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Neutron Stars Hidden Magnetic Fields

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The paradigm that pulsars are neutron stars has been established decades ago. The reverse statement, that all neutron star should appear, at least when they are young, as pulsars has been seriously challenged recently. Among the two dozens of known young ($<10^4$ yrs) neutron stars, less than ten actually are pulsars. Evidence for the presence of a pulsar in the remnant of SN 1987A is still lacking. I will describe a possible scenario, late hypercritical accretion in core collapse supernovae, that may temporarily hide the magnetic field of a new born neutron star. On a long time scale, thousands to millions of years, the hidden field may comes back, resulting in a delayed switch-on of a pulsar.

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