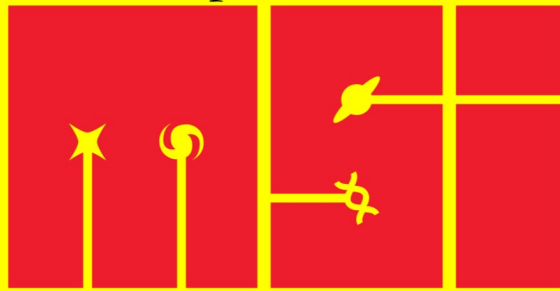


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SEMINAR SERIES

A tale of two fast radio bursts

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A population of millisecond-timescale gigahertz-frequency “fast radio bursts” (FRBs), with signatures of propagation through plasma column densities of cosmological proportions, has recently been identified. Evidence is mounting that FRBs are indeed extragalactic, in which case they may represent new, exotic astrophysical phenomena, and hold great promise for fundamental cosmology.

I will present results on two bursts recently detected at the Parkes telescope, which together suggest that FRBs originate in rare, distant cataclysms. FRB 131104 has a candidate radio afterglow with properties characteristic of a relativistic explosion. FRB 150807, with a remarkable band-averaged flux density of 120 Jy and evidence for rapid diffractive scintillation, appears to originate at greater than a gigaparsec from the Milky Way in a sparse environment. A population synthesis analysis provides additional evidence that at least a subset of the FRB population propagates over cosmologically significant distances. With apologies to Charles Dickens, this is the age of wisdom yet of foolishness, the epoch of belief yet of incredulity; it nonetheless appears that a new field of astrophysics may be beginning.

Tuesday Feb 2, 3:30 pm

MSI Conference Room, 3550 University

