

Neutron star observations and extreme matter properties

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There are thousands of neutron stars in our galaxy. Observations across the electromagnetic spectrum, from radio to gamma-ray, have provided deep insight into the properties of these incredible stars - which contain the most dense matter in the known Universe. I will discuss what we have learned so far (and how we have come to these conclusions), the open theoretical questions that drive our current research, and how this guides future observational and theoretical studies. I will place particular emphasis on the interplay between fundamental physics, 'messy astrophysics', and astronomical instrumentation.

Useful reading:

[1] <https://link.springer.com/article/10.12942/lrr-2008-8>

[2] <https://journals.aps.org/rmp/abstract/10.1103/RevModPhys.88.021001>