Improving prediction of space weather disturbances: what is needed?

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To this day, predicting the onset of major space weather disturbances is strikingly unprecise. The uncertainty of even the most advanced prediction schemes is still of the order of 20 hours. Further: a significant percentage of geomagnetic storms occurs totally unpredicted (missing alarms), and a similar percentage of predicted events never occur (false alarms). In this presentation, the various reasons for this embarrassing situation are analyzed and proposals for impovements are made.