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Uncovering the neutron star crust using cooling measurements

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Neutron stars in binary star systems accrete matter from their neighboring star, causing their surface temperature to rise. When accretion stops, the neutron star cools. Using cooling data on neutron stars MXB1659-29 and KS1731-260 and the codes MESA and dStar, this research modeled neutron star cooling by varying attributes including radius, mass, density, pressure, core temperature, and impurity in order to determine the composition of the star. In this poster I will present the results of these simulations.

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