

Neutron star origins and masses

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We present a brief general view of the issue of neutrons star births and current masses. We argue that there are reasons to expect very massive objects in Nature, in particular those in “spider” binary systems that undergo very long accretion histories. A maximum value of $2.5 M_{max}$ is obtained directly from the observed mass distribution using a simple Bayesian analysis. This is consistent with the recent report of a very asymmetric GW 190814 smallest component, which may be the heaviest neutron star ever detected. If so, the dense matter equation of state will be challenged to be stiff enough to explain these masses.

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