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Abstract for an Invited Paper  
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**Quark matter and neutron stars<sup>1</sup>**

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I discuss some of the signatures by which the presence of quark matter in neutron stars might be inferred from observations. I show how the recent observation of a heavy neutron star places strong constraints on the quark matter equation of state, and I survey some of the distinctive transport properties of the color-superconducting phases of quark matter.

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