

# Comets: from icy wanderers to rocky surprises

Comets are considered primitive leftovers from the era planet formation. Most comet science questions therefore revolve around whether observed properties are primordial, i.e. representative of conditions during the era of planet formation, or whether they are caused by subsequent processing. Comets may also have delivered water and complex molecules to Earth and other planets in our solar system. Finally, the discovery that our solar system is frequently visited by interstellar comets places comet science at the forefront of astrobiology.

This talk will take you on a tour of key atomic and molecular processes in cometary atmospheres. Like comets in our solar system, it will be difficult if not impossible to directly study the physical and chemical properties of comets around other stars. Instead, we have to infer these properties from the gas surrounding them. Atomic and molecular reaction such as dissociation, ionization, and charge exchange both alter gases surrounding comets. Because many reactions result in the emission of light, they also offer insight into the composition and radiation environment exocomets are exposed to.

**Thursday, March 6th****3:30 - 4:30 p.m.**

725 Commonwealth Ave | Room 502

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