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Ultraluminous X-ray pulsar: accreting magnetar?

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Magnetars are neutron stars powered by their superstrong magnetic field.
The discovery of low magnetic field magnetars etc has deeped our understanding of magnetars. Accreting normal neutron stars are discovery 40 years ago. However,
no strong evidence for the existence of accreting magnetars are found up to now.
Recently, an ultraluminous X-ray source powered by an accreting neutron star is discoveryed (Bachetti et al. 2014, Nature, 514, 202). It may be an accreting magnetar candidate. For an aged magnetar, it is more like to be a low magnetic field magnetar. An accreting low magnetic field magnetar may explain both the radiative and timing observations of the ultraluminous X-ray pulsar. Combined with previous researches, three signatures of accreting magnetar are available at present: (1) magnetar-like bursts, (2) a hard X-ray tail, and (3) an ultraluminous X-ray pulsar.

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