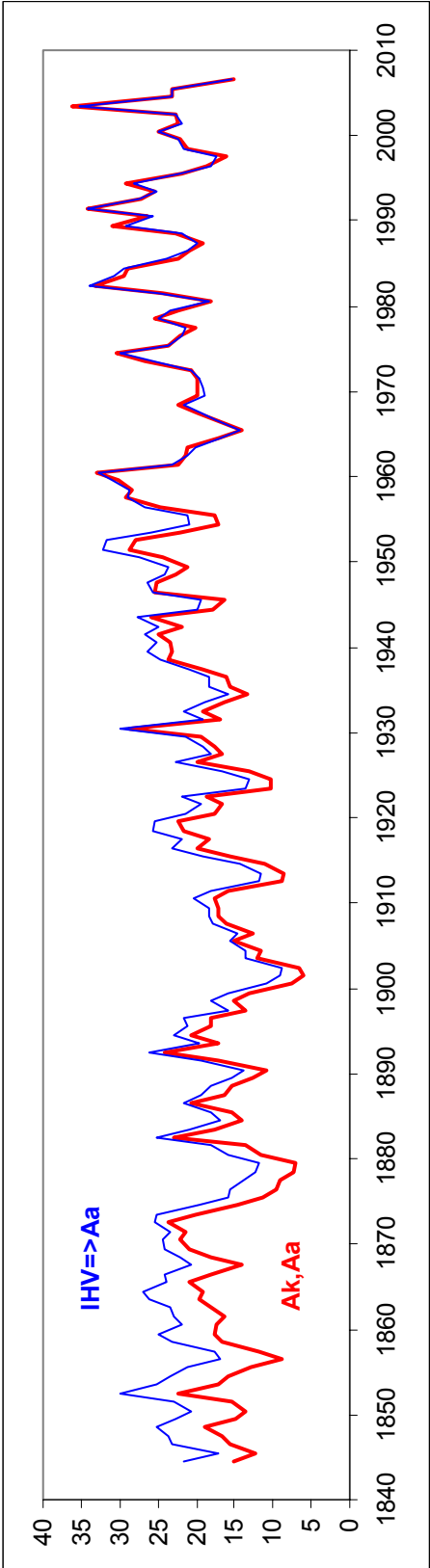
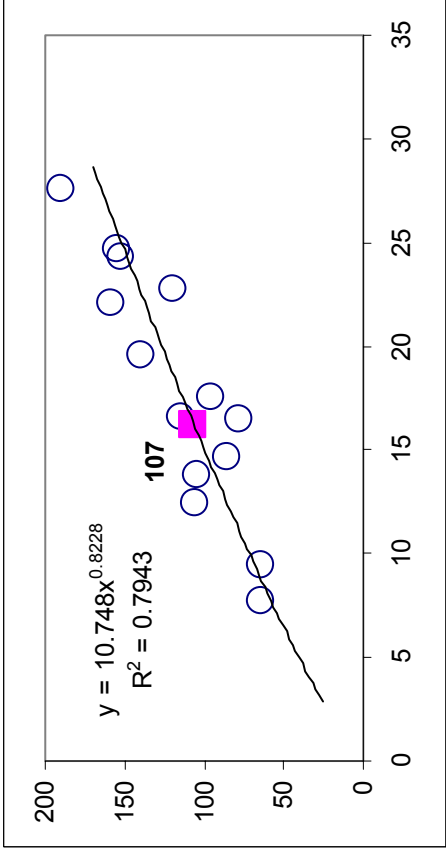
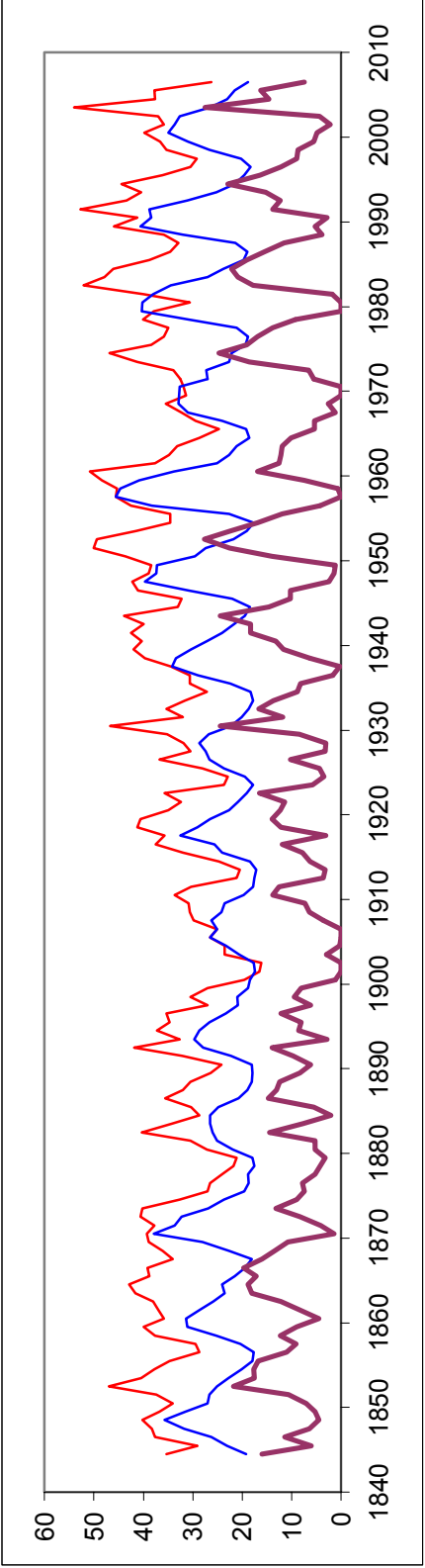
