

Department of Physics & Astronomy

**Dr. Daniel Whalen**

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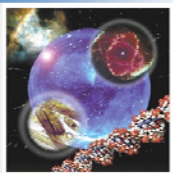
Friday, November 8, 2013

3:15 p.m. - 4:15 p.m.

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## **Finding the First Cosmic Explosions**

Primordial stars are the key to understanding the nature of primeval galaxies, early cosmological reionization and chemical enrichment, and the origin of supermassive black holes. Unfortunately, because they lie at the edge of the observable universe, individual Pop III stars will not be visible to JWST or even the next generation of thirty-meter class telescopes. But primordial supernovae may soon reveal the properties of the first stars because they can be detected at high redshifts and because their masses can be inferred from their light curves. I will review the state of the art in supercomputer models of Pop III star formation and present numerical simulations of Pop III SNe and their light curves and spectra. I will also discuss how light from these ancient explosions will be found in future deep-field and all-sky surveys by JWST and WFIRST.



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