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Nuclear Astrophysics of Novae

Classical novae are explosive events in binary star systems that require a deep understanding of both stellar and nuclear physics. These outbursts are driven by a thin-shell instability in material accreted from a main-sequence or red giant companion onto the surface of a white dwarf. The explosion ejects matter into the interstellar medium, and the detailed composition of this material offers vital clues to the nature of the nova, as the high temperatures reached are sufficient to trigger thermonuclear reactions on light and intermediate-mass nuclei ($A < 40$). Recent research has focused on the recurrent nova **T Coronae Borealis**, which is expected to appear soon in the night sky and may reach a peak brightness comparable to that of the North Star in the northern hemisphere. This talk will summarize our current understanding, and the remaining uncertainties, about the key nuclear processes likely to shape the composition of the nova ejecta.

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