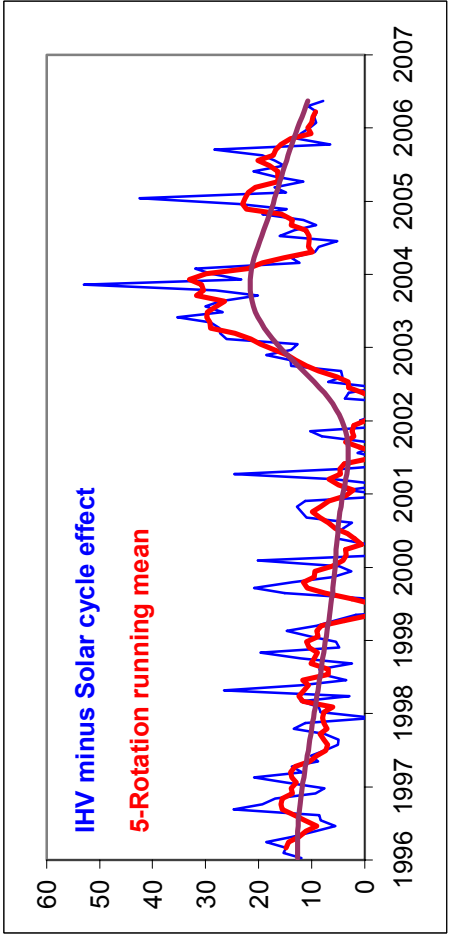
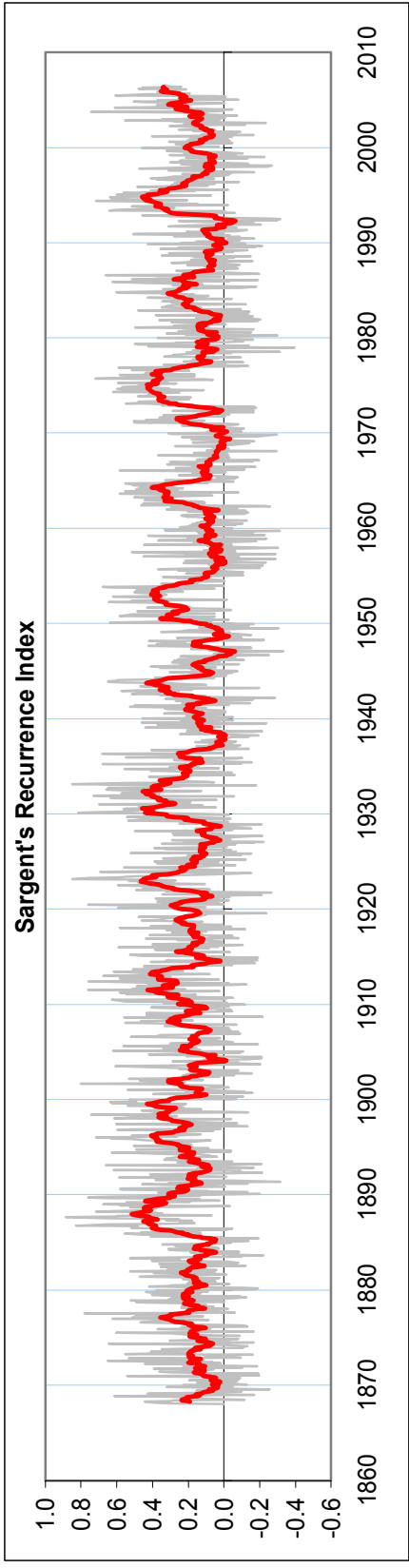


