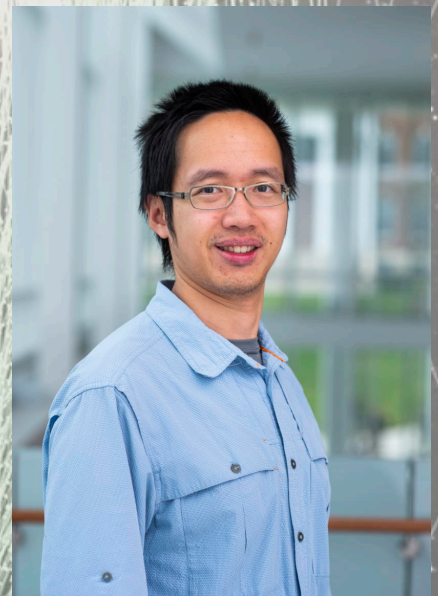


The Enigmatic Phaethon

Near-Earth asteroid (3200) Phaethon presents a unique and intriguing case in planetary science. Despite its dynamically asteroidal orbit, Phaethon is widely recognized as the parent body of the Geminids meteor shower -- the most intense annual meteor shower observed at Earth. This association implies significant mass-loss events in Phaethon's recent history, yet the underlying mechanisms remain elusive. Recent observations have revealed that Phaethon exhibits brightening and a transient tail at its extreme perihelion at 0.14 au, reminiscent of comet-like activity but still distinct in its orbital location and tail morphology. While recent advances in meteoroid stream modeling have reinforced the Phaethon-Geminids association, they have yet to explain several key characteristics of the Geminids stream, underscoring unresolved questions about Phaethon's activity and evolution. I will discuss the latest research on the evolution of the Phaethon-Geminids system and its broader implications for our understanding of active asteroids, transitional objects, and the dynamical processes shaping small Solar System bodies.

**Thursday, March 20th****3:30 - 4:30 p.m.****725 Commonwealth Ave | Room 502****Quanzhi Ye****Boston University**