

Supernova Neutrinos - MeV Messengers of the Extreme

Tuesday, September 13, 2016 11:30 AM (30 minutes)

A core-collapse supernova is a nearly perfect neutrino bomb. While capable of outshining its entire host galaxy, this stunning light show represents just a small portion of the explosion. Indeed, each such cataclysmic event typically radiates two orders of magnitude more energy as low-energy neutrinos than it does as electromagnetic radiation or as kinetic shockwaves. Consequently, MeV-scale neutrinos are made in huge numbers as the star is dying, and because these ghostly subatomic particles interact so rarely with normal matter they easily escape the fireball, providing a window into one of the most violent and interesting volumes in space: the heart of a stellar collapse. This talk will cover some of the history of neutrinos and supernovas, as well as how we are preparing new technology and partnerships to observe the next spectacular explosion in all its multimessenger glory.

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