

Physics and Space Sciences Department Colloquium Presents:



Observational Signatures of Recoiling Supermassive Black Holes



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Anisotropic emission of gravitational waves during the coalescence of a binary Supermassive Black Hole (SMBH) can impart a significant recoil velocity to the merged SMBH. Following recent advances in numerical relativity it has been shown that, for certain configurations of the original binary, recoil velocities up to several 1000 km/s are possible, leading to long-lived oscillations within the host galaxy or, in extreme cases, ejection of the SMBH from the galaxy. Such recoiling SMBH's might be detected observationally as off-center Active Galactic Nuclei, or via Doppler shifting of emission lines from the retained gas. I'll briefly review recent efforts by our group and others to identify recoiling SMBH's, and highlight some of the more intriguing candidates that have been discovered to date. These include the giant elliptical M87 and the luminous quasar E1821+643.

Friday, March 22, 2013

4:00-5:00P.M.

Olin Physical Sciences

Room 140