

Abstract Submitted  
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**Probing the interiors of accreting neutron stars** ANDREW CUMMING, McGill University — Neutron stars in low mass X-ray binaries accrete hydrogen and helium from a low mass companion. The neutron star can be observed directly in X-rays during periods of quiescence, when accretion switches off, or during thermonuclear X-ray bursts which result from unstable thermonuclear burning of the accreted matter. Recent long term monitoring observations of these systems have revealed new types of long duration X-ray bursts resulting from unstable burning of thick helium or carbon layers. The properties of these long bursts are sensitive to the heat flux emerging from deep in the star, and therefore give a new way to probe neutron star cooling. I discuss the current constraints on the neutrino emissivity of the stellar core, and the dense matter interior, including the possibility that these stars are in fact strange stars.

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