

Department of Physics & Astronomy

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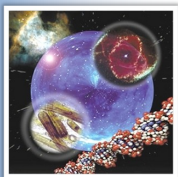
Friday, Apr, 20 2012

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

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Understanding Astrophysical Transients

Much of the night sky does not vary on a human timescale and Astronomers today are studying the same night sky that fascinated Nicolaus Copernicus or Galileo Galilei. However, there are outbursts that appear and disappear on much shorter timescales: from a few months down to less than 1 minute. These transients include some of the most explosive outbursts in the entire universe: e.g. supernovae and gamma-ray bursts. The most energetic transients are produced in the most extreme physical conditions in the universe: for example, just off the event horizon of a black hole or in the formation of a neutron star. These transients can act as physics laboratories to study this extreme physics. But to do so, we must work back from observations of these outbursts (the experimental diagnostics) to the explosion mechanism itself. Here I will review the methods we employ to develop these extreme physics laboratories, discussing recent advances both in theoretical approaches and observational diagnostics.



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