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## Motivate Your Beam Time: X-Ray Burst Reaction Rate Sensitivites

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The powerful thermonuclear explosions driving X-ray bursts are powered largely by the rp-process. The large number of rare, short-lived isotopes involved in the process means reaction rates are often poorly constrained, while at the same time thousands of reactions can potentially participate in the process. In a world with finite beam time, we need a way to determine which rate measurements have the greatest potential for scientific impact. In this talk I give candidates for such experimental measurements based on the largest self-consistent x-ray burst sensitivity study conducted to date. The study starts with baseline models of three well-observed bursting systems in different burning regimes: GS 1826-24, SAX J1808.4-3658, and 4U 1820-303. These models are calculated with the Kepler stellar evolution code, which has a long history of modeling such systems. For each baseline in the study, we vary the involved rates and remodel the system to determine the impact on X-ray burst observables, determining the rates models are most sensitive to.

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