
Breaking the rules: classical novae as testbeds for extending spectral modeling

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Abstract

Classical novae are “comparatively simple” single ejection ballistic events that show a rich phenomenology across the spectrum. For the “Fe curtain”, they resemble LBVs in fast forward, for complex cool spectra, they mimic R CrB and AGB stars. They even (under extraordinary conditions) show shock interactions within a stratified dense medium, as in symbiotic stars. All this happens in a non-stationary, non-spherical, highly fragmented medium in which the chemical properties may not even be completely homogeneous. Classical novae form dust (think supernovae but with far lower mass and not radioactive), show molecular phases (think mergers, e.g. V1309 Sco), display a very wide range of ionizations with a central illuminating source whose spectrophotometric properties are changing in real time (think planetary nebulae in real time). They are even binaries in which the accretion restarts after some time, changing yet again the illumination of the ejecta. What more could you ask for?

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