Geomagnetic Activity









Smoothing? Everybody does it, even:

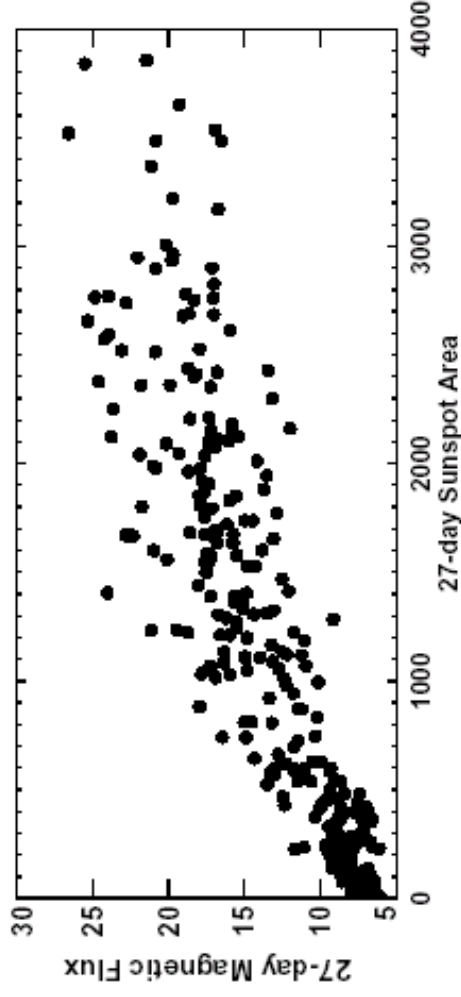


Figure 7. Sunspot area (from SOON and NOAA) and photospheric magnetic flux (from NSO/Kitt Peak), averaged over a solar rotation, for the period 1977-2000. The plot shows that the mean values for these two observables have a significant correlation with the Pearson coefficient of $r=0.87$.

(From Dikpati et al.: download.hao.ucar.edu/pub/dikpati/dynamopredi.pdf)

Definitely non-linear, but with suitable smoothing one gets a linear relation:

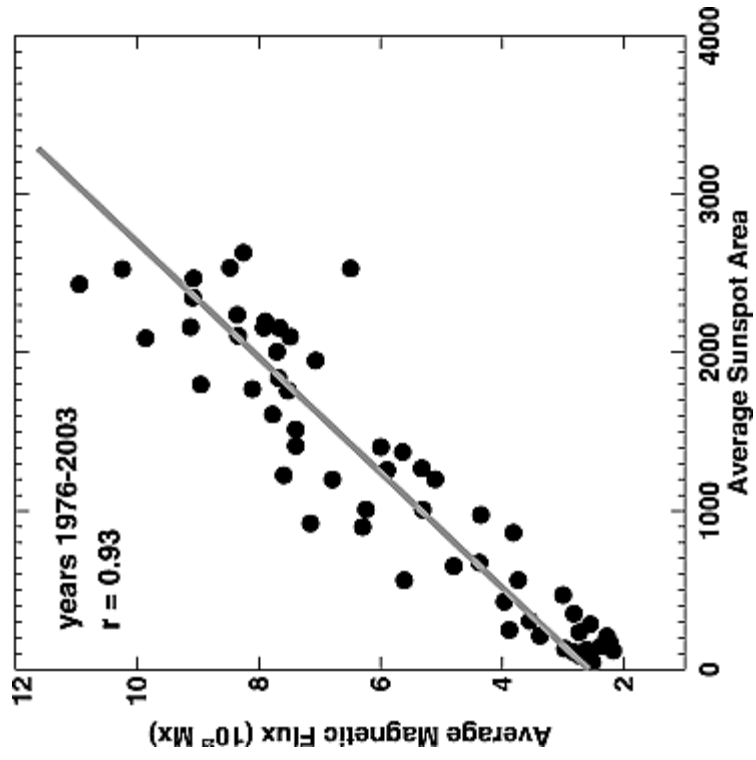


Figure 1. Sunspot area (from SOON and NOAA) in units of 10^{-6} of visible hemisphere and NSO/Kitt Peak photospheric magnetic flux (in 10^{23} Maxwell), both averaged over 6 rotations, for the period 1976–present.

(Dikpati et al., GRL 2006)

Geomagnetic activity in 2003 coming from the large coronal holes then.

Solar mean field was very large in 2003. Comes from central half of the solar disk (not polar cap).

Seems hard to accept that 2003 was a part of the “extended” cycle as the field was at low latitudes.

