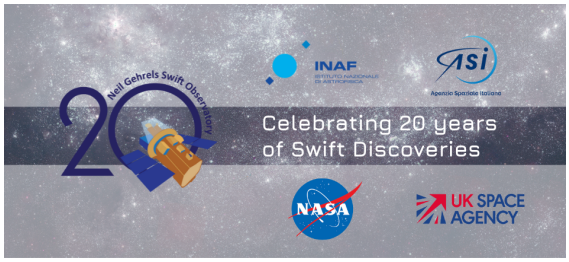

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Novae as Exemplars of Physical Processes Encountered in Transients

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Classical novae begin as explosive, but not destructive, mass ejection events following a thermonuclear runaway on a mass accreting white dwarf but the "main event" is the subsequent development of the ejecte mass. To understand the photometric and spectroscopic histories of the events requires dealing with physical processes encountered in a broad variety of cosmic transients. The symbiotic-like recurrent novae, such as RS Oph and T CrB, present analogs to the acceleration shocks in supernova remnants. The recombination and re-ionization waves provoked by both sudden and slow brightness variations of the illuminating central white dwarf in the short period nova systems are also seen in TDEs, red novae, ILOTs,and LBVs. Dust formation in the expanding ejecta, a not infrequent event in novae, is also observed in supernovae and a broad range of outflows. Ejecta geometries affect emitted spectra and lightcurves. Large amplitude photometric fluctuations, often interpreted as shocks, can also arise from variations in the luminosity and effective temperature of the remnant white dwarf by being reprocessed in the expanding ejecta. The ejecta structure, inhomogeneous chemically and in density and strongly density and velocity stratified, present an essential exemplay for the study of all transients. In all of these cases, Swift continues to be a unique, invaluable source of multiwavelength data from the UVOT filter photometry and grism spectroscopy and the XRT for the view of the state of the degenerate. We will show examples of how the analysis combines these to tease out the physical picture.

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