Extremes of AGN activity: large amplitude and transient variability

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Nearly all galaxies host supermassive black holes (SMBHs) at their centers. In a subset of these galaxies, the accretion of matter onto the central SMBH produces significant radiation across much of the electromagnetic spectrum. These objects, known as active galactic nuclei (AGN), are typically persistent yet variable sources, offering valuable cosmic laboratories for studying diverse physical processes, including the effects of strong gravity near black holes. Recent observations have revealed intriguing classes of AGN that exhibit extreme variability, such as changing-look AGN and quasi-periodic X-ray eruptions (QPEs) with very large amplitudes. Furthermore, the tidal disruption of stars by central SMBHs can initiate accretion, resulting in transient phenomena in otherwise quiescent galactic nuclei. I will present recent findings based on multi-wavelength observations, particularly those derived from AstroSat.